

MONTHLY

EPIC!

*Supplementary reading material for MGP and Current Affairs classes of
ForumIAS Academy*

AN EXCLUSIVE CURRENT AFFAIRS MAGAZINE FOR

PRELIMS + MAINS

PREPARATION

May 2023

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Congratulations

Celebrating our CSE 2022 Topper's Remarkable Achievement!

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8 Selections in Top 10

64 Selections in Top 100

I was a part of MGP at Forum IAS. Apart from this I also took Current Affairs classes for mains by Dipin Dandekar Sir. The top notch quality of the content and the versatile perspectives I got from Sir's classes really boosted my score in GS. One on one interaction with Ayush Sir during my interview preparation helped me.

I am really grateful to Forum IAS especially Dipin Sir and Ayush Sir for their valuable inputs.


Garima Lohia
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I enrolled myself in multiple courses at ForumIAS – SFG, ANFG, MGP, current affairs classes and Ethist+ classes. The quality of content, the consistency of classes and availability of mentorship right when I needed it helped me throughout my preparation journey.

A special thanks to Ayush Sir and Dipin Sir for their efforts and constant support, even though I was practically invisible!

Smriti
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5 students in Top 5, 8 students in Top 10 and 64 students in Top 100 Ranks List of CSE 2022 are ForumIAS Academy students.

TABLE OF CONTENTS

| | |
|--|-----------|
| TABLE OF CONTENTS | 3 |
| Focus Article | 6 |
| Control of Administrative Services in NCT, Delhi: SC Judgment | 6 |
| General Studies Paper I | 9 |
| 1. Adoption Rights for the LGBTQIA+ Community | 9 |
| 2. Grant of Divorce on Irretrievable Breakdown of Marriage: Supreme Court Judgment | 10 |
| 3. Economic and Financial Participation of Women | 11 |
| 4. Women and Agriculture | 13 |
| 5. State of World Population Report, 2023 and India's Demographic Dividend | 14 |
| 6. Rising Ocean Temperature and Consequences | 17 |
| General Studies Paper II | 19 |
| 1. Role of the Governor in Assenting Bills Passed by the State Legislature | 19 |
| 2. 50 Years of Kesavanand Bharti Judgment and the Basic Structure Doctrine | 20 |
| 3. Supreme Court's Judgment on Shiv Sena Dispute | 22 |
| 4. Custodial Violence in India | 24 |
| 5. Institutions of Eminence (IoE): Status and Challenges | 26 |
| 6. Universal Health Coverage in India | 28 |
| 7. India's Nuclear Doctrine | 30 |
| 8. India's Evacuation (of Citizens) Missions | 33 |
| 9. Russia-China Relationship and Implications for India | 34 |
| 10. Using Buddhist Diplomacy to Enhance Soft Power | 36 |
| General Studies Paper III | 38 |
| 1. The Debate on Poverty Estimation in India | 38 |
| 2. Advent of Knowledge (Brain) Economy and Implications | 39 |
| 3. Tariffs on Utilities in India | 40 |
| 4. WTO Ruling on India's Duties on Electronics Imports | 41 |
| 5. Quantum Technologies: Uses, Challenges and India's Initiatives | 43 |
| 6. India's Space Policy, 2023 | 46 |
| 7. National Policy on Rare Diseases, 2021: Provisions and Concerns | 48 |
| 8. Great Nicobar Development Project | 50 |
| 9. Unrest in Manipur: Implications for Regional Security | 52 |
| 10. India's Earthquake Disaster Preparedness | 54 |
| Factly | 56 |
| Polity | 56 |
| 1. Supreme Court Refers Nabam Rebia Judgment to 7-Judge Bench | 56 |
| 2. Use of Powers Granted to the Supreme Court under Article 142 | 56 |
| 3. High Court has no powers to direct changes to the ST List: Supreme Court | 57 |
| 4. Supreme Court on Right to Statutory Bail | 58 |
| 5. Andhra Pradesh High Court Judgment on Regulation of Public Assemblies | 59 |

| | | |
|-------------------------------------|--|-----------|
| 6. | Supreme Court's Observation on PoSH Act..... | 60 |
| 7. | MoU between Assam and Arunachal Pradesh on Boundary Dispute | 61 |
| 8. | World Press Freedom Index, 2023 | 61 |
| Policy | | 62 |
| 1. | Aadhar Authentication by Private Entities | 62 |
| 2. | National Medical Devices Policy, 2023 | 62 |
| 3. | National Health Accounts (NHA) about India's Healthcare Sector | 63 |
| 4. | Model Prisons Act, 2023 | 64 |
| 5. | Government of Rajasthan's Bill for Gig Workers | 65 |
| 6. | Unified Security Force for Security of Airports | 65 |
| 7. | FSSAI on Misleading Ads..... | 66 |
| 8. | Technical and Scientific Terminology for Official Languages | 67 |
| Economy | | 68 |
| 1. | PLFS Data on Female Labour Force Participation Rate (FLFPR)..... | 68 |
| 2. | Ponzi Scheme..... | 68 |
| 3. | Gaps in Aadhaar-enabled Payment Systems (AePS)..... | 69 |
| 4. | Electrification of Railway Network | 70 |
| 5. | Levy of Tax on Electricity Generation | 70 |
| 6. | Predatory Pricing..... | 71 |
| 7. | Logistics Performance Index, 2023..... | 71 |
| 8. | NITI Aayog's Report on Millets..... | 72 |
| 9. | Nano DAP..... | 73 |
| 10. | Liberalised Remittance Scheme (LRS)..... | 74 |
| International Relations..... | | 75 |
| 1. | Trade Agreement with EFTA..... | 75 |
| 2. | North-South Asia Corridor..... | 75 |
| 3. | Concerns Related to IPEF..... | 76 |
| 4. | US Debt Ceiling | 77 |
| 5. | Laundromat Countries..... | 78 |
| 6. | Syria Re-admitted to Arab League | 79 |
| 7. | Afghanistan's Ambassador to India | 79 |
| 8. | G7 Summit..... | 80 |
| 9. | Washington Declaration..... | 81 |
| Science and Technology | | 81 |
| 1. | Auroras in Ladakh | 81 |
| 2. | Sodium-Ion Batteries (SIBs) | 82 |
| 3. | Digital Twin..... | 83 |
| 4. | Malaria as Notifiable Disease | 84 |
| 5. | COVID-19 and Monkeypox Not Public Health Emergencies Now: WHO | 85 |
| 6. | Pre-term Babies: India Among Top 5 Countries..... | 86 |
| 7. | Mitochondrial Donation Treatment (MDT)..... | 86 |
| 8. | Spurious Liquor | 87 |
| 9. | Check Unnecessary Hysterectomies: Union Government to States | 88 |
| 10. | Sludge as Fertilizer | 89 |

| | |
|--|------------|
| Environment | 89 |
| 1. No 100% Biodegradable Plastic in India: Bureau of India Standards (BIS) | 89 |
| 2. Census of Water Bodies in India | 90 |
| 3. WMO Global Annual to Decadal Climate Update: 1.5°C Limit to be Breached by 2027 | 91 |
| 4. India Warming at a Slower Pace than the Global Average | 92 |
| 5. RBI's Report on Currency and Finance: 'Towards a Greener Cleaner India' | 93 |
| 6. Debt-for-Climate Swaps | 95 |
| 7. RBI's Framework for Green Deposits | 95 |
| 8. Ban on Diesel Vehicles in India | 96 |
| 9. Supreme Court Modifies Order Related to Eco-Sensitive Zones (ESZs) | 97 |
| 10. Use of Artificial Intelligence (AI) in Environment Sustainability and Conservation | 97 |
| History, Art and Culture | 98 |
| 1. Thirunelli Temple, Kerala | 98 |
| 2. Tungnath Temple | 98 |
| 3. Hemis and Thiksey Monastery | 99 |
| 4. Shilabhattacharika | 100 |
| 5. Santiniketan Recommended for UNESCO World Heritage Status | 100 |
| 6. Supreme Court Upholds Amendments by States to Overturn Ban on Bull-taming Sports | 101 |
| 7. Meitei Community | 102 |
| Miscellaneous | 102 |
| 1. Seamounts | 102 |
| 2. Heat Index for Measuring Stress Due to Heat Waves | 103 |
| 3. Disaster Preparedness of Asia Pacific Countries: ESCAP Study | 104 |
| 4. Monitoring Groundwater Quality | 105 |
| 5. Bluewashing | 106 |
| 6. World Development Report 2023: Migrants, Refugees and Societies | 107 |
| 7. 'The State of the World's Children 2023: For Every Child, Vaccination' | 108 |
| Pointly | 109 |

Focus Article

Control of Administrative Services in NCT, Delhi: SC Judgment

News: The Supreme Court has ruled that the elected Government of Delhi has control over administrative services in the National Capital Territory (NCT), Delhi.

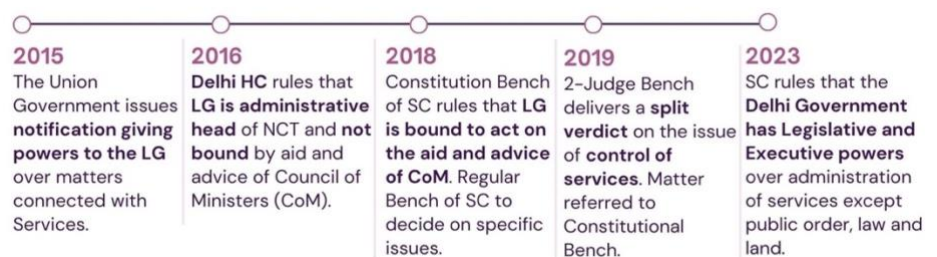
What are the issues with the functioning of administrative services in Delhi?

- **Control over Administrative Services:** The dispute is between the elected Government of Delhi and the Lieutenant-Governor (LG) appointed by the Union Government regarding control of administrative services in Delhi including the IAS. The dispute had often led to deadlock in decision-making, affecting smooth functioning of the administration. A 2015 notification had given control of services to LG.
- **The National Capital Territory of Delhi (Amendment) Act, 2021:** The Act amended the NCT Act, 1991 to give more powers to the LG:
 - The term 'Government' referred to in any law made by the Legislative Assembly will imply LG.
 - Prohibited the Legislative Assembly from making any rule to enable itself to consider the matters of day-to-day administration of the NCT of Delhi.
 - The amendment added that on certain matters, as specified by the LG, his opinion must be obtained before taking any executive action on the decisions of the Minister/ Council of Ministers.
- **Division of Powers:** The NCT Delhi lacks full statehood and does not have complete control over the police, land, and public order. The Government says this limits their ability to execute policies effectively.
- **Legislative Ambiguity:** The lack of clarity in the legislative text about the distribution of powers between the elected Delhi government and the LG has led to confusion. The ambiguity in the reading of Article 239AA of the Constitution, which outlines the powers of the Delhi government, has often resulted in disagreements.
- **Political Differences:** Differences between Union Government and elected Delhi Government (when ruled by different parties) have led to administrative issues.

Article 239AA of Constitution

Article 239AA granted **Special Status to Delhi** in 1991 through the **69th Constitutional Amendment Act (CAA)**. The 69th CAA provided Delhi with a Legislative Assembly and a Council of Ministers (CoM). The CoM was **made responsible to the legislative Assembly** and empowered to deal with matters listed in State and Concurrent Lists except Law and Order, Police and Land.

Timeline of Dispute



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What are the viewpoints of the Union and Elected Delhi Government?

Views of the Union Government

- **Control over NCT:** The NCT holds a special status that necessitates the Union to have control over the administrative services. Absence of control will impede the ability of the Union Government to discharge its national and international responsibilities effectively.

- **Adequate Powers:** The Delhi Government has sufficient control over the bureaucracy through the **Transaction of Business Rules, 1993**, The Rules grant adequate powers to Ministers of Government of Delhi to ensure supervisory and functional control over civil services.
- **Delhi's Status as a Union Territory:** The LG should retain considerable power due to Delhi's status as a Union Territory. The 2021 Amendment Act widened the scope of powers of the LG.

Views of the Elected Delhi Government

- **Power to Implement Policies:** The elected Government is responsible to the electorate and should have the power to implement policies effectively and hold the civil servants accountable.
- **Article 239AA:** Article 239AA gives the elected Delhi Government legislative and executive powers similar to other States, excluding matters of public order, police, and land.
- **Overreach by the Union Government:** The 2021 Amendment Act as an overreach by the Union Government into the administrative affairs of Delhi, and an attempt to undermine the powers of the elected Government.
- **Limiting LG power:** The LG should act on the 'aid and advice' of the Council of Ministers, as per the 2018 Supreme Court ruling, and that the L-G's power should not extend to matters within the Legislative Assembly's scope.

Supreme Court's Judgment in 2018

- The Constitution Bench verdict in 2018 stated that the **LG has not been entrusted with any independent decision-making power**.
- The LG has to **act on the aid and advice of the Council of Ministers**.
- The 'aid and advice' clause **applies to the matters on which the Legislative Assembly of Delhi has powers** under the State and Concurrent Lists (except Public Order, Police, and Land).
- Wherever there are differences between the LG and the elected Government, the **LG should refer the question to the President**.
- The power to refer "any matter" to the President **does not mean "every matter"**.

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What is the Supreme Court's Judgment?

- **Control of Services:** The SC has ruled that the Government of Delhi has Legislative and Executive power over all administrative services in the NCT, except those related to Land, Law and Order, and the Police. The executive power of the Delhi government was '**coextensive**' with its legislative power. Services come under State List (Entry 41). The elected Government in Delhi can now control the bureaucracy and hold civil servants accountable. This includes powers over transfers, postings, and appraisals of these officers.
- **Impact on the 2015 Notification:** The ruling partially overturns a 2015 notification by the Ministry of Home Affairs, which had given control of all services to the LG. LG can no longer exercise control over Services.
- **Role of the LG:** The SC has reiterated that the **LG is bound by the aid and advice** of the CoM in matters within the legislative scope of the Government of NCT.
- **Asymmetric Federalism:** The SC has acknowledged that though Delhi is not a full-fledged State, its Assembly has power to legislate on subjects in State and Concurrent List. Under Article 239AA(3), NCTD was given legislative power which is similar to States. The Constitution created an '**asymmetric federal model**'.

What are the implications of the SC Judgment?

- The Judgment gives greater power to the elected Government in exercising control over bureaucracy. This should, **in theory, allow for more efficient and responsive governance**, as the Government can directly hold officials accountable, instead through the LG.
- It will provide **greater flexibility to the CoM in implementing policies**. CoM now controls the bureaucracy responsible for executing policies.
- The SC has **not adjudicated on certain issues** which can lead to further dispute between the Union and Delhi Government.

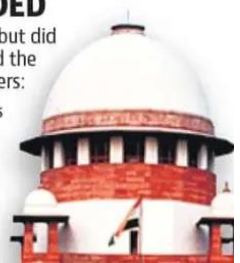
CONTENTIOUS ISSUES YET TO BE DECIDED

The five-judge SC bench outlined broad constitutional contours but did not go into specifics on certain issues between the AAP govt and the LG. Here are 3 matters that will be tested separately, among others:

1 MHA's notification that says the LG shall, in matters connected with 'services', exercise powers and discharge functions of the central government to the extent delegated to him

2 MHA's notification that Delhi's anti-corruption branch shall not take any cognisance of offences against officers, employees and functionaries of Centre

3 Delhi government's appointment of a commission of inquiry to investigate a CNG fitness scam. The move was declared illegal by the Delhi high court



- Several Constitutional experts argue that the **ruling upholds the principles of federalism** by emphasizing the importance of elected Governments and their role in serving the needs of their electorate.
- It has upheld the principle that a representative regime should be controlled by the elected representatives and not unelected administrators. It reaffirms Thomas Jefferson's idea that "**Just government should derive its powers from the consent of the governed.**"
- Although the ruling is specific to Delhi, it could set a precedent for other UTs with legislative assemblies, like Puducherry, potentially **leading to a reassessment of the Centre-UT power dynamics.**

What are the Key Provisions of the Ordinance brought by the Union Government?

- It creates a new statutory authority, the **National Capital Civil Service Authority (NCCSA)**. It will be headed by the CM of Delhi, and will include the Chief Secretary and the Principal Home Secretary as its members.
- The NCCSA will make **recommendations to the LG** regarding transfer posting, vigilance and other matters.
- All matters required to be decided by the body shall be decided by a **majority of votes** of the members present and voting. The decision of the CM can be **overruled by the two senior bureaucrats.**
- The **LG can return the recommendations back** to the Authority in case of difference of opinion. If the differences persist, the **decision of the LG shall be final.**

What are the concerns associated with the Ordinance?

- It effectively **overturns the Judgment of the SC** that had given more powers to the elected Government.
- The Ordinance, by creating the NCCSA, skirts the emphasis laid down in the judgement on the '**triple chain of command**' in the governance of Delhi.
- The Ordinance overturns the **Transaction of Business** (of the

Supreme Court's Remarks in the Judgement

- "If a democratically elected government is not provided with the power to control the officers, then the **principle underlying the triple-chain of collective responsibility would become redundant**".
- "The Triple Chain of Command is:
 - Civil service officers are accountable to Ministers.
 - Ministers are accountable to Parliament/Legislature.
 - Parliament/Legislature is accountable to the electorate".
- "The Principle of Collective Responsibility extends to the responsibility of officers, who in turn report to the Ministers. If the officers stop reporting to the ministers or do not abide by their directions, **the entire principle of collective responsibility is affected**".

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- Government of NCT of Delhi) **Rules, 1993**. Rules say that matters falling within the ambit of the **executive functions** of the Government of NCT should be decided by the **CoM headed by Chief Minister.**
- The Ordinance has expanded the scope of Article 239AA(3) to include **Services as an exception over which Government of NCT Delhi has no control.** Some experts feel that this should require Constitutional Amendment (although Article 239AA(7)(b) says amendment may not be necessary).

What should be the approach going ahead?

- **Cooperation:** All stakeholders, the Union Government, the LG and the elected Government of Delhi must cooperate with each other to ensure smooth and efficient governance in the NCT Delhi. This includes respecting each other's roles and responsibilities as defined by the Constitution and the Supreme Court's Judgment. The solution to ongoing tussle may lie in overcoming political partisanship.
- **Clarification of the NCT of Delhi (Amendment) Act, 2021:** Given the potential for conflict between the Supreme Court's ruling and the provisions of the National Capital Territory of Delhi (Amendment) Act, 2021, further **legal clarification may be needed.** The SC can clarify or the Government can amend the Act to remove ambiguities and conflicts.
- **Enhanced Accountability Measures:** Robust accountability measures can ensure that civil servants can effectively serve public interest.

General Studies Paper I

1. Adoption Rights for the LGBTQIA+ Community

News: The National Commission for Protection of Child Rights (NCPCR) has opposed granting of adoption rights to same-sex couples, arguing that it will endanger the children.

What is the legal position regarding adoption by LGBTQIA+ group in India?

- The Juvenile Justice (Care and Protection of Children) Act, 2015 (JJ Act), allows **only heterosexual married couples**, and single and divorced persons to adopt (albeit with some restrictions and qualifications).
- The Hindu Adoption and Maintenance Act, 1956 (HAMA) permits any male or female Hindu of sound mind to adopt, and for couples to adopt with the consent of their spouse.
- **Central Adoption Resource Authority (CARA)** permits applications from adoptive parents in live-in relationships. (Refer EPIC March 2023 for The Issue of Same-Sex Marriages).

How do present adoption principles hamper the adoption by LGBTQIA+ couples?

- Both the HAMA and the JJ Act envisage a forthcoming adoptive couple to be heterosexual and married.
- In a situation where one partner in a non-heterosexual relationship adopts a child as a single parent, the other partner is deprived of legal recognition as an adoptive parent. (Refer EPIC December 2022 for Rights of Sexual Minorities in India (LGBTQ+ Rights)).

Judgments Related to Rights of the Sexual Minorities (LGBTQI+)



- **Naz Foundation Govt. v. NCT of Delhi (2009):** The High Court of Delhi held that Section 377 of IPC (carnal intercourse against the order of nature) imposed an **unreasonable restriction over two adults engaging in consensual intercourse in private**. It was in direct violation of Articles 14, 15, 19 and 21 of the Constitution of India.
- **Suresh Kumar Koushal vs Naz Foundation (2013):** The SC overturned the Delhi HC Judgment and re-criminalised homosexuality. The LGBT+ persons constitute a 'minuscule minority' and therefore **did not deserve constitutional protection**. The SC held that Section 377 was not unconstitutional.
- **National Legal Services Authority v. Union of India (2014):** The SC legally recognised non-binary gender identities and declared transgender people the 'third gender'. The Rights granted by Articles 14, 15, 16, 19(1) (a) and 21 are equally applicable to them. It gave them the **right to self-identification** (as male, female or third gender). The SC referred to the international human rights treaties and **Yogyakarta Principles** to recognise transgender persons' human rights.

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What are the various opinions supporting the adoption by LGBTQIA+ couples?

- **Parliamentary Standing Committee** on Personnel, Public Grievances, Law and Justice has emphasised the **need for uniform and comprehensive legislation on adoption applicable to all**, irrespective of religion, that should also include the LGBTQIA+ community. (Refer EPIC August 2022 for Parliamentary Standing Committee Report on Adoption Laws).
- In **Deepika Singh v. Central Administrative Services (2022)**, the Supreme Court observed that "Familial relationships may take the form of domestic, unmarried partnerships or queer relationships". These units equally deserve protection and benefits under the law.
- Several countries around the world, including Argentina, Brazil, Cuba, South Africa, the UK and the US have legal provisions to allow unmarried same-sex couples to adopt.

What are the debates regarding the "best interest of the child"?

- **United Nations Convention on the Rights of the Child**, (1989) requires the best interest of the child to be the primary consideration. Both the JJ Act and the Adoption rules aims to fulfil the best interest of the child. Indian courts have applied the principle of "the welfare of the child" in the context of adoption, custody, and guardianship cases and arrived at decisions on a case-to-case basis.
- In **Suzanne Du Toit Anna-Marié De Vos v. Minister for Welfare and Population Development and Others (2002)**, the **Constitutional Court of South Africa** held that the exclusion of unmarried same-sex couples

who are otherwise suitable to adopt, from jointly adopting children **violated the principle of the paramountcy of the best interest of the child** and the right to dignity of the parents.

What should be done regarding the adoption by LGBTQIA+ couples?

- **Relax the criteria:** Sexual orientation or marital status should not be the sole basis for the exclusion of same-sex couples from jointly adopting as long as they meet the suitability criteria and can ensure the best interest of the child.
- **Remove discrimination:** An adopted child being raised by a same-sex couple through single parent adoption should not be discriminated against and deprived of the rights available to an adopted child raised by a heterosexual married couple.

Judgments Related to Rights of the Sexual Minorities (LGBTQI+)



- **K.S. Puttaswamy v Union of India (2017):** The SC noted that **sexual orientation is an essential attribute of privacy**. Discrimination based on sexual orientation is deeply offensive to the dignity and self worth of the individual.
- **Navtej Singh Johar V. Union of India (2018):** The SC **overruled the Suresh Kumar Koushal Judgment (2013)** and held Section 377 as unconstitutional. **Discrimination on the basis of sexual orientation violated the right to equality**. Criminalising consensual sex between adults in private **violated the Right to Privacy**. Sexual orientation is an **intrinsic aspect of self-identity** and that rejecting it would **violate the Right to Life**. Fundamental rights cannot be rejected on the grounds that they only affect a small percentage of the population.
- **Arun Kumar vs Inspector General of Registration (2019):** The Madras HC recognized a marriage solemnized between a male and a transwoman. The HC stated that transgender persons had the **right to decide their self-identified gender**, (NALSA v Union of India (2014)). Under the Hindu Marriage Act, 1955 the definition of marriage only includes men and women. The Judgement **expands the category of women to include transgender people** to identify as women to be brides as well.

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Both the Parliament and the Supreme Court should consider the best interest of children, as well as the fundamental right to equality and non-discrimination of children and couples identifying as LGBTQI while examining the matter.

2. Grant of Divorce on Irretrievable Breakdown of Marriage: Supreme Court Judgment

News: The Supreme Court has held that it can directly grant a divorce under Article 142 of the Constitution in cases where the marriage has irretrievably broken down.

What is the status of divorce rates in India?

- In India, divorcees have doubled in number over the past two decades. But the incidence of divorce is still at 1.1%. Divorces in urban areas make up a large proportion.
- According to Census 2011, the population which is 'separated' is almost triple of the number of divorced people. There are many women, particularly among the poor, who are abandoned or deserted.

What is the current procedure for getting a divorce in India?

- **Fault-based Divorce:** Under Section 13 of the Hindu Marriage Act, a marriage may be dissolved on grounds of adultery, cruelty, desertion, bigamy, rape, etc. (fault-based cases). A divorce petition can be moved by either party without the consent of the other.
- **No-fault Divorce:** This could be sought only by **mutual consent** under Section 13-B. In such cases, the parties would ordinarily file a motion for divorce, and then have to wait 6-18 months before the decree could be passed by court. The intent is to give a 'cooling-off period' and allow the couple time for reflection.

What is the Supreme Court's Ruling?

- The Constitution Bench of the Supreme Court held that it can directly grant divorce under Article 142 of the Constitution in cases where the marriage has irretrievably broken down and 'separation is inevitable'.

- This can be done **without referring the parties to a family court first**, thus eliminating the need to wait for 6-18 months.

- However, the SC cautioned that grant of divorce by it on the ground of irretrievable breakdown of marriage **was not a matter of right**, but a discretion which is to be **exercised with great care and caution**.

- Several factors would be considered by the SC before invoking Article 142 in matrimonial cases like the duration of the marriage, period of litigation, the time they have stayed apart, the nature of the pending cases between the couples, the number of attempts at reconciliation and the Court's satisfaction that the mutual agreement to divorce was not under coercion.

Grounds for Divorce Under the Hindu Marriage Act

Section 13 of the Hindu Marriage Act, 1955 provides 9 grounds for divorce:

- Voluntary sexual intercourse with a person other than Spouse (Adultery).
- Cruelty.
- Desertion for a period of more than 2 years.
- Conversion to another religion.
- Unsound Mind or Mental Disorder.
- Virulent or incurable form of Leprosy.
- Venereal disease in a communicable form (sexually transmitted infections).
- Renunciation.
- Presumption of death: has not been heard of as being alive for a period of 7 years or more.

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What is the rationale behind granting divorce for irretrievable breakdowns?

- Courts have recognized in past cases that the mandatory waiting period only **prolongs the misery of the couple**, and often delays or impedes a settlement.
- The **Law Commission** in its 71st report (1978) recommended that the law be amended to provide for "irretrievable breakdown of marriage" as an **additional ground for divorce**. The same was reiterated in its 217th report.
- The Government had introduced the Marriage Laws (Amendment) Bill, 2013 which included a clause to **waive off the 6 month waiting period by mutual consent** of spouses. However, the Bill was not passed. The SC has corrected the gap.

What are the concerns highlighted by experts?

- The experts point out that granting divorce for irretrievable breakdowns without a cooling-off period might **push women into a disadvantageous position** as there are high levels of gender discrimination in India.
- Many women are **still not financially independent**. A quicker divorce may lead them **without any alternatives** to financially support themselves.
- There is still a **social stigma** associated with divorce.
- The notion of marriage as a **partnership of mutual consent** is not yet the reality in much of India, and its dissolution usually entails enormous social and economic hardship for women and children.

3. Economic and Financial Participation of Women

News: Several initiatives have been undertaken to promote financial and economic participation of women. Yet there are several gaps that remain to be addressed.

What are the findings of the Women at Work Report?

- Consulting Firm Deloitte has published the Women at Work Report. The report notes that
 - Only 15% of working women split daily tasks equally with their partner. **85% of working women bear the burden of household responsibilities alone** while performing task of being breadwinners.
 - Even when men and women earn equally, the responsibility of child care falls exclusively on women.

- Disproportionate care responsibilities make women to **ignore/reject promotion opportunities**, making men higher earners by default.
- **Absence of paternity leaves** makes men reluctant to accept childcare responsibilities.
- Around 20% women report **experiencing health challenges relating to menstruation or menopause**. Among those, ~40% say they worked through pain and discomfort. Only 19% of such women took time off from work, but **without disclosing the real reason**.
- **Lack of flexibility around working hours** is one of the top 3 reasons women leave their employers. Women need more flexibility to balance professional and care responsibilities.
- 44% respondents reported **experiencing harassment and/or microaggressions** in the workplace over the past year.
- 37% women with hybrid work arrangements report **experiencing exclusion** from meetings, decisions, or informal interactions. 30% of hybrid workers say they don't have enough access to senior leaders.
- Women also tend to have **higher mental stress**.
- Thus, women continue to face **visible and invisible challenges** at the workplace, that reduces their presence in the workforce (at a global level).

What is the status of financial inclusion and participation by women?

- In India, 56% of all these new bank accounts opened under **Pradhan Mantri Jan Dhan Yojana (PMJDY)** are owned by women. This highlights the remarkable financial inclusion of women.
- A report by Women's World Banking observes:
 - Most women access their PMJDY accounts only to withdraw the benefit transfers from the Government.
 - They **do not use these accounts for savings**, to build a credit history, or **avail financial products** such as insurance and loans.
- This highlights the need for women to actively engage in the formal financial industry.

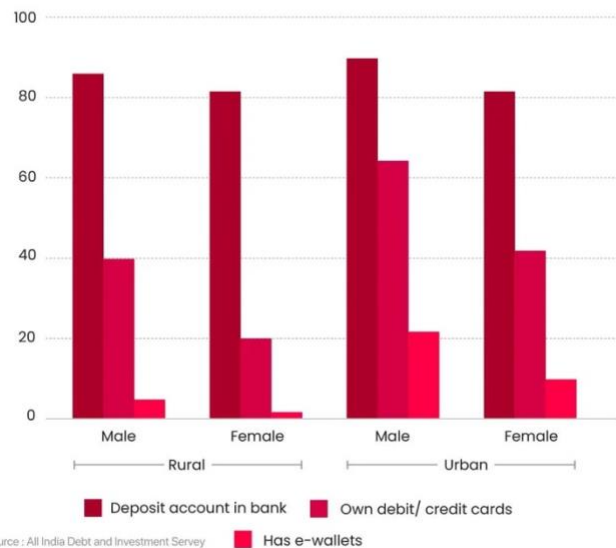
What are the challenges faced by women while entering the formal financial industry?

- Most women tend to work and shop **within a 4-kilometre radius of their homes**. This means the majority of the industries are **beyond the reach of most women**, particularly in the rural hinterland.
- Women tend to have concerns around privacy and confidentiality and as a result, they hesitate to discuss personal financial matters with strangers.
- Women tend to live longer and have **higher medical expenses**. This renders traditional retirement planning poorly suited to the needs of the average woman.

What can be done to enhance women's participation in economic and financial activities?

Huge Gender Gap When It Comes To Digital Financial Inclusion

India's female labour participation rate is 26.2% in comparison to global OECD average of 51.1%



Source: Inc.com. Only ~2% rural women had access to e-wallets. ~20% rural women own debit/credit cards compared to 40% rural men. Gender gap is least in access to deposit accounts, primarily due to PM Jan Dhan Scheme.

- **Promote Use of Digital Payments among Women:** Digital banking will reduce will reduce hurdles related to physical visit to bank branches and make the process of managing finances easier.
- **Dedicated Services:** A private research has found that the women-specific financial services industry is worth US\$ 700 billion. This amount far exceeds the annual revenue of most of the world's leading financial institutions. Fintech firms and financial institutions need to make a concerted effort to address the challenges faced by women while using formal finances. They need to bring a **gendered approach in each stage of the product delivery cycle** to make sure that they are serving the **genuine concerns around limited mobility and access to information faced by women**.
- **Ecosystem of Business Correspondents:** To ensure that women have digital and financial capabilities, there is a need to nurture the ecosystem of business correspondents in rural areas. The correspondents should **offer a broader range of services** than just plain banking like overdrafts for emergencies, micro-insurance, micro-pension and other similar products.
- **Paternity Leaves:** To balance the childcare responsibilities, policymakers should introduce paternity leave to encourage fathers to take part in childcare and be sensitive to mothers' needs.
- **Enabling Environment:** Women lack support within organizations on various issues like acceptance of proposals put forward by women employees, efforts by employer to stop them from quitting etc. Such issues need to be addressed through suitable enabling environment for women to participate. (Refer EPIC March 2022 for Low Female Labour Force Participation Rate in India and EPIC March 2023 for Issues with Measurement of Female Labour Force Participation Rate (FLFPR) in India).

4. Women and Agriculture

News: Agriculture in India is increasingly becoming dependent on women.

What is the status of participation of women in Agriculture in India?

- About 80% of the India's economically active female population is employed in the farm sector. Women comprise ~33% of the agricultural labour force, and nearly 48% of self-employed farmers.
- ~95% of animal husbandry-related work is performed by women. Their involvement in the production of field crops and horticulture crops is 75% and 79% respectively. More than 50% of post-harvest activities are carried out by women.
- Overall, the work participation rate for women is 41.8% in rural areas against 35.31% in urban areas.

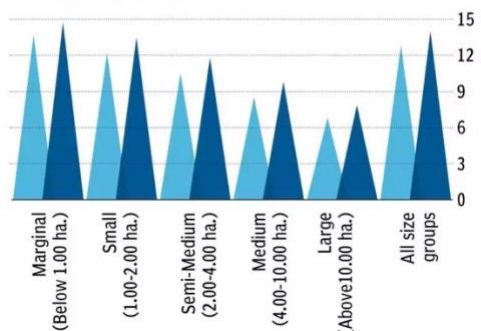
What are the various reasons for increasing women-dependency in Indian agriculture?

- **Migration of Men:** More men are migrating from villages in search of paid employment because of the fragmentation and shrinking of land holdings. The Economic Survey 2017-18 pointed out that growing rural-to-urban migration by men was leading to "feminisation" of the agriculture sector.
- **Lower Payment:** Typically, female labour is employed in farms for **low-skilled** but **labour-intensive** and **irregular jobs**. Women workers are paid lesser than men and are preferred in order to lower the costs.
- **Nature of Jobs:** Women are deemed ideally suited for work like weeding, collecting cotton sticks, detaching fibre from cotton seeds, and de-husking grains. They also look after

Most marginal, small farms are owned by women

% of female operational holders as per Agriculture Census

▲ 2010-11 ▲ 2015-16



Source: The Hindu. According to the Agriculture Census, 2015-16, women own < 15% landholdings. Their ownership share is maximum in marginal landholdings (< 1 hectare), while share in large landholdings (> 10 hectares) is ~8%.

domestic animals and make value-added products like curd, butter, and ghee, and dealing with animal dung. There are a few intricate farm operations which require some training, for which women are deemed more suitable than men like transplanting paddy, tea plantation etc.

What are the challenges associated with women-dependency in Indian agriculture?

- Despite improved participation, **most land-holdings remain in the name of men.**
- The bulk of the **benefits of government welfare schemes tend to accrue to men** because of land ownership (land *pattas* (titles) are in men's names).
- Women are often **denied access to credit** because of lack of ownership of land, property, or other assets to serve as collateral.
- Women face **difficulties in getting membership** of cooperative societies and FPOs.
- Women have **limited ability to take decisions** with respect to agriculture.

What should be done to utilise women-dependency in Indian agriculture?

- Women should be empowered through enhanced access to resources like land, property, credit, technology, and training. This can enhance their potential and raise their living standard. It will also contribute to faster growth in agriculture.
 - Government should ensure greater share of women beneficiaries in agriculture related schemes.
 - Women's ownership of assets can be improved through suitable incentives like concessions in registration fee.
- According to the UN Food and Agriculture Organization (FAO), farm output in developing countries can be raised by 2.5 to 4% by ensuring men and women have equal access to resources, skill development, and opportunities in agriculture. The **policies in the agriculture sector need to be gender sensitive** and ensure inclusivity.
- **Specialised farm implements** and equipment, designed with female ergometry in view, are needed to reduce the physical strain of strenuous work on farm women.

5. State of World Population Report, 2023 and India's Demographic Dividend

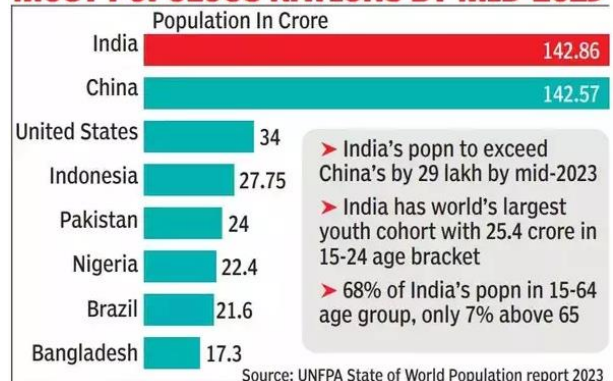
News: The UN Population Fund (UNFPA) has released the State of World Population Report, 2023.

What are the key findings of the report?

Global

- The population of the world is **8.045 billion**. The age-wise share is **0-14 years: 25%, 15-64 years: 65% and above 65 years: 10%.**
- **East and Southeast Asia is the most populous region** followed by Central and Southern Asia.
- **India and China** are the **most populous countries** with 1.428 billion and 1.423 billion people respectively.
- The rate of global population growth has fallen, and has been at less than 1% since 2020. This is primarily due to **declining fertility**. Around ~66% of people live in a country or area with a Total Fertility Rate (TFR) at or below 2.1 children per woman ('Replacement Fertility Rate' or "Zero-Growth Fertility Rate'). In 1950 the global fertility rate stood at 5.
- The **life expectancy** is **71** and **76 years** for **men** and **women** respectively.

MOST POPULOUS NATIONS BY MID-2023



- The global population could grow to around 8.5 billion in 2030, 9.7 billion in 2050 and 10.4 billion in 2100.
- More than half of the projected increase in global population up to 2050 will be concentrated in eight countries: Congo (DRC), Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and Tanzania.

India

- India now has 1,428.6 million people and is the most populous country in the world.
- India's population will grow in a **decelerated mode** until 2064, after that it will begin to reduce. The peak of India's population is expected to be **~169.6 crore in 2063**.
- At present, 68% of India's population belongs to the 15-64 years category, making **India one of the youngest countries in the world**.
- The fertility rate in India has been steadily dropping. India has attained a TFR of 2.0 (NFHS 5 (2019-21)), less than the replacement level of 2.1, falling from 2.2 in NFHS 4 (2015-16).
- The increased use of **contraceptive methods, spacing of pregnancies, access to health care** and the **impetus to family planning**, besides **increasing wealth** and **education**, has contributed to the growth rate of the population slowing. (Refer EPIC July 2022 for Issues Related to Population in India).

What are the implications for India?

- The nature of **population growth, size** and **composition** decide when a population becomes a '**resource**' or a '**burden**'. Population is a resource as long as the **country's carrying capacity** is intact.
- **Carrying capacity** is not limited to the per capita availability of natural resources. It is a **dynamic concept** which changes according to **changing technology, efficiency of production** and **consumption systems** of a country.
- Age composition determines **support ratios** in the form of the ratio of the working age population (15-64 years) to the dependent population that needs care (children and the elderly). **India has higher proportion of working population** (68%) unlike countries such as Japan (declining total population and rising elderly population). Younger population has lesser disease load, disability and caring burden. Countries like Japan will require skilled labour and India can capitalize by utilizing its demographic dividend.
- India has a **demographic window of opportunity** for the next ~35 years to reap an **economic dividend**. This demographic opportunity has the potential to boost per capita GDP by an additional 43% by 2061.

Demographic Dividend

Demographic dividend refers to a period in an economy's trajectory when there is a **bulge in the working-age population** (15-65 years). This opens up a **window of opportunity** during which such a country can potentially **raise its level of savings and investment** and economic growth.

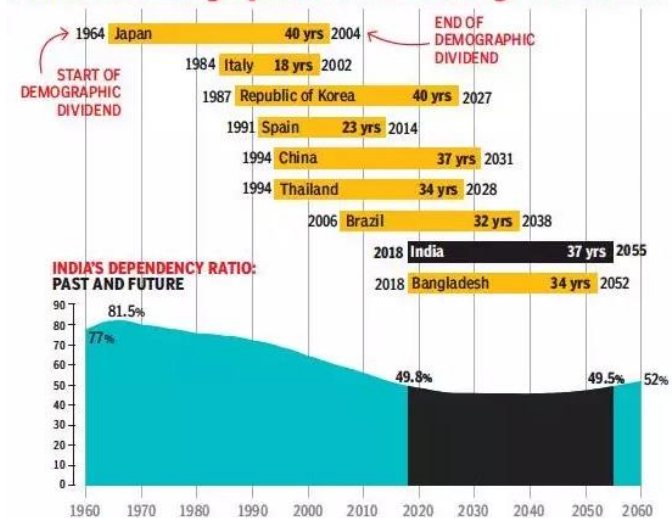
What are the key mechanisms to translate a demographic dividend into economic dividend?

- **Employment creation, Education, skills generation** and **healthy lifespan** are the most important aspects in translating demographic dividend to economic dividend.
- A **skilled and healthy workforce** is critical for **better productivity** of an economy. It reduces **excessive public spending** and helps in **greater capital creation**.
- **Good governance** is vital. India has the potential to become **worldwide market for both production and consumption**, with lower manufacturing costs due to a relatively cheaper workforce. Governance and economic reforms to **ensure structural transformation of economy** away from low-productivity agriculture is necessary for more livelihood creation.
- A **TFR of less than 1.8** may not be **economically beneficial** for India. Any **drastic population control methods** can induce forced population ageing. It can result in the nation '**getting old before getting rich**' and must be avoided.

What are the challenges in achieving demographic dividend?

- India's **human development remains poor**. A large section of population lack access to quality and affordable healthcare and education.
- India's recent economic growth has not been accompanied by **commensurate growth in employment opportunities**. The employment generation has been limited to high productivity sectors requiring skilled workforce. In addition, there has been **lack of upskilling labour**. This has **increased disparities**.
- India's female labour force participation has remained much below desirable levels.
- A large section of population is **still dependent on agriculture**. 45% of the agriculture workforce contributed 20% to India's GDP and thus have lower wages and low living standards. As a consequence, they remain trapped in low-productivity activities and unable to gain resources necessary for upward mobility (acquiring education, skills etc.)

Period of demographic dividend in large economies



The WHO has defined Dependency Ratio as the average number of economically dependent population per 100 economically productive population, at a specific point in time. The age group 15-64 years is considered productive. India's dependency ratio (estimated) at present (2023) is 32%/68% = ~47%.

What steps can be taken to reap the demographic dividend?

- The proportion of low-wage agricultural work must be reduced and turned into higher-wage, better-skilled employment. This can be done by:
 - Reducing the number of agricultural labours by **training the youth for vocational skills** in manufacturing and services.
 - **Allow foreign entry into the agriculture sector** and increase its productivity by lowering tariffs.
- The large education gaps in children's learning need to be decisively addressed. This can be done by:
 - ASER-style surveys should be regularly conducted to assess success and identify remaining gaps.
 - **STEM education** should be encouraged at secondary schooling levels in public schools, with screening based on entrance tests.
- It is necessary to **make it easier for women to join and remain in the labour force**. This can be done by utilizing **Corporate Social Responsibility** of the companies to:
 - Support for entities that provide education to the girl child and skilling to the young female population.
 - Maternity leaves and primary caregiver relief for spouses will provide the flexibility for mothers in resuming work.
 - **Setting up of quality childcare facilities in company premises** or neighbourhoods to reduce the domestic burden of working women.

What are the other suggestions given by the UN Report?

- The report has called for a radical rethink on how countries address changing demographics and **cautioned against the use of family planning** as a tool for achieving fertility targets. It has warned

that global experience showed that family planning targets can **lead to gender-based discrimination** and harmful practices such as prenatal sex determination leading to sex-selective abortion.

- The Report has strongly recommended that governments **introduce policies with gender equality and rights** at their heart, such as parental leave programmes, child tax credits, policies that promote gender equality in the workplace, and universal access to sexual and reproductive health and rights.

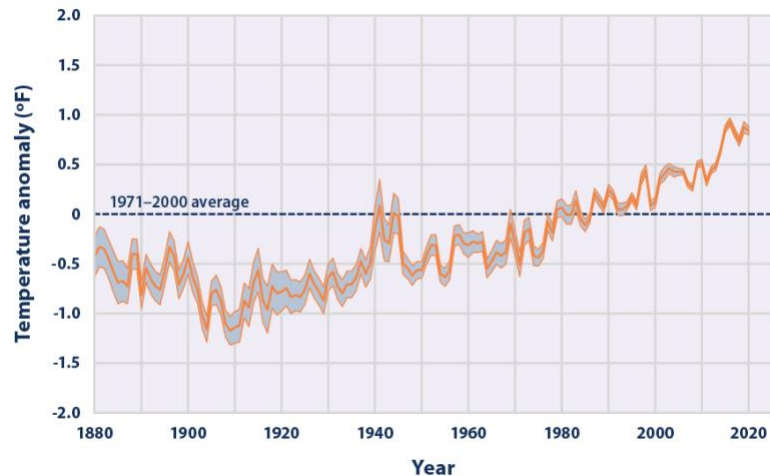
6. Rising Ocean Temperature and Consequences

News: The Oceans are warming up at an alarming pace. It can have drastic consequences.

What are the trends in rising ocean temperature?

According to the National Oceanic and Atmospheric Administration (NOAA)

- From 1901 through 2020, temperature rose at an **average rate of 0.08°C per decade**.
- Sea surface temperature (SST) has been consistently **higher during the past 3 decades** than at any other time since reliable observations began in 1880.
- The pace of temperature rise has increased from 1970 onward.
- **Changes in SST vary regionally.** Most parts of the oceans have witnessed a rise in temperature, a few areas have experienced cooling like parts of the North Atlantic (south of Greenland).



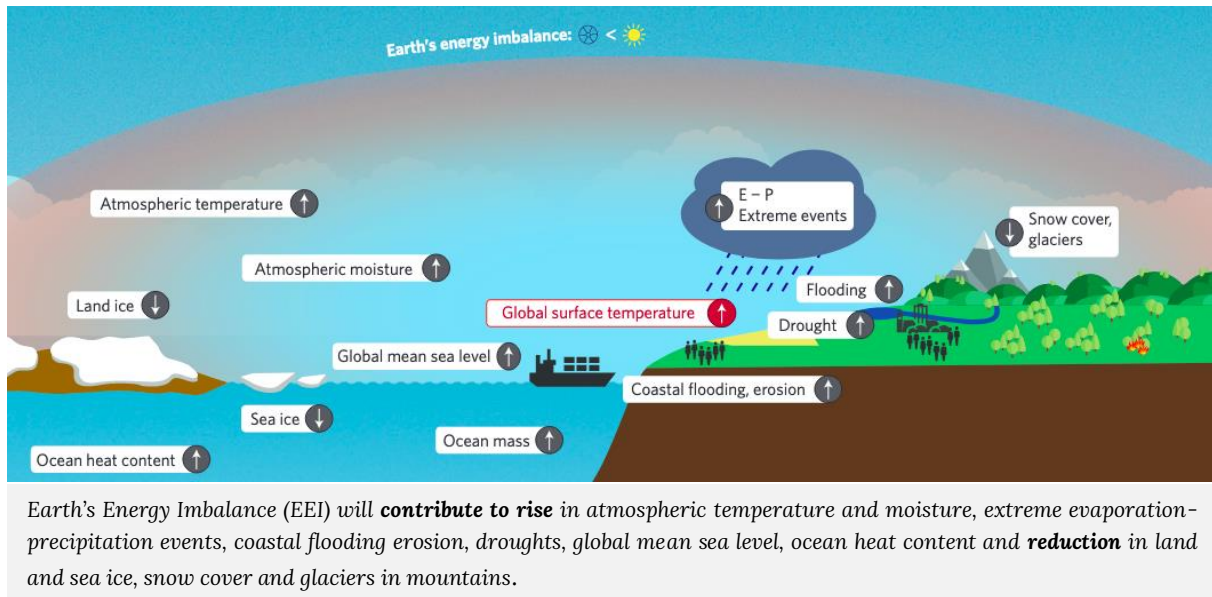
The average sea surface temperature between 1971-2000 has been considered as baseline. Since 1980, the temperature has been above the 1971-2000 baseline.

What are the reasons for ocean temperature rise?

- Since the advent of industrial revolution, the **anthropogenic emissions of Greenhouse gases (GHGs)** have risen sharply and have accumulated in the atmosphere. The change in composition of GHGs in the atmosphere has **altered earth's heat balance (Earth's Energy Imbalance (EEI))**.
- Majority of the excess heat accumulating in the earth's system has been **absorbed by the oceans**. Various estimates put the excess heat absorbed by the oceans between 90% to 93%. The uppermost part of the ocean (down to about 2,300 feet (700 meters)), has absorbed the bulk of the extra heat. The uppermost layer of the sea, (~250 feet), is **warming up the fastest**, heating up by an average of about **0.11°Celsius each decade** since the 1970s.
- The absorption of excess heat has **resulted in rise in sea surface temperatures**.

What are the consequences of ocean temperature rise?

- **Altered Climate Patterns:** Warming oceans can lead to **alterations in climate patterns** around the world. Warmer waters may promote the **development of stronger storms** in the tropics, which can cause damage to property and loss of life.



- **Rise in Sea Level:** Warming of oceans will contribute to **expansion of water**, leading to **sea level rise**. Rising sea level will have grave consequences like **submergence of coastal areas** and **climate-induced distress migration** among coastal communities, devastating **storm surges**, harmful impact on **coastal ecosystems**, fisheries and aquaculture among others. Reduced productivity of fisheries will raise concerns related to **food security**. (Refer EPIC March 2023 for Global Sea Level Rise and Implications: WMO Report).
- **Teleconnections:** Climate scientists forecast that warmer Pacific Ocean may **strengthen the El-Niño and La-Niña cycle**, creating **extreme weather conditions**.
- **Marine Heat Waves:** Rising sea temperature will increase frequency of **marine heat waves** that will alter the marine ecosystems. They have an adverse impact on marine life and can lead to extinction of species not able to deal with the **rising thermal stress**. Marine heatwaves can **destroy kelp forests and grasses** that provided a home for fish and marine mammals. (Refer EPIC February 2022 for Marine Heat Waves and their Impact).
- **Ocean Circulation:** Rising temperature will **impact ocean circulation**. Marine scientists say that altered patterns of circulation can create regions of stillness within oceans, where circulation stops and oxygen gets depleted. Scientists have observed dead zones in Gulf of Mexico. This will impact marine life including the phytoplankton, the zooplankton, the fish, the marine mammals, and seabirds.
- **Ocean Acidification:** Increase in levels of **dissolved carbon** is changing the chemistry of seawater and **making it more acidic**. Increased ocean acidity makes it more difficult for certain organisms, such as corals and shellfish, to build their skeletons and shells. These effects could substantially **alter the biodiversity and productivity of ocean ecosystems**.

What steps are required to check the rise in ocean temperature?

Checking the rise in sea temperature will require:

- **Limiting emission of GHGs** and achieving the targets set by Paris Climate Agreement.
- **Protecting and restoring marine ecosystems** through Marine Protected Areas.
- Improving **human adaptation** through appropriate policy measures.
- **Strengthening scientific research** to measure and monitor ocean warming and its effects. This will provide more precise data on the scale, nature and impacts of ocean warming, making it possible to **design and implement adequate and appropriate mitigation and adaptation strategies**.

General Studies Paper II

1. Role of the Governor in Assenting Bills Passed by the State Legislature

News: The Tamil Nadu Assembly passed a resolution urging the President to fix a timeline for the Governors to act on the Bills passed by the Assembly. The Supreme Court has reminded the Governors to act on the Bills 'as soon as possible'.

What are the Constitutional provisions Regarding Assent to Bills by Governors?

- Article 200 of the Constitution provides that after the passage of the Bill by State Legislative Assembly (and Council, if there is one), the Governor may:
 - Assent to the Bill.
 - Withhold the assent to the Bill.
 - Reserve the Bill for the consideration of the President.
 - Return the Bill for the reconsideration by the House(s) (if not a Money Bill).
- The Article has **not specified any time limit** within which the Governor must provide her assent.
- The clause related to reconsideration by the House(s) mentions that Governor must return the Bill to the House(s), "as soon as possible."

Supreme Court's View on Discretionary Powers of the Governor



- UNR Rao vs Smt. Indira Gandhi (1971):** Governor occupies the position of the head of the executive in the State but it is virtually the Council of Ministers in each State that carries on the executive Government.
- Shamsher Singh vs State of Punjab (1974):** The President and Governor shall "exercise their formal constitutional powers only upon and in accordance with the advice of their Ministers, except in a few well-known exceptional situations".
- Nabam Rebia vs Deputy Speaker (2016):** The SC ruled that the exercise of the Governor's discretion under Article 163 is limited, and her choice of action should not be arbitrary or fanciful.

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Is the Governor obligated to Assent to the Bill?

- Article 200 provides that Governor can withhold her assent to a Bill.
- Article 154** states that the Governor can exercise her executive powers only on the **advice of the Council of Ministers** (CoM). Based on this argument, the Governor **can withhold assent only when advised so by the Council**. This can happen in rare cases if the Government has second thoughts on the Bill after it has been passed by the Legislature.
 - Proponents of this view also argue that **Governor is only a Constitutional head** and has no real powers. Allowing the Governor to withhold assent in her discretion (without advised as such by the CoM) would lead to **negation of the will of the Legislature**, and thus the people.
- In the United Kingdom, the convention (last Royal veto in 1708) is that the **Crown's power of veto could only be exercised on Ministerial advice**. Refusal of Royal assent on the ground that the monarch strongly disapproved of a Bill or that it was intensely controversial **would be unconstitutional**.

What are the concerns associated with delay in taking decision on the Bill?

- Article 200 provides 4 options to the Governor. **Keeping the Bill pending is not an option**. No time limit has been specified within which the Governor should make her decision. The framers of the Constitution may not have envisaged such a situation of Governors keeping the Bills pending.
- Not taking a decision on the Bill is **against Constitutional discretion**. It is violative of Constitutional responsibility assigned to the Governor.
- It **impacts federal relationship** between the Union and State Government. States view this as an **interference by the Union** in functioning of the States.

What should be the approach going ahead?

- The Supreme Court has recently remarked that the expression ‘as soon as possible’ contains significant constitutional content and **must be borne in mind by constitutional authorities**. However, the Court has refrained from prescribing a time limit. The Governors should heed to the advice and decide on the Bills within reasonable time period.
- **Punchhi Commission** had recommended that:
 - The **discretionary powers** should be used sparingly, and must be a choice dictated by **reason**, activated by good **faith** and tempered by **caution**.
- The Governor should make her decision on a Bill within 6 months after submission of Bill. (Refer EPIC March 2023 for Centre-State Relationship and Punchhi Commission Report).
- Constitutional experts feel exercise of pocket veto by Governors goes against federal principles and should be avoided.
- In the US, there is a **time limit of 10 days** for the President to give assent or veto a bill. If the President does not sign or vetoes the Bill within this time, it **automatically becomes an Act**. The Constitution of India can be suitably amended to adopt a similar provision in India. (Refer EPIC January 2023 for Issues Related to the Office of Governor).

2. 50 Years of Kesavanand Bharti Judgment and the Basic Structure Doctrine

News: The landmark Kesavanand Bharti Judgment was delivered on April 24, 1973. Over the past 5 decades the Basic Structure Doctrine has helped preserve the fundamental tenets of the Constitution of India.

What was the Kesavanand Bharti vs. State of Kerala Case about?

- In 1970, Swami Kesavanand Bharti challenged the land reforms acts of the Government of Kerala that imposed certain restrictions on the management of land owned by the Edneer Mutt. Swami Bharti was the head of the Edneer Mutt in Kasargod, Kerala.
- A petition was filed that the land reforms acts violated Article 26 of the Constitution that allowed acquisition of property and its administration by religious denominations.
- The case was adjudicated by 13-Judge bench of the Supreme Court. The decision was made by 7:6 majority. The case led to the establishment of the Basic Structure Doctrine.

What is the Basic Structure Doctrine?

- It is a legal doctrine made from judicial innovation by the Supreme Court. The word ‘Basic Structure’ is not mentioned in the Constitution of India.
- The doctrine prescribes that certain features of the Constitution are essential for the functioning of the state. **Such features are beyond the limits of the amending powers of the Parliament.**
- The concept developed gradually with the tussle between the Parliamentary power to amend the Constitution and the Judiciary’s power to review such amendments.
- The doctrine has been used by the Judiciary to test the **legality of any legislation** made by the

Evolution of the Basic Structure Doctrine



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Legislatures. Any law of the Parliament or the State Legislature that violates the basic structure can be **declared unconstitutional** by the Supreme Court.

- The Supreme Court has gradually enlarged the features considered as basic structures through subsequent Judgments.

What has been the significance of the Basic Structure Doctrine?

- **Upholding Basic Tenets of the Constitution:** The Doctrine has been used by the Supreme Court to uphold the fundamental features and democratic principles of the Constitution of India like Federalism, Essence of Fundamental Rights, Principle of Equality, Secularism, Rule of Law, Free and Fair Elections, Judicial Review, Access to Justice, Separation of Powers, among others.
- **Check on Arbitrary Use of Power:** The Judiciary has kept a check on the misuse of power by the Legislature or the Executive. Several Acts have been declared unconstitutional because they transgressed the basic features e.g., The doctrine has been invoked to check Union's transgressions into domains of State Governments to preserve Federalism, or the NJAC Act that interfered with Judicial independence.
- **Flexibility:** The Basic Structure is a dynamic concept. The Supreme Court has gradually expanded the 'basic features' with the requirement of changing times.

| Judgment | Element of the Basic Structure |
|---|--|
| <i>Kesavananda Bharati vs State of Kerala</i> , 1973 | Supremacy of the Constitution; Republican and Democratic form of Government; Secular character of the Constitution; Separation of Powers between the Legislature, Executive and the Judiciary; Federal character of the Constitution; The mandate to build a welfare State; Unity and Integrity of the nation; Sovereignty of India; Freedoms secured to the citizens; Equality of status and the opportunity. |
| <i>Indira Gandhi v. Raj Narain</i> , 1975 | Rule of Law; Free and Fair Elections; India as a Democratic, Sovereign, Republic; Secularism; Judicial Review |
| <i>Minerva Mills vs Union of India</i> , 1980 | Limited power of Govt. to amend Constitution; Judicial Review; Harmony and Balance between Fundamental Rights and Directive Principles. |
| <i>Central Coal Fields Ltd. vs Jaiswal Coal Co.</i> , 1980 | Effective Access to Justice. |
| <i>L. Chandra Kumar vs Union of India</i> , 1997 | Powers of High Court under Articles 226 and 227. |
| <i>IR Coelho vs State of Tamil Nadu</i> , 2007 | Rule of Law; Separation of Powers; Principles underlying Fundamental Rights; Judicial Review; Principles of Equality. |
| <i>National Legal Services Authority vs Union of India</i> , 2014 | Article 14, Right to Equality. |

What are the major concerns of experts on the Basic Structure Doctrine?

- **Ambiguity:** The SC has not defined the doctrine precisely and has gradually expanded the basic features. While it provides flexibility to adjust with changing times, it also gives rise to ambiguity whether a particular feature is a basic feature or not.
- **Judicial Overreach:** Some experts contend that Basic Structure Doctrine has **aided Judicial overreach**, with the Judiciary entering the domain of legislation and policy making e.g., rather than addressing the concerns with the NJAC Act, the SC chose to strike it down. It could have pushed for amendments in the contentious clauses. The Vice President of India had recently remarked that the scrapping of the NJAC Act and the 99th Constitutional Amendment Act was a “**severe compromise of Parliamentary Sovereignty**” and disregard of the “**mandate of the people**”. (Refer EPIC January 2023 for Vice President's Remarks Regarding Basic Structure Doctrine).

- **Balance of Power:** Constitutional experts also argue that the Doctrine has led to tilt in the balance of powers towards the Judiciary, which has tried to adjudicate many cases related to matters of policy.
- **Subjectivity:** In the absence of concrete definition, the application of the Doctrine and its expansion may vary based on individual preferences of the Judges/composition of the Benches.

What should be the approach going ahead?

- Several remarks have been made on the Judiciary by the Ministers in the Government in recent times, indicating tensions between the Judiciary and the Executive.
- Many legal experts contend that the **Supreme Court and some High Courts have encroached into the domain of the Legislature or the Executive** in the past. Such overreach has to be corrected on a case-by-case basis. However, **Judicial overreach cannot be the reason to reverse the Basic Structure Doctrine.**
- All organs of the State must respect their respective boundaries. At the same time, the Judiciary is expected to check the abuse of power by the Executive and Legislature. Basic Structure Doctrine will be handy in keeping them in check.

Features Included Under Basic Structure

- Supremacy of the Constitution.
- Rule of Law.
- Principle of Separation of Powers.
- Objectives specified in the Preamble.
- Judicial Review (Article 32 and Article 226).
- Federalism.
- Secularism.
- Sovereign, Democratic, Republican Structure.
- Freedom and dignity of the individual.
- Unity and Integrity of the Nation.
- Principle of Equality, Quintessence of Equal Justice.
- Essence of Fundamental Rights.
- Balance between Fundamental Rights and Directive Principles.
- Parliamentary Form of Government.
- Principle of Free and Fair Elections.

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3. Supreme Court's Judgment on Shiv Sena Dispute

News: The Supreme Court has declared its judgment related to the split in the Shiv Sena.

What was the dispute?

- In June 2022, a group of Shiv Sena MLAs (popularly called Shinde faction) rebelled against the then party leadership (Thackeray faction). Shiv Sena was part of the ruling alliance in Maharashtra.
- As it became evident that the rebels would call for a trust, the rebel faction received disqualification notices from the then deputy speaker. They moved to the Supreme Court challenging the disqualification notices served to them by the Deputy Speaker.
- The CM, Uddhav Thackeray resigned without facing the floor test. The then Governor then called the rebel faction to prove their majority. Petitions were filed by the Thackeray group challenging the Governor's decision to call for a trust vote and the swearing-in of Mr Shinde as Chief Minister.
- The election of the new Speaker was also challenged.

What is the SC ruling on the Case?

- **Disqualification of MLAs:** The SC did not interfere with the proceedings related to the disqualification of 16 MLAs including the present Chief Minister. The issue of disqualification should be decided by the Speaker of the Legislative Assembly as per established procedures in law.
- **Appointment of the Whip:** The SC deemed the appointment of the whip by the split-led faction to be illegal.
 - The Speaker should have **conducted an independent inquiry** to verify the decision of the political party regarding the appointment of the whip.
- **Call for Floor Test:** The Governor was not justified in calling the incumbent CM for the floor test because **he did not have objective material to reach the conclusion.**

- But status quo ante cannot be restored because the CM had already resigned.

• **Distinction between Legislature and Political Party:** Questions arose on whose whip is binding, if the whip appointed by the Political Party and the one acting on behalf of the Legislature Party gave different instructions.

- The SC said that as per provisions of the Representation of the People Act, an association of individuals calling itself a Political Party has to be registered with the EC.
- The Parliament has recognised the independent existence of a Legislature Party to the limited extent of providing a defence to the actions of legislators of the political party.
- A whip interacts with members of the Legislative Party to communicate the directions of the political party. It held that **it is the Political Party and not the Legislature Party which appoints the Whip and the Leader of the party in the House**. Therefore, the **Speaker must recognise** only the whip and leader who are **duly recognised by the Political Party**.
- In the present case, the Speaker should have conducted an independent inquiry to verify the decision of the political party regarding the appointment of the whip.
- **Concurrent Jurisdiction of Speaker and EC:** The SC rejected the contention that the Election Commission was barred from deciding on the party symbol dispute until the Speaker has decided the disqualification pleas. Both the Speaker and the EC can adjudicate issues concurrently.

Key Questions Raised by the Dispute

- **Role and impartiality of the Speaker:** The neutrality of the Speaker in handling intra-party disputes, particularly related to disqualification petitions.
- **Definition of 'Political Party':** The correct interpretation of 'political party' in the context of the Tenth Schedule of the Constitution. Prior to the ruling, the distinction between a 'political party' and a 'legislative party' wasn't explicitly defined, leading to potential confusion in its application.
- **Anti-Defection Law:** How the Anti-Defection Law (Tenth Schedule) applies when a political party splits into factions, and how defection should be defined and identified in such scenarios.
- **The Interplay between Anti-Defection Laws and Freedom of Speech:** In the present case, some members argued that the anti-defection law was curtailing their freedom of speech.
- **Governor's Role in Floor Test:** The constitutionality of demanding a floor test and acceptance of the resignation of a Chief Minister by the Governor, have been questioned.

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What are the implications of the SC's Judgment?

- **Party's Control over Legislators:** The Judgment, by defining a 'political party' to include the central organization, gives more control to the party's leadership over legislators, which can impact the balance of power between the central leadership and State units.
- **Roles of Constitutional Offices:** The Judgement has marked the boundaries of Governors, the Election Commission and Presiding Officers of Legislatures. Governors shouldn't play a role in intra-party disputes.
- **Preserving the Stability of State Governments:** The clarification of the Anti-Defection Law in the context of party splits could significantly impact state politics, as it could discourage splits and defections, thereby preserving the stability of State Governments.
- **Ensure legislative independence:** The Judgment's upholding of the Speaker's role and authority in disqualification cases can ensure legislative independence in handling intra-party disputes.

What are the criticisms of the SC Judgment?

Legal experts have found contradictions in SC's Judgments in Delhi (Control of Services) and Shiv Sena Dispute Judgments.

- **Triple Chain of Command:** SC's Delhi judgment adheres to the principle of Triple Chain of Command, in which Ministers are accountable to the Legislature.
 - But in the Maharashtra case, the SC ruled that the Tenth Schedule makes a differentiation between the Legislature and the Political Party and the power to issue directions is with the Political Party.
 - Thus, the person in charge of the Political Party (who may not be a member of the Legislature) would control every vote of the MLAs/MPs of that party.

- This reinforces the idea that the MP/MLA is **not accountable to the electorate but to the party**. In doing so, it breaks the Triple Chain of Accountability.
- **Daily Assessment by the Legislature:** In the Delhi judgment, the Court states that the Government is assessed daily in the Legislature through debates on Bills, questions raised during Question Hour, resolutions, debates and no-confidence motions. But, in the Maharashtra judgment, the SC states that the legislators of the party with a majority in the House have to abide by the directions of the political party. The **Political party leadership controls the vote of its legislators** on each issue. This makes the very idea of a daily assessment by the Legislature (which is distinct from Political party) meaningless.

What should be done to strengthen the Federalism further?

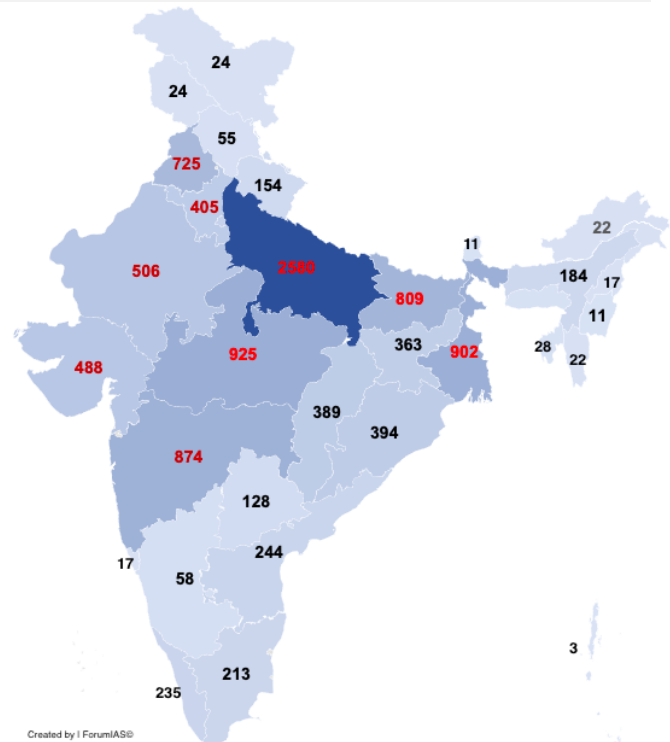
- **Adherence to the SC Judgment:** Parties and legislators should strictly adhere to the SC's Judgment. It means respecting the rights of political parties as entities beyond just the Legislature and honouring the authority of the party leadership.
- **Speaker's Role in Disqualification:** The Speaker should handle disqualification petitions judiciously, guided by the principles laid down in the Judgment. She must act impartially, considering the constitution of the party, the rules and regulations of party leadership, and not merely the majority in the Legislative Assembly.
- **Strengthening Anti-Defection laws:** To deter defections and uphold the principles of democracy, anti-defection laws must be strengthened further. By ensuring strict penalties for defections, the stability of the government and the integrity of elected representatives can be maintained.

4. Custodial Violence in India

News: The instances of custodial violence in India has remained high.

What is the status of custodial deaths in India?

- According to the data shared in the Lok Sabha, there have been **11,419 deaths in police/judicial custody** between 2016-17 to 2021-22 (not all deaths due to police violence).
- Uttar Pradesh recorded highest custodial deaths in this period, accounting for ~22.5% of total such deaths. Larger States with higher population **tend to fare worse** in this statistic.
- According to the National Crimes Record Bureau, between 2017 and 2021, **only 286 magisterial/judicial enquiries were ordered for custodial deaths**. 114 policemen were arrested, 79 were charge sheeted but no policeman has been convicted till now.



Custodial deaths in India between 2016-17 and 2021-22. The deaths in J&K and Ladakh have been equally split (total 48, 24 each).

What is Custodial Violence?

- Custodial violence refers to violence inflicted on person(s) in police or judicial custody. Violence generally means use of force over a person in order to cause injury.
- Custodial violence can be of three types:

- **Physical:** This includes methods of physical torture on the victim.
- **Physiological:** It includes mental torture e.g., depriving a person of food, threatening or humiliating the victim.
- **Sexual:** It is employed through rape/sodomy and is directed towards the social and psychological harassment of the victims.

Laws Related to Custodial Violence

- **Section 41, Code of Criminal Procedure (CrPC, 1973):** Provides **safeguards** so that procedures for **arrest and detention** are on **reasonable grounds**. Procedures to be documented. Family members to be informed of the arrest. Legal representation to be allowed for the arrested person.
- **Section 163, CrPC and Section 24 of Indian Evidence Act, 1872** prohibit **inducement, promise or threat** to seek confession. Confession with such methods **deemed irrelevant** during proceedings.
- **Section 25 of Indian Evidence Act, 1872:** Confession made to police officer **not admissible** in law.
- **Section 49, CrPC:** Arrested person should not be subjected to more restraint than is necessary to prevent his escape.
- **Section 220, Indian Penal Code (IPC):** It provides for punishment (up to 7 years) for an officer who **maliciously confines** any person.
- **Section 330 and 331, IPC:** Whoever causes hurt to extract confession shall be liable to be **punished with imprisonment** up to 7-10 years and a fine.
- **Section 29, The Police Act, 1861:** A Police Officer who inflicts violence on a person in his custody can be imprisoned up to 3 months or a penalty up to 3 months pay.

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What are the reasons for high custodial violence in India?

- **Systemic Gaps:** There is **no anti-torture law** in India that prohibits custodial violence. In **D.K. Basu vs West Bengal (1997)**, the Supreme Court had issued 11-point guidelines to accompany Article 22 (Rights of Accused). However, the implementation of the guidelines has remained poor.
- **Accountability:** Lack of action on culprit officers fails to create a deterrent. Only in limited cases enquiries are ordered, and very few officers are charge sheeted. Convictions are negligible.
- **Awareness:** Lack of awareness among victims (and general public) about their rights leads them not to seek justice. In the US, the police can be sued for damages. Most victims belong to the marginalized communities lacking access to resources.
- **Training:** The policemen and law enforcement officials are **not trained to be sensitive** while dealing with suspects. They frequently resort to violence in order to extract information.

What are the Guidelines Issued by the National Human Rights Commission?

- The NHRC acts as a watchdog of human rights and has issues guidelines to be followed in case of custodial deaths. The guidelines include:
 - A magisterial inquiry should be conducted.
 - The magistrate must visit the place of crime, note all relevant facts, record evidence and identify witnesses.
 - The inquiry should include reasons for death, events leading to the death of the victim, suspects of the said crime, and medical treatment provided to the victim.
 - A detailed report to be prepared on time.

What should be done?

- **Anti-Torture Law: The Prevention of Torture Bill** was introduced in the Parliament in 2010. It provided for **punishment for torture** inflicted by public servants. The Bill had lapsed in 2014. It should be re-introduced and passed by the Parliament after deliberations.

Judgments Related to Custodial Violence



- **Rudul Shah vs State of Bihar (1983):** The Prisoner was detained in prison for 14 years after acquittal. The Court held the detention unjustified. If an individual's fundamental right is violated by the wrongful act of the State, then that individual is **entitled to compensation**.
- **Nilabati Behera vs State of Orissa (1993):** The Supreme Court recognized custodial violence inflicted on the deceased victim. The Court asked the State to pay compensation of INR 155,000 to the victim.
- **Joginder Kumar vs State of Uttar Pradesh (1994):** The SC held that arresting someone without justification would **make it illegal**. It said that Police have been given certain powers but they cannot misuse them for illegal purposes.
- **DK Basu vs State of West Bengal (1997):** The SC stated that custodial violence is an attack on the dignity of a human being. The SC laid 11-point guidelines to be followed while making an arrest.

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- **Use of Technology:** Several former Police Officers have suggested that Governments should mandate law enforcement officials to wear body cams all the time as is the practice in several Western countries.
 - All police stations should have CCTVs as directed by the Supreme Court in **Paramvir Singh Saini v. Baljit Singh & Others (2020)**.
 - A senior officer should monitor CCTVs during interrogation. Such measures will act as deterrent to indulge in custodial torture.
- **Mental Health Check-up:** Mental health check-ups of police personnel should be regularly undertaken to ensure that they are in right frame of mind to undertake their duties.
- **Awareness About Rights:** All Police Stations should have posters detailing rights of arrested persons, in English, Hindi and vernacular languages.

5. Institutions of Eminence (IoE): Status and Challenges

News: The Parliamentary Standing Committee has submitted a report outlining the shortcomings of the Institutions of Eminence (IoE) Scheme.

What are the salient features of the IoE Scheme?

- It is a scheme of Ministry of Human Resource Development pertaining to **Higher Education Institutions (HEIs)** in India.
- Its aim is to develop **20 world-class teaching and research institutions** and make them achieve **top 500 world ranking** in the next 10 years and in top 100 eventually over time. These IoEs will **enhance the general level of education** in India.
- IoEs will pay special attention to teaching and research in **unique and emerging areas of knowledge** and become **Centres of Excellence**.
- IoEs will be granted **greater autonomy** and **funding to pursue academic and research goals**.
- IOEs are expected to **attract the best talent** from around the world, foster collaborations with other leading institutions, and contribute to the country's **economic and social development**.

What is the current status of IoEs?

- At present, 12 institutions have been granted IoE status (8 public and 4 private).
- INR 3,428 crore have been allocated to 8 public institutes, with IISc Bangalore receiving the largest share (INR 620.59 crore).
- However, the selected private campuses have yet to reap the scheme's promised benefits.
- There has been a delay in recognition of 2 public and 5 private HEIs as IoEs. The lack of an Empowered Expert Committee (EEC) is impeding the process.

Need for IoEs

- **Enhance Global Ranking:** IoE Scheme will support and build top universities that can compete on a global scale and rank among the top 500 schools in the world.
- **Encourage Research:** IoE Scheme will improve research and education in Universities by providing them enhanced funding, infrastructure, and autonomy.
- **Attract Foreign Students:** IoEs will bring in students from other countries and enhance India's soft power. It will give students from other countries a chance to study in India and experience India's rich culture.
- **Fostering innovation:** IoEs will work to **encourage innovation and entrepreneurship** in many different fields and aid economic growth and development.

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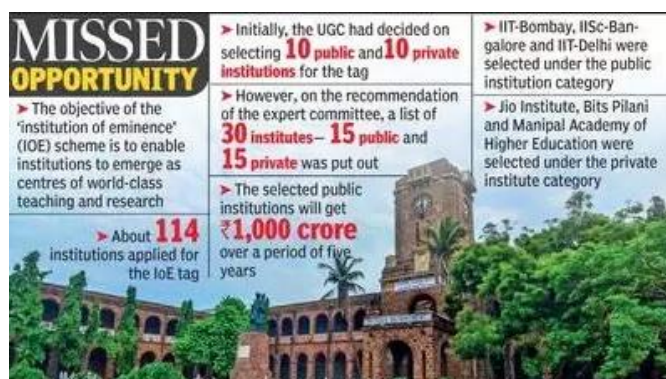
What are the challenges faced by the IOE scheme?

- **Criticism of elitism:** The IoE scheme has faced criticism for **being elitist** and **favouring already established institutions** while ignoring the needs of smaller universities. Certain regions or types of institutions have been underrepresented in the selection of IoEs, leading to **concerns of bias** and uneven development.

- **Funding Constraints:** The enhanced funding from the Government may not be enough to fully achieve the programme's goals. Budget constraints may limit the impact of the scheme. Private IoEs will not receive funding from the Government.
- **Challenges in Implementation:** The implementation may be challenging due to **bureaucratic procedures** and resistance from stakeholders who are resistant to change. For example, only 4 of the 10 private higher education institutions selected for the IOE status have received official recognition to date (March 2023).
- **Capacity Building:** Some selected IoEs may lack the necessary capacity and resources to fully realize the potential of the IoE scheme, requiring additional investments and support.
- **Measuring Impact:** It may be difficult to measure the impact of the IoE scheme on the higher education system, and whether it has truly improved the quality of education and made Indian universities more competitive globally.
- **Ensuring Autonomy:** IoEs have been granted greater autonomy under the scheme. However, it may not happen in actual practice. It remains to be seen whether introduces any restrictions in terms of curriculum etc. The UGC Regulations for Foreign HEIs (FHEIs) setting campus in India had put restrictions on offering courses that go against India's sovereignty and integrity, the State's security, good relations with other countries, public order, decency, or morality. (Refer EPIC January 2023 for *Establishing Campuses of Foreign Universities in India: Benefits and Challenges*).

What are the issues with higher education in India?

- **Access:** Access to higher education is limited and is generally inaccessible to students from marginalized communities and those living in rural areas.
- **Quality of Education and Research:** The quality of higher education in India is often criticized, with concerns about outdated curricula, inadequate teaching standards, and a **lack of focus on research**.
- **Brain Drain:** Many talented students and scholars migrate to Western countries for higher education and career opportunities.
- **Affordability:** Higher education can be expensive, especially in private HEIs for students from lower-income families, who may struggle to afford tuition fees and living expenses.
- **Infrastructure:** Many higher educational institutions lack adequate infrastructure and resources, such as modern labs, libraries, and IT facilities.
- **Governance and Regulation:** There are concerns about the governance and regulation of higher education in India, with criticisms of a **lack of accountability**, **politicization**, and **corruption** in the sector. (Refer EPIC June 2022 for *Issues in India's Higher Education Institutions and Universities*).
- **Industry Linkages:** The linkages between higher education institutions and industry are often weak, leading to a mismatch between the skills and knowledge of graduates and the needs of the job market.



What should be done to reform IoE Scheme and improve Higher Education in India?

- **Accelerate the process of granting status:** The Parliamentary Standing Committee Report has recommended to accelerate the process of granting IoE status to the identified eligible institutions.

- **Revision of the Higher Education Financing Agency (HEFA):** The Government should accelerate the reform of the HEFA scheme and notify it as soon as possible to broaden the scope of financing available under it. Efforts should be made to approve more loans under the HEFA plan, ensure prompt disbursement of sanctioned loans, and meet targets on time during 2023-24.
- **Vacancies:** The Government should adopt a proactive approach towards filling up over 34,000 teaching and non-teaching vacancies in Central Universities, IITs, IIMs, NITs, and other institutions.
- **Autonomy:** The Government should extend granting greater autonomy to Universities as has been envisaged for the Foreign Universities willing to set-up campuses in India.
- **Courses on Indian Heritage and Culture:** To attract more foreign students to Indian universities, there is a need for the introduction of courses on Indian heritage and culture like Yoga, and Ayurveda.
- The **formation of a higher education umbrella body**, as well as **simplified visa requirements for foreign faculty in these institutes**, will aid in the faster realisation of the objectives of the IoE scheme.
- India can bring **the IoE programme in line with the National Education Policy, 2020**.

6. Universal Health Coverage in India

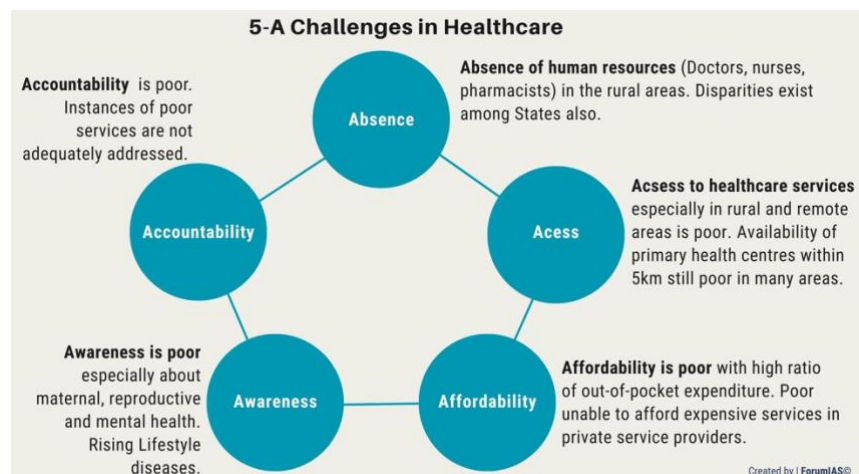
News: The Healthcare System in India continues to face several challenges despite gradual improvement with increased Government spending. Healthcare experts argue in favor of Universal Health Coverage (UHC) to address the lacunae.

What is the meaning of Universal Health Coverage (UHC)?

- According to the WHO, Universal Health Coverage (UHC) means that **all people** have **access to the full range of quality health services they need, when and where they need them, without financial hardship**.
- It covers the **full continuum of essential health services**, from health promotion to **prevention, treatment, rehabilitation and palliative care**.
- SDG 3 is related to Good Health and Well-being. UHC is covered under the **SDG 3.8**: “Achieve universal health coverage, including **financial risk protection**, access to **quality essential health-care services** and access to **safe, effective, quality and affordable essential medicines and vaccines for all**”.

What are the challenges related to provision of Healthcare Services in India?

- **Human Resource:** According to the Government, India's doctor-patient ratio is 1:834 (1 doctor per 834 people, December 2022) against 1:1000 recommended by WHO. However, most **doctors are reluctant to work in rural areas**, where the ratio is much worse. 15th Finance Commission had noted that nurse-population ratio is 1:670, much higher than WHO norm of 1:300.
- **Infrastructure:** Government has built extensive network of Primary Health Centres (PHCs), including in rural areas. It has improved access. However, the access to secondary and tertiary health services remains poor.



- **Disease Load:** India has one of the highest prevalence of diseases like TB and malaria. The disease load of modern lifestyle diseases like diabetes, cancer, cardiovascular diseases, obesity is rising. The proportion of deaths due to non-communicable diseases (NCDs) has increased from around 38% in 1990 to 62% in 2016.
- **Affordability:** The out-of-pocket expenditure is high. In the absence of suitable insurance cover, the poor are unable to afford healthcare services (especially tertiary care) offered by private sector. Private sector owns ~66% of the hospital beds in the country.
- **Public Spending:** The public spending (as % of GDP) is below Policy target of 2.5% of GDP (National Health Policy, 2017). The combined expenditure of State and Union Government on healthcare was 2.1% of GDP in FY2022-23 (Economic Survey). This leads to shortage of infrastructure, personnel, and poor status of R&D.
- **Services:** Stand-alone hospitals and nursing centres, which account for 95% of private hospital beds, are unable to provide multi-speciality care. District hospitals offer limited services e.g., only 16% of the district hospitals in Tamil Nadu offered all key services, it was just 1% in Mizoram and UP.
- **Insurance Cover:** Schemes like **Ayushman Bharat**, the **Employees State Insurance (ESIC)**, and **CGHS** have covered nearly 74% of Indians. However, millions remain uninsured.

What has been the approach to UHC?

- The target of UHC was endorsed by the World Health Assembly in 1977.
- The **International Conference on Primary Health Care** (Alma Ata, 1978) listed 8 components of minimum care for all citizens. It **laid emphasis on primary healthcare** and mandated all basic services, prevention of diseases including vaccinations **to be free for all** using the Government resources, esp. for the poor. The **secondary and tertiary care was left to the individual** to either seek it from a limited number of public hospitals or from the private sector by paying from their own pockets. NCDs were also left out.
- This approach led to neglect of UHC and emergence of dominant, **unregulated, profit-making private sector** including in health insurance sector. The approach has been **adopted by most developing nations**, while few developed nations have moved towards UHC.

Models for Healthcare

Beveridge Model

- Developed in the UK as **National Health Service (NHS)**.
- Healthcare provision is funded by direct **income tax deductions**.
- The Government acts as the **single-payer**, to keep **costs low and standardise benefits**.
- **No out-of-pocket fees for patients**.
- **Tax-paying citizens guaranteed same access to care**, and nobody receives a medical bill.
- Suffers from **risk of over-utilization**. Without restrictions, free access could lead patients to demand healthcare services that are **unnecessary or wasteful**. The result would be **rising costs and higher taxes**.

Bismarck Model

- Developed in Germany by Otto Bismarck.
- **Employers and employees are responsible for funding** their health insurance system through **funds created by payroll deductions**.
- **Providers and hospitals are generally private**, though **insurers are public**.
- Unlike the Beveridge model, it **doesn't provide UHC**. It **requires employment for health insurance**, and allocates resources to those who contribute financially.
- Suffers from lack of care for those who can't afford contributions, including **ageing populations** and the imbalance between retirees and employees.

National Health Insurance

- It blends different aspects of Beveridge and the Bismarck model.
- This model is driven by **private providers** (Bismarck), but the **payments come from a government-run insurance program** (Beveridge). Every citizen pays for insurance.
- The National Health Insurance model is **universal insurance** that doesn't make a profit or deny claims.
- Because of no need for marketing, no financial motive to deny claims, and no concern for profit, it's cheaper and much simpler to navigate.
- It suffers from **long waiting lists and delays in treatment**.

Out-of-Pocket Expenses

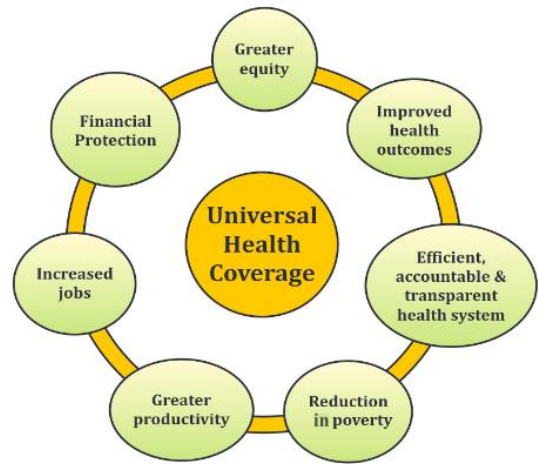
- Most common in **less-developed countries** that **lack financial resources**.
- Patients must pay for services **out of pocket**. Healthcare is driven by income.
- Payments can be made directly or through **private insurance** or through **government-sponsored programmes**.
- It is **inequitable model**. The wealthy get professional medical care. Those lacking resources are unable to access services due to lack of affordability.
- Used in India, China, Africa, Latin America and the uninsured population in the US.

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What should be the approach going ahead?

- The UHC should encompass primary, secondary and tertiary care for all at affordable cost without discrimination.

- In 2011, a **High Level Expert Group** (HLEG) had provided a detailed **framework and recommendations** on **introducing UHC in India**. The recommendations covered aspects like Financing, Service norms, Human resources, Access to medicines, Institutional reforms etc. The recommendations included:
 - Increasing public expenditure (Union and State) to 3% of GDP.
 - Ensuring access to medicines through increased public spending on drug procurement.
 - General taxation as the principal source of health care financing.
 - Expenditures on primary health care should account for at least 70% of all health care expenditures.
 - Purchases of all health care services under the UHC system should be undertaken directly by the Union and State Governments.
 - Strengthening District Hospitals.
 - Ensure adequate trained healthcare professionals at all levels.
- Government should implement the recommendations of the HLEG in a phased manner.



Source: HLEG Report. Expected benefits of UHC.

What are the salient aspects of Rajasthan Right to Health Act, 2022?

- The Act gives every resident of the State the **right to emergency treatment without payment** to any healthcare institution. The **private healthcare institutions** providing such services will be **compensated for the charges** incurred.
- The Act seeks to provide for equity in relation to health and well-being for **achieving the goal of health care for all**. This is sought to be achieved through guaranteed access to quality health care for all residents of the State, **without any out-of-pocket expenditure**.
- The law provides for a social audit and grievance redressal.

Why was the Act opposed by various stakeholders?

- Private sector doctors and hospitals opposed the Act. They had raised concerns related to:
 - Lack of proper definition of medical emergency that entitled service.
 - Bureaucratic and political control to admitting or reimbursing payment for patients.

What are the expected benefits of the Right to Health Act?

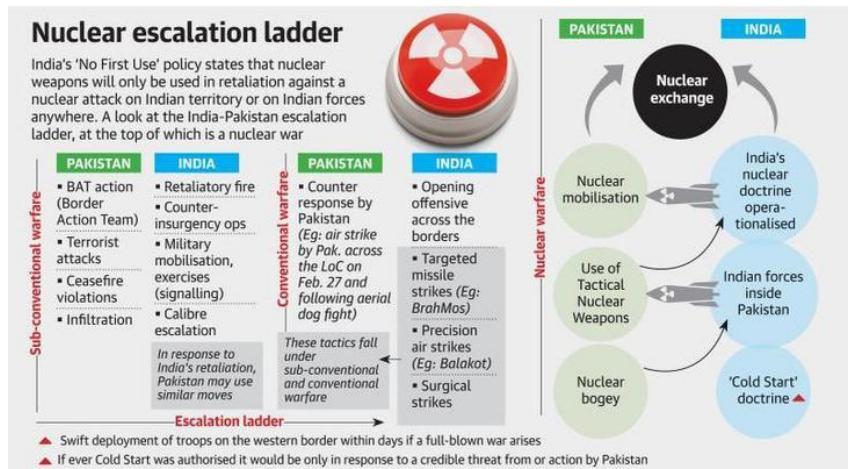
- It will lead to improvement in access to healthcare for the poor. It will check the exploitation of the poor who had to pay exorbitant fee to private hospitals.
- Rajasthan has one of the highest incidences of **violence against healthcare professionals**. This is due to mistrust between patients and doctors. The RTH bill will **increase trust in the system**.
- It is a step towards ensuring UHC for all.

7. India's Nuclear Doctrine

News: India conducted Nuclear Tests in Pokhran 25 years ago (1998). India formulated the Nuclear Doctrine in the aftermath of the tests.

What are the key features of India's Nuclear Doctrine?

- **No First Use (NFU):** India is committed to not being the first to use nuclear weapons in a conflict. However, India would retaliate against a nuclear attack on Indian territory or on Indian forces anywhere.
- India will retain the option of retaliating with nuclear weapons, in the event of a major attack against India, or Indian forces anywhere, by biological or chemical weapons.
- **Retaliation to a Nuclear Attack:** India's nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage.
- **Credible Minimum Deterrence:** India would maintain a sufficient number of nuclear weapons to deter a nuclear attack, but it would not seek to match other countries' arsenals in size.
- **Non-use Against Non-Nuclear Weapon States:** India would not use or threaten to use nuclear weapons against countries that do not possess them.
- **Civilian-Political Control:** Nuclear retaliatory attacks can only be authorised by the civilian political leadership through the **Nuclear Command Authority (NCA)**.
- **Commitment to Disarmament:** India is committed to the goal of a nuclear weapon free world, through global, verifiable and non-discriminatory nuclear disarmament.



What are the advantages of India's nuclear doctrine?

- **Credibility:** The doctrine provided a clear and credible stance regarding India's position on use of nuclear weapons. It **reduces chances of accidental escalation** as other countries can be assured of non-aggression from India.
- **Stability:** The stance of 'No-First Use' and 'No-use against Non-Nuclear Weapon States' has addressed anxieties of India's neighbours. It also **avoided nuclear arms race** as India's nuclear arsenal is deterrent.
- **Disarmament:** India has pushed for a nuclear weapons-free world by consciously limiting its arsenal. India has called for elimination of nuclear weapons by all countries.
- **International Standing:** India faced international sanctions after the 1998 tests. The formulation of Doctrine helped the world understand India's concerns and the acquisition of nuclear weapons as a deterrent. The **NFU stance** and **Civilian control** through NCA established India as a **responsible nuclear power**. It helped **alter the worldview** and the subsequent lifting of sanctions.

What are the challenges raised against India's nuclear doctrine?

- **Changing Regional Dynamics:** The security dynamics in India's neighbourhood have changed since 2003. China has risen to become a global power and has rapidly expanded its nuclear arsenal. This has been accompanied by increased Chinese aggression on Himalayan borders and Indian Ocean.
- **Credibility of Deterrence:** There are questions regarding India's nuclear deterrence; whether the current arsenal is deterrent enough in the face of rising Chinese nuclear weapons.
- **Credibility of NFU Policy:** Some experts raise doubts whether India would stick to NFU commitment if there were reliable information about an imminent nuclear strike. The ambiguity could undermine the deterrence value of the Doctrine.

- **Lack of Counter-Force Strategy:** The Doctrine does not explicitly mention a counter-force strategy, focusing on enemy military assets. Critics argue that this could potentially limit India's strategic options in the event of a nuclear conflict.
- **Pakistan's Tactical Nuclear Weapons (TNWs):** Pakistan's development of TNWs challenges India's NFU policy. The use of such weapons in a limited war scenario could potentially escalate the conflict, putting India in a difficult position given its NFU commitment.
- **Vulnerability to First Strike:** The NFU stance exposes India to a damaging first strike from an adversary. Critics argue that India's ability to launch a retaliatory strike could be significantly compromised in case of first strike by an enemy State.

Strategic vs Tactical Nuclear Weapons

- Tactical Nuclear Weapons are much smaller. The smallest TNW can be 1 kiloton or less (producing the equivalent to a thousand tonnes of the explosive TNT). The largest can up to 100 kilotons. **Strategic nuclear weapons can be up to 1,000 kilotons.**
- Tactical weapons are designed for use in **battlefield situations** and launched from **short range**. Strategic weapons are designed for **strategic targets** like military bases, cities in the interior of enemy territory and are **launched from longer range**.

What are the implications of shifting from the present Doctrine?

Several experts have called for review of India's Doctrine, especially the NFU stance. They argue in favour of a more ambiguous stand with respect to use and deployment of weapons. However, there are several concerns associated with the review:

- **Regional Stability:** Abandonment of NFU policy could escalate regional tensions, particularly with Pakistan and China, who might interpret such a move as a **sign of increased aggression**.
- **Arms Race:** A shift in Doctrine could potentially **trigger an arms race**, with neighbouring countries feeling the need to expand their own nuclear arsenals.
- **International Reputation:** This will dent India's standing as a responsible nuclear power and weaken India's argument of acquisition of weapons as a deterrent.
- **Expansion of Weapons:** A change in stance can create pressure on India to expand nuclear arsenal which will necessitate greater financial resources. This can divert funds away from welfare and development activities.

What should be done?

- **Maintain Strategic Restraint:** India should adhere to its current doctrine. The NFU stance has served India well by maintaining regional stability and preserving its international standing.
- **Dialogue:** India should engage in regular strategic dialogues with its nuclear-armed neighbours. This can help in managing mutual concerns, reducing misunderstandings, and preventing potential conflicts. India should work to enhance **crisis management mechanisms** like establishing hotlines and agreeing on confidence-building measures to **prevent accidental escalation** during the times of crisis.
- **Strengthen Conventional Capabilities:** While maintaining a credible nuclear deterrent, India should also focus on strengthening its conventional military capabilities. This can help deter conventional

Nuclear Triad

A **nuclear triad** is a **3-pronged military force structure** that consists of **land-launched nuclear missiles**, **nuclear-missile-armed submarines**, and **strategic aircraft with nuclear bombs and missiles**. Thus Nuclear triad consists of land-, air- and sea-based nuclear weapon delivery systems.

Nuclear Triad **enhances deterrence** by providing **credible second-strike retaliatory capabilities** to deliver nuclear weapons in case of first strike.

conflicts that may escalate to the nuclear level. India should **enhance its Missile Defence capabilities** to protect against possible first strike by a nuclear adversary.

- **Promote Nuclear Disarmament:** India should continue advocating for global nuclear disarmament and non-proliferation. This includes supporting international treaties aimed at nuclear disarmament and urging other nuclear states to adopt NFU policies.

8. India's Evacuation (of Citizens) Missions

News: India has regularly undertaken evacuation missions to evacuate Indian citizens caught in conflict zones abroad.

What are the reasons for rising need of evacuation operations?

- **Global Instability:** Rising geopolitical instability in various regions necessitates evacuation of Indian citizens caught in distress.
- **Expanding Diaspora:** Indian citizens are spread over all continents. Indian citizens are present in remote and conflict-ridden regions in search of economic opportunities. This necessitates the expansion of reach of India's Missions.

India's Evacuation Missions

- **Operation Kaveri:** Sudan (2023).
- **Operation Ganga:** Ukraine (2022)
- **Operation Devi Shakti:** Afghanistan (2021).
- **Operation Raahat:** Yemen (2015).
- **Operation Safe Homecoming:** Libya (2011)
- **Operation Sukoon:** Lebanon (2006)

What are the challenges associated in undertaking Evacuation Missions?

- **Limited Intelligence:** Evacuation missions often face challenges due to insufficient information about local conditions, hindering effective planning and execution. Embassies may lack complete information about exact number and locations of Indian citizens requiring evacuation.
- **Logistical Hurdles:** Citizens are often dispersed over territory under conflict. Bringing them together, coordinating transportation, navigating difficult terrain, and providing basic necessities like food and water can be challenging during evacuation missions.
- **Communication Barriers:** Language differences, poor communication infrastructure, and limited access to local authorities can complicate coordination and rescue efforts.
- **Time Constraints:** Rapidly changing conditions in conflict may mean that agencies face time crunch in evacuating citizens in the shortest possible time. It may also require quick decision-making and rapid changes in the strategy and plans as circumstances change.
- **Navigating Political Sensitivities:** Evacuation missions may involve coordinating with foreign governments or navigating complex political situations like coordination with both Russian and Ukrainian Governments during **Operation Ganga**.
- **Diverse Nationalities:** India's evacuation missions often involve foreign nationals, adding to the logistical challenges of coordinating with other Governments and international organizations. In **Operation Raahat**, India evacuated over 950 nationals from 41 countries amid the Yemen crisis.
- **Coordination Challenges:** Evacuation missions require close coordination between various Government agencies, Armed Forces, and international partners. This increases the complexity of such operations.
- **Security Threats:** Ensuring safety of evacuees and the personnel involved in the missions, requiring robust planning and countermeasures to mitigate risks.

What are the advantages associated with the success of India's Evacuation Missions?

- **Enhanced National Reputation:** Successful evacuation missions, like the 2023 Sudan evacuation, demonstrate India's commitment to its citizens abroad and bolster India's international standing.
- **Improved Military Capabilities:** Complex operations help strengthen India's military expertise, particularly in the areas of special operations and logistics.
- **Strong Diplomatic Relations:** Coordinating with multiple nations and evacuating citizens of other nations fosters international cooperation and strengthens diplomatic ties.
- **Greater Public Confidence:** Successfully executing evacuation missions instils confidence in Indian citizens, both at home and abroad, that their Government is committed to their safety and wellbeing.
- **Showcase of Technological Advancements:** Successful evacuations, such as the **Wadi Seidna mission**, highlight the capabilities of advanced aircraft like the C-130J Super Hercules. (Wadi Seidna airstrip in Sudan had no navigational approach, aids or landing lights, yet Indian Air Force successfully undertook the rescue mission). This shows India's technological progress in the defence sector.

Steps Taken by Government for Evacuation Missions

- **Strong Political Commitment and Continuous Assessment:** Preparation of evacuation plans, regular monitoring and assessment of safety of citizens supported by political commitment at highest level.
- **Interagency Coordination:** Coordination among all Stakeholders led by Ministry of External Affairs, Foreign Embassies, Armed Forces to ensure smooth operations.
- **Diplomatic Efforts:** Coordination with external agencies including the UN and its organs, Host and Foreign nations and other non-Government bodies
- **Resource Allocation:** Government allocates all necessary resources including Military Aircraft (like C-130J), naval assets among others.
- **Public Communication:** Ministry of External Affairs undertakes regular communications to update the citizens caught abroad about the status, do's and don'ts to keep them safe etc.
- **Specialised Training:** Armed Forces specially train for such operations and undertake regular exercises simulating the missions.

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What should be done going ahead?

- **Enhance Intelligence Gathering:** Indian agencies should collaborate with regional and global partners to improve intelligence collection and sharing for better situational awareness.
- **Strengthen Coordination Mechanisms:** The Government should establish joint task forces with friendly countries to streamline coordination between different government agencies, foreign governments, and international organizations, similar to the collaboration during the Nepal earthquake relief operations. Invest in
- **Advanced Technology:** The Government should continue investing in cutting-edge technology, such as the C-130J Super Hercules and C-17 Globemaster aircraft, to enhance evacuation capabilities and ensure mission success, as seen in the Sudan evacuation.
- **Train and Equip Special Forces:** The Armed Forces should strengthen the training and capabilities of special forces like the *Garud* commandos, who participated in the Herat Embassy evacuation mission.
- **Develop Contingency Plans:** The Armed Forces should conduct regular simulations and exercises with regional partners to prepare comprehensive contingency plans for different scenarios, ensuring timely and effective responses in real-life situations.
- **Maintain Diplomatic Engagement:** The Government should actively participate in regional forums and establish joint mechanisms with countries in the region, as well as those with significant citizens in crisis zones. This will ensure smooth cooperation during evacuation missions.

9. Russia-China Relationship and Implications for India

News: The Ukraine War has brought Russia closer to China. This poses a new challenge to Indian diplomacy amidst growing tensions with China.

What are the recent developments in China – Russia relations?

- **Economic and Trade Ties:** In the aftermath of the Ukraine invasion, Russia's trade dependence on China has increased due to sanctions imposed by NATO nations.

- **Military Ties:** The two countries have increased their military cooperation, with rising frequency of joint military exercises. In November 2021, they signed a **Road Map for Military cooperation for 2021-2025** to guide collaboration in this sphere. According to leaked US Government documents, China has supplied lethal weapons to Russia but has kept the transfer secret.

- **Political Ties:** China and Russia have been aligning themselves more closely on the international stage in their opposition to the US and the NATO. They had signed **Treaty of Friendship in 2001**. In February 2022, the Presidents of the 2 nations referred to the bilateral relationship as a '**no-limits friendship**' with '**no forbidden areas**' of cooperation.

- **De-Dollarization Efforts:** Both countries are working together to reduce the global reliance on the US dollar for international trade payments. They intend to reduce the 'weaponization of dollar' through trade and commerce sanctions.

- **COVID-19 Vaccine Cooperation:** China and Russia have also been cooperating in the development and distribution of COVID-19 vaccines. In 2020, Russia approved a Chinese COVID-19 vaccine for use within its borders, and in 2021, China approved the Russian Sputnik V vaccine for emergency use.



What are the implications of closer China-Russia relations on India?

- **Power Asymmetry:** The Russia-China closeness comes at a time of **Chinese ascendancy** and **Russian decline**. Facing global isolation, Russia will be more dependent on China in this new partnership and may have to oblige to conditions put by China. This can impact India-Russia relationship.
- **Strategic Implications:** The India-China relationship has been strained due to border disputes in the Himalayas. Russia may not support India's position if the situation escalates.
- **Geopolitical Implications:** India has been cooperating with Australia, Japan and the US to check Chinese aggression in the Indo-Pacific. A China-Russia axis can make the efforts more difficult. India will face greater challenges in balancing its interests in rival groupings like SCO and the Quad. India's **space for 'strategic autonomy'** may be reduced. **Russia has supported India at the UN on multiple issues**. Russian response maybe more nuanced in future.
- **Military Implications:** Russia-China Defence cooperation may increase in future. China may put conditions on Russia regarding India-Russia Defence trade. China may also force Russia to increase defence cooperation with Pakistan. India may have to reduce its dependence on Russian defence imports.
- **Regional Politics:** China may try to marginalize India's role in Afghanistan and Central Asia and undermine India's strategic interest in the region.
- **Economic Competition:** The share of Yuan in Russia's imports from China has risen to 23% in 2022 from 4% in 2021. Both China and Russia are promoting settlement in Yuan for Russia's trade with Latin American and African nations. Russia has halted Rupee-Rouble trade settlement in May 2023. China may limit India's trade competitiveness in this regard.

What should be India's approach?

- **Diplomatic Efforts:** India should enhance diplomatic outreach to Russia. This could involve high-level visits, cultural exchanges, and people-to-people contacts. India should **allay Russia's fears** regarding India's increased cooperation with the US and allies. Simultaneously, India should continue its engagement with China to diffuse tensions along the border. India can utilize SCO as a platform for enhanced diplomatic exchanges with both Russia and China.
- **Economic Growth:** India should diversify its trade and reduce dependence on Chinese imports (*Refer EPIC November 2022 for India's Trade with China*). China has raised its geopolitical salience through its economic might. India has to undertake domestic policy reforms to ensure rapid economic and trade (export) growth. India should be more proactive in signing FTAs favourable to domestic industries.
- **Regional Cooperation:** India should take centre stage in enhancing regional cooperation among the South Asian neighbours while **being mindful of their concerns**. Increased cooperation will contribute towards economic growth, rising prosperity, and reduced regional dependence on China.
- **Multilateral Engagement:** As the possibility of return of bipolar global order rises (US/NATO vs Russia-China), India should scale-up its efforts to rally the Global South for promoting peace and stability. Global South should collectively push for more critical issues like Climate Action, addressing poverty, malnutrition and hunger.

Thus India's options should be to **strengthening ties with other like-minded countries, building regional partnerships, promoting economic integration, investing in military capabilities, and engaging in diplomatic dialogue**. India must adopt a proactive and strategic approach.

10. Using Buddhist Diplomacy to Enhance Soft Power

News: 2-day Global Buddhist Summit was held in New Delhi, organized by Ministry of Culture and the International Buddhist Confederation. Buddhist Diplomacy can enhance India's soft power globally.

What was the Summit's importance for India?

- The summit provided a significant opportunity for India to **project and connect** with the Buddhist population around the world. It will strengthen **India's soft power**.
- The summit saw a diverse group of 171 foreign delegates from South Korea, Thailand, Cambodia, Japan, and Taiwan, along with 150 delegates from Indian Buddhist organisations. It was attended by prominent scholars, *sangha* leaders, and dharma practitioners.
- The Government of India hopes to demonstrate its commitment to **preserving and promoting Buddhist culture and heritage**. The Government has actively invested in Buddhist diplomacy e.g., promotion of international tourism through Buddhist Tourist Circuits.
- In his address at the Summit, the Prime Minister of India laid emphasis on the **continuing relevance of Buddha's teachings** in today's world. (*Refer EPIC October 2022 for Using Sports to enhance Soft Power*).

Panchamrit Guiding Principles of Foreign Policy

Samman (Dignity)

Samvad (Dialogue)

Samriddhi (Shared Prosperity)

Suraksha (Regional and Global Security)

Sanskriti evam Sabhayata (Cultural and Civilisational Links)

How can India claim legitimacy in promotion of Buddhist Diplomacy?

India has small proportion of Buddhist population, however, India is in a position to claim legitimacy in its promotion of Buddhist diplomacy.

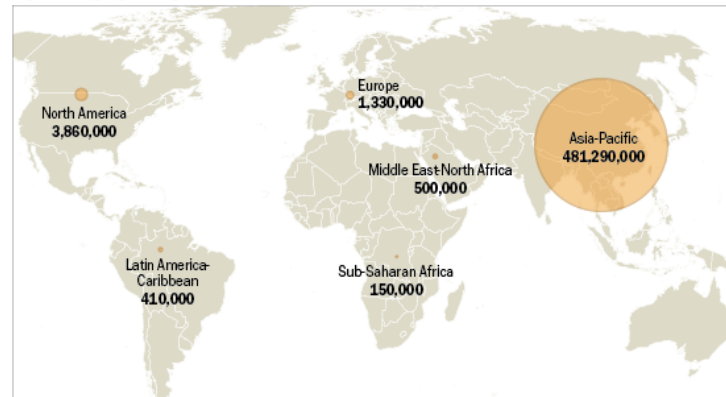
- The Buddhist faith originated in India.

- India has **numerous sites of importance to the Buddhist faith**, like Bodh Gaya, Sarnath, and Nalanda among others.
- India has nurtured an image of being a **protector of the persecuted**. The Tibetan parliament-in-exile and Dalai Lama have existed in Dharamshala since 1950s following their failed insurrection against China.
- In addition to ties with Tibetan Buddhism, **historical links to Theravada Buddhism** means that India is in a good position to further relations with other Buddhist countries and create conversation between multiple streams of faith.

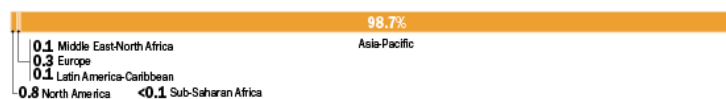
What is the potential of Buddhist Diplomacy?

- The Prime Minister of India remarked that, “India has not given ‘Yuddha’ (war) but ‘Buddha’ to the world”. India wants to provide an alternative to contested global politics, with **morality as the guiding principle**.
- India wants to position itself as a **great power committed to cooperation rather than coercion**. It is rooted in its **deep historical and cultural ties** to the region. **Cultural and Civilizational links is one of the 5 principles of India's Foreign Policy**.
- Buddhist diplomacy has the potential to promote **regional cohesion**. ~98% of the global Buddhist population is based in Asia.
- China had in the past and is still using **Buddhist diplomacy** effectively to engage with its neighbouring countries. It continues to employ this approach to gain **legitimacy for its Belt and Road Initiative**.

Regional Distribution of Buddhists
Population by region as of 2010



Percentage of world Buddhist population in each region as of 2010



Source: Pew Research. Buddhist Diplomacy can play a vital role in India's Act East Policy and forging healthy partnerships with East and South East Asian Nations.

How can India effectively utilise Buddhist Diplomacy?

- China is actively seeking to exert control over the **appointment of the next Dalai Lama**. It would be a blow to India's efforts to project its soft power through Buddhism. India must act proactively to ensure that it remains a **key player in the global Buddhist community**.
- India should continue **promoting Buddhism at the highest levels of Government**, while also organising cultural events to showcase the country's rich Buddhist history. The **Indian Council for Cultural Relations (ICCR)** could play a significant role in promoting such events within and outside India.
- India should work to strengthen its ties with **key Buddhist institutions and leaders** around the world. The Delhi summit was a step in the **right direction**.
- India also needs to **utilise the reach of Bollywood** in promoting its Buddhist heritage. China, with its **influence over Hollywood**, has completely **dominated the narrative** around Buddhism through cinema. In contrast, India is behind in this domain.
- The Government should use **the G-20 Presidency** to promote **Buddhist diplomacy** on a bigger scale through **various cultural meetings**. Buddhist teachings align with the motto of India's G-20 Presidency, 'One Earth, One Family, One Future'.

General Studies Paper III

1. The Debate on Poverty Estimation in India

News: In the absence of official estimates on poverty, there has been a raging debate among economists regarding the level of poverty and its trend reduction rate over the last decade.

What is the debate regarding Poverty Reduction in India?

- The last official poverty estimation was undertaken in 2011-12. Since then, in the absence of official data, several experts have estimated poverty ratio and have arrived at widely differing estimates.
- Some studies have come to surprising conclusion that **India has eliminated extreme poverty** (World Bank's Benchmark of Income < US\$ 1.9 per day), while others suggest that the **proportion of poor has remained stagnant** or may even have increased.

Basis of Estimation of Poverty

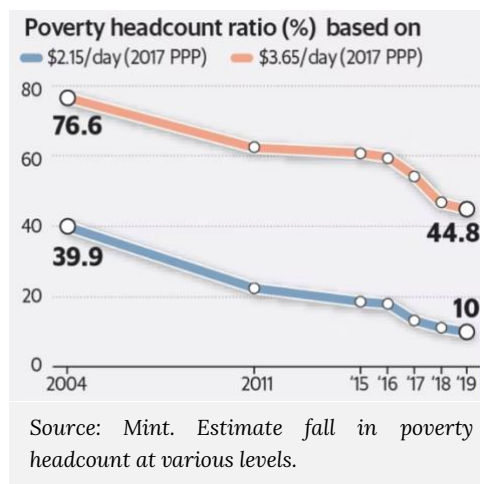
Estimation of Poverty in India has been based on **consumption expenditure** instead of level of income. Income as basis is avoided due to **difficulties in assessing incomes** of self-employed people, daily wage laborers etc., **large fluctuations in income** due to seasonal factors, **additional side incomes** and difficulty in collection of income data with large informal sector.

What are the challenges in estimating Poverty?

- **Population and Head Count:** India's huge population makes poverty estimation a challenging task. Surveys are undertaken and then extrapolated to arrive at a national estimation. Generally estimates are in terms of percentage of population below a particular consumption level.
- **Inflation:** A large country like India has differential inflation (Urban, Rural, State level). The estimate must adjust for these factors, and State-level, Rural/Urban poverty lines may be needed.
- **Level of Development:** The level of poverty needs to be adjusted according to the overall national development and as the economy undergoes structural transformation.

Why has there been a lack of Official Data?

- The Government had undertaken **Consumption Expenditure Survey 2017-18**. However, the data were not released because of **glaring errors in the survey**.
- According to reports, the Government is undertaking back-to-back consumer surveys (for agricultural years July-June 2022-23 and 2023-24). The Government has tried to improve the methodology and quality of data collection (e.g., same household shall be visited thrice for to record **7-day consumption** (fruits and vegetables), **30-day consumption** (most items), and **durable items** (recall period of 365 days)).
- Experts have raised concerns regarding lack of data. It leads to use of alternate sources for estimation of poverty which can **lead to widely differing estimates**. Wrong estimates can lead to **wrong policy prescriptions** that can prove to be **counter-productive**.

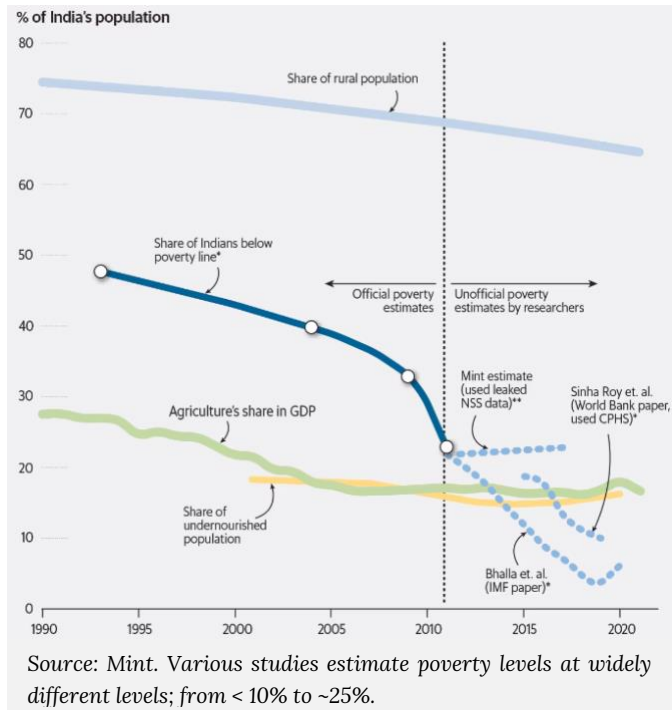


What is the basis for claims regarding reduction of poverty in India?

- Based on NFHS and Indian Human Development Survey (by University of Maryland, US) Data, the **multi-dimensional deprivation** (poverty) **head-count has reduced** from 41.3% in 2011-12 to 16.4% in 2019-21.
- India's **per capita GDP has risen by ~55%** between 2011-12 (US\$ ~1,440) and 2021-22 (US\$ ~2,250). The **real per capital consumption has also risen** by 37%.
- A **World Bank Poverty and Equity Brief** in 2020 had estimated that poverty in India declined from 21.6% in 2011-12 to ~ 13.4% in 2015 at the international poverty line (US\$ 1.9 per person per day).

What are the counter-arguments to claims about reduction in poverty?

- Analysis of the leaked data from **Consumption Expenditure Survey 2017-18** indicates stagnation of poverty headcount at ~25%. One study had pointed out that rural poverty has increased while urban poverty has reduced rapidly.
- The **share of population dependent on Agriculture** has decreased marginally to 43% from ~50% in 2022. Sector's contribution to GDP has remained stagnant at 16-17%. The **real wages** in the agriculture sector **have remained same** for almost a decade.
- Some economists have **challenged the assumptions** underlying the analyses that have shown reduction in poverty in India.
- Reduction in poverty levels should have **reflected improvement in other metrics** like nutrition. However, such a trend is not visible e.g., proportion of undernourished population was 15% in 2013-15 and 16% in 2019-21.



What should be done?

- **Lack of data impacts policymaking.** Data insights can enable targeted policy measures and enable measurement of their effectiveness through regular monitoring of outcomes.
- The Government must **finish the consumer surveys and release the data**, so that there can be accurate estimation of poverty headcount. This can enable targeted and effective poverty reduction measures.

2. Advent of Knowledge (Brain) Economy and Implications

News: Knowledge Economy will have deep impact on all aspects of the economy, most profoundly on labour. Policy measures would be necessary to adapt to the new economic system.

What are the unique features of Knowledge Economy?

- The nature of labour has changed drastically (since mid-19th century) from **body to skill to brain**. Physical labour required little or no education. Skill-based labour required higher education, training and expertise. Brain-based labour is about **rapid innovation and creation, driven by technology**.
- Brain economy (driven by technology) will **reshape all sectors**; retail, agriculture, automobile, finance, energy, manufacturing, healthcare, education, sports and entertainment etc.

- It will not be limited to software and data analytics. Technology will spread rapidly across quantum computing, genetic engineering, 3D printing, nanotechnology and combinations.

What changes will be brought by Brain Economy?

- The concerns of the employees in the body economy revolved around **low wages, job tenure and exploitation**. The concerns in the skill economy are **skill relevance, flexibility and work-life balance**.
- In the Knowledge Economy, the concerns related to environment, gender parity, equality, wealth sharing and other social issues will become more prominent.
- Many corporations will be a **combination of brain, skill and body** e.g., Amazon requires brains to develop new products, skill to manage process and data, and body for delivery services. The approach will be to **gradually eliminate the body through complete replacement with skills and technology** e.g., e-commerce companies are deploying **autonomous mobile robots** to sort the delivery parcels. Eventually the complete chain from finding the product from warehouse, packaging, shipping and sorting may be automated.
- Knowledge Economy will give rise to opportunities to innovate outside of corporates. **Open Source innovations** will expand. It will give rise to 'societal brain'.
- Knowledge Economy will contribute to solving several challenges (like pollution/waste management), improve productivity, economic growth and quality of life.

What is the way forward for the success of the brain economy?

- The **myth of man vs machine** needs to be ended. Technology will eliminate some jobs (body/physical labour) but will create new jobs e.g., there were fears that computerization of banking sector will increase unemployment. However, the expansion of banking services aided by technology lead to creation of much more opportunities.
- Technology will give rise to **new concerns**. These include **market dominance, regulation, ethical concerns and inequities** among others. All these need to be addressed. The approach should view technology as an enabler rather than hindrance.
- Technology illiteracy leads to differential access and inequities. Such gaps should be addressed by expanding access to technology.
- The **education architecture** should be revamped. Students and teachers should be equipped with technology right from primary education.
- **Multidisciplinary Research Universities** should be created. Courses in different aspects of technology must be made **mandatory for all liberal arts programmes**, just like liberal arts courses should be made mandatory in all science and technology departments.

3. Tariffs on Utilities in India

News: Tariff levels on utilities like electricity, water etc. are a sensitive political issue. Tariff control on utilities lead to economic inefficiencies and under-performance of service providers.

What are the issues with tariffs on utilities in India?

- The **pricing of utilities** in India like electricity, water and gas are **not market driven** but are carefully administered by the Government(s).
- **Political compulsions force the Government(s) to keep the price low**. Often, the administered price is not high enough to **cover the even the cost of provision of the utility** e.g., one study estimated that the average cost of supplying power in ~INR 6.2 per unit. In contrast, the revenues from DISCOM operations amounted to only ~INR 4.2 per unit. This is one factor contributing to **poor financial status** of DICOMs.
 - The recovery of costs is even poor for water. A study estimates that water boards across India are able to **recover only 1/3rd of their operation and maintenance costs** through tariffs.

- The tariffs are **not charged uniformly** e.g., per unit electricity price is much **higher for commercial and industrial users** compared to agricultural and household users. In some cases, **commercial users pay 9 times higher price than agricultural users**. In developed countries, tariffs for industrial consumers tend to be lower than those for households.
- There is **multiplicity of pricing regimes** e.g., in Chhattisgarh, industrial consumers are further divided into 6 slabs, and each slab is charged a different fixed and energy cost.

What are the impacts of lower tariffs?

- Inability to recover costs lead to **poor financial status** of service providers. Hence, they **lack resources to invest** in capacity enhancement, repair and maintenance etc.
- Service providers are unable to **improve processes** e.g., DISCOMs may not be able to check leakages or theft. This lowers their revenue further, making it a vicious cycle.
- A lot of areas/localities **remain un/under-served**.
- Artificially keeping the price low sets a wrong precedent. It becomes **politically impossible to raise the prices again**, fearing backlash.
- Lower tariffs lead to **higher indiscriminate consumption** e.g., low price of electricity for farm users has been attributed to be the cause behind sowing of rice and over-irrigation in Punjab.

What is the way forward?

- Low prices contribute to economic inefficiencies like leakages, overuse, higher subsidy burden etc. Market-based pricing leads to optimal usage, increased efficiency and better outcomes.
- The Government(s) should **rationalize the prices of utilities**. Better alternative mechanisms should be used to provide affordable access to the weaker sections.
- The **economic gains** realized through rationalized tariffs should be utilized to **enhance service levels**.

4. WTO Ruling on India's Duties on Electronics Imports

News: WTO Dispute Settlement Panel has found India's tariffs on certain electronics products like mobile phones inconsistent with India's WTO obligations and global norms.

What is the WTO dispute about?

- India has **imposed import duties on electronic items** aimed at **discouraging Chinese imports** and promoting domestic electronics manufacturing.
- The EU, China, Japan, Thailand, Singapore and the US have objected to duties on communication components like microphones and transmission apparatus. The challenge was that **India's import duties on electronics products exceeded the allowed maximum rate**.

What are the provisions of the WTO regarding imposition of tariffs?

- WTO member countries are under a **legal obligation** not to impose tariff rates **more than the maximum tariff rates** committed in their **Goods Schedule**.
- The **Goods Schedules** are based on the **World Customs Organization's (WCO) classification system**.

HSN System and Transposition

WCO's classification system catalogues (lists) traded products with specific names and numbers. This is known as the **Harmonized System of Nomenclature (HSN)**.

Due to the continuous emergence of new products owing to technological innovations, the HSN system is **regularly updated** to reflect new products. It is known as '**transposition**'.

- India is a signatory to the **Information Technology Agreement (ITA)** which requires it to eliminate tariffs on a range of tech products.

What were India's Arguments at the WTO?

- India argued that at the time of signing the ITA, products such as smartphones did not exist. Hence, India is not bound to eliminate tariffs on such items.
- India argued that an error was committed during the **transposition of its Goods Schedule** from the **HSN 2002 edition to the HSN 2007 edition**. Therefore, an **error in a treaty** would **invalidate a State's consent**, as per Article 48 of the Vienna Convention on Law of Treaties.

Information Technology Agreement (ITA)

- ITA is a **plurilateral agreement** of the WTO. It was concluded by 29 participants at the **Singapore Ministerial Conference in December 1996**. India had joined the Agreement in 1997.
- At present, ITA has 82 members, representing about **97% of world trade in IT products**. ITA covers products like Computers; Semiconductors; Semiconductor Manufacturing Equipment; Telecommunication Apparatus; Instruments; Data-storage Media and Software; and parts and accessories.
- The participants are committed to **completely eliminating tariffs on IT products** covered by the Agreement. At the Nairobi Ministerial Conference in December 2015, over 50 members concluded the expansion of the Agreement (ITA 2.0).
- According to the Ministry of Commerce, India's experience with the ITA has been **most discouraging**, which **almost wiped out the IT industry from India**. The real gainer from that agreement has been China which raised its global market share from 2% to 14% between 2000-2011.

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What was the WTO panel's ruling?

- The WTO panel found that India's tariffs on IT products **violated global trading rules**. They were inconsistent with the terms of the Information Technology Agreement (ITA).
- WTO tribunal determined that the ordinary Customs duties were above those provided in India's WTO Schedule.
- The ruling has highlighted the need for India to align its trade policies with global norms and obligations.

What are the options for India?

- It is unlikely that India **will comply with the WTO ruling**. Compliance would remove the **high protective tariff** imposed by India to boost domestic manufacturing of ICT products.
- India is likely to **appeal against the panel ruling**. However, WTO's **Appellate Body** that hears appeals has ceased to exist since 2019 because the US has been **blocking the appointment** of the body's members.
- Thus, India's appeal will go into the void. Legally, **India will not be required to comply with the panel rulings till the time its appeal is heard**.
- Under the WTO law, **Retaliatory action** in the form of trade sanctions can be imposed only after the **authorisation of the Dispute Settlement Body**. The WTO law does not allow countries to impose trade sanctions when an **appeal is pending**.
- The EU and a few other WTO member countries have created an alternative appellate mechanism; the **Multi-Party Interim Appeal Arbitration Arrangement (MPIA)**. However, India is not a party to this and will not use it to resolve this dispute.

What are the positive impacts of high tariff rates?

- High tariff rates has **protected domestic electronics industry** from **cheap imports from China**, supported by subsidies provided by the Chinese Government.
- Protection from dumping of electronics imports has been supplemented by incentives to domestic industry, increase in investments leading to **expansion in exports of electronic goods**.

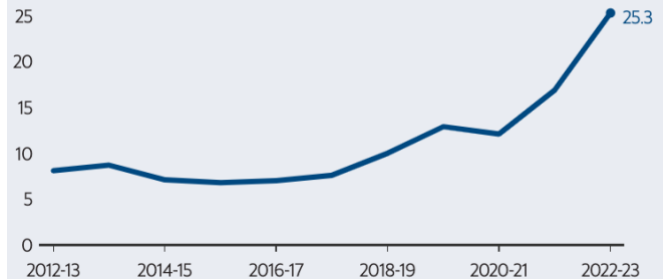
Why is a high tariff policy not ideal?

- **Value addition** in the mobile manufacturing industry in India **has been low**, barely crossing the 10% level. The electronics sector continues to be a major component of India's trade deficit. Growth, wage level and job creation in the sector will remain below India's competitors unless it introduces **more open policies** that do not rely on tariffs and protectionism.
- **Tariffs are a tax paid by Indian consumers.** They have to purchase electronics equipment at a higher price. Tariffs reduce the welfare of the people and **make India high-cost and uncompetitive economy.**
- There are **geopolitical implications** of high tariffs. It can result in alienating its closest economic and geopolitical partners.
- High Tariffs can only be a short-term measure rather than a long-term strategy.

India should **develop domestic competitiveness** by **lowering costs** through measures like improved infrastructure, transportation and uninterrupted access to utilities (like electricity). (Refer EPIC April 2023 for Growth in Electronics Exports and EPIC February 2022 for Manufacturing of Semiconductors in India).

Electronics exports soar to lifetime highs in FY23, here's how it shaped in the past decade

Exports of electronic goods* (\$ bn)











Source: Mint. India's electronics exports have risen from US\$ 6.8 billion in 2015-16 to US\$ 25.3 billion in 2022-23.

5. Quantum Technologies: Uses, Challenges and India's Initiatives

News: The Union Government has approved INR 6,000 Crore for the National Quantum Mission. Quantum Computing and Technologies will have a profound impact on multiple sectors of the economy.

What is Quantum Computing?

- Quantum Computing is an emerging field of physics and engineering, which **relies on the principles of quantum mechanics**. Quantum mechanics describes the unique behaviour of matter and energy at the atomic and subatomic level ($\sim 10^{-10}$ m or less).
- Quantum Computing is a type of computation that harnesses the collective **properties of quantum states**, such as **superposition**, **interference**, and **entanglement**, to perform calculations.
- **Fundamental Units:** Classical computing uses **bits as its fundamental units of data** (value either 0 or 1 but not both). Quantum computing uses **quantum bits (qubits)**.
- **'Superposition'** means particle **can exist in multiple states** (both 0, 1) **at the same time**. Qubits (unlike bits) can represent data as 0, 1, or **both 0 and 1 simultaneously**. This allows quantum computers to perform complex calculations and solve problems that are infeasible for classical computers.

| Quantum Computing | Vs. | Classical Computing |
|--|-----|--|
|  <p>Calculates with qubits, which can represent 0 and 1 at the same time</p> | |  <p>Calculates with transistors, which can represent either 0 or 1</p> |
|  <p>Power increases exponentially in proportion to the number of qubits</p> | |  <p>Power increases in a 1:1 relationship with the number of transistors</p> |
|  <p>Quantum computers have high error rates and need to be kept ultracold</p> | |  <p>Classical computers have low error rates and can operate at room temp</p> |
|  <p>Well suited for tasks like optimization problems, data analysis, and simulations</p> | |  <p>Most everyday processing is best handled by classical computers</p> |

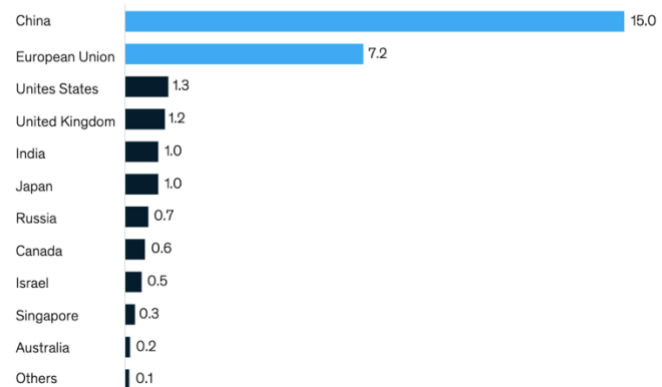
- **‘Entanglement’** is a phenomena where two or more particles **are inextricably linked** and **mirror each other** exactly, **even when separated by great physical distance** (i.e., change in one particle will produce a change in the other entangled particle instantaneously even if far apart). Entanglement allows for **faster and more efficient information processing**, as changes in one qubit can simultaneously affect the entangled qubits.
- **Parallelism and Problem-solving Capabilities:** Due to superposition and entanglement, quantum computers can **perform multiple calculations simultaneously**. Classic computers process data **sequentially** (one after the other). The computing power of quantum computers increases exponentially (by a factor of 2) with increase in qubits. This inherent parallelism allows them to solve certain problems much faster than classical computers,
 - Quantum computing has the potential to solve complex problems in areas such as **cryptography**, optimization, materials science, computational chemistry (like drug discovery, making Li-ion batteries more efficient), Financial portfolio optimization, Logistics etc. that are currently intractable for classical computers.
- However, **quantum computers are not intended to replace classical computers** but **complement them** by tackling specific types of problems.

Why should India focus on Quantum Computing?

- **Wide Applications of Strategic Importance:** Countries taking a lead in quantum technologies can control development and evolution of new technologies. Quantum computing capabilities will impact Internet-of-Things, AI/ML, robotics and will be the **foundation of knowledge economy**. It can help **overcome limitations of classical computing**.
- **Economic Benefits:** According to a Nasscom-Avasant report, the adoption of quantum technologies across industries could potentially **add US\$ 280-310 billion value to the Indian economy by 2030**. Manufacturing, high-tech, banking, and defence sectors will remain at the forefront of quantum-led innovation.
- **Global Competition:** China is expending large amount of resources on development of Quantum technology capabilities. China can **control several strategic technologies** in future e.g., quantum computing can make traditional encryption technologies vulnerable to hacking. **Quantum cryptography can make communications more secure**. India must catch-up fast to prevent any advantage to China. China has launched satellite **Micius** that has enabled space-based quantum communications.
- **Complex Issues:** Quantum computing can help **address complex global issues** like climate change, disease outbreaks, and resource management etc. Quantum computing capabilities can help India be at the forefront of addressing these challenges.
- **Growing Demand:** According to The Quantum Revolution in India, The quantum ecosystem in India is growing at an accelerated pace with support from government agencies and participation from the academia, service providers, and the start-up community.

China and the European Union lead significantly on public funding for quantum computing.

Announced planned governmental funding,¹\$ billions



Source: McKinsey. China is spending more on quantum computing research than the combined spending of all other countries.

What are the associated challenges?

- Quantum computers are **highly prone to interference** and can give **erroneous results**. Scientists are working to improve accuracy. A lot of **engineering barriers need to be overcome** to create large quantum processors.
- Most quantum computers cannot function **without being super-cooled to a little above absolute zero** temperature since **heat generates error or noise in qubits**. Expanding quantum computing will **increase ecological footprint** due to high cooling requirements. Quantum processors also need radiation shielding and protection against external shocks to preserve superposition states.
- Finding the right talent is another big hurdle as there is an **acute shortage of candidates with doctorates** in quantum physics, engineering, and statistics.
- A **comprehensive multi-stakeholder network** is amiss. It is not clear whether India will focus on near-term quantum applications or long-term applications or both. **Translating research into real-world applications** should be at the core of India's quantum efforts.
- Metrics to assess the outcomes of India's quantum efforts are not clearly defined. Merely achieving quantum supremacy will not necessarily safeguard India's national interests.
- India **lacks the capability to domestically manufacture most hardware** used in quantum computing. It is another strategic sector where **India is import-dependent**.
- India's **funding for quantum research is much less** compared to China.
- IP Protection:** India needs to improve its intellectual property (IP) protection and technology transfer mechanisms to encourage innovation and safeguard researchers' work in quantum computing.

India's Initiatives for Quantum Technologies

- National Quantum Mission:** It is an 8-year project aimed at developing **Quantum Computing, Communication, Sensing Technologies and Materials**. It will nurture and scale up **scientific and industrial R&D** and **create an innovative ecosystem** in Quantum Technology.
- QuEST:** The Department of Science and Technology launched the **Quantum-Enabled Science and Technology** (QuEST) initiative to invest INR 80 crores for infrastructure and research.
- Quantum Computer Simulator (QSim) Toolkit:** It provides the quantum development environment to academicians, industry professionals, students, and the scientific community in India.
- Research and Development:** Institutions like Indian Institute of Science (IISc), the Tata Institute of Fundamental Research (TIFR), and IITs are undertaking research in projects like quantum cryptography and simulations.
 - The **Indian Army** has established a quantum research facility in Madhya Pradesh, for **quantum technologies for military applications** like secure communication, advanced sensing capabilities.
 - Scientists from the Department of Space jointly demonstrated quantum entanglement with real-time **Quantum Key Distribution (QKD)** between 2 buildings separated by a distance of 300 m.
- Start-ups:** Quantum computing startups, such as QNu Labs and QuScTec, are working on developing quantum algorithms, hardware, and software solutions to tackle real-world problems.
- Skill Development:** Several IITs are focusing on developing quantum expertise by offering **specialized courses and degrees** in quantum computing and related fields.

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Potential Applications of Quantum Computing

Secure Communications, New Medicine and drug development, Improved Weather and Climate Predictions, Enhanced AI Models, Better Logistics and Supply Chain solutions, Better Investment Strategies among others.

What should be the approach going ahead?

- Invest in Facilities:** The Government and private sector should invest in building state-of-the-art research facilities and providing resources for quantum computing development.
- Collaboration:** The Government should cooperate with the **academic institutions, private sector and friendly nations** who are working to address the critical bottlenecks of quantum computing. Makers Lab (Tech Mahindra) has announced it has set up a quantum centre of excellence called QNxT in Finland. IBM has partnered with top-tier academic institutions in India to provide **access to IBM quantum systems**. **Microsoft Garage India** has joined hands with IIT Roorkee to conduct **lectures on quantum computing** for an entire semester.
- Increase Funding:** Both public and private entities should increase funding and investment in quantum computing research, development, and innovation.

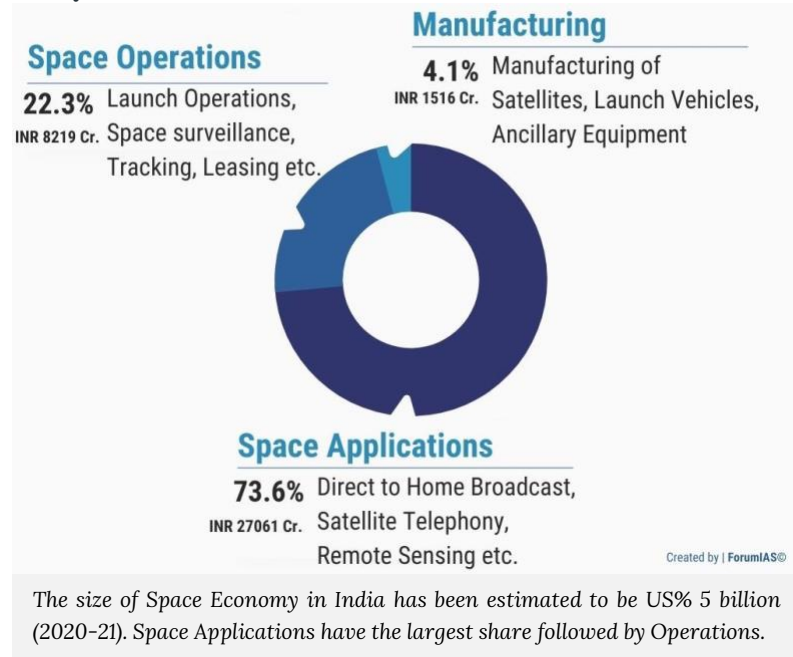
- **Education and Training:** The focus should be on **enhancing education and training programs** in quantum computing, including specialized courses and workshops to build a strong talent pool.
- **Government Policies:** The Government should develop policies that support and encourage the growth of the quantum computing sector, including **incentives for R&D**, and **establishment of quantum computing hubs**.

6. India's Space Policy, 2023

News: The Union Government has approved India Space Policy 2023.

What is the need for the Indian Space Policy 2023?

- **Regulatory Framework:** Without a clearly defined space policy, it is challenging to regulate and supervise the activities of various stakeholders in the space sector.
- **Untapped Potential:** The Indian space sector has been, till recently, dominated by the Government. The policy is needed to **tap into the potential of the private sector** and start-ups.
- **National Security:** Space sector has strategic importance. Space Policy is need to ensure the strategic interests are secured while allowing for innovation and progress through private sector collaboration.
- **Increasing Global Competitiveness:** India's share in the space market is ~2%. The policy is required to increase the competitiveness of Indian space companies on the global stage and position them as viable alternatives to existing players.
- **Economic Implications:** The space sector is **capital-intensive** and has **high economic risks**. There is a need for a policy that **could guide investments, ensure profitability, and manage the economic implications of space activities**.



What are the key provisions of the Indian Space Policy 2023?

- The policy delineated the roles and responsibilities of **ISRO**, space sector PSU **NewSpace India Limited (NSIL)** and the **Indian National Space Promotion and Authorization Center (IN-SPACe)**.
- It **allows the private sector** to take part in end-to-end space activities that include building satellites, rockets and launch vehicles, data collection and dissemination.
- **ISRO:** ISRO's roles has been rationalized.
 - It will **not have any operational and production work** for the space sector and focus its energies on **developing new technologies**, new systems and R&D.
- **NSIL:** The **operational part of ISRO's missions will be moved to the NSIL**.
 - It will be responsible for **commercialising space technologies and platforms** created through public expenditure.

- It will service the **space-based needs of users**.
- **INSPACE** will be the interface between ISRO and Non-Governmental Entities (NGEs).
 - It will act as the **single window agency** for the authorisation of space activities by Government entities and NGEs.
 - It will work with both Industry and Academia to **widen the space ecosystem** and enable industry-academia linkages.
 - It will **identify and facilitate transfer of technologies** developed by ISRO TO NGEs.
 - It will encourage NGEs to participate in space exploration and having a human presence in outer space. It will ensure necessary clearances for any space object intended to be launched.

What are the advantages of the Indian Space Policy 2023?

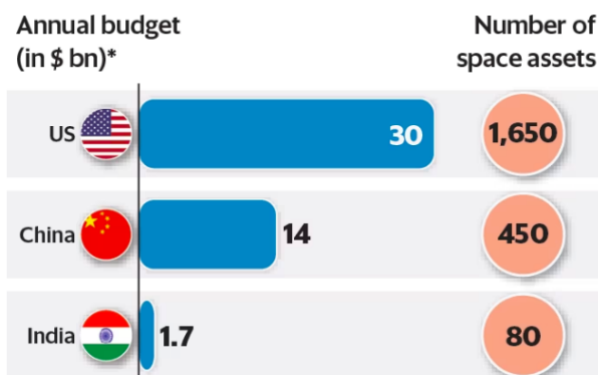
- **Clarity of Roles:** The policy has clearly defined the roles of all entities like NSIL, IN-SPACe, ISRO.
- **Fostering Innovation:** The Policy **encourages private sector participation**, which brings new ideas, innovation, and competition into the Indian space sector. This could lead to the development of more advanced technologies and efficient processes, driving the overall growth of the sector.
- **Economic Growth:** The entry of private sector and start-ups in the sector will lead to economic growth and job creation. The policy will **spur investments** and create **high-tech jobs**.
- **Accessible Space Technology:** Private competition will make space technology and services more accessible and affordable. It will benefit sectors like communication, navigation, earth observation etc.
- **Encouraging Entrepreneurship:** It will promote entrepreneurship in the space sector.
- **Streamlining Regulations:** The policy streamlines the regulatory process for space activities by creating a **single-window clearance system**, this makes it easier for businesses to navigate the regulatory landscape and encourages more entities to participate in space activities.

What are the challenges in the implementing Indian Space Policy?

- **Balancing Security and Growth:** Striking a balance between encouraging involvement of private sector and ensuring national security is a significant challenge.
- **Investment:** India's space budget is much lower than the US and China. Attracting adequate funding and investment for private space ventures could be a challenge, particularly for **capital-intensive projects** that may not have **immediate revenue generation potential**. Investors may not support projects with **long gestation periods** and uncertain returns.
- **Global Competition:** India's private sector will face intense competition from established global players like SpaceX and Blue Origin.
- **Developing Skilled Workforce:** The space sector requires highly skilled professionals with specialized expertise in various fields. Developing and retaining a skilled workforce, given the competition for talent from established global space companies, will require creative solutions.

Lagging competition

India has fewer space assets when compared to key countries.



Source: Mint. Space budget of the US and China is 17 and 8 times of India's space budget respectively.

- **Infrastructure:** Developing the necessary infrastructure for private companies to operate, such as launch pads, ground stations, and testing facilities, requires significant investment and planning. Ensuring that these resources are readily available and accessible to private players is a challenge.
- **Technology Transfer:** The Government must create an environment that encourages collaboration and sharing of resources, expertise, and technology while protecting intellectual property rights. The technology transfer process between ISRO and private entities should be simple.
- **International Collaboration:** Ensuring compliance with international norms and fostering collaboration with global partners will be crucial to India's success in the space sector. Navigating international treaties, agreements, and regulations in the space sector can be challenging for private companies.

What should be the approach going ahead?

- **Robust Regulatory Framework:** A comprehensive, efficient, transparent, regulatory framework should be established. This will help streamline the approval process for private companies, encourage compliance, and ensure security concerns are adequately addressed. The Government must ensure that **sensitive information and technologies do not fall into the wrong hands** while promoting innovation and growth.
- **Facilitate Funding:** The Government should facilitate access to funding for private players. This could include setting up dedicated funds, tax incentives, or other financial support mechanisms.
- **Space Ecosystem:** Efforts should be made to cultivate a vibrant space ecosystem in India, encouraging the growth of start-ups. This could involve hosting **space technology events**, fostering **mentorship programs**, and **encouraging collaboration** between different players in the space sector.
- **Research and Development:** R&D should be encouraged through provision of grants and facilitating private investment in the sector.

7. National Policy on Rare Diseases, 2021: Provisions and Concerns

News: The Union Government has given full exemption on basic customs duty for all imported drugs for the treatment of all Rare Diseases listed under National Policy for Rare Diseases, 2021.

What are the challenges associated with Rare Diseases?

- **Varying Definitions:** Different criteria to classify rare diseases results in inconsistencies and impacts the access to treatment and research and development.
- **Diagnosis of Rare Diseases:** Often correct diagnosis of rare diseases may take up to 7 years because:
 - Lack of awareness among primary care physicians.
 - Lack of adequate screening and diagnostic facilities.

Misdiagnoses are common.

- **Research and Development:** There is relatively little knowledge about the pathophysiology or the natural history of these diseases. Small pool of patients makes research difficult. There is lack of published data on long term outcomes of treatment.

Rare Diseases

- There is **no single, agreed-upon definition of Rare Diseases**. Diseases are classified as rare based on prevalence of the disease per 1,000 or 10,000 people.
- According to the WHO, Rare diseases are **debilitating lifelong disease** with a prevalence of **1 or less, per 1000 population**.
- Nations classify rare diseases based on their **unique populations, healthcare infrastructures**, and factors like **disease severity, threat to life, availability of alternative treatment options**, etc.).
 - **US:** Disease that affects fewer than 200,000 patients in the US (or 6.4 in 10,000 people).
 - **EU:** Disease that affects fewer than 1 in 2,000 people (5 in 10,000 people).
 - **Japan:** Diseases with fewer than 50,000 prevalent cases (0.04% or 4 in 10,000) in the country.
- According to the **National Health Portal** (Government of India), there may be ~7,000 rare diseases. ~70% of rare diseases are genetic in origin.
- Globally, there are 300 million people living with a rare disease. India has close to **50-100 million people** who are affected by rare diseases. **~80% of patients suffering from rare diseases are children**.
- Example of rare disease include Inherited cancers, Autoimmune disorders, Congenital malformations, Hirschsprung's disease, Gaucher disease, Cystic fibrosis, Muscular dystrophies and Lysosomal Storage Disorders (LSDs).

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• Challenges in Treatment:

- **Unavailability of Treatment:** About 95% rare diseases have no approved treatment and less than 1 in 10 patients receive disease specific treatment. A therapy may not be available for the disease even in case of correct diagnosis.
- **Prohibitive Cost of Treatment:** As the prevalence is very low, drugs for rare diseases have a very limited market. Hence, Pharmaceutical companies do not undertake R&D to develop drugs for rare diseases. Rare diseases are also called 'orphan diseases' and drugs to treat them are called 'orphan drugs'. The limited drugs available for rare diseases are prohibitively expensive.

What are the concerns associated with the Policy?

- **Lack of Definition:** The Policy does not define rare disease in India due to lack of adequate data. It has provided for creation of a hospital-based **National Registry for Rare Diseases** under the ICMR to collect the epidemiological data for rare diseases. Absence of definition will impact diagnosis and treatment.

- **Neglect of Group 3 patients:** Patients with Group 3 disorders require sustainable treatment support. Due to absence of long-term funding support, they are at **greater risk and dependent upon crowd-funding**, which is not very reliable.

- **Lack of support from States and UTs:** National Registry has been set up by ICMR (in 2017) to prepare a database of rare diseases in India. Only 12 States and 4 UTs have approved institutions that have the facility of qualified investigators for the identification and diagnosis of rare diseases.
- **Absence of Proper Mechanisms:** The policy does not lay out clear guidelines regarding the coordination required among various stakeholder institutions. The **framework for reporting the data** from health care workers to tertiary hospitals, Centres of Excellence, and *Nidan Kendras* etc. is absent. **Absence of referral mechanism** will create hurdle in building the National Registry.
- **Cost Sharing:** The Policy says that the Union Government will cover costs, but there is no clarity on the implementing the proposed benefits. The policy lacks a cross-control system for diagnosis, preventive, and financial aid.
- **Financial Support:** All diseases are proposed to get the same amount of money (INR 20 lakh), irrespective of treatment costs incurred (whether INR 10 lakh or 10 crore). For funds to be used more effectively, a cap on financial help needs to be set by disease, and a more centred approach to the problem is needed.
- **Empanelment:** There is no guideline on **empanelment of hospitals** and **claim of funds** after diagnosis.

Salient Features of National Policy for Rare Diseases

- **Aim:** Lower the incidence and prevalence of rare diseases based on an integrated and comprehensive preventive strategy. The strategy includes **awareness generation, counselling programmes, providing affordable Health Care** etc.
- **Categorisation:** Rare diseases categorised into 3 groups:
 - **Group 1:** Disorders amenable to one-time curative treatment.
 - **Group 2:** Diseases requiring **long term or lifelong treatment** with relatively lower cost of treatment and documented benefits.
 - **Group 3:** Diseases for which definitive treatment is available, but **require lifelong therapy** and are costly.
- **Government Support:** Provide **financial support of up to INR 20 lakh** under the Umbrella Scheme of *Rashtriya Arogya Nidhi* for treatment of those rare diseases listed under Group 1.
 - About 40% of the population, eligible under *Pradhan Mantri Jan Arogya Yojana*, will be eligible for assistance.
 - For group 2, the State Governments can consider supporting specific patients.
- **Voluntary Crowdfunding:** The Government will assist in **voluntary crowd-funding** for the treatment of Group 3. It will be difficult to fully finance the treatment of high-cost rare diseases of Group 3.
- **Centres of Excellence:** Boost **tertiary health care facilities** for preventing and treating uncommon diseases by designating certain **premier Government tertiary hospitals** as 'Centres of Excellence'. These would receive up to INR 5 crore for **upgrading testing facilities**.
- **Nidan Kendras:** *Nidan Kendras* will be set up by the Department of Biotechnology (DBT) under **Unique Methods of Management and treatment of Inherited Disorders (UMMID)** project for genetic testing and counselling services. These Kendras will be set-up for **screening, testing, and counselling** of rare diseases and also provide treatment if the facilities exist.
- **National Registry for Rare Diseases:** Nationwide hospital-based registry of rare diseases will be created so researchers have appropriate data and definitions.

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- **Drug Manufacturing:** The Policy states that the pharmaceutical industries would be encouraged to develop drugs for rare diseases with appropriate policy support (like tax benefit and research grants etc.). However, **no such policy has been formulated so far**. The absence of incentives to domestic drug manufacturers to invest funds into the R&D severely limits the ability to develop new drugs.

What should be done going ahead?

- **Comprehensive Definition:** A more reliable approach to arriving at a definition could be based on the factors like location, level of rarity, severity among others.
- **Awareness Generation:** There is a need to create awareness amongst general public, patients and their families, training the doctors for early and accurate diagnosis, standardization of diagnostic modalities and development of newer diagnostic and therapeutic tools.
- **Collaborations:** There is need to explore **international cooperation for research** and collaborations with the physicians who work on any rare disease. This will help **gain a better understanding of patho-physiology of these diseases**. In addition, there is a need to **review and modify clinical trial norms** keeping in mind the particular challenges in rare diseases.
- **Transparency:** There should be transparency in setting prices and **price control for drugs for rare diseases**.
- **Center-State Cooperation:** Public Health and Hospitals are State subjects. The Union Government should encourage and support the States in their endeavour towards screening and prevention of rare diseases through Centres of Excellence and *Nidan Kendras*.
- **Policy on Orphan Drugs:** The Government must come up with appropriate policy measures for **supporting R&D and drug development for rare diseases**.

8. Great Nicobar Development Project

News: Environment activists have claimed that the local administration has restricted entry of outsiders to the Great Nicobar Island. The NGT has temporarily stayed the Great Nicobar Development Project and constituted a committee to revisit the environmental clearances granted to the Project.

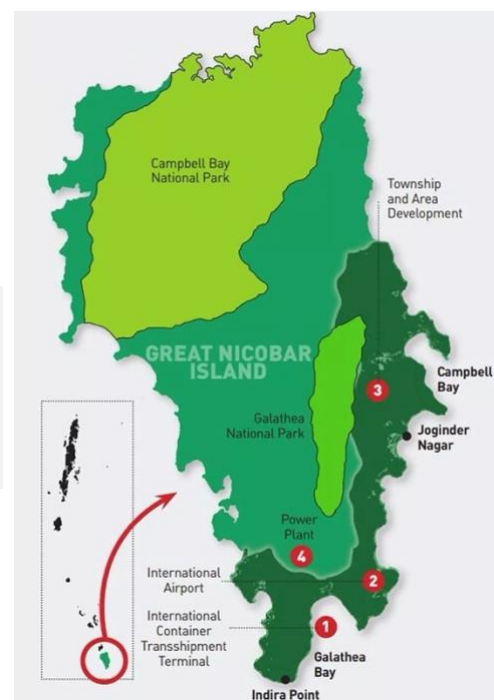
What are the development proposals?

- The project has multiple components
 - An **International Container Transshipment Terminal (ICTT)** with capacity of 14.2 million TEUs (20-foot equivalent units) to be developed in phases. The port will be controlled by the Indian Navy.
 - A **greenfield airport** with peak handling capacity of 4,000 passengers per hour.

Global Initiatives Regarding Rare Diseases

- **USA:** Orphan Drugs Act, incentivises industry by way of **market exclusivity, grants** to researchers and **tax incentives** on expenditure incurred during drug development.
- **European Union:** The **European Joint Programme on Rare Disease** focuses on research for treatment of rare diseases.
- **United Kingdom:** The National Health Service (NHS) England provides that the treatment for Spinal Muscular Atrophy (SMA) will be made available to the youngest and most severely-affected (SMA Type 1) patients immediately by **Biogen** (Pharma company that manufactures treatment for SMA), with NHS England offering funding on **National Institute for Health and Care Excellence (NICE)**.
- **Singapore:** A **Rare Disease Fund** has been created to fund 5 medicines to treat 3 rare disease conditions.
- **Australia:** Subsidised access is provided to expensive and lifesaving drugs for eligible patients.

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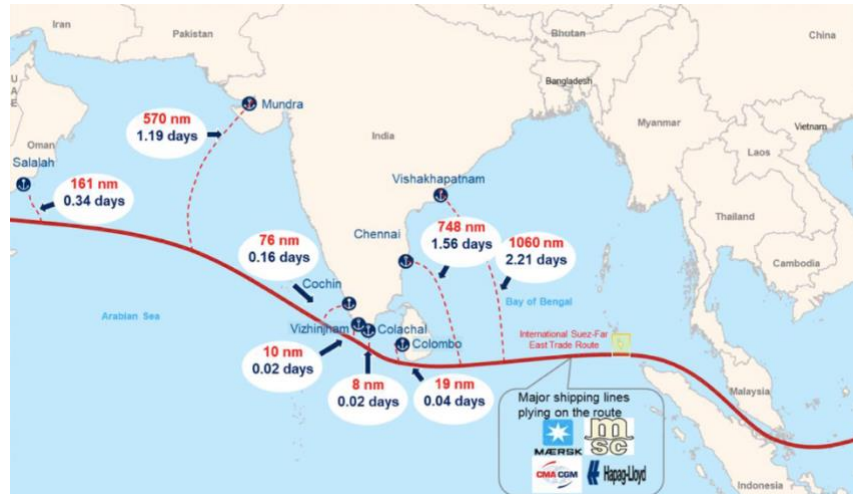


Source: The Frontline. Location of major projects within the island (1) ICTT; (2) Airport; (3) Township; (4) Power Plant.

- A **Diesel-Gas-Solar-based power plant** with capacity of 450 MVA.
- A greenfield **Township and Area Development Project** with the systems for water supply, waste and storm water, electrical transmission and distribution, roads, public transit, and solid waste etc.

What are the rationale and expected benefits from the Project?

- **Transshipment Hub:** At present, Singapore and Colombo are the major cargo transshipment hubs. Due to geographical and logistic constraints, existing ports on the east and west coasts of India do not have berthing capacity for heavy inter-continental vessels with draft over 15 m. Hence, India is **losing substantial revenue** in terms of facilities. The **unique location of Great Nicobar Island** and the



Source: NITI Aayog, Location Advantage of Great Nicobar Transshipment Hub.

greater depth of sea near coast (20 m depth within 1 Nautical Mile from the sea coast) offers unique opportunity for the island to become international transshipment hub.

- **Strategic Interests:** The Airport will have dual military-civilian functions. The islands are very proximate to the strategic Malacca strait. It can **enhance India's strategic depth in the Indian Ocean** and counter rising presence of the Chinese navy.
- **Operations and Maintenance:** The greater depth of sea near the coast will reduce the need of regular dredging. The port is expected to have lower operational and maintenance costs for comparable ports.
- **Livelihood Opportunities:** The entire project will create thousands of livelihood opportunities. ICTP alone is expected to create more than 4,000 direct and indirect jobs.
- **Tourism:** The project will enhance tourism potential of the islands. This will bring in economic prosperity in the region.

What are the concerns with the project?

- **Threat to Biodiversity:** The project is adjacent to nesting sites of **Giant Leatherback Turtles** (Galathea Bay) and **Nicobar Megapode** (both IUCN: Vulnerable). The island is **endemic** to 11 species of mammals, 32 species of birds, 7 species of reptiles and 4 species of amphibians. The area harbours **coral reefs** as well. The project will threaten the survival of multiple species. The area was designated as a **biosphere reserve** in 1989, and made part of UNESCO's 'Man and Biosphere Programme' in 2013.
- **Loss of Forest Cover:** The island has pristine forest cover with more than 650 species of angiosperms, ferns, gymnosperms, bryophytes and lichens among others. The project will lead to the diversion of 15% of its forest area and the felling of 8.52 lakh trees in phases. This goes against India's Climate Action commitment. According to the EIA Report, compensatory afforestation will be done in Haryana and Madhya Pradesh. This will not be able to replace the biodiversity rich forests of Great Nicobar island.
- **Tribal Rights:** ~850 square kilometres of the island's area is notified as **tribal reserve** under the **Andaman and Nicobar Protection of Aboriginal Tribes Regulations, 1956**. The **Shompen** and

Nicobarese tribes are among the world's **least studied and most vulnerable tribal groups** that still rely on hunting and food gathering. The project may negatively impact their livelihood.

- **Population Pressure:** The development projects will attract lot of people to the island. This will impact local ecology.
- **Seismic Hazard:** The island lies in **Zone V (seismically most active zone)** and is prone to maritime hazards like tsunamis. The coastline of the island sank after the 2004 Indonesia earthquake. The island may still be sinking, and thus may not be suitable for large infrastructure projects.

What should be done?

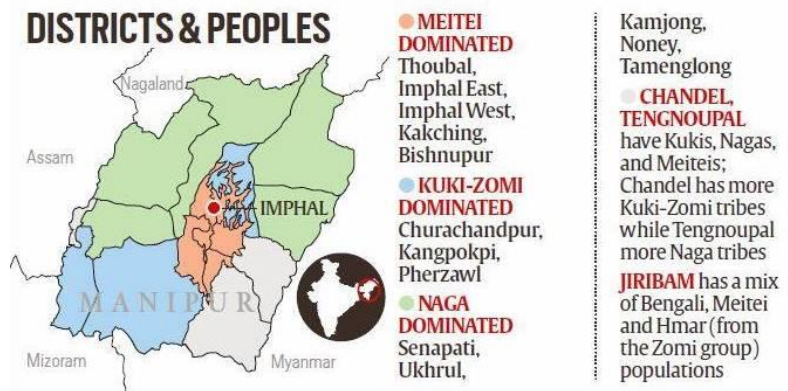
- Given the concerns regarding national security and rising Chinese presence in the Indian Ocean, the **project may be imperative.**
- However, the Government must **ensure minimal damage to the environment.**
 - This can be done by rationalizing some aspects of the project including size and location of the project near the tribal areas. The **Shompen Policy of 2015** calls for giving priority to tribal rights over large scale development proposals.
 - Construction of infrastructure can be done in environmentally friendly manner e.g., adherence to **GRIHA code.**
- Government can collaborate with friendly countries like Japan that have demonstrated capabilities in undertaking island development in a sustainable manner.

9. Unrest in Manipur: Implications for Regional Security

News: Manipur has witnessed violent clashes between two tribal communities. The clashes can have security implications for the entire north-east region.

What are the reasons behind the unrest in Manipur?

- **Demand for Scheduled Tribe Status:** The Manipur High Court had asked the State Government to send a recommendation to the Union Government on the **Meiteis' demand for Scheduled Tribe status.** This triggered protests by tribal groups fearing a loss of reservation benefits.



Source: Indian Express. The Manipur State has multiple tribes, each dominant in different districts. Nagas dominate northern districts bordering Nagaland, Meiteis are prominent in the central (valley) region surrounding the capital Imphal, Kukis are present in South Manipur and hills surrounding Imphal. All tribes share tense relations with each other.

- **Land Issues:** The Meitei community is numerically in the majority. They mainly inhabit the Imphal Valley (~10% of the State's total land area). The competition for land and resources has intensified tensions between the Meiteis and hill tribes (Kukis).
- **Historic Tensions:** The Meiteis and hill tribes (Kukis) vie for **political representation, resources and cultural recognition** for a long time. Their relationship has been tense since long.
- **Role of Insurgent Groups:** The State Government had launched an anti-encroachment drive to protect the forests. Some insurgent groups held rallies against the Government initiative. This led the State

Government to withdraw the **Suspension of Operations (SoO) Agreement** with the Kuki National Army (KNA) and the Zomi Revolutionary Army in March 2023. They may have a role in fomenting the current unrest. SoO was a peace agreement (signed May 2008) between Government of India and Kuki groups.

- **Lack of Economic Development:** Economic underdevelopment in the region has exacerbated inter-ethnic tensions, as communities compete for scarce resources and opportunities.
- **Governance Issues:** The Government's handling of the situation, such as the suspension of mobile internet and the application of the Armed Forces (Special Powers) Act (AFSPA), has been disruptive and has not effectively addressed the root causes of the unrest.
- **Myanmar Crisis:** The military coup in Myanmar in 2021 and subsequent unrest have led to a continuous influx of Burmese refugees into Manipur. This is complicating the ethnic balance in the State. Many refugees share kinship ties with Manipur's Kuki tribe.
- **Drug Trafficking and Cross-border Crime:** The proximity to the Golden Triangle and porous border make Manipur vulnerable to drug trafficking and other cross-border criminal activities.

What will be the impact of Manipur unrest on regional security?

- **Social Cohesion:** The violence on ethnic lines will have a negative impact on social cohesion. It can undo the gains made in recent times in controlling various insurgencies in the region. Internal displacement of population leading to pressure on resources on neighbouring regions can fuel further tensions.
- **Economic Impact:** Government has launched several initiatives to bring the region into mainstream like improving connectivity, infrastructure etc. Social unrest can halt the development activities and flow of investments in the region.
- **External Relations:** Strife in the North-east region can impact India's relationship with Myanmar and Bangladesh. An unstable North-east can hamper India's Act East Policy.
- **Border vulnerability:** The unrest in Manipur can make the border unstable and lead to increased cross-border criminal activities such as smuggling, drug and arms trafficking. This could make the region's borders more vulnerable and affect overall security.
- **Regional Stability:** All States in the Northeast are vulnerable to ethnic conflicts and insurgencies. Worsening situation in Manipur may cause dormant groups in other States to become active and cause wider instability in the region.
- **Human Rights Violations:** The ethnic violence has witnessed gross human rights violations with killings of large number of innocent civilians, mostly women.

Government's Response to Violence

- The Government has deployed **10,000 troops of Indian Army and Paramilitary forces** to restore order.
- **Internet services were suspended** for more than 5 days.
- **Section 144 of the Indian Penal Code (IPC)** was imposed. 'Shoot at sight' orders in 'extreme cases' were given to enforce the curfew.
- A panel led by a retired Chief Justice will be set-up to **probe the ethnic violence**.
- A **Peace Committee** would be set up under the Governor, the Security Advisor and members of the Civil society. Created by | ForumIAS®

What are the challenges associated with resolving unrest in Manipur?

- **Ethnic Complexity:** Presence of large number of ethnic tribes with differing interests makes it difficult to address grievances of all groups and reconcile them.
- **External Influence:** The insurgent groups are supported by China through Myanmar to create trouble in India's Northeast.
- **Development:** Despite Government initiatives, the region lacks economic development leading to disaffection among local population.
- **AFSPA:** The area under AFSPA has fallen, but it has not been withdrawn. Local communities view AFSPA as exploitative and draconian leading to violation of human rights.

What should be done going ahead?

- **Inclusive Dialogue:** The Government should engage all stakeholders, including various ethnic groups, in a dialogue to understand their grievances and find common ground. The **Mizoram Accord of 1986** with the Mizo National Front (MNF) serves as an example of successful engagement with all stakeholders.
- **Strengthen Governance:** The Union and State Government should strengthen local administration, and take steps to check corruption and inefficiency. Involvement of local communities in administration can lower grievances.
- **Economic Development:** The Governments should fasten the pace of execution of connectivity and other development projects. Focus should be on creating local livelihood opportunities that can reduce inter-community conflict for access to resources.
- **AFSPA:** The Government should review and rationalize the use of AFSPA. Gradually reducing areas under AFSPA will help build trust between the Government and local communities.
- **External Cooperation:** The Government should also cooperate with Government of Myanmar to reduce cross-border issues like smuggling, infiltration, drugs and arms trafficking etc.
- **Involvement of Civil Society:** Civil society organizations can help in conflict resolution and building peace and trust. The work of organizations like the Naga Mothers Association and the Northeast India Women Initiative for Peace in Manipur can be further supported and expanded.

10. India's Earthquake Disaster Preparedness

News: India was hit by 10 earthquakes of magnitude > 4.0 in February, March 2023. ~58% of the Indian landmass is vulnerable to earthquakes. India's preparedness to respond to a massive earthquake should be reviewed.

What are issues with India's Preparedness?

- India's policy on earthquake preparedness is primarily focused on structural aspects. It is guided by the **National Building Code (NBC)** and **Seismic Codes** by the **Bureau of Indian Standards**. The codes cover principles of seismic strengthening, selection of materials, and techniques for repair of buildings.
- However, many buildings have existed before these codes came into origin and **lack adequate safeguards as prescribed by the Codes**.
- Moreover, the **adherence to the Codes is poor**, with the implication that vast majority of buildings are vulnerable to the earthquakes.
- The Codes treat earthquakes as a problem of individual buildings and **lack a systems and holistic approach**.

SEISMIC ZONES IN INDIA

The Bureau of Indian Standard has grouped the country into four seismic zones
Intensity of earthquakes in different zones

| Seismic zone | Intensity on Modified Mercalli scale | Areas |
|---|--------------------------------------|--|
| ZONE V (Very severe intensity zone) | IX (and above) | Entire northeastern India, parts of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Rann of Kutch in Gujarat, part of North Bihar and Andaman & Nicobar islands |
| ZONE IV (Severe intensity zone) | VIII | The remaining parts of J&K and Himachal Pradesh, Delhi, Sikkim, northern parts of Uttar Pradesh, Bihar and West Bengal, parts of Gujarat and small portions of Maharashtra near the west coast and Rajasthan |
| ZONE III (Moderate intensity zone) | VII | Kerala, Goa, Lakshadweep islands, remaining parts of UP, Gujarat and West Bengal, parts of Punjab, Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Chhattisgarh, Maharashtra, Odisha, parts of Telangana, parts of Andhra Pradesh, Tamil Nadu and Karnataka |
| ZONE II (Low intensity zone) | VI (or less) | The remaining parts of the country |

What interventions are needed to improve the preparedness for earthquakes?

- **Adopt Best Practices:** Japan has **invested heavily in technological measures** to mitigate the damage from the frequent earthquakes. Similar measures should be adopted in Indian Codes.

- Skyscrapers are built with **counter-weights and other high-tech provisions** to minimise the impact of tremors.
- Small houses are built on **flexible foundations**.
- Public infrastructure is **integrated with automated triggers** that cut power, gas, and water lines during earthquakes.
- **Individual Building Level:** There is a need to create a system of **retrofitting existing structures** and **enforcing seismic codes** with more efficiency. The approach should have two measures:
 - Create a system of **tax-based** or **development rights-based incentives for retrofitting** building up to seismic codes. This will enable the growth of an industry around retrofitting and will generate a body of well-trained professionals and competent organisations.
 - Ensuring **better enforcement of seismic codes** through a similar model. The **National Retrofitting Programme** was launched in 2014 is a step in that direction. The RBI directed banks to **deny loans for any building activity that does not meet the standards** of earthquake-resistant design.
- **At Urban-Level: Surveys and audits** should be undertaken to can generate **earthquake vulnerability maps**.
 - These maps show the parts of the city that are **more prone to serious damage**. This should follow 4 criteria:
 - The **percentage of vulnerable structures** in the area.
 - The availability of **evacuation routes and distances** from the nearest open ground.
 - **Density of buildings** in the area.
 - **Location of nearest relief services** and the efficiency with which these services can reach affected sites.
 - Using such maps, enforcement, incentives, and response centres can be proportionally distributed across the urban terrain.
- A policy on earthquake preparedness will require a **visionary, radical and transformative approach**.
- Some areas such as dense historic city centres will still be beyond repair. They will require either **surgical retrofitting or revised town planning schemes**.

What can be the role of vernacular architecture in building earthquake resistance?

- Vernacular Architecture involves local or regional construction, using **traditional materials** and **local resources**. Vernacular Architecture is tailored to the **climatic, geographic, and socio-cultural needs** of specific communities, localities, and traditions.
- Traditional structural designs that are resistant to earthquakes include **Koti Banal** (Uttarakhand), **Kath Kuni** (Himachal Pradesh), **Bhunga** (Kutch), **Taq** (Kashmir) and **Ikra** (Assam). The unique features of these styles should be **suitably adapted** to make **earthquake-resistant structures** in seismically active zones.

Earthquake Resistant Vernacular Architecture

Koti Banal (Uttarakhand)

- These structures are made of **wood**.
- Wooden frames are filled with **local stones**.
- Timber-reinforced stone masonry architecture **transfers load directly to the ground without lateral movements** during earthquakes.



Kath Kuni (Himachal Pradesh)

- These structures use **alternating layers of wood and stone masonry**, held in place **without using mortar**.
- **Kath** means wood and **kuni** means corners.
- The horizontal **robust wooden connection on overlapped corners** and the dry masonry **transfer forces directly to the ground** without causing harm to the structure.



Bhunga (Kutch, Gujarat)

- They consist of a **single cylindrically shaped room**, with conical roof.
- The circular pan makes them more stable. One-half of house acts as an **arch against the lateral forces from seismic waves** in all directions.
- They are both earthquake and heat-resistant.



Ikra (Assam)

- They are designed as individual units instead of one continuous building to reduce the impact of the seismic forces.
- Lightweight materials are used in construction to provide more flexibility.
- The name comes from the local Ikra reed, which is extensively used in the construction process.



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Factly

Polity

1. Supreme Court Refers Nabam Rebia Judgment to 7-Judge Bench

News: The Supreme Court has referred the Nabam Rebia Judgment to a larger Bench, noting that it is in conflict with the 'Kihoto Hollohan' Judgment.

About the Supreme Court's Judgment in the Nabam Rebia Case

- **Article 163** of the Constitution requires the Governor of a State to act in consultation with the Council of Ministers in the exercise of his functions. The SC confirmed that the Governor does not enjoy broad discretionary powers and is always subject to constitutional standards.

- **Article 174** confers the Governor with the power to summon, prorogue or dissolve the Legislature of the State. The SC concluded that the Governor's discretion **did not extend to the powers conferred under Article 174**. Hence, he could not summon the House, determine its legislative agenda or address the legislative assembly without consultation.

- **Article 179(c)** of the Constitution provides that a Speaker may be removed from office by a resolution of the Assembly passed 'by a majority of all the then members.' The Constituent Assembly debates reveal that the **phrase 'all the then members' was preferred to 'members present and voting'** as it was precise. Hence, the Court concluded that **Speaker Rebia's decision to disqualify rebel MLAs was an attempt to overcome voting by 'all the then members' and evade disqualification**. Thus, it would be **constitutionally impermissible** for a Speaker of the House to adjudicate upon disqualification petitions under the anti-defection law while a motion of resolution for his own removal from Office of Speaker is pending.

Background to Nabam Rebia vs Deputy Speaker Judgment

- In November 2015, 21 sitting MLAs representing the ruling party in Arunachal Pradesh **rebelled against the Government**.
- 13 MLAs from the opposition party **sent a letter to the Governor** to communicate their displeasure with the Speaker and the Government.
- The Governor advanced the Assembly session from January 2016 to December 2015 and **listed the removal of the Speaker on the legislative agenda**.
- The Speaker, Nabam Rebia, **pre-emptively disqualified the rebel MLAs on the grounds of defection** before the Assembly could meet. During the meeting of the Assembly, the **resolution to remove the Speaker was adopted**.
- The Speaker challenged this dismissal in the Gauhati High Court. The **High Court stayed the disqualification of rebel MLAs** and dismissed the Speaker's plea. Subsequently, an appeal was filed before the Supreme Court
- The Court identified two broad issues.
 - Was the Governor's decision to **advance the Session of the Assembly** Constitutional?
 - Could the Speaker disqualify MLAs while a motion for his removal was pending before the House.

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SC's Referral to the Larger Bench

- The SC observed that some aspects were not considered in the Nabam Rebia judgment. One aspect was whether a temporary disablement of the Speaker is prone to **misuse by MLAs who anticipate disqualification petitions against them**. (Refer EPIC July 2022 for Issues with the Working of Anti-Defection Law).
- The Court further said that the Nabam Rebia verdict was in conflict with the Judgment in the **Kihoto Hollohan vs Zachillhu (1992)**. The Nabam Rebia verdict doubted the **ability of the speaker to remain neutral** while deciding disqualification petitions after a resolution to remove them is moved, the Kihoto Hollohan order of the SC had stated there was **no reason to doubt the independence and impartiality of the Speaker** when adjudicating such proceedings under the Tenth Schedule.

2. Use of Powers Granted to the Supreme Court under Article 142

News: The Supreme Court has held that it can directly grant divorce under Article 142 of the Constitution in cases where the marriage has irretrievably broken down.

About Exercise of Powers Under Article 142

- The powers under Article 142 are sweeping in nature but the SC has defined its scope and extent through its judgments over time.
- **Prem Chand Garg vs Excise Commissioner, UP (1962)**: The SC held that in order to do complete justice, the order passed must be **consistent with the Fundamental Rights** and the **substantive provisions of the relevant laws**.
- **Union Carbide Corporation vs Union of India (1991)**: The SC ordered UCC to pay US\$ 470 million in compensation for the victims of the tragedy. It clarified that prohibitions or limitations contained in ordinary laws cannot act as prohibitions or limitations on the constitutional powers under Article 142. **Limiting powers under Article 142 through a law** would convey the wrong idea that **statutory provisions can override a Constitutional provision**.
- **Jitendernath vs Jubilee Hills Coop. House Building Society (2006)**: It held that in its exercise of Article 142 no injustice should be caused to a person not party to the case.

Article 142

The Supreme Court in the exercise of its jurisdiction may **pass such decree or order** as is necessary **for doing complete justice** in any matter pending before it, and any decree so passed or orders so made shall be **enforceable throughout the territory of India** in such manner as may be prescribed by or under any law made by Parliament and, until provision in that behalf is so made, in such manner as the President may by order prescribe.

Criticism of Article 142

- The absence of a standard definition for the term 'complete justice' under Article 142 allows the possibility of its arbitrary exercise or misuse.
- Unlike the Legislature and the Executive, the Judiciary cannot be held accountable for its actions. Hence there is no check on its arbitrary use of Article 142.
- Critics say it leads to dilution of doctrine of separation of powers, as Supreme Court has ventured into domains of the other two organs while passing orders under Article 142.

3. High Court has no powers to direct changes to the ST List: Supreme Court

News: The Supreme Court has said that the High Court or State Government do not have the power to add, subtract or modify the Scheduled Tribes List.

About the Case

- A petition was filed in the SC challenging the direction of the Manipur High Court to consider the inclusion of the Meitei community in the Scheduled Tribe list.

Article 342(2)

Parliament may by law include in or exclude from the list of Scheduled Tribes specified in a notification issued under clause (1) any tribe or tribal community or part of or group within any tribe or tribal community.

About the SC Judgment

- The Supreme Court said that there were several earlier judgments which have held that the High Court could not direct the grant of ST status to a community.
- In **State of Maharashtra versus Milind (2000)** the Supreme Court had held that the State governments or courts or tribunals or any other authority cannot modify, amend or alter the list of Scheduled Tribes specified in the notification issued under clause (1) of Article 342.
- The SC held that a notification issued under Article 342(1) can be amended only by law to be made by Parliament. (Refer EPIC October 2022 for Addition of Communities to the Scheduled Tribe (ST) List and EPIC December 2022 for Procedure for Addition of New Communities to Scheduled Tribe List).

About the Demands for ST Status

- The **stakes of reservation** have become higher amid **economic liberalisation** and **neoliberal reforms**.
- Many marginalised sections not recognised as STs observe the benefits accruing to other ST groups. Such disparities can **spark inter-community tensions and conflicts**.
- At present, there are ~720 recognised STs in India. At least a thousand more groups are vying for recognition as STs.
- The Draft National Tribal Policy, 2006 observed that adding new communities to the list reduces the benefits to existing STs. Therefore, it should be done, only if there is **no room for doubt**.
- The Draft pointed to the problematical nature of the **official criteria for defining STs** laid out by the **B N Lokur Committee in 1965**. These criteria may not be relevant in present times and new criteria need to be evolved.
- **Justice Jasraj Chopra committee** was appointed in 2007 by the Rajasthan government to examine the demands of the Gujjar community for ST status. According to the Committee, a **national debate** should be initiated on the existing norms for according ST status to any community.

4. Supreme Court on Right to Statutory Bail

News: The Supreme Court has clarified that Courts could grant default bail without relying on the Ritu Chhabaria Judgment.

About Provisions Related to Bail

- The **Right to Statutory Bail** (Default Bail) is available to accused persons in cases when the investigating agency fails to complete its investigation within the **stipulated time**.
- **Section 167(2) of the Code of Criminal Procedure (CrPC)** provides a period of 60-90 days to investigators depending on seriousness of the offence. Accused can apply for the default bail after this period.
- In **Achpal vs State of Rajasthan (2018)**, the Court held that an investigation report filed by an **unauthorised investigating officer**, would not bar the accused from availing default bail.
- In **S. Kasi vs State (2020)**, the Court stated that even during the COVID-19 pandemic, the investigating agencies would not be allowed any relaxation for the **maximum stipulated period** of investigation. It could lead to additional detention of the accused.



Concerns with Functioning of the Process

- The protections related to bail have **eroded in practice**. Investigating authorities routinely file **incomplete** or **supplementary charge sheets** within the stipulated period to prevent the accused from **seeking default bail**. The investigating authorities also file charge sheets after the 60/90 day period but before the filing of default bail application by the accused.
- This violates the right to bail and nullifies protections against the misuse of the provisions.

Supreme Court's Viewpoint in Ritu Chhabaria Case

- The Supreme Court's decision in **Ritu Chhabaria** delegitimizes such illegal practices. It held that incomplete charge sheets filed by the police would not bar an accused from applying for default bail.

Supreme Court's Observations related to Provision of Bail



- **Joginder Kumar vs State of UP (1994)**: The Supreme Court stated that 'arrest and detention in police lock-up of a person can cause incalculable harm to the reputation and self-esteem of a person'.
- **Arnesh Kumar vs State of Bihar (2014)**: The Supreme Court observed that 'arrest brings humiliation, curtails freedom and cast scars forever'.
- **Satender Kumar Antil vs CBI (2021)**: The Supreme Court had issued guidelines on the aspect of grant of bail to accused who are not arrested during investigation on charge sheet being filed. The requisite conditions for the guidelines to apply: (a) Not arrested during investigation; (b) Cooperated throughout in the investigation.

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- The SC said the **right of default bail** under Section 167(2) of the CrPC is not merely a statutory right, but a **fundamental right** that flows from **Article 21 of the Constitution**.

- The Union Government has filed an application seeking review recall of the verdict. The SC said that the trial courts and High Court need not rely on *Ritu Chhabria Judgment* while considering plea for default bail. The Court will hear the review petition of the Government in July 2023. (Refer EPIC July 2022 for *The Supreme Court's Observations Regarding Provisions of Bail*).

5. Andhra Pradesh High Court Judgment on Regulation of Public Assemblies

News: The Andhra Pradesh High Court has struck down an order of Government of Andhra Pradesh that sought to regulate public meetings, processions, and assemblies on roads etc.

About the Judgment

- The Government sought to regulate public meetings or assembly on roads (without imposing a blanket ban) to prevent accidents like stampedes and ensure smooth movement of traffic.
- The State Government relied on **Sections 30, 30A and 31** of the **Police Act, 1861** to issue the directions.
- The High Court clarified that Section 30 of the Police Act only gives authorities the **power to regulate the conduct of assemblies**, processions, etc., on public roads. The power granted is limited to regulating assemblies, especially when there is blockage of road.
- The right to assemble or protest peacefully in streets, public places, etc. **cannot be restricted totally** by virtue of these sections of law. If the law-enforcement officer thinks that the assembly may cause a breach of peace, then she can ask the organisers to apply for a license and prescribe the conditions under which the procession can be held.
- Accident **cannot be used as a 'cause' to curtail the right to assemble on all other roads**.
- The HC said that the "right to assemble, to protest peacefully, and to express one's opinion freely" is an important freedom which cannot be taken away. **Freedom of speech is the "bulwark" of democracy** and is **regarded as the first in the hierarchy of liberties**. This freedom should not be curtailed on anyone's discretion and these rights can only be subject to a 'reasonable restriction'.
- The HC relied on the Supreme Court Judgment (2018) which laid down guidelines for peaceful assembly and regulating protests and demonstrations.

SC Guidelines in *Mazdoor Kisan Shakti Sangathan vs Union of India (2018)*

The Guidelines:

- Regulated the intended number of participants in such demonstrations.
- Prescribed the minimum distance from the Parliament House, SC, and the residences of dignitaries within which no demonstrations are allowed.
- Imposed restrictions on certain routes where the PM, Central Ministers, and Judges pass through.

- Disallowed demonstrations when foreign dignitaries are visiting a place or route.
- Disallowed demonstrators from carrying firearms, lathis, spears, swords, etc.

6. Supreme Court's Observation on PoSH Act

News: The Supreme Court has said that there are 'serious lapses' in the implementation of The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, (PoSH Act) forcing many women to leave their jobs.

Observations of the Supreme Court

- Working women are **reluctant to report instances of sexual harassment** either due to **uncertainty about whom to approach** or because of **their lack of confidence in the process** and its outcome.
- The Court referred to news reports that out of 30 national sports federations, only 16 had constituted the Internal Complaints Committees (ICCs) mandated under the PoSH Act.
- The majority of the ICCs either had an **inadequate number of members** or **lacked a mandatory external member**.
- The Court directed the Union, States and UTs to undertake a time-bound exercise to verify whether Ministries, Government organizations, authorities etc. have constituted ICCs under the Act.
- The bodies have been ordered to **publish the details of their respective committees** on their websites.

About the PoSH Act, 2013

- The Supreme Court had laid down **Vishaka Guidelines** in 1997 that focused on **prevention of sexual harassment of women at the workplace**.
- The PoSH Act was passed in 2013 to further strengthen the **Vishaka Guidelines**. The Act creates a mechanism for redressal of complaints.
- The law **expanded the definition of 'workplace'** beyond traditional offices to include organisations across sectors, including non-traditional workplaces. It covers unorganised and domestic workers. The Act **applies to all public and private sector organisations throughout India**.
- The Act has adopted a **'wide' definition of sexual harassment** that includes **physical contact** and advances, demand for **sexual favours**, making **sexual remarks**, showing **pornography** and other unwelcome **physical, verbal or non-verbal conduct of sexual nature**.
- The law requires any employer with **more than 10 employees** to form an **Internal Complaints Committee (ICC)**. It mandates every district to **create a local committee** to receive complaints from women working in firms with less than 10 employees and from the **informal sector**.
- It also provides **safeguards against false or malicious charges**.
- The Act prescribes **penalties for employers**. Non-compliance is punishable with a fine and repeated violations can lead to cancellation of license to conduct business.
- Offences under the Act are punishable with **rigorous imprisonment up to 3 years**, or with fine, or both.

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Procedures Prescribed in PoSH Act

- The PoSH Act mandates that **every employer must constitute an ICC** at each **office or branch** that has **10 or more employees**. The Act defines various aspects of sexual harassment and lays down procedures for action in case of a complaint.
- It is not compulsory for the aggrieved victim to file a complaint. If the woman cannot complain because of physical or mental incapacity or death or otherwise, her **legal heir may do so**.
- The complaint must be made **within 3 months** from the date of the incident. However, the ICC can "extend the time limit" if it is satisfied that the circumstances were such **which prevented the woman from filing a complaint** within the said period.
- After receiving the complaint, the ICC may either **forward the victim's complaint to the police** or it can **start an inquiry that has to be completed within 90 days**.
- The ICC has **powers similar to those of a civil court** in respect of summoning and examining any person on oath and requiring the discovery and production of documents.
- After the completion of enquiry, the ICC must provide a **report of its findings to the employer** within 10 days. The report must also be made available to both parties.
- If either the aggrieved woman or the respondent is not satisfied, appeal can be filed in a court within 90 days.

7. MoU between Assam and Arunachal Pradesh on Boundary Dispute

News: The Governments of Assam and Arunachal Pradesh have signed a Memorandum of Understanding (MoU) to end a 51-year-old interstate-boundary dispute.

About the MoU

- Assam and Arunachal Pradesh share an 804 km long boundary. The dispute in question is over 123 villages that stretch across 12 districts of Arunachal Pradesh and 8 of Assam.
- According to the MoU, **disputes over 34 of these villages stand resolved**. The disputes over 37 villages had been resolved through the **Namsai Declaration of July 2022**.
- For remaining 52 villages, the village boundary of 49 is to be finalized by regional committees in the next 6 months, while 3 villages inside the IAF bombing range will require rehabilitation.
- Both State Governments have agreed that **no new claim area or village will be added in future** beyond these 123 villages. (Refer EPIC February 2022 for Assam-Arunachal Border Dispute and EPIC July 2022 for Namsai Declaration).
- It also states that both Governments agree to effectively **prevent any new encroachment** in the border areas and agree that the MoU is full and final with respect to the 123 villages. (Refer EPIC December 2022 for Inter-State Boundary Disputes).

➤ 123 villages were claimed by Arunachal Pradesh before the local commission in 2007

➤ Disputes over 71 villages have been amicably resolved—37 were resolved through the **Namsai Declaration on July 15, 2022** and 34 through Thursday's MoU

➤ Out of the 71 villages, 1 in Arunachal Pradesh will

now be in Assam, 60 villages in Assam will now be part of Arunachal Pradesh and remaining 10 villages will continue to be of Assam's

➤ Boundary demarcation for 49 villages among the remaining 52 will be finalised in next 6 months

➤ Last 3 villages lying inside IAF's bombing range will be rehabilitated

8. World Press Freedom Index, 2023

News: Global media watchdog Reporters Without Borders (RSF) has released the World Press Freedom Index 2023.

About the World Press Freedom Index

- The aim of the Index is to assess the state of journalism in 180 countries and territories.
- The index ranks countries based on 5 indicators: the political context, legal framework, economic context, sociocultural context and security.
- The index has defined press freedom as the **effective possibility for journalists** as individuals and as groups to **select, produce and disseminate news and information**. Especially in the public interest, **independently from political, economic, legal and social interference** and **without threats** to their physical and mental safety.

Key Findings of the World Press Freedom Index 2023

- Norway is ranked 1st for the seventh consecutive year.
- India has been **ranked 161 out of 180 countries**. Press freedom in India has gone from 'problematic' to 'very bad', with the country slipping 11 ranks from the 2022 report.
- Except for Bangladesh (163), Myanmar (173) and China (179), all **other neighbours have a better rank than India**: Bhutan (90), Nepal (95), Sri Lanka (135), Pakistan (150), Afghanistan (152).

INDEX 2023

161 / 180

Score : 36.62

INDEX 2022

150 / 180

Score : 41

POLITICAL INDICATOR

169

33.65

POLITICAL INDICATOR

145

40.76

ECONOMIC INDICATOR

155

34.15

ECONOMIC INDICATOR

149

30.36

LEGISLATIVE INDICATOR

144

42.92

LEGISLATIVE INDICATOR

120

57.02

SOCIAL INDICATOR

143

45.27

SOCIAL INDICATOR

127

56.25

SECURITY INDICATOR

172

27.12

SECURITY INDICATOR

163

20.61

Source: The Earth News Network

- According to the report, violence against journalists, the politically partisan media and the concentration of media ownership all demonstrate that press freedom is in crisis in India, the world's largest democracy. (Refer EPIC December 2022 for Analysis of India's Performance on Various Global Indices).

About the Reporters Without Borders (RSF)

- It is an **international** NGO whose self-proclaimed aim is to defend and promote media freedom.
- It has **consultative status with the United Nations**.
- It is headquartered in Paris, France.

Policy

1. Aadhar Authentication by Private Entities

News: The Ministry of Electronics and Information Technology has proposed a new set of rules that would allow private entities to carry out Aadhaar authentication.

Proposed Rules on Aadhar Authentication

- At present, only Government ministries and departments are permitted to undertake Aadhaar authentication for various Central and State Government schemes.
- The proposed amendment to the rules would **allow private entities to build platforms** to facilitate the Aadhaar authentication for the beneficiaries for purposes such as the usage of digital platforms to ensure good governance, preventing dissipation of social welfare benefits, enablement of innovation and the spread of knowledge.
- Private entities have to submit proposals with justifications for using Aadhaar authentication. The proposals will be **reviewed by UIDAI**. It will recommend whether to grant the approval or not.
- The proposed rules raise concerns as they seek to expand the use of Aadhaar-based authentications to a range of private entities.
- In 2019, the Government amended the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 under which it had allowed **only banking and telecom companies to carry out such authentications** for KYC requirements. The amendment was necessitated after the Supreme Court, in 2018 had struck down **Section 57 of the Aadhaar Act** which allowed the use of Aadhaar data by any 'body corporate or person' (i.e., private companies) to establish the identity of an individual for being 'unconstitutional'.
- The 2019 Amendment was challenged in the Supreme Court. The case is yet to come to a conclusion. The Government has expanded the scope while the matter is still sub-judice.

2. National Medical Devices Policy, 2023

News: The Union Cabinet has approved the National Medical Devices Policy, 2023.

Need for the Policy

- The medical devices sector in India is a sunrise sector growing at a fast pace. The market size of the medical devices sector in India is estimated to be US\$ 11 billion (approximately INR 90,000 Cr) in 2020 and its share in the global medical device market is estimated to be 1.5%.
- The Indian medical devices sector has potential to contribute towards the goal of universal health care.
- The Government of India has initiated the implementation of PLI Scheme for medical devices and support for the setting up of **4 Medical Device Parks** in the States of Himachal Pradesh, Madhya Pradesh, Tamil Nadu and Uttar Pradesh.

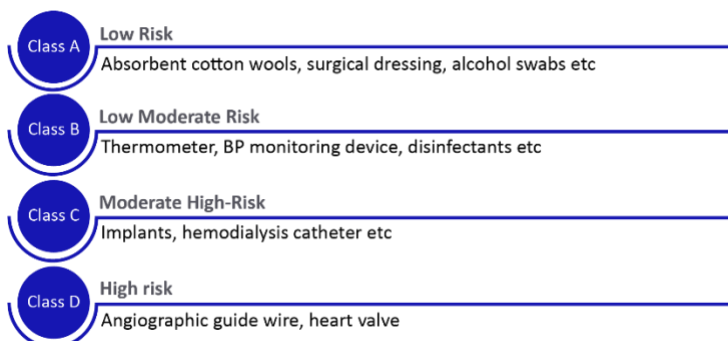
- A holistic policy framework is needed to accelerate this growth and fulfil the potential of the sector.

Salient Features of the National Medical Devices Policy

- The objective of the scheme is to **accelerate the growth of the medical devices sector** with a patient-centric approach. It aims to achieve a **10-12% share in the global market** over the next 25 years and help the **sector grow to US\$ 50 billion by 2030**.

- Medical devices sector will be facilitated and guided through a set of strategies that will be cover 6 broad areas of policy interventions:

- **Regulatory Streamlining:** Creation of a Single Window Clearance System for Licensing of Medical Devices; coordination between all the stakeholder such as AERB, MeitY, DAHD, etc., Enhancing the role of Indian Standards like BIS; Designing a coherent pricing regulation etc.
- **Enabling Infrastructure:** Developing medical device parks and clusters.
- **Facilitating R&D and Innovation:** Through the establishment of Centres of Excellence in academic and research institutions, innovation hubs, 'plug and play' infrastructures and support to start-ups.
- **Attracting Investments in the Sector:** Along with recent schemes and interventions like Make in India, Ayushman Bharat program, Heal-in-India, Start-up mission, it encourages private investments.
- **Human Resources Development:** Skilling, reskilling, and upskilling of professionals in the medical device sector; Supporting dedicated multidisciplinary courses for medical devices in existing institutions; Developing partnerships with foreign academic/industry organizations.
- **Brand Positioning and Awareness Creation:** The policy envisages the creation of a dedicated Export Promotion Council for the sector under the Department which will be an enabler to deal with various market access issues.



CDSCO classification of Medical Devices in India. CDSCO has classified 115 devices in these 4 categories through its order in 2020.

3. National Health Accounts (NHA) about India's Healthcare Sector

News: The National Health Accounts (NHA) estimates for 2019-20 have been released.

About the National Health Account (NHA) Estimates

- The National Health Account (NHA) estimates for India 2019-20 is the 7th consecutive NHA estimates report **prepared by National Health System Resource Centre (NHSRC)**.
- The NHA estimates are prepared by using an accounting framework based on the internationally accepted standard of System of Health Accounts, 2011, developed by the WHO.

Key Findings of the NHA Estimates

- **Government Spending on Healthcare:** The money spent by the government on healthcare as a percentage of GDP has increased from 1.13% in FY 2015 to 1.35% in FY 2020.
- The number is still far from the target of 2.5% investment in healthcare by 2025. It is expected to rise in the post-pandemic period.

- **Out-of-pocket Expenditure:** The share of Out-of-Pocket Expenditure (OOPE) in total Health Expenditure (THE) declined from 62.6% to 47.1%. It shows progress towards ensuring financial protection and Universal Health Coverage for citizens.

- **Sector-wise Spending:** Out of the total spending by the government on healthcare in FY 2020, 55.9% went to primary care, 29.6% went to secondary care, and 6.4% went to tertiary care.

Table 1: Key Health Financing Indicators

| Indicators | 2019-20 | 2014-15 |
|---|---------|---------|
| Total Health Expenditure (THE) Per capita (Rs.) at current prices | 4863 | 3826 |
| Government Health Expenditure (GHE) percent of THE | 41.4 | 29 |
| Out of Pocket Expenditure (OOPE) as percent of THE | 47.1 | 62.6 |
| Social Security Expenditure on health as percent of THE | 9.3 | 5.7 |
| Private Health Insurance Expenditures as percent of THE | 7 | 3.7 |
| External/ Donor Funding for health as per cent of THE | 0.5 | 0.7 |
| Union Government as percent of Current Health Expenditure (CHE) | 12.14 | 8.2 |
| State Government as percent of CHE | 20.03 | 13.3 |
| Local Bodies (Urban and Rural) as per cent of CHE | 0.99 | 0.7 |
| OOPE as percent of CHE | 52 | 67 |
| Households (HH) Health Expenditure as per cent of CHE | 59.2 | 71 |
| Others (Enterprises + NGOs + Donors) as per cent of CHE | 7.6 | 6.9 |

- **Social Security Expenditure:** It has increased from 5.7% of the total spending on health in FY 2015 to 9.3% in FY 2020.
- **Spending on Insurance:** The spending on privately purchased health insurance increased from 3.9% of the total health expenditure in FY2014-15 to 7.72% in FY2019-20.
- **Health spending by States:** National Health Policy 2017 says that 8% of States' budget should go towards healthcare. Only 2 big States and 3 smaller States have crossed the 8% target in FY2019-20: Delhi (18.7% of its total spending on health), Kerala (8%), Puducherry (10.5%), Meghalaya (8.9%), and Goa (8.7%).

4. Model Prisons Act, 2023

News: The Union Government has prepared a Model Prisons Act, 2023 to replace the current British-era Prisons Act, 1894.

Need for a New Law

- The present 'Prisons Act, 1894' is a pre-independence era Act and is ~130 years old.
- The Act mainly focuses on **keeping criminals in custody** and **enforcement of discipline and order** in prisons. There is **no provision for the reform and rehabilitation** of prisoners in the existing Act.
- According to the Constitution, 'Prisons'/'persons detained therein' is a 'State' subject (Item 4). The responsibility of prison management and administration solely vests with State Governments.
- Given the **critical role of efficient prison management in the criminal justice system**, the Government of India supports the States/UTs in this regard. Hence, the Union Government has come up with the Model Prisons Act, 2023.
- The task of review of 1894 Act has been undertaken by the **Bureau of Police Research and Development**.

Focus Areas of the Model Prisons Act, 2023

- Security assessment and segregation of prisoners.
- Prison Development Board.
- Use of technology in Prison Administration.
- Protecting society from criminal activities of hardened criminals and habitual offenders.
- Punishment for prisoners and jail staff for use of prohibited items such as mobile phones in jails.
- Establishment and management of high-security jails, open jails.

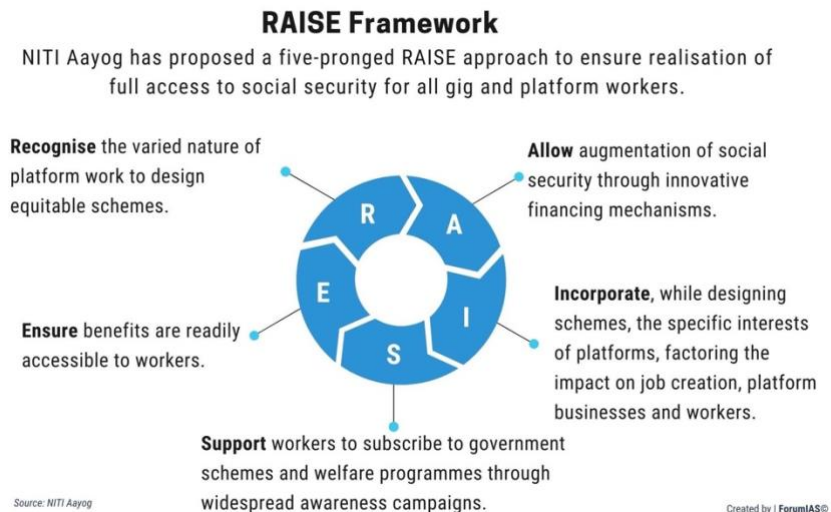
- Provisions for providing legal aid to prisoners, parole, furlough and premature release to incentivise good conduct. (Refer EPIC February 2023 for Issues Related to Prisons and Prison Reforms).

5. Government of Rajasthan's Bill for Gig Workers

News: The Government of Rajasthan is working on the Rajasthan Platform-based Gig Workers (Registration and Welfare) Bill, 2023 aimed at regulating the Gig economy in the State.

About the Rajasthan Platform-based Gig Workers (Registration and Welfare) Bill, 2023

- The Bill aims to ensure the welfare of gig workers and introduce strict provisions to punish errant aggregators.
- **Platform-based Gig Workers Welfare Board:** It will be chaired by the State Labour Minister, and will have representatives from Gig workers' unions, aggregators, and members of civil society.
 - It would be responsible for **developing welfare policies** and **hearing the grievances of workers** who have been hired on a piece-rate basis, i.e. payment depending on the units of work performed.
 - All platform-based workers in the State would be **automatically registered with the Board** regardless of their employment period with the respective platform.
 - A unique ID would be assigned to each worker which will help them obtain benefits of welfare schemes of the Government or lodge complaints.
- **Penal Action:** Contravention of any provisions made by the Board can lead to fine of INR 10 lakh or prevention from functioning within the State.
- **Welfare Fund:** The Bill has proposed to set up a Rajasthan Platform-Based Gig Workers **Social Security and Welfare Fund**, which will start with seed money of INR 200 crores.
- **Cess:** The Bill mentions a cess, which would be a certain % of the total value paid from the consumer to the aggregator or primary employer. The levy % will be decided by the Board. (Refer EPIC July 2022 for NITI Aayog Recommendations on Gig Economy in India).



6. Unified Security Force for Security of Airports

News: The Government is considering the creation of a unified security force for all airports in the country, along the lines of Transportation Security Administration (TSA) of the US.

About the Transportation Security Administration (TSA)

- TSA was formed in the aftermath of the 9/11 attack in the US.
- The TSA It oversees **security for all modes of transportation**, such as air travel, passenger rail and intercity bus travel.

Need for a Unified Security Force for Airports in India

- At present, the control of the airport security system in India is fragmented.
 - The **Bureau of Civil Aviation Security** is the regulatory authority for civil aviation security and falls under the Ministry of Civil Aviation. It is responsible for the implementation of National Civil Aviation Security Programme.
 - The **Central Industrial Security Force** guards the airports and falls under the Ministry of Home Affairs.
 - The **Bureau of Immigration** is responsible for immigration checks at airports, sea ports and land borders works under the **Intelligence Bureau**, Ministry of Home Affairs.
 - The **Customs Department** falls under the Ministry of Finance.
- Due to this fragmented approach, the coordination between multiple agencies becomes difficult.
- Hence, the government is considering the creation of a unified security force for all airports in the country.

Significance of the Proposal

- India is pegged to be the 3rd-largest aviation market in the world by 2024. India is already the **3rd-largest domestic aviation market** after the US and China.
- India is also the **world's fastest-growing market at 9%**. India accounts for only 2% of the global passenger traffic. This shows the potential for expansion of aviation market in India.
- The total number of airports in the country is also targeted to grow from the current 148 to 220 by 2025, and airlines have more than 1,000 aircraft on order.
- Given the **strategic and economic importance of the aviation sector**, the proposal of unified force for security assumes significance.

7. FSSAI on Misleading Ads

News: The Advertisement Monitoring Committee of the Food Safety and Standards Authority of India (FSSAI) has flagged 32 fresh cases of Food Business Operators (FBOs) making misleading claims and advertisements.

About FSSAI's Guidelines

- FSSAI has released Guidelines for advertisements to be truthful, unambiguous, **not misleading** and help consumers to comprehend the information provided.
- The claims must be **scientifically substantiated** by validated methods of characterizing or quantifying the ingredient or substance that is the basis for the claim.
- **Food Safety and Standards (Advertising & Claims) Regulations, 2018** specifically deal with food (and related products). The rules prohibit companies from using deceptive words like “natural”, “fresh”, “original”, “traditional”, “premium”, “finest”, “best”, “authentic”, “genuine” and “real”.
 - Product claims suggesting a prevention, alleviation, treatment or cure of a disease, disorder or particular psychological condition is prohibited unless specifically permitted under the regulations of the FSS Act, 2006.

Misleading Words in Advertisements

- **Natural:** A food product can be referred to as ‘natural’ if it is a **single food derived from a recognised natural source** and has **nothing added to it**. Composite foods, mixture of plant and processed constituents can be called ‘**made from natural ingredients**’ instead of ‘natural’.
- **Fresh:** It can be used for products which are **not processed in any manner** other than washing, peeling, chilling, trimming, cutting or irradiation by ionizing radiation. Those with **additives** (to increase shelf life) may instead use ‘freshly frozen’ or ‘frozen from fresh’ to contextualize that it was quickly frozen while fresh.

- **Pure and Original:** 'Pure' is to be used for **single-ingredient foods** to which nothing has been added and which are devoid of all avoidable contamination. 'Original' is used to describe food products made to a formulation, with a traceable origin that has remained unchanged over time.
- **Nutritional Claims:** Nutritional claims may be about the **specific contents of a product** or comparisons with some other foodstuff. Claims of equivalence such as "contains the same of (nutrient) as a (food)" may be used in the labelling. Most complaints of misleading Ads were related to the nutrition of a product, its benefits and the ingredient mix not being based on adequate evidence.

Other Steps

- **Central Consumer Protection Authority (CCPA):** It has been set up under **Consumer Protection Act, 2019** to promote, protect and **enforce the rights of consumers**.
 - It is empowered to **conduct investigations** into violation of consumer rights and institute complaints, prosecution, order recalls of unsafe goods, order **discontinuation of unfair trade practices** and misleading advertisements, **impose penalties** on publishers of misleading advertisements.
- **Programme and Advertising Codes prescribed under the Cable Television Network Rules, 1994:** It stipulates that advertisements must not imply that the products have some special or miraculous or supernatural property or quality, which is difficult to prove.

8. Technical and Scientific Terminology for Official Languages

News: The Commission for Scientific and Technical Terminology (CSTT) is working to create technical and scientific terminology in 10 Indian languages underrepresented in the learning landscape.

About the Initiative

- It aims to bring out fundamental (basic) dictionaries with 5,000 words per language. These will be in a digital, searchable format and free of cost.
- 10 languages in the Eighth Schedule (Bodo, Santhali, Dogri, Kashmiri, Konkani, Nepali, Manipuri, Sindhi, Maithili, and Sanskrit) lack study material, primarily because of a **lack of words to describe scientific phenomena and technical terms**.
- Limited material is available in these languages at the primary level, and **uses English words** for which regional vocabulary is not available.
- The move assumes importance as the **National Education Policy 2020** has espoused the use of regional languages as a medium of education in both school and college.

About the Commission for Scientific and Technical Terminology (CSTT)

- It was established in 1961 under clause (4) of **Article 344 of the Constitution** of India as a follow-up of recommendations of a Committee in this regard.
- It was established in pursuance of a 1960 Presidential Order with the objective to **evolve technical terminology in all Indian Languages**.
- It works under the Department of Higher Education, Ministry of Education.
- The Functions of the Commission include:
 - Evolving and **defining scientific and technical terms** in Hindi and all Indian Languages and publish technical glossaries, definitional dictionaries etc.;
 - **Encourage technical writings in Hindi and other Indian Languages** by sponsoring Seminars, Symposia etc. on scientific and technical subjects.
 - Coordinate with all States to ensure uniformity of terminology in Hindi and other Indian languages.

Economy

1. PLFS Data on Female Labour Force Participation Rate (FLFPR)

News: According to the recent Periodic Labour Force Survey (PLFS) report, FLFPR has increased to 27.2% (Current Weekly Status) in 2021-22, while the unemployment rate has declined from 4% to 2%.

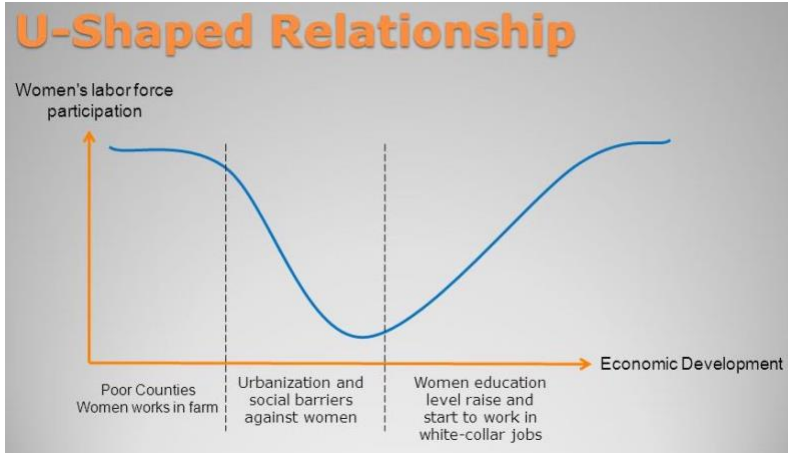
Key Findings of the PLFS on FLFPR

- **Self-Employed & Unpaid:** Women in casual labour and in regular/wage employment have declined by 6% and 4% respectively. The share of **self-employed women increased to 62%**. The majority of self-employed women work as part-time or full-time helpers in their household enterprises and are without pay (60%), while a lower percentage are employers and own-account workers (40%).

- **Rural vs Urban FLPR:** Rural women's workforce participation emerged as the key driver of women's employment. Rural FLPR increased by 22% from pre-pandemic level compared to 2% for urban areas.

- **Decrease in Salaried Workers:** There is a simultaneous decrease in salaried, wage and casual labour work. There is a high increase in informalisation of women's work
- **Increase in Gender-wage Inequality:** For the self-employed, men have gone from earning 2.2 times more than women in 2017-18 to 2.6 times in 2020-21.
- **Role of Agriculture:** Agriculture remains the most ubiquitous employment for women (feminisation of agriculture). Women's participation increased from 57% in 2017-18 to 63% in 2021-22.

(Refer EPIC March 2022 for Low Female Labour Force Participation Rate in India and EPIC March 2023 for Issues with Measurement of Female Labour Force Participation Rate (FLFPR) in India).



U-shaped relationship between level of economic development and FLFPR. FLFPR is high at lower development levels (higher participation in agriculture). As economy formalizes, FLFPR falls as women face social barriers (lower women participation in formal economy). At high development levels, there is gender parity in education and work force participation level.

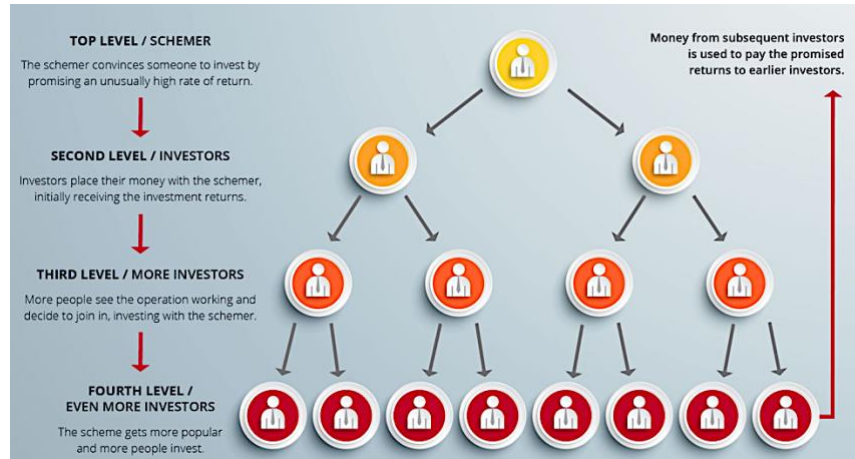
2. Ponzi Scheme

News: The Union Finance Minister has said the Union Government is taking steps to clamp down on Ponzi Apps to protect investors' money.

About Ponzi Schemes

- A Ponzi scheme is an **investment fraud** that pays existing investors with funds collected from new investors.
- Ponzi scheme organizers often promise to invest investors' money and **generate high returns with little or no risk**. But the fraudsters do not invest the money. Instead, they use it to pay those who invested earlier and may keep some for themselves.

- With little or no legitimate earnings, **Ponzi schemes require a constant flow of new money to survive.** When it becomes hard to recruit new investors, or when large numbers of existing investors cash out, these **schemes tend to collapse.**



- Ponzi schemes are named after Charles Ponzi, who duped investors in the 1920s with a postage stamp speculation scheme.
- In India, Ponzi schemes are banned under the **Banning of Unregulated Deposit Schemes Act, 2019.**

3. Gaps in Aadhaar-enabled Payment Systems (AePS)

News: Cybercriminals are now using silicone thumbs to operate biometric POS devices and biometric ATMs to drain users' bank accounts.

About AePS

The AePS is a bank-led model which **allows online financial transactions** at the Point-of-Sale (PoS) devices and micro ATMs of any bank **using Aadhaar authentication.** The model **removes the need for OTPs, bank accounts** and other **financial details.**

Under **Section 7 of the Aadhaar Act**, users who wish to receive any benefit or subsidy under schemes have to mandatorily submit their Aadhaar number to the banking service provider.

According to the MeitY, the **AePS service does not require any activation.** The only requirement is that the user's bank account should be linked with their Aadhaar number.

According to the National Payments Corporation of India (NPCI), this allows fund transfers using only the bank name, Aadhaar number, and fingerprint captured during Aadhaar enrolment.

Exploitation of AePS Ecosystem by Cybercriminals

- The UIDAI said that the Aadhaar data, including biometric information, is fully safe and secure. **UIDAI's database is not the only source from where data can be leaked.**
- Aadhaar's numbers are readily available in the form of photocopies, and soft copies, and criminals are using Aadhaar-enabled payment systems to breach user information.

UIDAI's Plan to Improve AePS Ecosystem

- The UIDAI has proposed an amendment to the **Aadhaar (Sharing of Information) Regulations, 2016.** The amendment will require entities in possession of an Aadhaar number to **not share details unless the Aadhaar numbers have been redacted or blacked out** through appropriate means, both in print and electronic form.
- The UIDAI has implemented a **new 2-factor authentication mechanism.** This uses a **machine-learning-based security system**, combining finger minutiae and finger image capture to check the 'liveness' of a fingerprint.

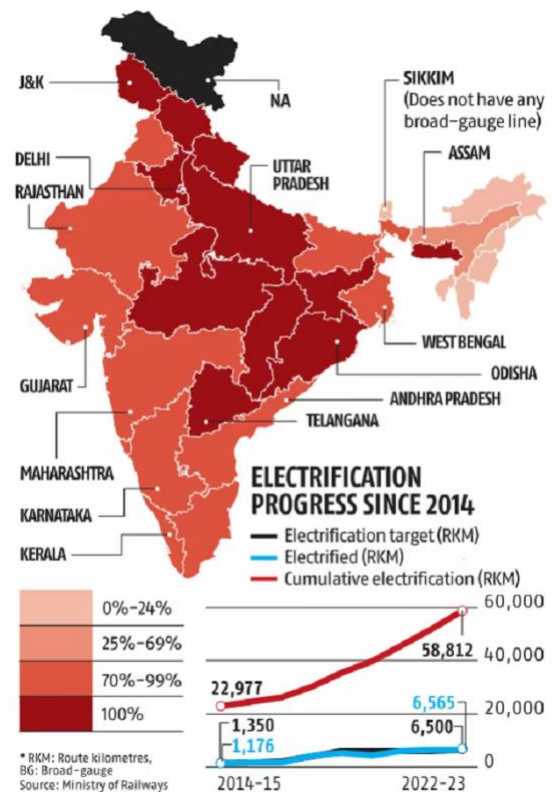
- UIDAI also advised users to **lock their Aadhaar information by visiting the UIDAI website or using the mobile app**. It can be unlocked when the need for biometric authentication arises, such as for property registration, passport renewals, etc.
- **Timely reporting** will ensure any money transferred using fraudulent means is returned to the victim.

4. Electrification of Railway Network

News: Indian Railways has completed 90% electrification of broad-gauge network as of March 2023.

About Electrification of Broad Gauge (BG) Network

- Indian Railways has set a target to complete the Electrification of its Broad gauge network by December 2023. Till now, it has fully electrified the BG network of 14 states and union territories (UTs).
- The pace of electrification between 2014 and 2019 was 7.5 route km per day which doubled to 15.3 route km per day between 2020 and 2022. In FY23, this pace **rose further to 18 route km per day**, the highest the national transporter has managed in a single year.
- However, the progress in the Northeast (barring Meghalaya) is in contrast, as **5 States are yet to have a single track electrified**.
- Electrification offers numerous benefits, including **saving over INR 150 crore** on fuel bill every year, **seamless operations, pollution-free mode of transport** and **increase average speed**.
- Gauge is the distance between the two rails of a railway track. Various Gauge Systems include **Broad Gauge** (1.676 m), **Meter Gauge** (1.000 m), **Narrow Gauge** (0.762 m – 0.610 m), **Standard Gauge** (1.435 m).



5. Levying of Tax on Electricity Generation

News: The Union Government has issued warning to States against resorting to tax levies on electricity generation, including through the imposition of a water cess.

About the Issue

- Some States have imposed taxes/duties under the guise of **levying a cess on the use of water for generating electricity**. This turns out to be a tax on the generation of electricity.
- The Union Government has called this unconstitutional. States can levy taxes on **consumption or sale of electricity** within their jurisdiction. However, electricity generated within a State can be sold in other States and no State is empowered to **levy taxes/duties on residents of other States**.
- **Entry-53 of List-II (State List)** authorizes States to put taxes on the **consumption or sale of electricity** in its jurisdiction. This does not include the power to impose tax or duty on the generation of electricity.
- **Article 286 of the Constitution** prohibits States from imposing any taxes on the supply of goods or services or on both where the **supply takes place outside the State**.
- **Articles 287 and 288** prohibit the imposition of taxes on the consumption or sale of electricity consumed by the Union government or sold to the Union government for its consumption.

- According to Entry-56 of List-I (Union List) regulations of issues related to **Inter-State Rivers** come under the purview of the Union Government. Any imposition of tax on the non-consumptive use of water of these rivers for electricity generation is in violation of provisions of the Constitution.

6. Predatory Pricing

News: Telecom service providers (Airtel, Jio, Vodafone) have accused each other of predatory pricing. TRAI is investigating the allegations.

About the Issue

- Telecom service providers have accused each other of indulging in predatory pricing. The allegations are related to pricing of 5G Data, offers related to broadcast of TV channels among others.

About Predatory Pricing

- Predatory pricing refers to the practice of **keeping the sale price of a good/service so low** by a firm that it becomes **difficult for other firms to compete**, and eventually force them to exit the market.
- Predatory pricing forces existing firms to exit the market and **prevents entry of new firms**.
- Predatory pricing is considered **violation of free competition**. Low prices may **benefit consumers in the short term**. But as many firms exit, and new firms are unable to enter, the **dominant firm may raise the prices once the competition becomes weak**. Then the dominant firm can earn supranormal profits.



Regulatory Framework Related to Predatory Pricing

- Section 4 of the Competition Act, 2002 prohibits enterprises from abusing the dominant position. It defines 'predatory price' as the **sale of goods or provision of services, at a price which is below the cost of production of the goods or provision of services** (as may be determined by regulations), with a view to **reduce competition or eliminate the competitors**.
- The Competition Commission of India (CCI) can **investigate cases of predatory pricing** on the basis of complaints received by it. (CCI can act on suo motu basis as well). The CCI can then **pass an order** accordingly based on the findings of the investigations.
- In **Competition Commission of India v. Bharti Airtel Ltd (2018)**, the Supreme Court had **authorized TRAI** (the regulator) to **settle any case on predatory pricing in the telecom sector**.
- An expert panel in 2012, has recommended **mandatory consultation between CCI and the regulator concerned** to arrive at a harmonious solution over the issues concerning predatory prices.
- Experts have said that the Government should clarify the roles of TRAI and CCI regarding predatory pricing in the **Draft Telecommunication Bill, 2022**.

7. Logistics Performance Index, 2023

News: The World Bank has released the Logistics Performance Index, 2023.

About the Logistics Performance Index, 2023

- It is a benchmarking tool created to help countries **identify the challenges and opportunities** they face in their **performance on trade logistics** and what can be done to improve the performance.

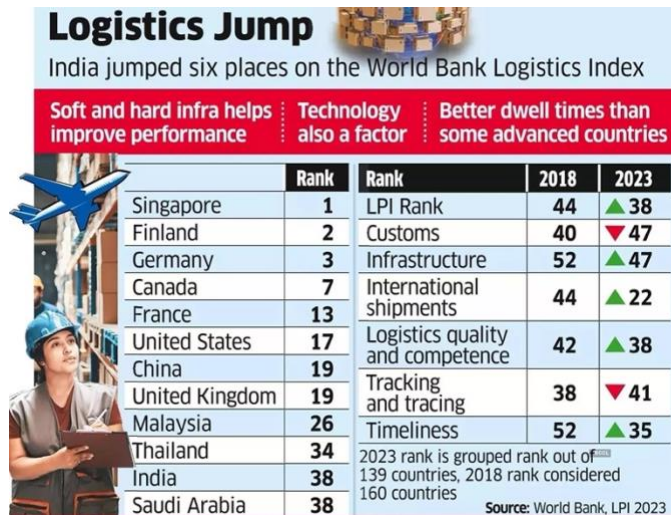
- The Logistics Index is built on 6 components **(a)** Efficiency of customs; **(b)** Quality of trade and transport infrastructure; **(c)** Ease of arranging competitively priced shipments; **(d)** Quality and competence of logistics services; **(e)** Ability to track consignments; **(f)** Timeliness.
- The **LPI 2023** allows for comparisons across 139 countries.

Key Findings of the 2023 Index

- Singapore and Finland are the most efficient and highest-ranked LPI countries.
- India has been ranked 38 out of 139 countries, climbing 6 places from the previous index. This achievement is credited to **India's investments in soft and hard infrastructure**, along with technology.

Initiatives Taken by India

- The Government of India launched the **PM Gati Shakti** initiative in 2021, a national master plan for multimodal connectivity, aimed at **lowering logistics costs** and stimulating the economy by 2024-25.
- The **National Logistics Policy (NLP)** was introduced in 2022 to address transport issues, optimize manufacturing efficiency, and speed up last-mile delivery in the logistics sector. (Refer EPIC October 2022 for Logistics Sector and National Logistics Policy and Port Infrastructure in India).
- The Government implemented a **Supply Chain Visibility Platform** under a public-private partnership, leading to significantly reduced delays.
- **NICDC Logistics Data Services** provides RFID (radio frequency) tagging on containers. This enables end-to-end tracking for supply chain consignees. From May to October 2022, India and Singapore had an **average dwell time of 3 days** for containers. It was better than some developed countries like the US (7-days), Germany (10 days). (**Dwell time** refers to the amount of time a ship or cargo spends at a port or terminal before being loaded or unloaded onto a vessel. Any delays in a port can disrupt shipping schedules, affecting the entire service).



8. NITI Aayog's Report on Millets

News: NITI Aayog has released a report titled 'Promoting Millets in Diets: Best Practices Across States'.

Key Highlights from the Report

- The Report presents a set of **good and innovative practices** adopted by State Governments and organizations in various aspects of millet value chain: Production, Processing and Consumption.
- **State Missions and Initiatives to Promote Millets:** **Odisha Millet Mission** was launched in 2017 with the aim to revive millets on farms and plates. It simultaneously focuses on production, processing, consumption, marketing and inclusion of millets in Government schemes.
 - Other State Mission worth highlighting are **Comprehensive Revival Of Millet Cultivation by Tribals** in Andhra Pradesh, Chhattisgarh Millet Mission and **Bhavantar Bharpayee Yojana** of Haryana among others.
- **Millet Production in India:** India produces all the 9 commonly known traditional millets viz. Sorghum, Pearl Millet, Finger Millet, Foxtail Millet, Proso Millet, Little Millet, Barnyard Millet, Browntop Millet and Kodo Millet.
 - Millets are the most secure crops for small farmers as they are **resilient and climate adaptable** in both hot and drought environments.

- The area under cultivation of various millets in India has been declining. The area harvesting 3 major millet crops (jowar, bajra and ragi) in India has almost halved since 1966.
- The fall in area under Millet cultivation has been attributed to:
 - Promotion of rice and wheat vis-a-vis millet production and lack of suitable initiatives towards millets.
 - **Low margins associated with millet production** vis-a-vis other crops.
 - The **relatively shorter shelf life** of the crops creates **storage-related concerns** and risks spoilage.
 - **Changes in lifestyle and consumer tastes**, coupled with the unavailability of ready-to-eat millets have contributed to lower demand. (Refer EPIC December 2022 for Production of Millets in India).

Timeline of policy initiatives related to millets by Government of India

| Year | Policy interventions |
|------|--|
| 2012 | Initiative for Nutritional Security through Intensive Millet Promotion (INSIMP) |
| 2013 | National Food Security (NFS) Act covers 'coarse grains' |
| 2017 | NITI Aayog of Government of India releases the National Nutrition Strategy (NNS) for 'Nourishing India' and recommends that the Ministry of Agriculture & Farmers' Welfare strengthen cereal productivity and production diversity - including the production of 'coarse' cereals such as millets |
| | Millets officially declared as "Nutri-cereals" |
| | Millets made part of the National Food Security Mission (NFSM) |
| | Government of India declared 2018 as the 'National Year of Millets' |
| 2018 | The Indian Government launched the Sub-mission on Nutri-cereals under NFSM with an outlay of INR 300.00 crore for 2018-19 |
| | Government of India sent a proposal to United Nations for declaring 2023 as the 'International Year of Millets', to promote greater production and consumption of millets |
| 2021 | UNGA has approved and declared 2023 to be observed as the 'International Year of Millets' (IYM) |
| 2021 | Government of India revises its Guidelines for procurement, allocation, distribution and disposal of coarse grains: <ul style="list-style-type: none"> • 9 months for <i>jowar</i> and <i>bajra</i>; 10 months for <i>ragi</i> and 6 months for Maize. This would increase procurement and consumption of these commodities as the State would have more time to distribute these commodities in TPDS/OWS. • Provision of inter-state transportation of surplus coarse grains through Food Corporation of India (FCI) is incorporated to cater for advance demand placed by consuming State before the start of procurement. |

9. Nano DAP

News: The Union Minister of Cooperation has launched the liquid Nano DAP.

About Nano DAP

- Nano DAP is a **liquid fertilizer product** that contains **nanoparticles of Diammonium Phosphate (DAP)**. It is the 2nd such variant of fertilizers. Nano Urea was the first one in this series.
- Nano DAP is a source of **nitrogen** and **phosphorus**. Both are **key primary nutrients** essential for the growth of crops.
- Nano DAP is jointly manufactured by **Indian Farmers Fertiliser Cooperative (IFFCO)** in association with a private sector entity Coromandel Fertilizers. The manufacturing units of Nano DAP have been established in **Kalol, Gujarat** and **Paradeep, Odisha** by IFFCO which has patents of both the Nano variant of liquid fertilisers.

Expected benefits of Nano DAP

- DAP is the 2nd **most consumed fertilizer** in India after urea.
- The estimated total annual consumption of DAP is ~10-12.5 million tonnes. 4-5 million tonnes (~40%) are produced locally, rest is imported.
- Use of Nano-DAP will help to **bring down India's fertilizer import bill**.
- It is expected to contribute to **bringing down the annual subsidy** on non-urea fertilizers.



- It will help farmers **reduce dependence on chemical fertilizers**, thus **enhancing the quality and quantity of their produce**.
- Reduced production cost and increased output will greatly **enhance the annual income** of farmers.

10. Liberalised Remittance Scheme (LRS)

News: The Union Government has amended rules under the Foreign Exchange Management Act (FEMA) to bring international credit card spending outside India under the Liberalised Remittance Scheme (LRS).

About LRS

- Liberalised Remittance Scheme (LRS) was introduced in 2004 with a limit of US\$ 25,000. It now permits individuals to **send US\$ 250,000 out of India** (in a financial year) **without prior approval from the RBI**.
- This policy depicted confidence in the Indian economy's strength, rupee's float and the sustainability of the country's external account.
- However, in recent years, the Government has systematically tightened the restrictions on how individuals can remit money out of the country.

CHANGES OR INCREASE IN RATES OF TAX COLLECTION AT SOURCE (TCS)

| Purpose of remittance | Till 30 -June-2023 | | From 1-July-2023 | |
|--|--------------------|------|------------------|------|
| | Threshold | Rate | Threshold | Rate |
| Purchase of an overseas tour travel package | Nil | 5% | Nil | 20% |
| Investment in bonds, stocks or real estate, gifts to non-residents, etc. | Rs 7 lakh | 5% | Nil | 20% |
| Medical treatment | Rs 7 lakh | 5% | Rs 7 lakh | 5% |
| For education out of a loan obtained from a financial institution | Rs 7 lakh | 0.5% | Rs 7 lakh | 0.5% |
| For education remitting from own funds | Rs 7 lakh | 5% | Rs 7 lakh | 5% |
| International spends on credit or debit cards | Rs 7 lakh | 5% | Rs 7 lakh | 20% |

About the Changes Related to the Usage of Credit Cards

- Credit card spending outside India has been brought under the ambit of the **Liberalised Remittance Scheme (LRS)**.
- Bringing credit card transactions under LRS enables the **levy of a Tax Collection at Source (TCS)**. The Union Budget 2023-24 had **hiked TCS rates from 5% to 20%** on overseas tour packages and funds remitted under LRS (other than for education and medical purposes). The new tax rates will come into effect from July 1, 2023.
- **Payments up to INR 7 lakh per financial year** will be excluded from LRS and will not attract TCS.
- The Reserve Bank of India has also set a **180-day limit** on any funds sent outside the country. Within this period, the **funds either should be invested in any instrument or repatriated**.

Response of Experts

- The changes in credit card spending will **add to the compliance burden of banks** and financial institutions. If the aim was to track overseas transactions, the TCS rate of 20% is too high and could have been instead at 1-2%.
- TCS is a **direct tax levy collected by the seller from the buyer** and deposited to the Government. It will add to the burden travellers at the time of purchase of a tour package. The **taxpayers can claim refunds** on the TCS at the time of filing their returns. But their **funds get locked** till the refund by the tax department.
- The move will impact **private and business travellers** who will have to set aside an additional 20% that will **impact their cash flows**, increase budgets and hamper the seamless movement of people.
- The 180-day limit reduces the freedoms to Indian investors, where and how they like to invest. High levels of restrictions for such transfers will **increase the incentive for evasion**.

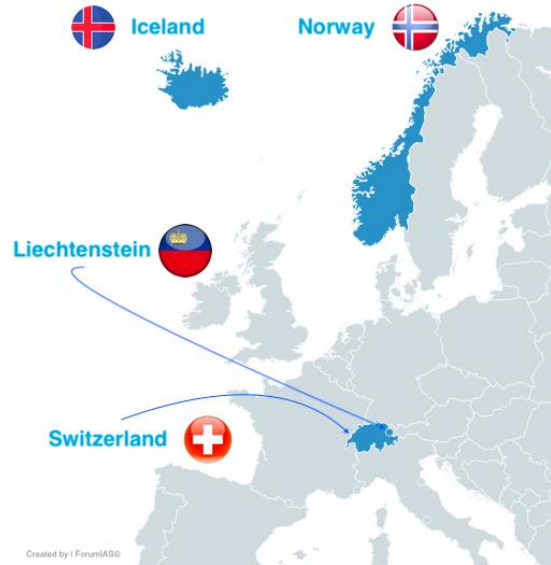
International Relations

1. Trade Agreement with EFTA

News: High-level delegations from the European Free Trade Association (EFTA) and India have met regarding beginning of discussions on a Trade and Economic Partnership Agreement (TEPA).

About European Free Trade Association (EFTA)

- European Free Trade Association (EFTA) include 4 countries: **Iceland, Liechtenstein, Norway** and **Switzerland**. It is a regional trade organization.
- These are small countries but together they form 10th largest merchandise traders and 8th largest services traders worldwide.
- The 4 nations rank among the highest in the world in **innovation, competitiveness, wealth creation per inhabitant, life expectancy, and quality of life**.
- EFTA companies are also world leaders in **pharmaceuticals, biotechnology, machinery manufacturing, R&D-driven technology products, geothermal-related technologies** and many more.
- EFTA has total of 29 Free Trade Agreements (FTAs) with **40 partner nations**. Nearly 22% of EFTA states' imports come from these FTA partners.



Benefits of Trade and Economic Partnership Agreement (TEPA) with EFTA

- The EFTA nations can support India's **economic development** and **leadership in the development of green technology**. A trade agreement would promote **technology and knowledge transfer**, facilitate R&D and innovation, and encourage business collaboration across different areas.
- **Improved market access** for goods will boost **India's export potential** to EFTA markets.
- EFTA states have contributed investments of over US\$ 35 billion in India across sectors such as machinery, electrical engineering and metals, etc. Trade pact will increase this further.
- The EFTA states can gain from the **highly skilled Indian workforce** in the services sector, while India benefits from over **400 companies established by EFTA States**, generating more than 150,000 jobs. India consistently ranks first in terms of work permits issued to non-EU citizens in Switzerland. A trade agreement will boost the cooperation further. (Refer EPIC May 2022 for India's Relationship with EU and other European Nations).

2. North-South Asia Corridor

News: India's National Security Advisor participated in a meeting in Saudi Arabia with his counterparts from the US, Saudi Arabia and the UAE.

Key Highlights of the Meeting

- The meeting marks a **deepening of India's outreach towards West Asia**, strengthening the initiative taken with the I2U2 grouping.
- The meeting signals a broader, integrated approach to West Asia, along with the US and regional partners, on lines similar to the Indo-Pacific.

- The meeting discussed a proposal to **link countries in West Asia through rail networks and roads**, as well as build **corridors between the region and South Asia through sea lanes**.
- The project is a response to China's Belt and Road initiative, which has been used by Beijing to increase its footprint across Asia.

About the viability of the North-South Asia corridor

- The project is viable due to:
 - Asian countries have begun to understand the issues with **China's 'debt trap' diplomacy**.
 - There is a visible **reduction in the rivalry between the West Asian countries**.
 - India has expertise in railways as demonstrated recently in Sri Lanka.
 - The **Abraham Accords of 2020** functionally normalised ties between Israel and the UAE and Bahrain. Similarly, Saudi Arabia and Iran also restored their ties earlier this year.

Advantages of the North-South Asia Corridor

- **Energy Security:** Direct corridors between West Asia and the Subcontinent will ensure a more steady and reliable supply of crude oil.
- **India's Credibility in Project Execution:** India building railways will increase the country's reputation as an executor of major projects.
- **Increase Employability:** The direct presence of Indian companies and government can brighten the prospects for millions of Indian workers in the region.

Challenges in participating North-South Asia Corridor for India

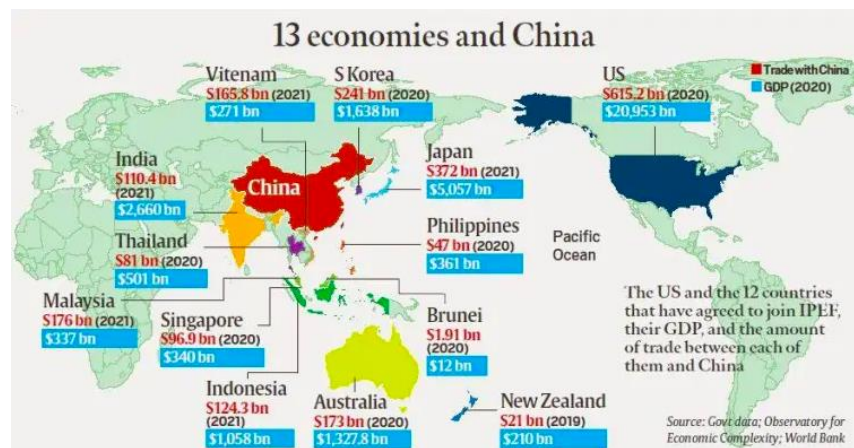
- Land connectivity with West Asia remains a challenge for India because of role of Pakistan.
- The new project will test India's balancing act with Russia and China and Russia and the West.

3. Concerns Related to IPEF

News: India fears that a proposal by the US under the 'Supply Chain' pillar of the Indo-Pacific Economic Framework (IPEF) could violate multilateral rules and reduce policy elbowroom.

About Indo-Pacific Economic Framework (IPEF)

- IPEF is an economic initiative launched by the US in 2022.
- It has **14-member countries** in the **Indo-Pacific region** and the membership is open to new countries.
- It is being considered as US response to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and RCEP.
- IPEF members represent **40% of the GDP** and **28% of the world's trade**.



Source: Indian Express. Trade level of 13 Founding Member States of IPEF with China. Fiji joined in May 2023.

- The IPEF has 4 pillars: **Trade, Supply Chains, Clean Economy**, and **Fair Economy** (Tax and Anti-corruption). India has joined the 3 pillars except the Trade pillar. (Refer EPIC June 2022 for IPEF).

US Proposal under IPEF

- The US has proposed that all IPEF partner countries will have to **provide advance notices on tariff changes and export restrictions**.
- India fears that such an exercise could amount to a **violation of the WTO rules** and a **possible loss of policy space** to the Government. Notifications are usually done only after measures are taken.

Other Concerns Related to IPEF

- Traditionally trade groups have mostly been related to Tariffs. However, issues related to IP Rights, investment, domestic regulation, digital economies, labour and environmental standards are becoming more centric to such groupings. The US is pushing IPEF in this direction.
- Economic experts feel that IPEF would result in **complete control over the economic systems** of the participating countries by the US. IPEF will leave little room for domestic policies to help a country's own priorities.
- In the digitalising world, giving up policy spaces in key areas such as digital, labour and environment, and export constraints, would lead to an **economic dependency on the US**. Labour and environment norms can hamper domestic manufacturing.
- The IPEF can have **implications for agriculture**, (like genetically modified seeds and food) creating dependence on the US-based agri-tech companies.

4. US Debt Ceiling

News: The US Congress has reached an agreement to raise the borrowing limit of the US Government.

About Debt Ceiling

- In the US, the Debt Ceiling is the **legislative limit on the amount of national debt** that can be incurred by the US Treasury.
- This limits the amount of money the Federal Government can spend by borrowing more from its existing debt. This includes paying for federal employees, the military, Social Security and Medicare, as well as interest on the national debt and tax refunds.
- Under Article I Section 8 of the United States Constitution, only the **US Congress can authorize the borrowing of money on the credit of the United States**.
- The **US Congress votes to raise or suspend the ceiling from time to time**, so that the Government can borrow more. The debt ceiling has been raised, extended, or revised **78 times since 1960**, most recently in 2021.

U.S. Debt Rises Irrespective of Who Is in the White House

Debt ceiling and gross federal debt in the U.S. 1981-2023 (in trillion U.S. dollars)



Source: Statista. The US Congress can either suspend the ceiling limit or raise it. Suspending the limit for a certain period allows the US Government to exceed the debt ceiling limit.

- The cap currently stands at roughly **US\$ 31.4 trillion**. The US Treasury Secretary had warned that without more borrowing, the US will not have enough money to meet all of its financial obligations.

Consequences of US Default on Debt

- The US has never defaulted on its debt, so predicating the impact is difficult.
- However, a US default can prove to be **'catastrophic' for the global financial system**. Trillions of dollars of global financial assets are tied to the value of the US bonds. A default in debt payments could see **bond prices plummet**. It can lead to **widespread financial contagion** in the Banks and global financial markets.
- A default will weaken the US dollar as well. As over half the world's foreign currency reserves are held in dollars, the **value of these reserves will drop**.

5. Laundromat Countries

News: A report has found that European countries that banned Russian oil imports are importing large oil products from India, China, the UAE, Singapore etc. that are using Russian oil.

About Laundromat Countries

- A report by Finland-based Center for Research on Energy and Clean Air (CREA), has categorized India, China, Turkey, the UAE, and Singapore as **Laundromat countries**.
- These countries are buying Russian oil and selling processed products to European countries, thus **side-stepping European sanctions against Russia**. (Refer EPIC March 2022 for The Effectiveness of Sanctions).
- The Report says that EU countries are substituting oil products they bought directly from Russia earlier, with the same products now **'whitewashed' in third countries** and bought at a premium.
- Among these 'Laundromat' countries, **India is the highest global consumer of seaborne Russian crude**. India is ahead of all others in the **export of crude products** to these price cap coalition countries, which include the EU, G-7, Australia and Japan. Diesel has become one of the largest components of India-EU trade. India is **exporting nearly 3.8 million tonnes of oil products** to the EU, the G7, and others.
- As part of sanctions on Russia, G7 nations had set the oil price limit at US\$ 60 per barrel last year. India started buying more Russian oil. In March 2023, **Russian oil made up 35% of India's oil imports**, up from just 1% before February 2022.
- Most oil products from India were being exported from two ports in Gujarat: the **Sikka port** that services the Reliance-owned refinery in Jamnagar and the **Vadinar port** that ships oil products.

Laundromat

A Laundromat is an all-purpose financial entity, typically set up by a bank or financial services company, that is **intended to help clients launder the proceeds of crime, hide ownership of assets, embezzle funds, evade taxes or currency restrictions**, and move money offshore. Laundromats allow people to **split money laundering between many banks** so that no bank has a complete overview of what is going on, or of the entire amount being laundered. The term was coined by **Organized Crime and Corruption Reporting Project**.

About EU's Response

- The EU Foreign Minister has said that **Europe should not permit the entry of refined petroleum products from India that are made from Russian oil**. It is normal if India is buying cheap Russian oil but it was not acceptable for that oil to be routed to Europe via refined products.
- **India has denied that it was violating sanctions**. India has said that it is not possible to fully identify the origins of petroleum products being sold in Europe.

6. Syria Re-admitted to Arab League

News: Foreign ministers from Arab League member states have agreed to reinstate Syria's membership after its suspension more than 10 years ago.

About the Arab League

- The Arab League is an **intergovernmental organization of Arab states** in the Middle East and Africa.
- It was formed in 1945 following the adoption of the **Alexandria Protocol** in 1944.
- Its objective is to draw closer relations between the member states, to **safeguard their independence and sovereignty**, and to consider the **affairs and interests of the Arab countries**.
- The league has **22 members** which includes countries like Egypt, Iraq, Jordan, Syria, Lebanon, Saudi Arabia, Syria, Yemen, and Palestinian Authority among others.
- Brazil, Eritrea, **India**, Armenia and Venezuela are **Observer countries**. Observer States are invited to participate during select Arab League sessions, but **do not hold voting privileges**.
- **Each member state has one vote in the Council of the Arab League**, and decisions are binding only for those states that have voted for them.
- The League is headquartered in **Cairo, Egypt**.



Criticisms of the Arab League

- The Arab League has been criticized for its **internal conflicts** and **collective inaction** on important international issues.
- Some observers criticize its **failed diplomacy in Syria** and its **fractured response to the rise of the Islamic State (IS)**.
- Many analysts say that **sectarian divisions** and **power rivalries** among members will continue to hamper the effectiveness of the League.

7. Afghanistan's Ambassador to India

News: The Taliban Government has recalled the current Afghan Ambassador to India and appointed a new ambassador.

Challenge Posed by New Appointment

- India, similar to many other countries, **has not recognized the Taliban Government**. However, in 2022, the Government of India established a **'Technical Mission'** in Kabul.
- The incumbent Ambassador was appointed in 2020 by the Ashraf Ghani Government. He has refused to vacate the office.

- The development has posed **diplomatic challenge for India**. Refusal to recognize the new Ambassador can **jeopardize India's Mission in Afghanistan**. Recognition of the Ambassador can be **interpreted as recognition of the Taliban regime**.
- Most other countries where Afghanistan ran missions have refused to accede to the appointments made by Taliban. Some countries like Russia, China, Pakistan, the Central Asian States and Iran have allowed the Taliban-appointed diplomats to run the missions.
- **India has gradually increased engagement with the Taliban regime**. India has provided food and medical aid, and Taliban officials have been trained in online courses run by the Indian Government.

(Refer EPIC July 2022 for India's Engagement with Taliban and EPIC August 2021 for Afghanistan Taliban 2.0).

8. G7 Summit

News: The Prime Minister of India attended the 49th G7 Summit in Hiroshima, Japan.

About G7 Group

- The G7 consists of the US, the UK, Germany, Japan, Italy, France and Canada.
- G7 was initially established to **tackle the oil crisis of 1973** due to **Arab-Israel war** and recession of the time. It was established as a grouping of restricted club of rich democracies. Since then, it has moved on to become an **economy-plus forum** encompassing in its deliberation **major global challenges**, including **peace**



- and **security, counter-terrorism, development, education, health, environment and climate change**.
- From 1998 to 2014, the group was called G8 which included Russia. Russia was expelled in 2014 after the Crimea crisis. The European Union is an invitee.
- G7 countries have around 45% of global GDP.

Importance of the India's Participation in G7 Summit

- India has been recognised as a partner of G7 for a long and is seen as a **strong voice of the democratic Global South**. India has been shaping the narrative on development, environment, peace and stability. This can get significant attention from like-minded countries.
- Hiroshima G7 summit allows for a certain **G20-G7 North-South bridging** which India is best placed to undertake among major stakeholders in the world. The presence of both Indonesia and Brazil (Present G20 troika countries) in the G7 summit further strengthens India's G20 presidency.

Concerns Regarding the G7

- G7 is **not representative in current times**. When it was established it accounted for ~66% of Global GDP. But now it accounts only for 33% on PPP basis and less than 50% on nominal basis (market prices).

- G7 **failed in tackling global issues and challenges** of Climate change, Terrorism, 2007-08 Financial crisis, COVID-19 pandemic etc.

9. Washington Declaration

News: The US and South Korea has signed Washington Declaration on nuclear deterrence strategy.

About Washington Declaration

- The US and South Korea signed the Washington Declaration on the 70th Anniversary of the US-South Korea bilateral relationship.
- The Declaration outlines **cooperation towards nuclear deterrence strategy**.
- According to the Declaration:
 - US **nuclear ballistic submarine would be deployed in the Korean peninsula**.
 - Nuclear Consultative Group would be formed to formulate principles of joint response tactics.
 - South Korea would receive Intel from the U.S. regarding nuclear advancements, and the US will strengthen **South Korea's nuclear deterrence capabilities** through joint military training programs and an annual intergovernmental simulation.
 - It reaffirmed the **Non-Proliferation Treaty** implying that **South Korea would not venture into the creation of its own independent nuclear capabilities** and would focus on deterrence measures through an alliance-based approach.
- The US is not keen to allow South Korea to develop their own nuclear arsenal as it would hinder the prolonged efforts of controlling nuclear production in the world.
- China has said that the **declaration undermines the nuclear non-proliferation regime** and the strategic interests of other countries.

Science and Technology

1. Auroras in Ladakh

News: The Indian Institute of Astrophysics has captured a rare occurrence of aurora in Ladakh on camera. This is the first time that such an occurrence has been witnessed in Ladakh.

About Auroras

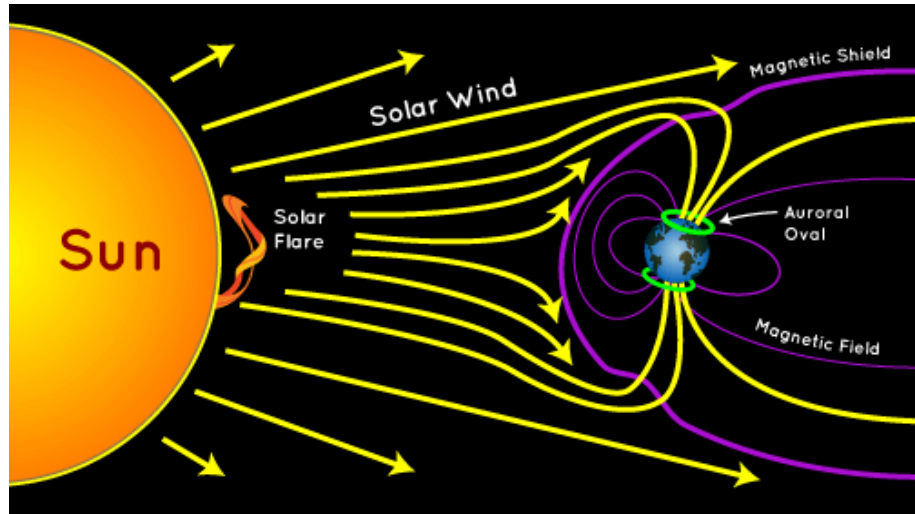
- Auroras are natural phenomenon which is characterized by a display of a **natural-coloured light** (green, red, yellow or white) **in the night sky**.
- Auroras are referred to as 'Polar Lights'. Auroras are predominantly seen in regions of high latitudes like the Arctic and Antarctic. They are called **Aurora Borealis** (Northern Lights) in the northern hemisphere and **Aurora Australis**, (Southern Lights) in the southern hemisphere.



Cause of Auroras

- Auroras are caused by Sun. The Sun emits a lot of **charged particles** which travel through space. The number of charged particles is particularly **high during solar storms** (Coronal Mass Ejection).
- The charged particles are prevented to enter Earth's lower atmosphere by the **Earth's magnetic field**, which **diverts them towards the Poles** (due to the peculiar shape of Earth's Magnetic Field).

- These particles **interact with the gases of the atmosphere** resulting in display of lights in the sky. **Oxygen** gas gives off **green and red lights**. **Nitrogen** glows in **blue and purple colours**.
- The phenomena of Auroras is not limited to Earth. Other planets like Jupiter and Saturn having atmosphere and magnetic field witness Auroras.
- The Auroras in Ladakh were captured on cameras placed in the Indian Astronomical Observatory, Hanle.



Source: NASA. Earth's magnetic field acts as a shield and directs charged particles from solar winds towards the Polar Regions. Auroras typically occur in high latitudes

2. Sodium-Ion Batteries (SIBs)

News: Scientists are working to develop Sodium-ion Batteries as alternative to Lithium-ion Batteries.

About Current Battery Solutions

- At present, **Lithium-ion Batteries (LIBs)** and **Lead-acid Batteries (LABs)** are the dominant commercial options to fulfil energy storage needs in India.
- LABs are popular for the manufacturing of 2- and 3-wheeler electric vehicles due to their affordability, material accessibility and recycling rates.
 - LABs have various **social, environmental and safety-related issues**. Lead, released during the value chain of LABs, can **accumulate in human body** and **can be fatal** as it **damages neurons of the central nervous system** and hinders mental growth in children.
- LIBs have gained high commercial value in the global market due to their high energy density, compact size and enhanced life cycle.
 - These batteries have the upper hand in performance when compared to LABs. However, **material scarcity** and **higher costs** restrain their production up-scaling.

Benefits of Sodium-Ion Batteries (SIB)

- An SIB is 20-30% cheaper than an LIB.
 - Large quantities of sodium can be extracted from both the earth's crust and seawater and at a lower cost than lithium.
 - SIBs use **aluminium current collector** unlike LIBs which require more expensive copper current collector.
- SIBs have **no over-discharge characteristics**, which means that they can be allowed to discharge to zero volts. This **reduces the chances of fire hazards during transportation**.
- SIBs have **faster charging times** and could have a **longer lifespan** compared to LIBs.
- SIBs have **45% less global warming potential** than Lithium-Iron-Phosphate (LFP) batteries. They have also shown positive results in **retaining capacity, resisting moisture** and having **little voltage fade**.

- SIBs have **higher operational safety than LIBs** with their operable temperature ranging from (-30°C) to 60°C, making their **temperature endurance higher** than other battery chemistries.

Challenges in Scaling-up SIBs

- Major challenge in scaling-up production is **development of suitable materials** and supply chain for both the **electrodes** and **electrolyte**.
- SIBs are heavier** than the lithium-ion variants for the same energy delivered **due to higher density**.

| CHARACTERISTIC | Na-ion | Li-ion |
|--------------------------------|---|--|
| Energy density | 70-160 W h/kg, with potential to go to 200 W h/kg | Ranging from about 150 W h/kg for lithium-iron-phosphate cathodes to 275 W h/kg for nickel-manganese-cobalt cathodes |
| Manufacturing | Yet to be manufactured at commercial scale | Proven at scale and in high-performance cars |
| Raw material cost | Sodium hydroxide is \$300-\$800 per metric ton | Lithium hydroxide is \$78,000 per metric ton |
| Safety | No risk of thermal runaway | Can overheat and catch fire |
| Cycle life | Some developers have struggled to overcome performance fade | Steady performance over a high number of cycles |
| Performance at low temperature | Maintains >90% performance at -20 °C | Drops considerably in cooler temperatures |
| Recyclability | Simple recovery process | Complex separation of metals may be required |

Opportunity for India

- SIBs present a promising opportunity in developing India's home-grown battery technology, and **reducing the dependency on battery and lithium imports**.
- The need for accelerated growth of EVs at a lower cost offers the opportunity for India to become a global leader in manufacturing SIBs.

3. Digital Twin

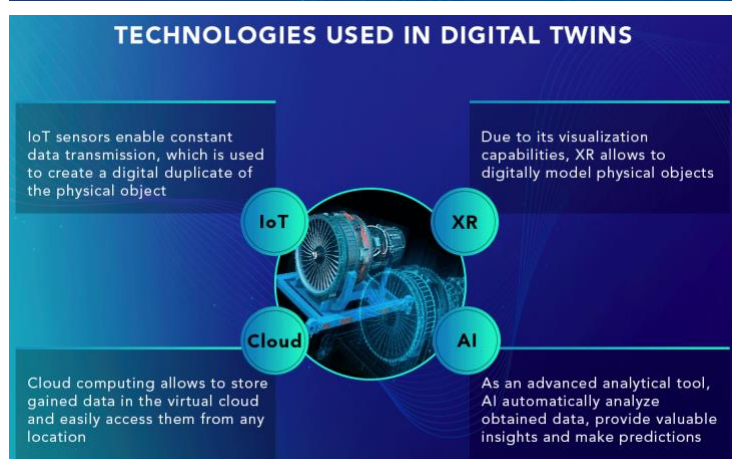
News: India may soon join countries like Singapore, China and the US to build Digital Twins of cities to enhance their efficiency and governance.

About Digital Twin

- A Digital Twin is a **3-dimensional (3D) virtual representation** of an object or system that **delivers real-time insights** into the **performance** or **operation** of the physical object or system.
- Cities and Urban Centres can also be modelled through Digital Twin technology e.g., the installation of mobile networks on specific rooftops can be modelled to identify the obstructions within the specified parameters, thus saving time and costs.

Benefits of Digital Twin

- It offers a model of urban planning and construction for **sustainable development**. It effectively utilizes innovations in digital technology to provide a feasible path for urban upgrading.



- It also **promotes safer, more efficient urban activities** and helps to create more low-carbon, sustainable environments.

Challenges Related to Digital Twin

- Digital twins require a significant investment in hardware, software, and personnel.
- Digital twins require a large amount of data to be collected and analyzed, which can be difficult to obtain.
- Digital twins are **complex systems** that require a **high level of technical expertise** to maintain and operate. This can be a barrier for cities that lack the necessary resources and personnel to manage digital twins.
- There is the challenge of **privacy and security**. Digital twins can collect a large amount of sensitive data, which is vulnerable to misuse or exploitation.

4. Malaria as Notifiable Disease

News: Malaria is set to be notifiable disease all over India. At present it is a notifiable disease in 33 States/UTs.

About Notifiable Diseases

- A notifiable disease is required by law **to be reported to government authorities**.
- Making a disease legally notifiable by doctors and health professionals **allows for intervention to control the spread of highly infectious diseases**.
- The Union Government has notified several diseases such as cholera, diphtheria, encephalitis, leprosy, meningitis, pertussis (whooping cough), plague, tuberculosis, AIDS, hepatitis, measles, yellow fever, malaria, dengue etc.
- The **onus of notifying any disease** and the **implementation** lies with the **State Government**.
- Any **failure to report a notifiable disease is a criminal offence** and the State Government can take necessary actions against defaulters.
- Bihar, Andaman and Nicobar Islands and Meghalaya have decided to make malaria a notifiable disease.

About the Decline in Malaria cases in India

- India was the only high-burden, high-impact country in the Southeast Asia region to report a decline in malaria cases in 2020 as compared to 2019.
- India witnessed an 85.1% decline in malaria cases and 83.36% decline in deaths during 2015-2022.

Steps Taken Against Malaria

- India has set a vision to be malaria-free by 2027 and to **eliminate the disease by 2030**.
- The **Ministry of Health** has initiated a **joint action plan** with the **Ministry of Tribal Affairs** for elimination of malaria in tribal areas.
- The Government now has the availability of **near-real-time data monitoring** through an **integrated health information platform** (HIP-Malaria Portal) and **periodic regional review meetings** to keep a check on malaria growth across India.

| GOALS | MILESTONES | | TARGETS |
|---|---|----------------------------|----------------------------|
| | 2020 | 2025 | 2030 |
| 1. Reduce malaria mortality rates globally compared with 2015 | At least 40% 18% reduction achieved 22% off track | At least 75% | At least 90% |
| 2. Reduce malaria case incidence globally compared with 2015 | At least 40% 3% reduction achieved 37% off track | At least 75% | At least 90% |
| 3. Eliminate malaria from countries in which malaria was transmitted in 2015 | At least 10 countries On track | At least 20 countries | At least 35 countries |
| 4. Prevent re-establishment of malaria in all countries that are malaria-free | Re-establishment prevented On track | Re-establishment prevented | Re-establishment prevented |

Source: WHO. Goals: WHO Global Technical Strategy for Malaria 2016-30.

Steps Required Further

- Globally, **children in the poorest households are 5 times more likely to be infected with malaria.**
- Malaria is also more prevalent among young children whose mothers have a **lower level of education and live in rural areas.**
- Reaching these populations with available **malaria prevention, diagnosis and treatment** is critical for achieving the goals of **Global Technical Strategy for Malaria 2016-2030** and Sustainable Development Goal targets and delivering on the promise of zero malaria for everyone, everywhere,

5. COVID-19 and Monkeypox Not Public Health Emergencies Now: WHO

News: The World Health Organization has declared that COVID-19 and Monkeypox are no longer a 'Public Health Emergency of International Concern' (PHEIC).

About PHEIC

- A Public Health Emergency of International Concern is the highest alert level declared by the WHO.
- PHEIC is part of the **International Health Regulations (IHR)** which have been the governing framework for global health security since 2007.
- The WHO defines PHEIC as an **extraordinary event** which is determined to **constitute a public health risk to other States through the international spread of disease and potentially requires a coordinated international response.**
- PHEIC implies that the situation is **serious, sudden, unusual or unexpected** and carries implications for public health beyond the affected country's border.
- The WHO reserves the designation for only those diseases that **need a coordinated international response** to prevent them from potentially escalating into a pandemic.
- The alert has been issued for diseases like Ebola, H1N1 Swine Flu, Poliovirus, Covid-19, Zika Virus and Monkeypox. (Refer EPIC August 2022 for Monkey Pox: Public Health Emergency Declared by the WHO).

Criteria for PHEIC

PHEIC is declared by the WHO based on fulfilment of certain criteria.

- 1 Public Health Risk to Other States through International Spread.
- 2 Requires Coordinated Response.
- 3 Situation is serious, unusual or unexpected.
- 4 Decision is made by the Director General, WHO and a committee of Experts.

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COVID-19's Status as PHEIC

- For over 12 months, COVID-19 has been on a **downward trend** with **immunity increasing** due to the highly **effective vaccines** developed in record time to fight the disease, and infections.
- **Death rates have decreased** and the pressure on once-overwhelmed health systems has eased. This trend has allowed most countries to return to life as it were before COVID-19.
- Hence, the PHEIC status for COVID-19 has been revoked.

WHO Recommendations for COVID-19

- Sustain the **national capacity gains** and **prepare for future events** to avoid the occurrence of a cycle of panic and neglect.
- Integrate COVID-19 vaccination into **life course vaccination programmes.**
- **Bring together information** from diverse respiratory pathogen surveillance data sources to allow for **comprehensive situational awareness.**
- **Continue to support R&D** to improve vaccines that reduce transmission and have broad applicability.

Focus Areas

- Nations should pay attention to **multiple variants and sub-variants** that continue to emerge regularly.
- Countries should periodically test their **capacity to respond to situations of epidemic**.
- Utilize health infrastructure built during the pandemic for further research like **genetic sequencing**.
- Individuals should follow the hygiene and precautions that became a habit during the COVID years.

6. Pre-term Babies: India Among Top 5 Countries

News: WHO and UN Children's Fund and Partnership for Maternal, New-born and Child Health (PMNCH) have released a report titled "Born too Soon: Decade of Action on Pre-term Birth".

Key Findings of the Report

- ~13.4 million babies were born pre-term in 2020, with **nearly a million dying from pre-term complications** (1 in 10 babies). This indicates a '**silent emergency**' for children's survival and health.
- Preterm births occur **earlier than 37 weeks** of an expected 40-week full-term pregnancy.
- ~50% of all pre-term births in 2020 were in 5 countries: India, Pakistan, Nigeria, China and Ethiopia.
- India tops the list with 30.16 lakh births. A report published in 2022 in PloS-Global Public Health showed that West Bengal reported 16% of preterm births, Tamil Nadu 14% and Gujarat 9%.

Causes of Pre-term Births

- The report found **inequalities related to race, ethnicity, income, and access to quality care**, determine the **likelihood of pre-term birth**, death, and disability, even in high-income countries.
- Factors like **air pollution** are estimated to contribute to **six million preterm births each year**.
- ~1 in 10 preterm babies (~10%) are born in the 10 most fragile countries affected by **humanitarian crises**.

Causes of Premature Birth

The exact causes of premature birth are not clear. Health Experts think it might be triggered by various risk factors in woman's lifestyle habits.

- 1 Uncontrolled health conditions.
- 2 Uterine, cervical, or placental abnormalities.
- 3 Abnormal Weight.
- 4 Infections during Pregnancy.
- 5 Maternal addictions.
- 6 Trauma or injuries.

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Recommendations Given by the Report

- The Report has called for a set of actions to save lives such as:
 - Boosting investments in new-born health.
 - Supporting locally led innovation and research to support improvements in quality of care and equity in access.
 - Progress must also advance in prevention, which means **every woman must be able to access quality health services before and during pregnancy** to identify and manage risks.

7. Mitochondrial Donation Treatment (MDT)

News: A baby has been born in the UK using a technique called Mitochondrial Donation Treatment (MDT), popularly called 'Three Parents Baby'.

About Mitochondrial Diseases

- Mitochondria are the **powerhouses of the cells**. They **generate energy** and are responsible for cell function in the human body.

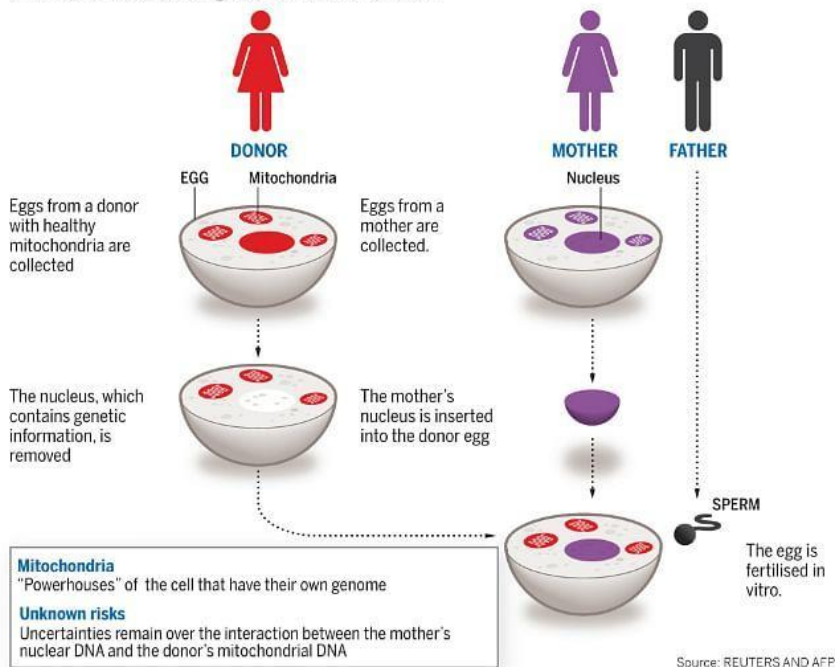
- **Certain defects** may impact the way the mitochondria produce energy for the cells (especially in the 'energy-hungry' tissues of the brain, nerves, muscles, kidneys, heart, liver). This impacts cell function. The diseases that arise out of such mitochondrial mutations are called **mitochondrial diseases**.
- Estimates put the prevalence of mitochondrial diseases as 1 in 5,000 people.
- Mitochondrial diseases are **passed on only by the mother to her child**. MDT prevents the passing of mitochondrial disease from mother to the child.

About Mitochondrial Donation Treatment (MDT)

- Through an advanced **in-vitro fertilisation** technique, the baby's biological **father's sperm** is used to **fertilize the eggs from the biological mother** (having mitochondrial disease) and a third, **female donor** with clear mitochondria, separately.
- The **nuclear genetic material from the donor's egg** is **removed** and **replaced with the genetic material from the biological parents**.
- The final product (the egg) which has the **genetic material (DNA) from the parents** and the **mitochondria from the female donor**, is implanted in the uterus and carried to full term to yield a baby who will be **free from the mother's mitochondrial disease**.
- Sometimes it is possible that a small amount of the maternal mitochondria with errors may get passed on during the procedure. However, more data is needed to establish consensus on this.

Mitochondrial donation

Mitochondrial donation is a treatment that would allow women with inherited mitochondrial diseases to avoid passing them on to their children



8. Spurious Liquor

News: Deaths due to consumption of spurious liquor is a common tragedy in India. Spurious liquor can prove to be fatal to human beings.

About Alcohol Content in Liquor

- Liquor is differentiated by its **alcohol content**, e.g., beer has 5% alcohol while wine has 12%. Alcohol, which is frequently consumed, is **scientifically known as ethanol**.
- The WHO has found that '**no level of ethanol consumption is safe for our health**'. Long-term use leads to **dependence** (addiction), increases the risk of various diseases, and may cause death.

Impact of Ethanol on Human Body

- Ethanol is a **psychoactive** drug that, in low doses, **reduces the level of neurotransmission in the body**, leading to its typical **intoxicating effects**.
- Inside body, Ethanol is metabolised in the liver and stomach by **alcohol dehydrogenase** (ADH) enzymes to **acetaldehyde**. **Aldehyde dehydrogenase** (ALDH) enzymes transform the acetaldehyde into **acetate**.
- **Acetaldehyde** is the main reason for **harmful effects** of ethanol in the body.

About Methanol

- Methanol is commonly produced by combining carbon monoxide and hydrogen in the presence of copper and zinc oxides as catalysts at 50-100 atm of pressure and 250°C.
- Methanol has several **industrial applications** including the production of acetic acid, formaldehyde, and aromatic hydrocarbons. It is also used as a **solvent** and as **antifreeze**.
- Use of methanol is governed by **various Union and State laws**.

About Spurious Liquor

- Spurious liquor is characterised by the liquid mixture containing **methanol with ethanol**. Methanol is added in the liquor to **strengthen the intoxicating effects** and/or to **increase its bulk volume**.
- The **Food Safety and Standards (Alcoholic Beverages) Regulations 2018** has provided standard for the maximum permissible quantity of methanol in different liquors.
- **The deadliness of spurious liquor arises from methanol**. Once ingested, methanol is metabolised in the liver by ADH enzymes to form formaldehyde. **ALDH enzymes convert formaldehyde to formic acid**. The accumulation of formic acid leads to a condition called **metabolic acidosis**.
- Acidosis can lead to **acidemia**, a condition wherein the blood's pH drops below its normal value of 7.35, becoming **increasingly acidic**.
- **Formic acid also interferes with an enzyme called cytochrome oxidase**, which in turn **disrupts cells' ability to use oxygen** and leads to the formation of lactic acid, contributing to acidosis. This ultimately leads to death.

9. Check Unnecessary Hysterectomies: Union Government to States

News: The Union Ministry of Health and Family Welfare has written to States/UTs to curb unnecessary and unjustified hysterectomies on poor, less-educated women, particularly in the rural areas.

About Hysterectomy

- Hysterectomy is surgical removal of the uterus. Uterus is the reproductive organ in females (mammals) that is responsible for **foetal development of the embryo** (during pregnancy) till birth.
- After a hysterectomy, the female is **not able to menstruate or get pregnant**.
- In India, hysterectomy is a common method of birth control. It is **permanent** and **irreversible**.
- The rate of hysterectomy in India is high. According to the NFHS-4 (2015-16), the rate was 3.6% among women in 30-39 years age group and 9.2% for 40-49 age group. In Andhra Pradesh, the rate is 20-23% in the 40-49 age group.
- A high prevalence of hysterectomies in India shows that **disproportionate burden of birth control falls on women**. Experts opine that birth control measures should rely on the **use of contraceptives** rather than on permanent methods like hysterectomies.

Supreme Court's View on Hysterectomy

- A petition was filed in the SC that said that several States performed "unnecessary hysterectomies" under the Rashtriya Swasthya Bima Yojana and other Government schemes related to healthcare. It

highlighted that several private institutions were **misusing the procedure to claim high insurance fees** from Governments under **various health insurance schemes**. It argued that the unnecessary hysterectomies endangered the lives of many women.

- Most women belonged to the Scheduled Castes, Scheduled Tribes, or Other Backward Communities.
- The SC noted that in developed countries hysterectomies are typically conducted among **pre-menopausal women above the age of 45 years**. In India, the trends indicate rising hysterectomy rates among younger women, between **28 to 36 years old**.
- The SC has called the ‘unnecessary hysterectomies’ as a **serious violation of the fundamental rights** noting that “**Right to health is an intrinsic element of the right to life under Article 21 of the Constitution**”.
- The Supreme Court has directed the States/UTs to **implement health guidelines** formulated by the Union Government to monitor “unnecessary” hysterectomies within 3 months.
- The Union Government had issued ‘Guidelines to prevent unnecessary hysterectomies’ in 2022. States have been advised to undertake compulsory audits for all hysterectomies.

10. Sludge as Fertilizer

News: A study has found that the sludge found in sewage treatment plants (STP), has ‘high potential’ to be used as fertilizer.

About Sludge

- Sludge is a thick residue found in Sewage Treatment Plants set up to treat polluted water.
- They are **rich in organic chemicals** but are also a repository of **heavy metals, industrial effluents and bacterial contaminants**.
- According to the standards of the United States Environment Protection Agency (EPA), treated sludge can be classified as:
 - **Class A sludge:** It is safe to be **disposed of in the open** and useful as **organic fertilizer**.
 - **Class B sludge:** It can be used in **restricted agricultural applications**, with the **edible parts of the crop not exposed to the sludge-mixed soil**, and animals and people not coming into extensive contact.
 - India doesn’t yet have standards classifying sludge as class A or B.

Government Initiative to Treat Sludge

- **National Mission for Clean Ganga** is a flagship programme of the Government to establish treatment facilities and prevent pollution of the Ganga River.
- One of the measures under this is ‘**Arth Ganga**’ (economic value from Ganga). It aims to **monetise and reuse treated wastewater and sludge**. This means converting sludge into usable products such as manure and bricks.

Study About Sludge Treatment in India

- A study by IIT Roorkee found that most of the sludge analyzed after drying fell into the class B category.
- The study said that the sludge found in Indian STPs has a **high potential for use as fertilizer** but **required treatment** before it could be **used unrestricted on farms** or as a potential biofuel.

Environment

1. No 100% Biodegradable Plastic in India: Bureau of India Standards (BIS)

News: The BIS has said that plastic is not a 100% biodegradable product and if any claims otherwise, it will be equivalent to misleading advertisement.

About the BIS Statement

- Several companies are claiming that their products use 'biodegradable' plastic.
- BIS has said that as of now there is no 100% biodegradable plastic in India. Firms making such claims or '**greenwashing**' their products are liable to face action under the '**misleading advertisements**' rules of the **Consumer Protection Act**.
- At present, the Government gives certificates only to 'compostable plastic manufacturers', which is different from certificates for manufacturing biodegradable plastic. In the case of compostable plastic, the materials are treated in controlled environmental conditions in industries.

Greenwashing

Greenwashing is the process of conveying **misleading information** to create a **false perception about the environmental sustainability** of a company's products. Greenwashing makes people believe that they are consuming **environmentally friendly products** when actually they aren't. Companies are engaging in greenwashing to **lure environmentally conscious users** by misleading them and earn profits.

About Green Standards

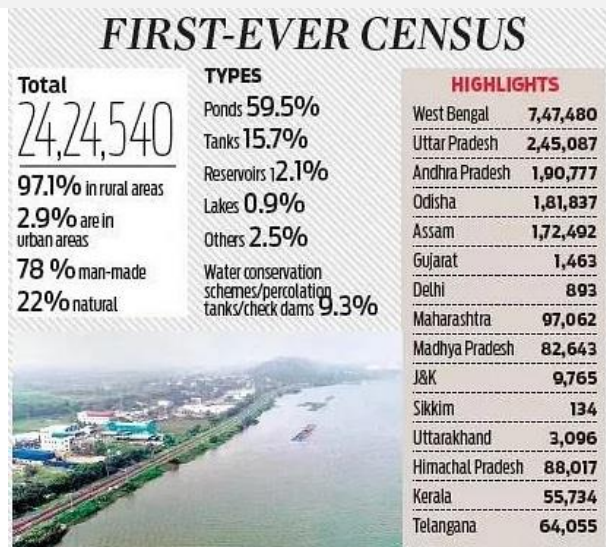
- Green standards indicate the **environmental attributes or performance of a product or service**.
- The aim is to **reduce the negative impact** of human activities on the natural environment and promote the efficient use of resources.
- **BIS has framed green standards for different sectors** which include:
 - Raw materials for construction (like fly ash bricks, construction and demolition waste, cement etc.).
 - Waste disposal (like recycling of plastics waste).
 - Electronic vehicles (EV charging infrastructure and battery swapping system).
 - Agriculture (organic farming process).
 - Renewable energy (wind turbines, energy-efficient motors and solar PV modules).

2. Census of Water Bodies in India

News: The Ministry of Jal Shakti has released the first census of water bodies in India.

About the Census of Water Bodies

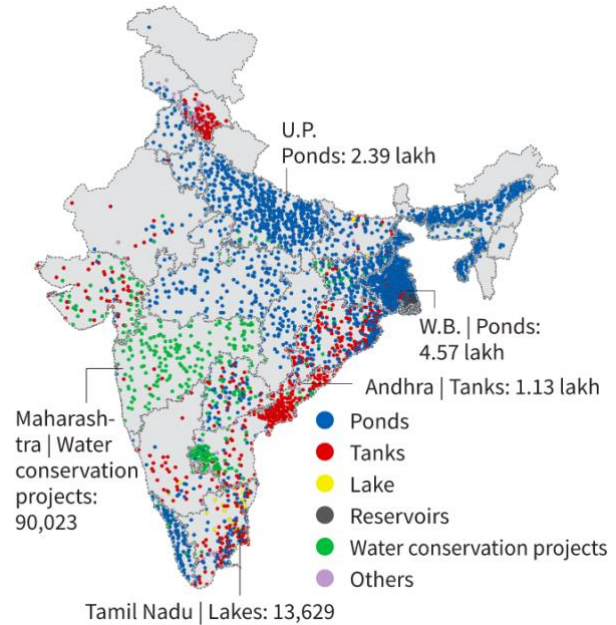
- The objective of the Census is to **develop a national database for all water bodies** by collecting information on all important aspects like size, condition, status of encroachments, use, storage capacity, status of storage etc.
- The census defines a waterbody as "**all natural or man-made units bounded on all sides with some or no masonry work used for storing water for irrigation or other purposes** (example industrial, pisciculture, domestic/drinking, recreation, religious, groundwater recharge etc)".
- The census was conducted along with the 6th Minor Irrigation Census for 2017-18.



Source: The New Indian Express. No encroachment on water bodies was reported from West Bengal, Sikkim, Arunachal Pradesh and Chandigarh.

Key Findings of the Census of Water Bodies

- **Waterbodies:** India has 24.24 lakh water bodies like ponds, tanks and lakes. West Bengal accounts for most of the water bodies and Sikkim the least. West Bengal's **South 24 Parganas** has been ranked as the **top district having the highest (3.55 lakh) number of water bodies** in India.
- **Classification of Water Bodies:** Around 59.55% of water bodies are ponds, followed by tanks (15.7%), reservoirs (12.1%), water conservation schemes/percolation tanks/check dams (9.3%), lakes (0.9%) and others (2.5%). The leading States by type of water body are **West Bengal** (Ponds, Reservoirs), **Andhra Pradesh** (Tanks), **Tamil Nadu** (Lakes) and **Maharashtra** (Water Conservation Schemes).
- **Encroachment of Water Bodies:** ~1.6% of all enumerated water bodies are encroached, with **95.4% of encroachments in rural areas** and the remaining 4.6% in urban areas.
- **Use of Water Bodies:** A major proportion of water bodies, **83.7% are in use**. Remaining **16.3% are not in use** on account of drying up, construction, siltation, destruction beyond repair, salinity and other reasons. Most of the water bodies are used in **pisciculture**, followed by **irrigation**, **groundwater recharge** and **domestic/drinking purposes**.
- **Ownership:** 55.2% of water bodies are owned by private entities, 44.8% fall under public ownership.
- **Origin:** 78% of enumerated water bodies are man-made whereas the remaining 22% are natural water bodies. ~97% of the bodies fell in rural areas.
- **Size:** A vast majority of water bodies are less than 1 hectare (ha) large; locating and keeping track of them is likely to remain a challenge.
- **Wet vs Dry Regions:** In drier States like Gujarat, Maharashtra, and Rajasthan, water bodies generally tend to be larger and publicly held. They are primarily used for irrigation. In the wetter regions, like Kerala, West Bengal etc. more than 75% water bodies are privately owned are primarily used for pisciculture and domestic purposes.



Source: The Hindu. In terms of distribution, water bodies are more concentrated in the Indo-Gangetic plains (esp. West Bengal, ponds), Brahmaputra Plains (ponds), Eastern coast (Godavari Delta, tanks) and Malabar coast (Kerala, ponds).

Significance of the Census

- The census provides a comprehensive overview of the distribution of water bodies in India,
- The data on the encroachment of water bodies can help in **identifying areas where conservation efforts are needed** to protect the resources.
- The census has, however, neglected the aspect of biodiversity and ecosystem services of water bodies, and focused more on human use.
- Experts have questioned the basis of classification arguing ponds and tanks may not be mutually exclusive.

3. WMO Global Annual to Decadal Climate Update: 1.5°C Limit to be Breached by 2027

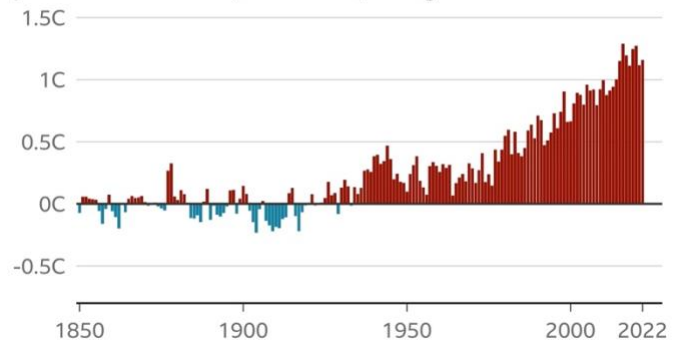
News: According to the World Meteorological Organization (WMO), global temperatures are likely to surge to record levels in the next 5 years, fuelled by heat-trapping greenhouse gases.

Key Findings of the WMO Report

- There is a **66% likelihood** that the **annual average near-surface global temperature** will be **more than 1.5°C above pre-industrial levels** for at least one year between 2023 and 2027.
- The annual mean global near-surface temperature for each year between 2023 and 2027 is likely to be 1.1°C-1.8°C higher than the average from 1850-1900.
- The likelihood is rising due to **rising emissions from human activities** and a **likely El Niño weather pattern** later in 2023.

The world has been getting warmer

Change in annual average global temperature from pre-industrial levels (1850-1900) in degrees C



Implications of 1.5°C Rise

- The 1.5°C level is not a direct measure of the world's temperature but an indicator of **how much the Earth has warmed compared to the long-term global average temperature**.
- Scientists use the average temperature data from the period between 1850-1900 as a benchmark of average temperature level before modern's civilizations dependence on coal, oil and gas.
- Scientists believe that **if the world warmed by 1.5°C from this benchmark, it can lead to calamitous outcomes**. Global temperatures have already **reached 1.28°C (2016) above the pre-industrial average**.
- With current climate policies, the earth is likely to heat beyond 2°C by the end of the century.

Impact of El-Niño

- For the last 3 years, the world has been experiencing a **La Niña event** which has **dampened climate warming to some extent**.
- However, the extra heat that El Niño will bring to the surface of the Pacific this year will likely push the global temperature to a new high in 2024.
- Hence, there is a **98% chance of at least one in the next five years beating the temperature record set in 2016**, when there was an exceptionally strong El Niño.

Impact on India

- The rise in ocean temperatures is also likely to **lead to stronger cyclones** e.g., the Cyclone Mocha in Bay of Bengal ended up being stronger than what was initially estimated.
- The IMD has indicated that **monsoon rainfall in 2023 will be on lower side of 'normal' due to El Niño**.

4. India Warming at a Slower Pace than the Global Average

News: The Earth is warming, but the increase in temperature is not uniform. According to estimates, the warming trends over Indian region are much slower than the global average.

About the Temperature Rise

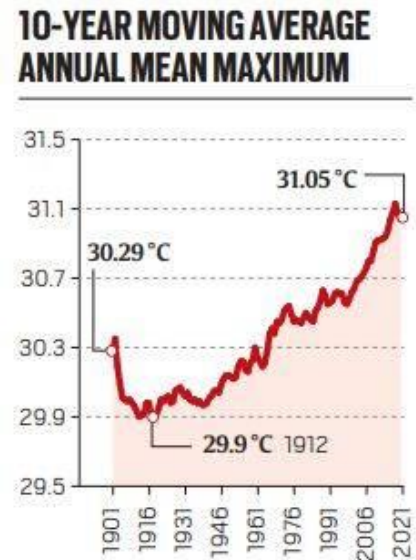
- The annual mean temperature of the world is known to have increased by 1.1°C-1.3°C from the average of the 1850-1900 period. The increase varies in different regions and at different times of the year.
- Temperature **rise over land is much higher than over oceans**. According to the latest IPCC report, the annual mean temperatures have risen by ~1.59°C over land, since preindustrial times. Oceans, in contrast, have warmed by ~0.88°C only.

Slower Warming over India

- According to an assessment by the Ministry of Earth Sciences (2020), **the annual mean temperatures in India have risen by 0.7°C from 1900**. This is much less than global average (for land 1.59°C).
- The increase in temperatures is known to be **more prominent in the higher latitudes, near the polar regions**, than near the equator. This is attributable to a **complex set of atmospheric phenomena**, including **heat transfers** from the tropics to the poles through prevailing **systems of air circulation**. India happens to be in the tropical region, quite close to the equator.

Warming in the Arctic Region

- The IPCC report says the **Arctic region has warmed at least twice as much as the world average**. Its current annual mean temperatures are about **2°C higher than pre-industrial times**.
- Arctic warming is related to **albedo effect**, the amount of sunlight reflected by a surface. Ice reflects most of solar radiation, while land and water absorb much more radiation compared to ice.
- Warming of Arctic leads to melting of ice, exposure of more land/water which absorb higher radiation **contributing to further warming** (Positive Feedback). (Refer EPIC July 2022 for Exceptional Warming of Barents Sea and Atlantification and EPIC October 2022 for Climate Tipping Points).



Impact of Aerosols

- Aerosols refer to all kinds of particles suspended in the atmosphere. These particles have the potential to affect the local temperature in multiple ways.
- Many aerosols **scatter sunlight back** so that **lesser heat is absorbed by the land**.
- Aerosols affect **cloud formation**. Clouds impact radiation by reflecting incoming sunlight and absorbing radiation emitted by Earth.
- Aerosol concentration over the Indian region is quite high, due to natural (due to location in tropics) and anthropogenic reasons like emissions from vehicles, industries, construction etc.
- Hence, a reduction in warming could be an unintended but positive side-effect of aerosols.

5. RBI's Report on Currency and Finance: 'Towards a Greener Cleaner India'

News: The RBI Report has highlighted the impact of climate-change-induced risks on the economy and the need for research to formulate policy options to address them.

Key Findings of the Report

- **Net Zero Target:** India aims to achieve the net zero target by 2070. This would require an accelerated reduction in the **energy intensity of GDP by around 5% annually** and improvement in its **energy mix in favour of renewables** to around 80% by 2070-71.
- The cumulative total expenditure for adapting to this climate change is estimated to be INR 85.6 lakh crore (at 2011-12 prices) by the year 2030.
- **Implications for Financial Stability:** The financial sector faces the dual challenge: **Recalibrating business strategies** to support the green transition process and **Strengthening resilience** to rising vulnerability to adverse climate events so as to safeguard financial stability.

- On the first challenge, estimates suggest that the **Green Financing requirement in India** could be **at least 2.5% of GDP annually** to address the infrastructure gap caused by climate events.
- On the second challenge, the report says that the public sector banks may be more vulnerable than private sector banks in India.

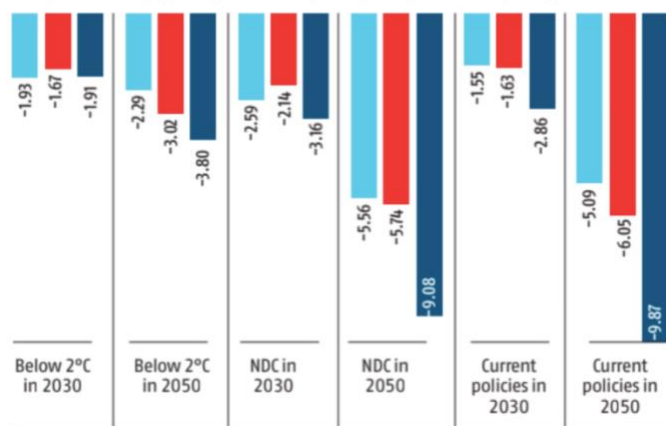
Impact of Climate Change-induced Risks on Financial Stability

- **Currency depreciation** in countries frequently affected by climate disasters can cause **financial instability**, higher import costs, and negative terms of trade.
- Climate change can **affect price stability through supply shocks** such as food and energy shortages.
- **Loss of wealth** (households and firms) due to disasters can cause **demand shocks**.
- Climate-induced uncertainty can make households **save more for precautionary purposes**, bringing down the **real equilibrium interest rate**, which is the interest rate at which the demand for money matches the supply. (Refer EPIC October 2022 for Impact of Climate Change on Monetary Policy).
- IMF's **INFORM Climate Risk Index** has stated that within BRICS and Advanced Economies (AEs), **India is the most vulnerable and least resilient to physical risks arising from climate change**. The positive development is that India is ranked the best among G20 nations in climate protection performance, according to the **Climate Change Performance Index 2023**.

CLIMATE CHANGE AND ITS IMPACT ON GDP

Scenarios (deviations from baseline in %)

■ Impact on GDP (US) ■ Impact on GDP (World) ■ Impact on GDP (India)



Source: Business Standard. Climate Change will negatively impact GDP growth in different scenarios. The impact on India is worst if climate action policies are not improved and present policies continue till 2050. In all scenarios, impact on India's GDP are much worse than those on the US or World (average).

Suggestions given by the Report

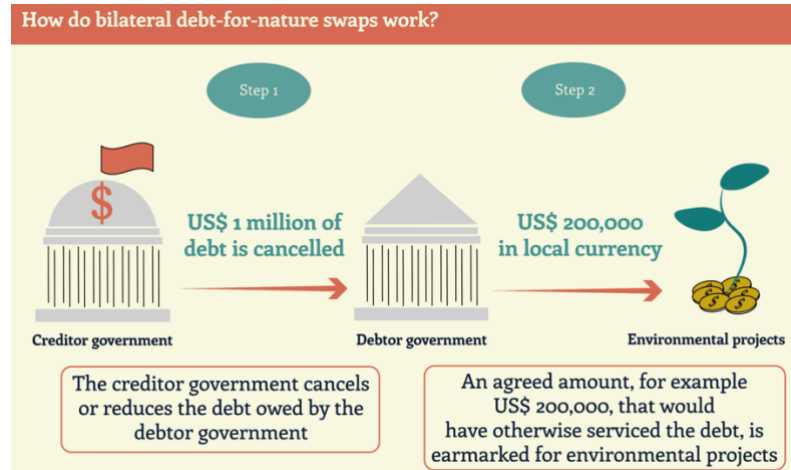
- **Introduce an Emissions Trading System (ETS)** covering all sectors of the economy which can balance subsidies (less polluting industries getting carbon credits for trading) and tax (more polluting industries that should have to buy carbon certificates).
- Ramp up domestic capacity to mine rare earth elements or procure them through long-term contracts and outward FDI.
- **Complementing green building standards** with IoT-based monitoring and AI and ML to manage and reduce energy demand.
- Boost **climate-resilient agriculture**.
- Production of **green hydrogen** using renewable energy.
- Investment in **carbon capture and storage technologies**.
- The Report noted that Banks in India have started taking steps in climate risk and sustainable finance. However, concerted efforts and further actions are needed. Banks must establish separate verticals or departments for sustainable finance and ESG related initiatives. (Refer EPIC March 2023 for ESG Framework in India).

6. Debt-for-Climate Swaps

News: Debt-for-Climate Swaps have grown popular among low- and middle-income countries. They provide debt relief to indebted countries while promoting environment sustainability.

About Debt-for-Climate Swaps

- They were introduced as a **debt restructuring device** that aim to **combat climate change** by ensuring that **debt-ridden countries do not incur additional debt while addressing climate change locally**.
- Under this arrangement, a new agreement is worked out with a multilateral or bilateral partner to replace the terms of the initial loan agreement. Under the new terms, the remaining debt is directed, on mutually agreed terms, towards **'Green or Blue' domestic investments** (i.e., environment (green) or sustainable use of ocean resources (blue)).
- Debt-for-Climate Swaps have dual objectives:
 - Promote specific investment and policy action.
 - Debt relief to the indebted nations unable to repay debt.
- They are a variation of **debt-for-nature swaps**, which were first proposed in the 1980s as a way to **conserve biodiversity and protect tropical forests** in exchange for debt relief.
- Debt-for-Climate Swaps emerged in the 2000s as a broader concept that encompasses conservation, climate mitigation and adaptation.



Advantages of Debt-for-Climate Swaps

- **Debtors:** Debt swaps can help the world's low-income countries **avoid default** and enable them to redeploy part of their debt repayments to invest in measures to **tackle climate change or nature conservation**.
- **Creditors:** Debt swaps can **reduce their risk** through additional guarantees and ensure that at least part of a loan is eventually repaid. It enhances their **development cooperation** and **climate finance objectives** and strengthen their diplomatic relations with debtor countries.

Encouraging Debt-for-Climate Swaps

- A **global framework or standard** that sets the **rules for green debt swaps** would enable more creditors to join such initiatives and help increase the size of deals.
- A **public campaign**, similar to the huge push to cut debt and poverty in the 1990s and 2000s, could be beneficial. Multilateral development banks and organizations like the United Nations Development Programme (UNDP) have been advocating Debt Swaps as a debt-relief measure.

7. RBI's Framework for Green Deposits

News: The Reserve Bank of India (RBI) has come up with a regulatory framework for banks to accept green deposits from customers.

RBI's Regulatory Framework for Green Deposits

- Green Deposits are like regular deposits. The key difference is that Banks promise to utilize the money from green deposits towards environment-friendly projects like financing renewable energy.
- The regulatory framework is aimed at **preventing greenwashing**. It lays down certain conditions that banks must fulfil to accept green deposits from customers:
 - Banks will have to formulate rules and policies related to investing the money from green deposits. These rules need to be made public on the banks' websites.
 - Banks will have to disclose regular information about the **amount of green deposits received, deposits allocated** towards various green projects and the **impact of such investments** on the environment.
 - A **third party will have to verify the claims** made by banks regarding the invested projects.
- RBI has **listed the sectors classified as sustainable** and thus **eligible to receive green deposits**. These include Renewable Energy, Waste Management, Clean Transportation, Energy Efficiency, Climate Change Adaptation, Sustainable Water and Waste Management, Pollution Control, Green Buildings, Biodiversity Conservation and Sustainable Land Use.

Impact of Green Deposits

- They are expected to provide greater access to finance for Green projects.
- But Banks may have limited choices to invest, depending on availability of Green projects.
- Some experts say many projects labelled 'Green Projects' may have limited environment impact.

8. Ban on Diesel Vehicles in India

News: The Energy Transition Advisory Committee has recommended a ban on diesel-powered four-wheel vehicles by 2027 in cities with population more than 1 million. It has recommended shifting towards electric and gas-fuelled vehicles and city transport with a mix of Metro trains and electric buses by 2030.

Rationale for Proposal

- The recommendation is along the lines of the Government's aim to **reduce greenhouse gas emissions**, and meet 50% of energy requirements from renewable energy by 2030.
- Diesel currently accounts for ~40% of India's petroleum products' consumption. Ban on diesel vehicles will reduce the demand for diesel.

Drawbacks of Diesel Engines

- Diesel vehicles have higher emissions of oxides of Nitrogen (NOx) leading to pollution.
- Diesel engines require greater maintenance compared to petrol engines.
- Upgrading diesel engines to tighter emission norms (BSVI) is more expensive than petrol engines

Issues with the Proposal

- ~87% of diesel fuel sales are in the transport segment, with trucks and buses accounting for about 68%.
- Carmakers and oil firms have **invested large funds in shifting to BS-VI** which will be lost.
- Most auto manufacturers have discontinued production of passenger diesel vehicles but a total ban will disrupt commercial vehicle segment, with high proportion of diesel vehicles. Alternative fuels options such as EV, CNG, and LNG are still being explored.
- Some users still prefer diesel vehicles because of **greater fuel efficiency** (less fuel per km) and lower cost of diesel compared to petrol.

Other Steps Taken

- Standards under BS-VI have necessitated oil refineries to **reduce the level of sulphur in diesel**.
- The Bureau of Indian Standards (BIS) has developed a standard for diesel containing 7% biodiesel.
- Looking at the current demand of diesel in the market, the Government should concentrate on phasing-out diesel rather than completely banning diesel vehicles.

9. Supreme Court Modifies Order Related to Eco-Sensitive Zones (ESZs)

News: The Supreme Court has modified its Order (2022) that had directed that each protected forest such as National Park must have an Eco-sensitive Zone (ESZ) of 1 km.

About the SC Order

- In June 2022, the SC had directed all national parks and wildlife sanctuaries falling under protected forests to **earmark a minimum distance of 1 km as ESZ where prohibited activities**, including mining and establishment of any new permanent structure, **will not be permitted**.
- The Union and several State Governments had returned to the Court seeking modification of the SC Judgment saying the judicial direction **affected hundreds of villages on the peripheries of forests**.
- The SC has modified its 2022 Judgment now. The SC reasoned that **ESZ cannot be uniform across the country and has to be “protected area-specific”**. The Court said a stringent observance of its earlier Order **would cause more harm than good**. This will **increase man-animal conflict** rather than abate it.
- Henceforth, the 2022 Order will not be applicable to:
 - ESZs in respect to which draft and final notifications have been issued by the MoEFCC, and where proposals for such notifications have been received by the Ministry.
 - Where the national parks and sanctuaries are located on inter-state borders or share common boundaries.
- However, the SC has made it clear that **mining** within the national park and wildlife sanctuary and **within an area of 1 km from their boundary** shall not be permissible.

10. Use of Artificial Intelligence (AI) in Environment Sustainability and Conservation

News: AI-based Applications can play a vital role in ensuring environmental sustainability and conservation.

About AI-based Applications for Environment

- **Saving trees with AI:** Deforestation and land use changes cause more than 10% of global greenhouse gas emissions. A Non-profit organization's ‘Guardian’ devices attach **acoustic monitoring sensors** to trees to detect sounds associated with **illegal logging**.
- **Shrinking the Carbon Footprint of Steel:** Materials such as steel and cement are heavy CO₂ emitters, making decarbonizing these industries a priority. Fero Labs' AI-driven optimization software learns from historical data to **recommend the minimum amount of mined ingredients or alloys required in steel production**.
- **Cutting Energy Waste in Buildings:** In Hong Kong, energy use in buildings is responsible for about 60% of the city's carbon emissions. A Design firm has come up with an app called Neuron that **uses 5G and Internet of Things sensors to gather real-time data from the energy management**



Source: Conure. Possible uses of AI in Environment Sustainability

system of a building. It then uses an algorithm to analyze this data and optimize the heating and cooling system, as well as make predictions for the building's future energy demand.

- **Fighting Poaching with Algorithms:** A South Africa-based company has developed AI-enabled bracelets that fit around rhinos' ankles to help conservation teams easily locate the animals and monitor their behaviour in real time.
- **Smart Farming:** A Germany-based start-up has developed an AI system that draws on data from solar-powered sensors **monitoring the microclimate around crops**. The data can be used to make **precise recommendations** about plant health and exactly how much water and fertilizer to use. This can both **boost yields** and **reduce wasted resources**.

History, Art and Culture

1. Thirunelli Temple, Kerala

News: Indian National Trust for Art and Cultural Heritage (INTACH) has urged the Government to conserve the historically significant structures, including the 600-year-old 'Vilakkumadom', at Sree Mahavishnu Temple at Thirunelli in Wayanad, Kerala.

About Thirunelli Temple

- Thirunelli Temple is an ancient temple dedicated to the **Lord Maha Vishnu**.
- It is located on the sides of **Brahmagiri Hill**, in Western Ghats in Wayanad, Kerala.
- It is also known as the **Sahyamala Kshetram** and **Kashi of the South**.
- The temple is a fine specimen of classical **Kerala temple architecture**.
 - The inner sanctum is surrounded by a tile-roofed structure and there is an open courtyard around the sanctorum.
 - Along the outer wall of the temple is a cloister made of granite pillars cut in cubical style.
- Thirunelli is also the only temple in the world where devotees can perform all the rituals related to one's life, starting from birth to death and life after death.
- The rituals in this temple are performed on the banks of stream **Papanashini**, which originates from the Brahmagiri hills.
- There is a sacred rock near the river **Pinnappara** where ritual offerings to the spirits of the departed are made (known as *bali*).



2. Tungnath Temple

News: The Union Government has issued notification declaring Tungnath Temple as Monument of National Importance.

About Tungnath Temple

- It is located in Rudraprayag district, Uttarakhand
- It is an **ancient 'Shivalaya'** located at one of the highest point above sea level in Asia.

- It is one of the **Panch Kedars** and is believed to have belonged to an ancient era almost 1000 years old.
- It is built in the **North Indian style of architecture** and has a dozen shrines of other Gods surrounding the temple.
- It is believed to have been discovered by **Adi Shankaracharya**.

About Panch Kedars

- Panch Kedar refers to a group of 5 sacred shrines of **Lord Shiva** located in the **Garhwal Himalayas**, Uttarakhand.
- They are the subject of many legends that directly link their creation to **Pandavas**, protagonists of epic **Mahabharata**.
- The five temples are Kedarnath Temple, Tungnath Temple, Rudranath Temple, Madhyamaheshwar Temple or Madmaheshwar and the Kalpeshwar Temple. (Refer EPIC February 2023 for Monuments of National Importance).



3. Hemis and Thiksey Monastery

News: Delegates from G20 countries visited the Hemis and Thiksey Monasteries in Ladakh.

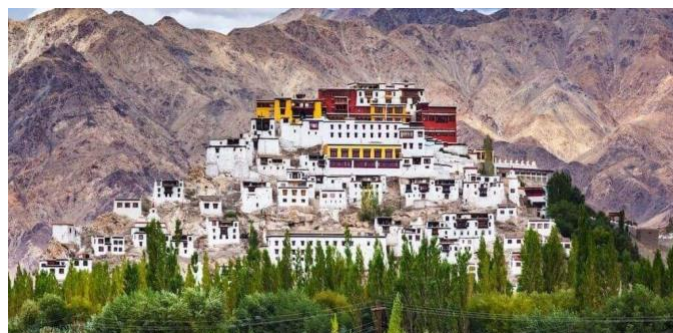
About Hemis Monastery

- It is a Buddhist monastery (*Gompa*) located ~45 km from Leh, in Ladakh. It is situated on the western banks of the **Indus River**.
- It belongs to the **Red Hat Sect** or **Drukpa** lineage of Buddhism.
- The monastery is famous for **Hemis Festival**. The festival is dedicated to **Lord Padmasambhava (Guru Rinpoche)**. He was a Buddhist **Vajracharya** who taught Vajrayana in Tibet. He helped construct **Samye Monastery**, the first Buddhist Monastery in Tibet.



About Thiksey Monastery

- The Thiksey monastery is located in Thiksey in Ladakh.
- The monastery is affiliated with the **Gelugpa sect** or **Yellow Hat sect** of Tibetan Buddhism.
- It is a 12-storey complex and **houses many items of Buddhist art** such as *stupas*, statues, *thangkas* (Tibetan Buddhist Paintings), wall paintings and swords.
- The monastery is notable for its **resemblance to the Potala palace in Lhasa**, Tibet and its annual **Gustor Festival**.
- The **Maitreya Temple** is one of the most popular attractions in the monastery. The temple houses a tall statue of **Maitreya Buddha** (future Buddha).



4. Shilabhattacharika

News: Researchers have decoded ancient inscriptions that have revealed information about celebrated Sanskrit poetess Shilabhattacharika.

About Shilabhattacharika

- Shilabhattacharika was an ancient Sanskrit poetess.
- She is considered a leading figure of the **Panchali literary style**, which maintains a balance between words and meaning.
- According to Sanskrit poet **Rajashekhara** (9th-century), the *Panchali* style can be traced to the works of Shilabhattacharika. He has placed her at par with **Banabhatta**, the court-poet of Harsha.
- **Sharangadhara-paddhati**, a 14th-century anthology, praises her and three other female poets for their great poetic genius and erudition.
- Researchers have found through inscriptions that Shilabhattacharika was a daughter of Chalukyan Emperor, **Pulakeshin II of Badami** (in modern Karnataka).
- This finding marks a notable shift in the historiography of Badami Chalukyas by placing Shilabhattacharika as having lived in the 7th-century CE rather than the current theory which believes that she was the wife of 8th-century **Rashtrakuta ruler, Dhruva**.

About Pulakeshin II

- Pulakeshin II was the most famous ruler of the Chalukya dynasty of Vatapi (present-day Badami). He ruled from 610-642 CE.
- He **defeated Harshavardhan** of Kanauj in a battle near the banks of the Narmada River in 618 CE.
- Badami Chalukyan rulers affixed the title of '**Satyashraya**' (translated as 'patron of truth') to their names, the only ruler to be known purely by this title was Pulakeshin II.

5. Santiniketan Recommended for UNESCO World Heritage Status

News: The International Council on Monuments and Sites, (UNESCO advisory body), has recommended Santiniketan to be included in the list of World Heritage Sites. It would be second cultural symbol from West Bengal in the UNESCO List. 'Durga Puja' was included in Intangible Cultural Heritage in 2021.

About Santiniketan

- Santiniketan is a renowned **cultural and heritage place** located in **Birbhum District, West Bengal**.
- It holds historical significance as it was the **home of Rabindranath Tagore**, where he lived and composed many of his literary works, including songs, poems, and novels.
- It was originally an *ashram* built by Debendranath Tagore (father of Rabindranath Tagore) where anyone, irrespective of caste and creed, could come and spend time meditating on one Supreme God.
- Santiniketan includes the entire **Visva-Bharati University Campus**, the core ashram area and the **Uttarayan complex**.



Source: Wikimedia Commons. Santiniketan Griha

- The core ashram area includes **Patha Bhavana** (the first school set up by Tagore in 1901), **Upasana Griha** (prayer hall, locally known as the glass temple), **Kala Bhavana** (institute of fine arts), **Sangit Bhavana** (institute of music) and **Santiniketan Griha** (the first house bought by Tagore's father Debendranath).
- The Uttarayan complex includes 5 houses of Tagore and a museum.
- Santiniketan is also adorned with splendid sculptures, frescoes, murals, and paintings created by renowned artists such as **Rabindranath Tagore**, **Nandalal Bose** and **Ramkinkar Baij** among others.

6. Supreme Court Upholds Amendments by States to Overturn Ban on Bull-taming Sports

News: The Supreme Court has upheld amendments made by Tamil Nadu, Karnataka and Maharashtra to the Prevention of Cruelty to Animals Act, 1960, to allow the traditional bull-taming sports of Jallikattu and Kambala, and bullock-cart racing.

About Jallikattu

- Jallikattu, also called **Eru Thazuvuthal** (literally, bull hugging), is a Tamil custom celebrated on the day of **Mattu Pongal**, the day after Pongal.
- Jallikattu finds a mention in the **Sangam literature**, and is being celebrated since nearly 2,500 years.
- 'Jalli' means coins and 'kattu' means to tie. During the rule of **Nayak kings**, **gold coins were tied to the horns of the bulls**, and were claimed as the prize by the winner.
- Bulls of indigenous breeds (mostly **Kangeyam**) are specially prepared for the event, by providing them with sumptuous food and care.
- On the day of the event, the bulls are let loose from an enclosure (*vadi vassal*) and **participants attempt to subdue them**. However, only the humps, or in some cases the horns, must be held on to. Touching any other part results in disqualification.
- The participant has to subdue to bull **within 30 seconds** or **4.6 metres**, whichever is longer. Sometimes, the participants have to get the flag that is tied to the horns of the bull.
- **If the bull gets subdued, the participant wins** and rewarded handsomely. The bull is used for **farm labour**.
- **If the bull cannot be subdued**, it wins. The bull owner is awarded handsomely, and the **bull is set aside for breeding purposes**, to preserve the vigour of the native breed.
- The custom thus **acts as an incentive for the people to conserve the indigenous cattle breeds**.

About Kambala

- Kambala is an annual festival celebrated in the **Dakshina Kannada** district of **Karnataka**.
- The festival involves the **traditional buffalo race** generally held from November to March.
- The buffaloes are made to **race one after another in paddy fields** as a thanksgiving to the Gods for protecting the animals from diseases.

About SC Judgment

- **Amendments Not 'Colourable Legislation':** The SC held that the amendments passed by the State Governments to allow the traditional bull-taming sports of Jallikattu and Kambala are not Colourable Legislation. Colourable Legislation refers to legislation made by a Legislature **under guise** on a subject **without having required competency** to make laws on that particular subject
- **Amendments Minimize Cruelty:** The amendments minimize cruelty to animals in the concerned sports. Once implemented and read with the rules, the Sports will not come under the definition of cruelty defined in the 1960 Act. The amendment has **received Presidential assent** and there is no flaw in the State action.

- **Jallikattu has Historical Context:** The Court said that the Legislature has declared Jallikattu as part of the **cultural heritage of Tamil Nadu**. The Judiciary will not go against the view.
- **Amendments do not violate Fundamental Rights and Duties:** The Amendment does not violate Articles 51-A (g) and 51-A (h) which impose duties on Indian citizens to protect the environment and develop a scientific temper, humanism, spirit of inquiry, and reform, respectively. The amendment doesn't violate Articles 14 (Right to Equality) and 21 (Right to Life) of the Constitution as well.

7. Meitei Community

News: Manipur has witnessed violent clashes between two tribal communities. The clashes have erupted after the Manipur High Court Order to the State Government regarding ST status to the Meitei Community.

About the Meitei Community

- The Meiteis are the largest community in Manipur.
- They speak the **Meitei language** (officially called Manipuri), one of the 22 official languages of India and the **sole official language of Manipur State**.
- The Meiteis are primarily settled in the **Imphal Valley region** in Manipur, though a sizable population has settled in the **neighbouring States** like Assam, Tripura, Nagaland, Meghalaya, and Mizoram. There is also a notable presence of Meitei in the **neighbouring countries** of Myanmar and Bangladesh.
- Meiteis are **divided into 7 major clans**, the members of which do not intermarry. These are Mangang, Luwang, Khuman, Angom, Moirang Kha, Ngangba, and Sarang Leishangthem.
- A majority **follow Hinduism** while more than 8% are Muslims, locally known as **Pangals**.
- The main festivals include *Lai Haraoba*, *Heikru Hindongba*, *Cheiraoba*, *Yaosang* among others.
- The **Manipuri martial art Thang-ta** is a combative sport which had its origin in the Meitei knights during the king's rule.



Source: Wikimedia Commons. Meitei Women participating in Heikru Hindongba.

Demand for ST Status

- The Meitei community has been demanding ST status since 2012, asking to provide them with constitutional safeguards to preserve their culture, language, and identity.
- The Meiteis argue that they were **recognised as a tribe before the merger of Manipur with India in 1949** but lost their identity after the merger in India. The Meitei community feels marginalized and victimized without any constitutional protections.
- The share of their population was 59% (in Manipur's population) in 1951 but has reduced to 44% in 2011.

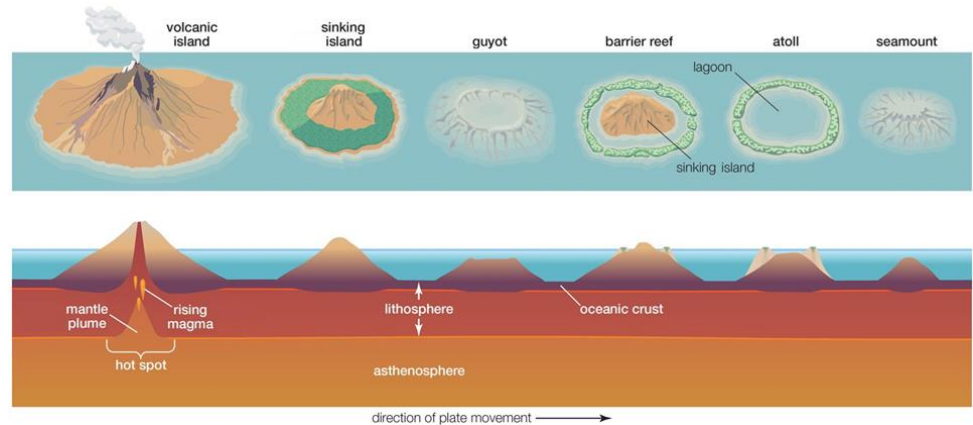
Miscellaneous

1. Seamounts

News: Scientists have reported finding 19,325 new seamounts through new high-resolution data.

About Seamounts

- A seamount is an **underwater mountain**.
- Seamounts with **flat tops** are called **Guyots**.
- Seamounts are formed through **volcanic activity**.
- Seamounts are recognized as **hotspots for marine life**.
- Like volcanoes on land, seamounts can be **active, extinct** or **dormant volcanoes**.



Source: Britannica. Sometimes undersea volcanic mountains can be high enough to emerge as sea islands. Subsidence of land causes submergence, and islands become seamounts.

- Most seamounts are **formed near mid-ocean ridges**, where the earth's tectonic plates are moving apart, allowing molten rock to rise to the seafloor. Seamounts are most abundant in North Pacific Ocean, Mid Atlantic Ridge and the East Pacific Rise.
- Some seamounts have been found near **intraplate hotspots** and **oceanic island chains** with a volcanic and seismic activity (island arcs). Intraplate hotspots are regions of **heavy volcanic activity within a plate**.
- Two common techniques to **map seamounts** are:
 - Echo sounders or multibeam **sonar on ships** for **topographic mapping**.
 - Using **satellite altimetry** for **gravity-field mapping**.

Importance of Seamounts

- Seamounts are formed when the molten rock from below the tectonic plates comes up and solidifies. They provide **information about the mantle's composition** and about **how tectonic plates evolve**.
- Oceanographers also study seamounts to understand their influence circulation of water, absorption of heat and carbon dioxide by water.
- Seamounts are home to **diverse biological communities**. Interactions between seamounts and underwater currents, as well as their elevated position in the water, attract **plankton, corals, fish**, and **marine mammals**. **Localized ocean upwelling** brings up **nutrient-rich water** from deep oceans supports rich marine life.

India's Contribution to Mapping of Seamounts

- **SARAL** is a satellite **jointly developed by India and France** for **oceanographic studies**. It has made a significant contribution in the expansion of the seamount catalogue.

2. Heat Index for Measuring Stress Due to Heat Waves

News: The IMD is planning to launch composite Heat Index by 2024 to quantify the impact of heat on the population and generate impact-based heatwave alerts for specific locations.

About Heat Index

- The India Meteorological Department (IMD) has started issuing experimental heat index from May 2023. It takes into account **air temperature** and **relative humidity** to determine '**how hot it really feels**'. It is still in experimental stage.

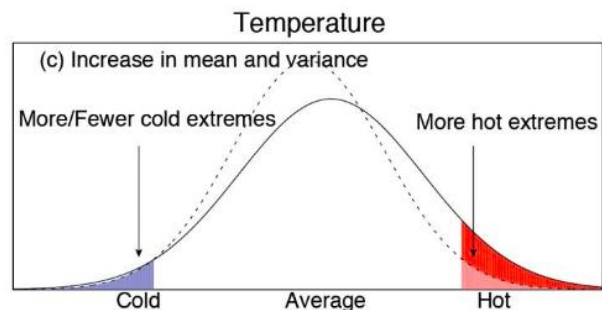
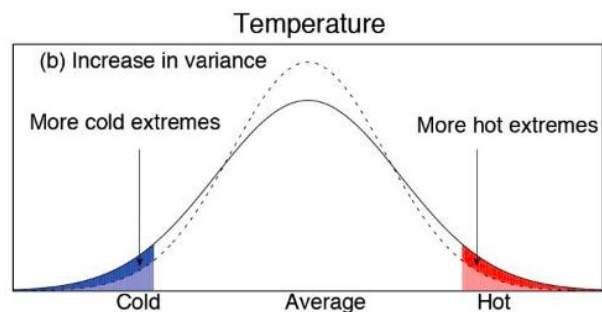
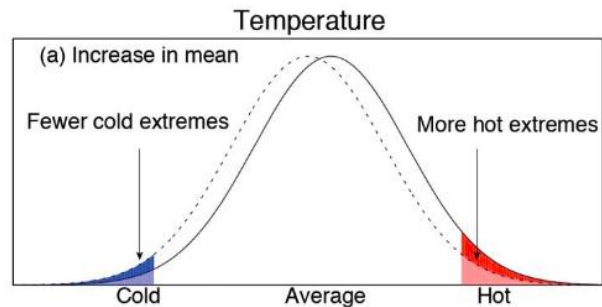
- By 2024, IMD will develop a multi-parameter 'Heat Hazard Score'. It will integrate parameters like **maximum and minimum air temperature, relative humidity, wind speed, duration of exposure** to **indicate heat stress** on people. Gradually health parameters will also be built into the Index.
- This will help in issuing **impact-based heatwave alerts** for specific locations.

About Heat Waves in India

- According to IMD data, there has been a 24% increase in the number of heat waves during 2010-2019 compared to 2000-2009.
- Between 2000-19, the mortality rate of heat waves has increased by 62%. IPCC Assessment Report has pointed to **rising mortality due to heat waves** as a major threat in the South Asian region.
- In 2023, India experienced its **hottest February** since record-keeping began in 1901. March 2022 was the warmest ever and the 3rd driest in 121 years.
- Heat waves are **yet to be notified as a natural disaster at the national level in India**.

Impact of Heat Waves

- Heat waves impact human health by causing cramps, exhaustion, stress, heat stroke and death.
- The elderly, children, and people with heart and respiratory problems, kidney diseases and psychiatric disorders are particularly affected.
- Extreme periods of high temperatures can lead to a **significant reduction in crop yields**.
- In India, about 75% of workers (around 380 million people) experience heat-related stress. A report by the McKinsey Global Institute warns that if this continues, by 2030, **India could lose between 2.5% to 4.5% of its GDP per year**. (Refer EPIC April 2023 for Review of Heat Action Plans).



Source: IMD/IPCC. Global warming will lead to increase in **mean temperature** (more number of hot days), increase in **variation of temperature distribution** (more number of days with extreme temperatures (hot or cold) and **changed symmetry in distribution of hot and cold weather**.

3. Disaster Preparedness of Asia Pacific Countries: ESCAP Study

News: A study by the UN Economic and Social Commission for Asia and the Pacific (ESCAP) has found that most Asia and Pacific nations are inadequately prepared to manage the rising risks of natural disasters.

Key Highlights of the UNESCAP Report

- The Asia-Pacific region accounts for more than **half of the world's greenhouse gas emissions**. It is one of the most rapidly developing regions of the world.
- Over the past 60 years, temperatures in the region have **increased faster than the global mean**.
- Extreme, unpredictable weather events and natural hazards have become **more frequent**. Intense Tropical cyclones, heatwaves, floods and droughts have brought **immense loss of life and displacement**, damaging people's health and **pushing millions into poverty**.

- 6 out of 10 countries most affected by natural disasters belong to this region.
- The annual average losses from natural and biological hazards in Asia and Pacific are ~ US\$ 780 billion.

Challenges Faced by the Asia Pacific Region

- The region is home to most of the **world's low-lying cities** and **vulnerable small island states**.
- Countries in the region **lack necessary data** and **means to support adaptation/mitigation efforts**.

Steps Recommended by UNESCAP

- **Energy:** There is a need for rapid uptake of renewable energy. This requires **restructuring national energy systems, new technical capacities** and **investment in supply and infrastructure**. The report stresses **cross-border electricity grids** to increase the share of renewable energy.
- **Transport:** The sector should be shifted to a **low-carbon pathway**. This can be achieved by reducing transport distance through **integrated land use**, shifting to **sustainable transport modes** with low-carbon emissions, as well as **improving vehicle and fuel efficiency**.
- **Regional Trade Agreements:** Trade must be climate-smart. The private sector must be encouraged to work towards a low-carbon pathway and **sustainability should be ingrained into business operations**.

Steps Taken by India Towards Disaster Management

- India has significantly increased funding for Disaster Management: US\$ 6 billion for Disaster Risk Reduction (DRR) and US\$ 23 billion for preparedness, response and recovery for the period 2021-25.
- India is developing **mitigation programmes to reduce the risk of losses from all hazards:** landslides, glacial lake outbursts, earthquakes, forest fires, heat waves and lightning.
- India has been the **first responder against disasters** across continents. It had recently sent its **National Disaster Response Force to Turkey and Syria** during earthquakes, dispatching field hospitals and search and rescue teams and medical relief material.
- Under **India's presidency**, **G20 members** have agreed to establish a **working group on Disaster Risk Reduction (DRR)**. The 5 priorities identified by the G20 working group are:
 - Early warning for all. (Refer EPIC November 2022 for 'Early Warning for All' Initiative).
 - Resilient infrastructure.
 - Improved financing of DRR.
 - Systems and capacities for response and **'build back better'**.
 - Ecosystem based approach to Disaster Management.
- In just over a decade, India has been able to reduce the loss of lives from cyclones to less than 2%.

Sendai Framework

- The Sendai Framework is the successor to the **Hyogo Framework for Action (HFA) 2005-2015**.
- It is a 15-year, **voluntary, non-binding agreement** which recognises that the **State has the primary role to reduce disaster risk**.
- It aims for the substantial reduction of disaster risk and losses in lives, livelihoods and health.

7 Global Targets

- Reduce mortality.
- Reduce number of affected people.
- Reduce direct disaster economic loss.
- Substantially reduce disaster damage to critical infrastructure and disruption of basic services.
- Spread disaster risk efforts.
- Increase cooperation and support.
- Increase accessibility.

4 Priorities for Action

- Understanding Disaster Risk.
- Strengthening disaster risk governance to manage disaster risk.
- Investing in disaster risk reduction for resilience.
- Enhancing disaster preparedness for effective response.

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4. Monitoring Groundwater Quality

News: The Ministry of Jal Shakti is working on a plan to deploy network of sensors to relay continuous information about groundwater levels and degree of contamination (at Taluk level).

About the Monitoring Plan

- At present, the Central Groundwater Board (CGWB) relies on a network of about 26,000 groundwater **observation wells** that **require technicians to manually measure** the state of groundwater in a region. The observations are taken only 4 times in a year.
- Under the new initiative, ~16,000-17,000 **digital water level recorders** will be connected to piezometers in the wells. Piezometers will measure groundwater levels, and recorders will transmit the information digitally.

Significance of the New Method

- It will help in **measuring groundwater quality continuously** and relay the information to the **National Water Informatics Centre** and make it available for monitoring.
- This can **provide groundwater forecasts to farmers** that would be useful for sowing. Updated advisories can influence **groundwater extraction policies by States**.

About the National Aquifer Mapping Programme (NAQUIM)

- The Programme was launched in 2012 by the Ministry of Water Resources (Ministry of Jal Shakti).
- The programme aims to **identify and map aquifers at micro level to quantify the available groundwater resources**.
- It aims to cover more than 25 lakh km² that have been delineated as **hydrogeologically mappable**.
- It also aims to **promote participatory groundwater management**. This can be achieved by empowering communities with a seamless flow of information and understanding of local aquifers.
- As of December 2022, 24.5 lakh km² area has been covered.

Condition of Groundwater in India

- According to the Ground Water Resource Assessment Report 2022, the total annual groundwater recharge in the country has been assessed as 437.60 billion cubic metres (BCM).
- The average stage of groundwater extraction in India is ~60.08%. **Extraction above 70% is considered "critical"**. Certain regions in Punjab, Haryana, Delhi and Rajasthan have groundwater blocks with over 100% extraction. (Refer EPIC April 2023 for Groundwater Usage and Governance in India and EPIC December 2022 for Dynamic Groundwater Resources of India, 2022 Report).

5. Bluewashing

News: The International Panel of Experts on Sustainable Food Systems (IPES) has released a report 'Who's Tipping the Scales?'. The Report highlights growing corporate control over governance of food systems.

Key Highlights from the Report

- **Rising Corporate Influence:** The 2021 UN Food Systems Summit exposed the ability of multinational agri-food corporations to **influence food system decision-making** and dominate seemingly inclusive 'multi-stakeholder' processes.
- **Methods of Influence:** Leading corporations have consolidated their grip by ensuring an industry-friendly regulatory environment (via lobbying and 'revolving door' approaches), shaping trade and investment agreements, putting up barriers to competition, sponsoring research, and making political donations.
- **Threat to Food Security:** Without effective action, food systems will be increasingly shaped by private interests. Public interest will suffer at the time of unprecedented threats to food security.
- **Addressing the Influence:** The influence can be checked through a UN-wide **Corporate Accountability Framework** and **robust conflict of interest policies**, taking inspiration from WHO frameworks for tobacco

control and **engagement with non-state actors**. There is a need to **democratize existing processes**, and create new autonomous governance spaces.

Bluewashing

- The Report has also **highlighted the practice of Bluewashing**. It points to FAO's partnership with CropLife, a major **pesticide lobby organization** that has many large agribusiness firms as members. Such partnerships with the UN and other intergovernmental bodies **gives a semblance of**

legitimacy to these firms (with corporate interests) and 'Bluewash' or 'Socialwash' their reputations.

- Bluewashing refers to **deceptive marketing techniques** to overstate a company's commitment to **responsible social practices**. It is similar to greenwashing, but is more focused on economic and community factors, while greenwashing is limited to environmental aspects.
- The term was first used to refer to companies who signed the **UN Global Compact** and its principles but did not make any actual policy reforms. Most companies had used the Compact as a **measure to improve public perception** about their values and governance practices **without introducing any real changes or reforms**.



Source: IPES. The Corporates use several techniques to influence systems several of which are not publicly prominent like sponsoring research (often to favour corporate interests), political donations/lobbying (for favourable policies).

UN Global Compact

UN Global Compact is a **non-binding UN initiative** that aims to encourage companies worldwide to adopt sustainable and socially responsible policies. The UN has formulated **10 principles** for Corporates to follow that are related to the domains of **human rights, environment, labour and anti-corruption**.

6. World Development Report 2023: Migrants, Refugees and Societies

News: The World Bank has published the World Development Report, 2023.

Key Findings of the Report

- Migrants:** There are currently 184 million migrants globally (2.3% of the population) including 37 million refugees. There are 4 types of migrants:
 - Economic migrants with strong skill match (Indian IT professionals in the US).
 - Refugees with skills in demand at destination (Syrian entrepreneur refugees in Türkiye).
 - Distressed migrants (some poorly skilled migrants at the US southern border).
 - Refugees (Rohingya in Bangladesh).
- India-US, India-Bangladesh, India-GCC, Mexico-US, China-US and Kazakhstan-Russia have been identified as the top migrant corridors.
- Increase in Remittances:** The remittances have increased to some of the countries with a large migrant population, including India, Mexico, China and the Philippines. Indian migrant workers in the UAE send nearly 70% of income to the family, with women likely to remit a higher amount.

- **Income Gain for Migrant Indians:** The report estimated a 120% income gain for Indians who migrate to another country for work, compared to a 40% rise in the case of internal migration. Largest income gains for low-skilled workers are for migrating to the US (500%) and the UAE (300%).

What are the recommendations given by the report?

- The report proposes an **integrated framework** to **maximize the development impacts of cross-border movements** on **both destination and origin countries** and on migrants and refugees themselves.
- The framework rests on a '**match and motive**' matrix that focuses on 2 factors:
 - How closely migrants' skills and attributes match the needs of destination countries
 - What motives underlie their movements.
- This approach enables policy makers to **distinguish between different types of movements** and to **design migration policies** for each.
- International cooperation will be critical to the effective management of migration.

(Refer EPIC March 2022 for The Need for an Asylum Law in India and EPIC March 2023 for Issue of Inter-State Migrant Workers).

7. 'The State of the World's Children 2023: For Every Child, Vaccination'

News: The UNICEF has released the report titled 'The State of the World's Children 2023'.

Key Findings of the Report

- **Vaccine Hesitancy:** The public perception of the importance of vaccines for children declined during the COVID-19 pandemic in 52 out of 55 countries studied.

- **China, India and Mexico** were the only countries examined where the **perception of the importance of vaccines remained stable or improved**.

- The report warns that **threat of vaccine hesitancy**

is rising due to confluence of various factors like uncertainty about the response to the pandemic, growing access to **misleading information**, declining trust in expertise, and **political polarization**.

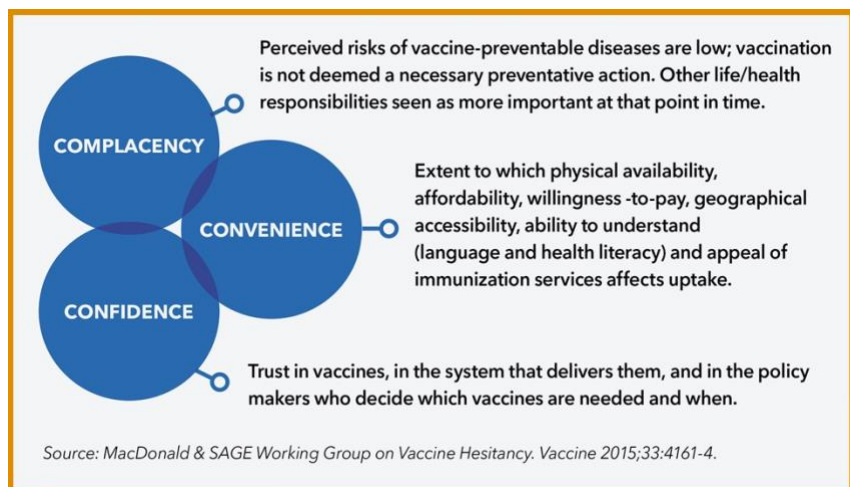
- **Childhood Vaccination:** The pandemic **interrupted childhood vaccination** almost everywhere due to intense demands on health systems, the **diversion of immunization resources** to COVID-19 vaccination, shortage of health workers and stay-at-home measures.

- The report has warned that a total of **67 million children missed out on vaccinations** between 2019 and 2021, with vaccination coverage levels decreasing in 112 countries.

- In 2022, the number of cases of measles was more than double the number in the previous year. The number of children paralyzed by polio was up 16% year-on-year in 2022.

- **Deepening Inequalities:** The COVID-19 pandemic exacerbated existing inequalities related to vaccination.

- Overall, in low and middle-income countries, 1 in 10 children in urban areas (10%) and 1 in 6 (16.7%) in rural areas had not received a single routine vaccination.



Source: SAGE. '3C' model outlines how complacency, confidence and convenience play into vaccine hesitancy. Addressing the concerns can move patients from hesitancy to acceptance.

Pointly

1. Haifa Port

The Haifa Port is located in **northern Israel**, along the **Mediterranean Sea**. It has a **natural deep-water harbour**, which operates all year long. It is the **2nd-largest port in Israel** in terms of shipping containers. Recently, the Adani Group-led consortium completed the acquisition of Haifa Port Company from the Government of Israel. Israel Foreign Minister has announced that Arab train networks in future would be carrying Indian goods to the Haifa port in Israel.



2. MEIDP (Middle East to India Deepwater Pipeline)

It has been proposed by **South Asia Gas Enterprise (SAGE)**. It is a **1,300-km-long energy corridor** that aims to transport Natural Gas from the Gulf/Middle East to India. The proposed route runs from **Oman** and **the UAE** through the **Arabian Sea**. The pipeline will allow options to import gas from Oman, UAE, Saudi Arabia, Iran, Turkmenistan and Qatar. If realised, the pipeline could result in **annual savings of ~INR 7,000 crores compared to importing Liquefied Natural Gas (LNG)**. South Asia Gas Enterprise (SAGE) has sought the support of the Ministry of Petroleum to develop the pipeline.



3. India-ASEAN Maritime Exercise

The inaugural Indian-ASEAN Maritime Exercise was held in **Changi Naval Base in Singapore** and the **South China Sea**. India's indigenously designed and built ships: destroyer **INS Delhi** and stealth frigate **INS Satpura**, participated in the exercises along with the ASEAN naval ships from Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

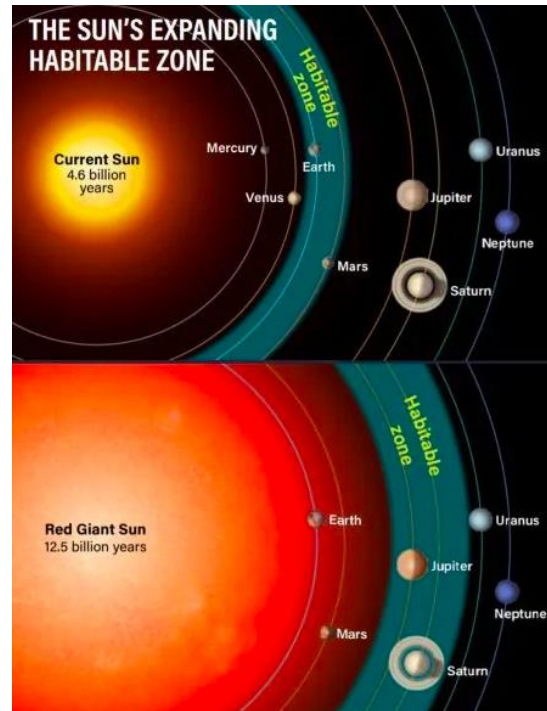
4. Engulfing of a Planet by a Star

Scientists have witnessed the swallowing of a Jupiter-sized planet by a Star ZTF-SLRN 2020. It is located in Milky Way 12,000 light years away from the Earth. When Stars run out of the fuel (hydrogen gas), they begin to **grow in size** (Red Giant Phase) and **engulf the nearby planets**. It has been predicted that the **diameter of Sun will become bigger than the orbit of Earth in about 5**

billion years from now and engulf the Earth. And as the Sun expands, the habitable zone will be pushed farther away.

5. Habitable Zone

According to NASA, the habitable zone is the area around a star **where it is not too hot and not too cold for liquid water to exist on the surface of surrounding planets**. On either side of the habitable zone, the planet will be **either too hot** (water will evaporate) or **too cold** (water will freeze). **Rocky planets in the habitable zones** of their stars are **most likely to support life**. As Sun will expand to the Red Giant phase, the habitable zone will be pushed back to the orbital regions of Jupiter and Saturn.



6. START Programme

The Space Science and Technology Awareness Training (START) has been launched by ISRO. Its purpose is to provide students with **introductory-level training in Space Science and Technology**. The program is aimed at **postgraduate** and **final-year undergraduate** students of Physical Sciences and Technology. The programme is part of the ISRO's efforts to enable Indian students to become professionals in Space Science and Technology. It is expected to help **build a human capacity** that will lead Space Science and research in the future.

7. Advanced Driver Assistance Systems (ADAS) Technology

ADAS encompasses a variety of technologies that **provide drivers with warnings, alerts, and automatic interventions** to help them **avoid accidents** and **prevent potential danger**. The systems work by using sensors, cameras, and radar to **monitor the surrounding environment**. It includes features such as automatic emergency braking, collision warning, collision-avoidance assist, lane-keeping assist etc. ADAS can help **reduce the number of accidents caused by human error**. (Read EPIC September 2022 for The Issue of Road Safety in India).

8. LockBit Ransomware

It is designed to infiltrate systems and **encrypt important files** rendering them inaccessible to users. It has been dubbed as the **'abcd' virus** due to the file extension used when encrypting files on target devices. Often hackers demand payment in cryptocurrency to decrypt files, hence it is called 'crypto virus'. It works as a **self-spreading malware**, not requiring additional instructions once it has successfully infiltrated a single device with access to an organizational intranet. It is known to hide executable encryption files by disguising them in the .png format, thereby **avoiding detection by system defences**. Attackers use **phishing tactics** and other **social engineering methods** to **impersonate trusted personnel** or authorities to **lure victims into sharing credentials**. It **disables security programs** that could permit system data recovery.

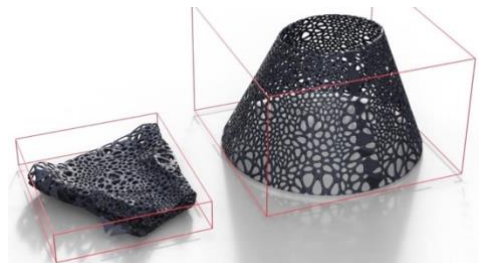
9. Markets in Crypto Assets (MiCA) Regulations (EU)

The European Parliament has approved the **Markets in Crypto Assets (MiCA) regulations**. These are the world's **first comprehensive rules to bring cryptocurrency markets under regulation**. MiCA aims to **protect investors** and **ensure financial stability** while allowing for innovation in the crypto-asset sector. MiCA regulations do not cover digital assets that qualify as transferable securities and Non Fungible Tokens (NFTs). The regulations will impose a number of requirements on crypto platforms, related to transparency, disclosure, and supervision of transactions etc. The rules **address environmental concerns** surrounding crypto, with firms **required to disclose their energy consumption** and the environmental impact of digital assets.

10. 4D Printing

4D printing relates to an advanced version of 3D printing where the **fourth dimension is time**. This 4th-dimension refers to the **concept of self-assembly** wherein the **3D printed object can reshape or self-assemble itself** on the application of external passive energy like heat, gravity, magnetism, or hot water.

Scientists have developed a new smart gel-based sheet using 3D printing technology which can **self-roll into a tube during surgery** to form a nerve conduit which could help reduce the complexity of surgeries and aid rapid healing of nerve injuries.



Source: Sculpteo. Change in shape of object with time.

11. ARTSENS

Researchers at the IIT Madras have developed a **non-invasive device** called 'ARTSENS' to **assess the health and age of blood vessels** and thereby provide **early screening for cardiovascular diseases**. The device functions by measuring carotid artery stiffness, aortic pulse wave velocity and central blood pressure, all three being important markers of cardiovascular health. The device is intended for **regular medical check-ups**, including by non-experts, to evaluate and anticipate vascular health.

12. Big Catch-up Initiative

It has been launched by the **WHO, UNICEF, Gavi the Vaccine Alliance**, along with **Immunization Agenda 2030** and a host of other public health organizations. It is a **targeted global effort to boost vaccination among children** following declines driven by the COVID-19 pandemic. The initiative will pay **special attention to the 20 countries** (including India) which are home to a majority of the children who have missed their vaccine doses. The **disruption has led to outbreaks of diseases**, including measles, diphtheria, polio and yellow fever **becoming more prevalent and severe**. Major activities under the initiative include **strengthening healthcare workforces, improving health service delivery, building demand for vaccines**, and **addressing obstacles to restoring immunization**.

13. Disease Burden of Non-Communicable Diseases

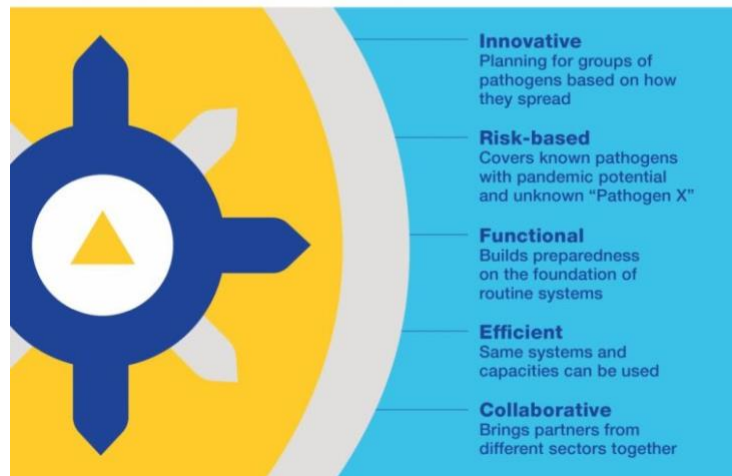
The Government has renamed the **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** as the **National Programme for Prevention & Control of Non-Communicable Diseases (NPNCD)** as there has been an addition of diseases to the programme. A study by the Indian Council of Medical Research (ICMR) estimated

that the **proportion of deaths due to NCDs in India have increased from 37.9% in 1990 to 61.8% in 2016**. The 4 major NCDs are cardiovascular diseases (CVDs), cancers, chronic respiratory diseases (CRDs) and diabetes which share **4 behavioural risk factors**: unhealthy diet, lack of physical activity, and use of tobacco and alcohol.

14. Preparedness and Resilience for Emerging Threats (PRET) Initiative

The WHO has launched the Preparedness and Resilience for Emerging Threats (PRET) Initiative. Its aim is to be **better prepared for future outbreaks** of a similar scale and devastation as the COVID-19 pandemic. It has a 3-pronged approach: (a) **Updating preparedness plans** that affirm priority actions; (b) **Increase connectivity among stakeholders** in pandemic preparedness planning through systematic coordination and cooperation and dedicate sustained investments; (c) **Financing and monitoring of pandemic preparedness** with a special focus on bridging the lacunes highlighted during the COVID-19 pandemic.

The Preparedness and Resilience to Emerging Threats (PRET) initiative helps countries prepare for disease pandemics by being:



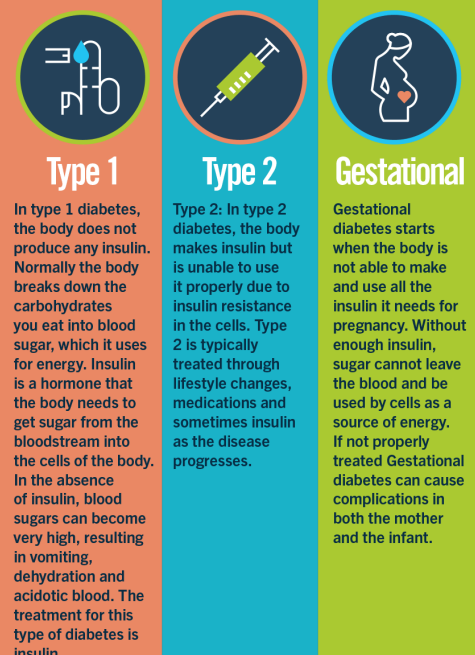
15. iDrone Initiative

ICMR has successfully conducted a trial run of the delivery of blood bags under its iDrone initiative. The aim of iDrone is to **assess the feasibility of using drones to deliver vaccines and medical supplies**. It was first used by ICMR during the Covid-19 pandemic for **distributing vaccines to hard-to-reach areas**. It is now being used to **deliver blood and blood-related products** (kept at a low temperature).

16. WHO on Artificial Sweeteners

The WHO has recommended against using artificial sweeteners to achieve weight loss and prevent lifestyle diseases such as diabetes. Artificial sweeteners **provide a sweet taste with very little to no calories**. Many diabetics use sweeteners in their tea and coffee. Packaged foods/beverages are using sweeteners as low-calorie options. WHO has said they lead to an **increased risk of Type-2 diabetes, cardiovascular diseases, mortality**; and

What are the 3 types of diabetes?

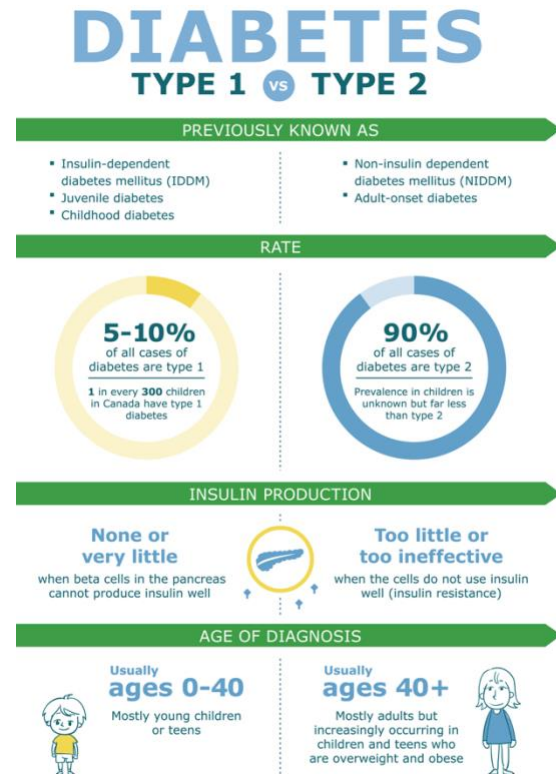


gain in weight in the long run. They also have an impact in causing **bladder cancer** and **preterm births** (when consumed by pregnant women).

17. Diabetes

Diabetes is a chronic (long-lasting) health condition that **affects how human body turns food into energy**. The body breaks down most of the food into sugar (glucose) and releases it into the bloodstream. When **blood sugar goes up**, it **signals the pancreas to release insulin**. Insulin acts like a key to let the blood sugar into body's cells for use as energy.

With diabetes, the **body doesn't make enough insulin** or **can't use it as well as it should**. When there isn't enough insulin or **cells stop responding to insulin**, and too much blood sugar stays in bloodstream. Over time, it can cause **serious health problems**, such as heart disease, vision loss, and kidney disease.



18. Types of Diabetes

There are 3 main types. Type 1 diabetes is thought to be caused by an **autoimmune reaction** (the body attacks itself by mistake). **This reaction stops the body from making insulin**. Approximately 5-10% of the people who have diabetes have type 1.

With type 2 diabetes, the **body doesn't use insulin well** and **can't keep blood sugar at normal levels**. About 90-95% of people with diabetes have type 2.

Gestational diabetes develops in pregnant women who have never had diabetes. Gestational diabetes usually goes away after child birth.

19. Donanemab

The drug Donanemab has been found effective in checking cognitive decline in people with early Alzheimer's disease. The drug is being developed by the US-based pharmaceutical giant **Eli Lilly**. The drug works by targeting amyloid plaques in the brain. **Beta-amyloid** protein plays an important role in functioning of brain. In Alzheimer's disease, beta-amyloid clumps together and **disrupts connection between brain cells**. It leads to cognitive issues like **memory loss**. Donanemab has been **found to slow down cognitive decline by 35%** when compared with a placebo in clinical trials. It is important to note that the drugs doesn't stop or reverse Alzheimer's. An estimate suggests that **India's burden of dementia will increase to 14 million by 2050**. (Refer EPIC December 2022 for Lecanemab).

20. Rheumatoid Arthritis (RA)

It is an **autoimmune** and **inflammatory condition** in which a **person's immune system unintentionally attacks healthy cells**, leading to inflammation (painful swelling) in the affected areas of the body. It frequently affects the **hands, knees or ankles**, and typically the **same joint on both sides of the body** (like both hands and both knees). In worse cases it can impact eyes, heart, circulatory system and lungs.

Rheumatoid arthritis can be very painful and can lead to permanent joint damage if left untreated for a longer period. Scientists have found that a **nano-micelle drug delivery system** combined with **anti-inflammatory drugs** has the potential to cure rheumatoid arthritis.

21. Psychedelic Drugs

Psychedelic drugs (banned under the Narcotic Drugs and Psychotropic Substances Act, 1985) are emerging in research as **promising ways to treat treatment-resistant depression** and **post-traumatic stress disorder**. They are a group of drugs that **alter perception, mood and thought processing** while a person is still conscious. Psychedelics are **non-addictive, non-toxic** and **compared to illicit drugs, they are less harmful to the end user**.

The psychological effects of psychedelics depend on the **interaction between the drug and the user's mindset** (together called a set), and the **environmental setting**. People with a personal or family history of psychosis are strongly discouraged from experimenting with psychedelics. There is also no evidence that psychedelics cause physiological or psychological dependence.

22. Neurotoxins

Neurotoxins are poisonous substances which can **directly affect the nervous system**. These substances can eventually disrupt or kill **neurons or nerve cells**, which are important for **transmitting and processing signals in the brain** and other parts of the nervous system. Methane, hydrogen sulphide (H₂S), carbon monoxide and carbon dioxide are common **neurotoxic gases**. Methane and carbon monoxide are odourless gases, **hydrogen sulphide has a pungent odour** and in higher concentration it can be fatal for humans.

~11 people have died due to leakage of H₂S from a sewer in Ludhiana, Punjab.

23. Arsenic Poisoning

A study has found that even low levels of arsenic consumption may impact cognitive function in children, adolescents and young adults. Arsenic is a **natural component of the earth's crust**. It is highly toxic in its inorganic form. People are exposed to elevated levels of inorganic arsenic through **drinking contaminated water**, using **contaminated water in food preparation** and **irrigation of food crops** among others.

Long-term intake of arsenic-contaminated water leads to **arsenic poisoning** or **arsenicosis**, with cancer of skin, bladder, kidney or lung or diseases of the skin (colour changes, and hard patches on palms and soles), or blood vessels of legs and feet.

24. Eco Biotraps

The Brihanmumbai Municipal Corporation (BMC) has announced launch of pilot project of 'Eco Biotraps'. The project aims to **prevent the spread of vector-borne infections in Mumbai**. They consist of a small bag containing a **mixture of attractant and insecticide**. These traps are filled with water and placed in mosquito-infested areas. The attractant in the water attracts the female mosquito to lay her eggs. The **insecticide present in the water destroys the eggs**.

25. Carbon Credit Trading Scheme

The Government of India is planning to develop a **Carbon Credit Trading Scheme for Decarbonisation**. It will be developed by the **Bureau of Energy Efficiency** (Ministry of Power) along with the **Ministry of Environment, Forest & Climate Change**. Its aim is to develop the **Indian Carbon Market (ICM)** with the objective to **decarbonise the Indian economy** by pricing the

GreenHouse Gas (GHG) emissions through the trading of **Carbon Credit Certificates**. The ICM will develop methodologies for the **estimation of carbon emissions reductions and removals** from various registered projects, and stipulate the **required validation**, registration, verification, and issuance processes to operationalize the scheme. **Monitoring, Reporting, and Verification (MRV)** guidelines for the emissions scheme will also be developed after consultation. The ICM will facilitate the **Nationally Determined Contributions (NDC) goal** of reducing the Emissions Intensity of the GDP by 45% by 2030 against 2005 levels. (Refer EPIC August 2022 for Amendments to Energy Conservation Act and Carbon Markets).

26. CORSIA

The **Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)** is a **carbon offset** and **carbon reduction scheme** to **lower CO₂ emissions for international flights** and to curb the impact of aviation sector on climate change. It was developed by the **International Civil Aviation Organization (ICAO)** and adopted in October 2016. Its goal is to have a **carbon neutral growth** from 2020. Financial implications due to offsetting have to be borne by individual airlines. CORSIA is **applicable only to international flights**. It will be **implemented in 3 phases**: Pilot, Voluntary and Mandatory. The mandatory phase for all ICAO member nations would be in force from 2027 to 2035. India has decided not to participate in the voluntary phases of CORSIA.

27. Long-Term Aspirational Goals (LTAG)

The 41st ICAO Assembly adopted a global Long-term Aspirational Goal (LTAG) for international aviation of **net-zero carbon emissions by 2050** in support of the UNFCCC Paris Agreement's temperature goal. The LTAG does not attribute specific obligations or commitments in the form of emissions reduction goals to individual States. It recognizes each State's special circumstances.

28. Meri LiFE App

The Ministry of Environment, Forest, and Climate Change has launched the 'Meri LiFE' (My Life) App to empower young people and encourage their participation in **tackling climate change**. The app aims to **showcase the power of citizens**, especially young people, in **saving the environment** by **emphasizing the impact of simple actions in daily life**. It encourages users to participate in a series of LiFE-related tasks under **5 themes**: **Save Energy, Save Water, Reduce Single-Use Plastic, Adopt Sustainable Food Systems** and **Adopt Healthy Lifestyles**.

29. City Nature Challenge

Over 30 Indian cities are set to participate in the City Nature Challenge. City Nature Challenge is an **international effort for people to find and document plants and wildlife in cities across the globe**. It was first organized in the US in 2016. **Bombay Natural History Society, World Wide Fund for Nature-India**, and **The Naturalist School** have partnered to lead the event in Bengaluru, Mumbai, Hyderabad and Delhi.

30. Bombay Natural History Society (BNHS)

It is a pan-India **wildlife research organization**. It has been promoting the cause of **nature conservation** since 1883. Its aim is to **spread awareness about nature** through science-based research, conservation advocacy, education, scientific publications, nature tours and other programmes.

31. United Nations Forum on Forests (UNFF)

It is a high-level **intergovernmental policy forum**. It was established in 2000 by the **UN Economic and Social Council**. Its objective is to promote the **management, conservation and sustainable development** of all types of forests and to **strengthen long-term political commitment**. The Forum is composed of all **Member States of the UN** and specialized agencies. The 18th session of UNFF was held at its headquarters in New York.

32. Petersberg Climate Dialogue

The Petersberg Climate Dialogue is an annual high-level political and international forum **held before the United Nations Climate Change Conferences (COP)**. It was initiated in 2010 by former German Chancellor Angela Merkel following the nearly unsuccessful negotiations at the 2009 COP15 in Copenhagen. Its central goal is to **strengthen trust both in multilateral climate negotiations and between States**. The focus this year included topics such as **climate adaptation, climate finance and dealing with loss and damage**.

33. Reduce, Recycle and Reuse Centres

The Union Government will soon launch one-stop 'Reduce, Recycle and Reuse' centres **where citizens can deposit old clothes, shoes, books, toys and plastic that can be reused or recycled**. They are being launched to **reduce waste generation** in Urban India. Unused or used plastic items, clothes, shoes, footwear, books, and toys etc. can be deposited here. They'll be refurbished for reuse or would be made into new products **contributing to a circular economy**. The centres would be set up as part of a nationwide campaign 'Meri LiFE, Mera Swachh Shehar'. (Refer EPIC October 2022 for Circular Economy: Meaning, Benefits and Opportunities).

34. Meri LiFE, Mera Swachh Shehar Campaign

It has been launched under the aegis of the **Swachh Bharat Mission – Urban 2.0 (SBM-U2.0)**. The objective of the campaign is to **take collective action for the protection and conservation of the environment by adopting sustainable daily habits**.

35. Baobab Tree

Baobabs are **long-lived deciduous**, small to large trees **from 20 to 100 ft tall** with **broad trunks** and **compact tops**. All baobabs look like they have been turned upside down, with their roots reaching for the sky. Baobab trees **can live for more than a thousand years**.

Baobab trees are **native to mainland Africa** and the **Madagascar Island**. In India, they are found in abundance in Mandu (in Dhar district of Madhya Pradesh). They have also been recorded in Prayagraj in Uttar Pradesh and Wai in Maharashtra. It has **medicinal properties** and provides some income for the Bhil community, which sells its fruits and seeds to local traders. Baobabs are known as the **tree of life** because it is **able to store water from the rains in their vast trunk** and produce a nutrient-dense fruit in the dry season when the land turns arid. The Madhya Pradesh Government has refused to translocate Baobab Trees.



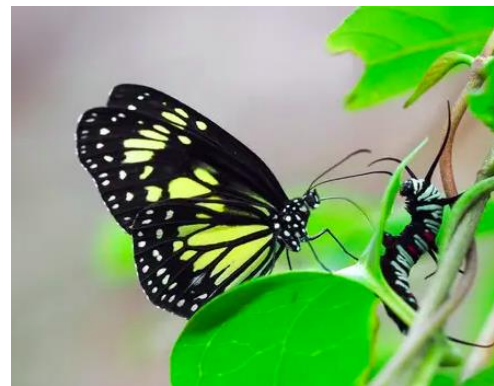
36. Lesser Flamingo

The Lesser flamingo is the smallest of all flamingos. They possess the 'hallux' or hind toe that some other flamingos do not have. Males are a little taller than females. They are **rare migratory birds** from the **sub-Saharan region in Africa**. They are found in **alkaline lakes** and **coastal lagoons** where they gather to eat **microscopic blue-green algae**. Their IUCN status is **Near Threatened**. After a 6-year absence, the lesser flamingos have arrived **Pulicat Lake** in May 2023.



37. Milkweed Butterflies

Milkweed Butterflies belong to the brush-footed butterfly family (Nymphalidae). There are ~300 species in the group, including the well-known **Monarch butterfly**. Most milkweed butterfly species are found in the **tropical regions** of both the **Old World** (Europe, Africa, and Asia) and the **New World** (North America, South America, and the Caribbean). However, some well-known members of the group, such as the **Monarch** and the **Queen butterfly**, **live in temperate regions**. They feed chiefly on milkweed plants which contain acrid, milky juices. This makes their larva distasteful to predators and protects them. (Refer EPIC August 2022 for Endangered Status for Monarch Butterfly).



Between October and April (winters), most Milkweed butterflies in the Western Ghats congregate in large numbers at specific sites. **When the summer rain cools Southern India**, the butterflies **migrate eastwards** into the Eastern Ghats and the plains. The migration of Milkweed butterflies plays a **vital ecological role**. As **pollinators**, their movements can impact entire ecosystems.

38. Eretmoptera Murphyi in Antarctica

Eretmoptera murphyi is an invasive species on Antarctic Signy Island. It is a native of **South Georgia, a sub-Antarctic Island**, and was accidentally introduced to Signy in the 1960s during a botany experiment. It feasts on dead organic matter and has **led to faster plant decomposition**, thus increasing the level of soil nitrate. It can **survive in water**, which **raises concerns that it could spread to other islands**. The activity of the midges, along with climate change, may also create conditions for other invasive species to become established and accelerate the effects of climate change.



39. Gum Arabic

Gum Arabic is a **natural gum** derived from the hardened sap of 2 species of the **Acacia tree**: Senegalia Senegal and Vachellia seyal. The gum is harvested commercially from wild trees, mostly in Sudan (70%) and **throughout the Sahel** (from Senegal to Somalia). Gum Arabic first found its way to Europe via Arabic ports, hence the name Gum Arabic. It is used in **printing, paints, glues**,

cosmetics, viscosity control in the inks and **textile industries, food industry** and **soft-drink industry** as a stabilizer. The war in Sudan can impact its supply chain and thus increase prices of all products which require Gum Arabic.

40. Pulicat Lake

Pulicat Lake is the 2nd-largest brackish water lagoon in India, (after Chilika Lake). The lake is located on the border between Tamil Nadu and Andhra Pradesh. The lake encompasses the **Pulicat Lake Bird Sanctuary**. The **barrier island of Sriharikota** separates the lake from the Bay of Bengal. The rivers **Swarnamukhi** and **Kalangi** in the north and the **Arani** and the **Korttalaiyar** (as the Kosasthalaiyar is referred to in old British era documents) in the south drain into Pulicat Lake during the monsoon.



41. GI Tag for Manamadurai Pottery

The Manamadurai pottery has been given a Geographical Indication (GI) tag. Manamadurai in **Sivagangai district, Tamil Nadu** is known for pottery making. The **Vaigai River enriches the clay** used for the Manamadurai pottery. A unique type of clay is also sourced from other water bodies to make these pots. The pots are painted in different colours. The pottery uses 5 elements of nature in its making: Earth (mud), Water (mud is mixed with water), Fire (baking), Air (passing through pores) and Space (cavity). Materials like lead, graphite, calcium lime, ash, red lead, sodium silicate etc. are also added.



42. Kondh Tribe

The Khonds are **the largest tribal group in Odisha**. They are known for their rich cultural heritage, valorous martial traditions, and indigenous values which centre on harmony with nature. Khonds speak the **Kui language** and write it in the Odia script. The Kandhamal district in Odisha has a 55% Khond population and is named after the tribe.

43. Bihan Mela

Bihan Mela (literal meaning 'seed festival') is celebrated by the **Kondh Tribe in Odisha**. Preparations for the festival begin as soon as farmers have **harvested Kharif crops**, which include varieties of paddy, millets, maize and sorghum. **Women collect seeds of the indigenous varieties and store them in earthen pots**. On a designated day in December, they decorate the pots with red and white motifs, place them in a bamboo



Source: Down to Earth. Indigenous seed Bank in Nayagarh, Odisha.

basket and carry it on its head to the village where the fair is being organized. Along the way, they are accompanied by men beating drums and other traditional instruments.

44. Hakki-Pikki Tribe

Hakki-Pikki is one of the major tribal communities in Karnataka. In Kannada, '*Hakki*' means 'bird' and '*Pikki*' means 'to catch'. The community is known as the '**bird catcher**' which is **their traditional occupation**. The community migrated from Northern India (Gujarat and Rajasthan) to Karnataka. Their population was ~12,000 in 2011. The community **speaks an Indo-Aryan language**. Their **mother tongue 'Vaagri'** has been listed as an **endangered language** by UNESCO.

Hakki-Pikkis in Karnataka **follow Hindu traditions**. They are **non-vegetarians**. The eldest son in a family is **not supposed to cut his hair** so that he can be identified easily. The tribe prefers **cross-cousin marriages**. The **society is matriarchal**, where the groom gives dowry to the bride's family.

Hakki-Pikkis are renowned for their **indigenous medicines**. The community resided in the dense jungles for a long time and created its own plant and **herb-based medicine systems**. The tribe members go to many places across the globe to sell their products. ~180 members of the community were struck in violence-hit Sudan in April-May 2023.

45. Krishi Mapper

Krishi Mapper is an **integrated app for Geospatial Data in Agriculture**. The app covers monitoring of all land-interventions-based schemes/programs such as Digital Crop Survey, Natural Farming, Seed Production and Distribution, NFSM Horticulture, Agroforestry & other related schemes. The app will help **minimize the duplication of efforts** and **provide ready-to-analysis data products** to innovators. It will facilitate **ease of access to credit**, **identify land parcels under stress** and near real-time assessment and **processing of claims**.

46. Minimum Import Price (MIP)

MIP is a temporary measure to provide **protection to domestic industry from predatory pricing of imports**. The import of a commodity is not allowed below MIP. **Directorate General of Foreign Trade (DGFT) frames the rules** related to exports and imports. In 2019, J&K produced ~1.9 million metric tons of apples, the highest in India. The farmers of J&K have faced the challenge of **influx of tax-free apples from foreign countries** in recent times. The unfair competition has adversely affected their livelihoods. Hence, the Union Government has taken a proactive step by introducing the Minimum Import Price (MIP) for apples.

47. Kochi Water Metro

The Prime Minister has inaugurated the first phase of the Kochi Water Metro. Kochi Water Metro is a first of its kind **public boat service in India integrated with a metro rail network**. The water metro boat service will operate in the **backwaters of Kochi**, connecting 10 nearby islands with the mainland of Kochi. The project is envisaged with 38 jetties, and 78 boats, covering a distance of 76 km. The boats are **hybrid, battery-powered, air-conditioned** and **disabled-friendly** among other features. They are less polluting than traditional ferries. Kochi Water metro has been envisaged as a **feeder service of the Kochi metro rail**, operational since 2017.

48. Sanchar Sathi Portal

It is a **citizen-centric initiative** of the DoT to empower mobile subscribers, **strengthen their security** and **increase awareness about citizen-centric initiatives of the Government**. The

portal allows citizens to check the connections registered on their names and **report fraudulent connections**. It has multiple modules:

Central Equipment Identity Register (CEIR): Block lost/stolen mobile phones.

Know Your Mobile: Allows citizens to check the genuineness of IMEI on their mobile devices.

Telecom Analytics for Fraud Management and Consumer Protection (TAFMCP): Allows users can check the number of mobile connections taken in their name using paper-based documents and report fraudulent connections.

Artificial Intelligence and Facial Recognition powered Solution for Telecom SIM Subscriber Verification (ASTR): Identify SIMs issued using fraudulent/forged documents. ASTR detects individuals who have registered more than 9 mobile connections to verify whether they have been created using legitimate means.

49. Central Equipment Identity Register (CEIR)

Mobile phone users will be **able to block** and **track their lost or stolen mobile phones across India** with the rollout of the Central Equipment Identity Register (CEIR). It is the **citizen-centric portal** of the **Department of Telecommunications (DoT)**. It facilitates the **blocking of lost/stolen mobile devices in the network of all telecom operators** leaving the device useless. If anyone tries to use the blocked mobile phone, its traceability is generated. The device is blocked through IMEI number.

50. IMEI

IMEI (International Mobile Equipment Identity) is a unique **15-digit serial number** given to every mobile phone which can then be used to check information such as the phone's **Country of Origin**, the **Manufacturer** and its **Model Number**. GSM networks use the IMEI number to identify valid devices. A device's IMEI (and other information) can be accessed by typing USSD Code ***#06#** on the dialpad.

51. Mission 50K-EV4ECO

Small Industries Development Bank of India (SIDBI) has announced 'Mission 50K-EV4ECO' to boost the electric vehicle (EV) ecosystem. Its aim is to increase the uptake of electric 2-, 3- and 4-wheelers through **direct and indirect lending support to vehicle aggregators, fleet operators and leasing companies**. SIDBI will directly provide loans to eligible small and medium enterprises (SME) for the purchase of EVs and **developing charging infrastructure**, including battery swapping.

52. India's First Undersea Twin Tunnel

India's first undersea twin tunnels in south Mumbai will be opened soon. It is a 2.07-km-long tunnel being built in Mumbai, Maharashtra. The tunnels are part of the **Mumbai Coastal Road Project (MCRP)** being built by the Brihanmumbai Municipal Corporation (BMC). The 10.58-kilometre MCRP connects **Marine Drive to the Bandra-Worli Sea Link**. The project also highlights the usage of India's largest-ever **tunnel boring machine (TBM)** called Mavala. This machine weighs over 1,700 tonnes and stands about 12 meters tall.



53. UDAN 5.0

The Ministry of Civil Aviation has launched the 5th phase of the Regional Connectivity Scheme (RCS)- UDAN (Ude Desh Ka Aam Nagrik). UDAN 5.0 aims to **connect new routes** and achieve the target of **operationalizing 1000 routes and 50 additional airports, heliports and water aerodromes** in the near future. UDAN 5.0 focuses on Category-2 (20-80 seats) and Category-3 (> 80 seats). **Viability Gap Funding (VGF)** will be provided under the scheme. **Airlines can now propose routes they want to fly** under the UDAN 5.0. Earlier, the Government determined the routes airlines could operate on.

54. PRAYAG Platform

PRAYAG stands for Platform for Real-time Analysis of Yamuna, Ganga and their Tributaries. It is a **real-time monitoring centre** for planning and monitoring projects and river water quality through various online dashboards. (Refer EPIC January 2023 for Cleaning of River Ganga).

55. Safe City Project

It is an initiative of the **Ministry of Home Affairs** in collaboration with the **Ministry of Women and Child Development** under the **Nirbhaya Fund**. Its aim is to create a safe, secure, and empowering environment for women and girls in public spaces. The project is being implemented in 8 metro cities: Delhi, Mumbai, Chennai, Kolkata, Hyderabad, Ahmedabad, Lucknow, and Bengaluru. CCTV cameras will be installed, along with a **command-and-control centres** with facilities for video analytics, AI, machine learning, and facial recognition. The cost of the projects is shared in a **60:40 ratio** between the Union and State Governments. In Delhi, the project is fully funded by the Centre.

56. Eat Right Food Streets Project

The **Ministry of Health** in collaboration with the **Ministry of Housing and Urban Affairs** has asked States and Union Territories to **develop 100 food streets in 100 districts across the country**. The aim of the project is to **encourage safe and healthy practices to reduce food-borne illnesses and improve overall health outcomes**. The project will be implemented through the **National Health Mission (NHM)** with technical support from the **Food Safety and Standards Authority of India (FSSAI)**.

Street foods have traditionally been an **integral part of Indian society**. They represent the rich local tradition of cuisine. They provide affordable diet and direct employment to a large number of people. However, safety and hygiene remain a matter of concern at street food outlets. The project can serve as a model for other such streets to be established across India to **ensure clean and safe food practices**.

57. Star Rating System for Water Taps

The Union Government is in the process of bringing in a **star rating system for water fixtures** similar to the ratings of electrical appliances. The rating system would have **3, 4 and 5-star water fixtures** based on their **water efficiency**. It would come under the **Bharat Tap Initiative**.

58. Bharat Tap Initiative

Bharat Tap initiative aims to provide **low-flow, sanitary ware at scale**, and thereby **reduce water consumption** considerably. It is estimated that this initiative will save approximately 40% of water. It will also result in considerable energy savings.

59. National Centre for Good Governance (NCGG)

It was set up in 2014 by the Government of India as **autonomous institution under the Ministry of Personnel, Public Grievances and Pensions**. The Centre traces its origin to the **National Institute of**

Administrative Research (NIAR), which was set up in 1995 by the Lal Bahadur Shastri National Academy of Administration (LBSNAA). NIAR was subsequently rechristened and subsumed into NCGG. The Centre is mandated to work in the areas of **governance, policy reforms, capacity building and training of civil servants** of India and other developing countries. The Centre has recently launched Capacity-Building Programmes (CBPs) for the civil servants of Bangladesh and the Maldives.

60. Harit Sagar

Harit Sagar are guidelines released with the aim to **achieve Green Ports**. The guidelines lay emphasis on **use of Clean and Green energy in Port operation**, developing Port capabilities for storage, handling and bunkering of Greener Fuels viz. Green Hydrogen, Green Ammonia, Green Methanol etc. The Guidelines provide a framework for the major ports to **achieve reduction in carbon emissions** through focused implementation and close monitoring of Green Initiatives. The main goal of Guidelines is to **reduce trash through the four R's: Reduce, Reuse, Repurpose, and Recycle** in order to achieve zero waste discharge from port operations.

Guidelines also include provision for adopting the **international Green Reporting Initiative (GRI) standards**.

61. Poshan Bhi, Padhai Bhi

The Government has launched the programme 'Poshan Bhi, Padhai Bhi'. It will focus on **Early Childhood Care and Education (ECCE)** at Anganwadi across the country. ECCE is an important component of **Mission Saksham Anganwadi** and **Poshan 2.0** (Mission Poshan 2.0) and is envisaged under the National Education Policy (NEP). The aim of the program is to **make Anganwadi centres a space for pre-school learning and holistic development**. There will be special focus on children aged 3 to 6 to make them school ready for grade 1. The National Institute of Public Cooperation and Child Development (NIPCCD) will provide training for Anganwadi workers. The ECCE program will **prioritize education in the mother tongue**, aligning with the principles of the NEP.

62. SAKSHAM

The Ministry of Health and Family Welfare has launched the SAKSHAM **Learning Management Information System (LMIS)**. It has been developed by the National Institute of Health & Family Welfare (NIHFW). SAKSHAM stands for Stimulating Advanced Knowledge for Sustainable Health Management. It is a dedicated and unified platform for providing **online training and medical education to all health professionals in India**. It ensures the **inclusive capacity building of health professionals** from primary health centres located in rural and remote areas up to tertiary care and corporate hospitals in metropolitan cities.

NOTE: With effect from 1st February 2022, the monthly ForumIAS Epic Magazine, for the month will provide wholistic coverage for the said month up to 20th of the month. This ensures that issues / stories that occur after 21st of the month are allowed to fully develop and are covered wholistically in the next month.