

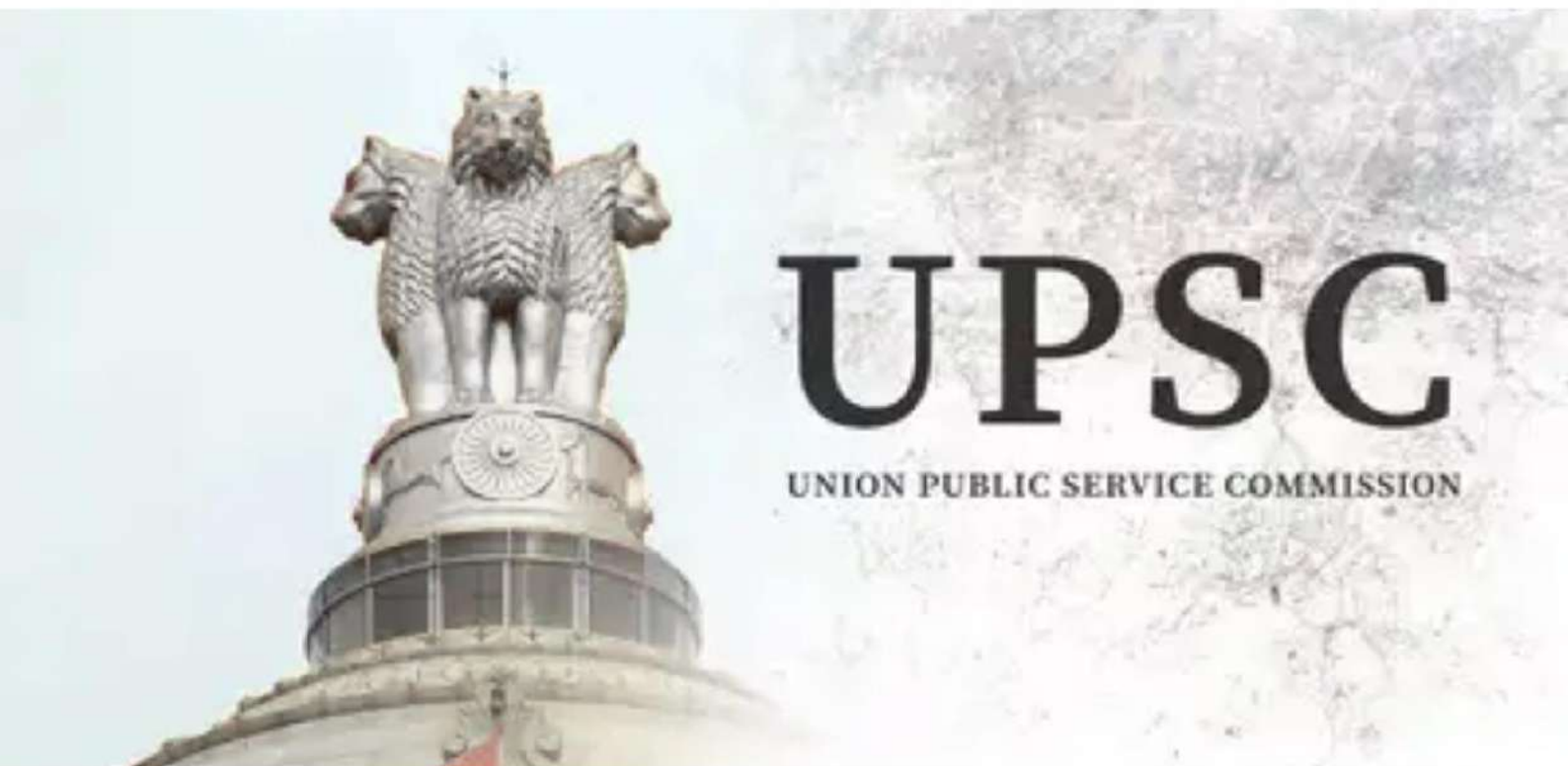


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June 2025

1. IMPORTANT TOPICS OF THE MONTH

1.1 Israel – Iran Conflict

Why in the News?

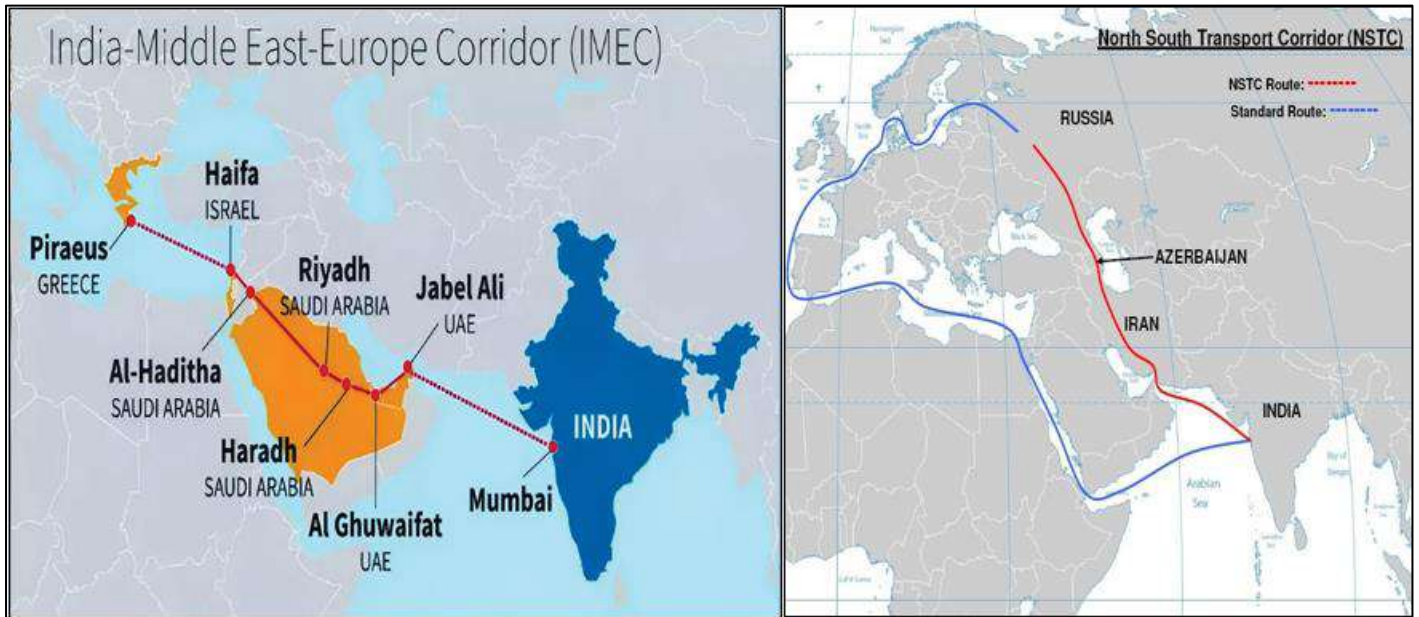
The conflict between Israel and Iran is escalating to higher level of war zone.

What is the history of Israel – Iran Conflict?

- **Early US Iran Cooperation** – In 1953, US helped the overthrow of Iranian popular Prime Minister Mohammed Mossadegh restoring Shah Mohammed Reza Pahlavi to Power.
- In 1957, Iran US nuclear deal was signed and US provided nuclear reactors and uranium enrichment facility to Iran.
- In 1970, Iran ratified Non-proliferation treaty, giving it the right to civil nuclear programme.
- **Government Change in Iran** – In 1979, Iran's Islamic Revolution forced shah to flee and upended ties with US and other major powers.
- **US and Iraq** – In 1984, US resorted its ties with Iraq and supported it in its war against Iran.
- **Iran Russia Nuclear Support** – In 1995, Russia agreed to support Iran in building nuclear reactor.
- **Nuclear Problem** – In 2002, western intelligence services revealed the secret uranium enrichment facility of Iran.
- **Cyber Attack on Iran Nuclear Facility** – In 2010, The Stuxnet computer virus, widely believed to be a joint US-Israeli creation, disrupted and destroyed Iranian centrifuges.
- **Comprehensive Nuclear Agreement** – In 2015, World powers and Iran announced a long-term comprehensive agreement to limit Iran's nuclear enrichment program.
- **Withdrawal of US** – In 2018, U.S. withdrew from the Iran's nuclear deal with world powers.
- **Israel attacks on Iran** – In 2020, alleged Israel attacks against Iran's nuclear program were stepped up and Iran's top nuclear scientist and commanders of Iranian revolutionary guard were assassinated.
- **Iran Upgrades Uranium Enrichment** – In 2021, Iran began enriching Uranium up to 60% level, its highest purity ever and a technical step from weapons grade levels of 90%.
- **Hamas Attack on Israel** – In 2023, Iran supported the Hamas attack on Israel from Gaza strip.
- **Escalated Attacks** – In 2024, Iran and Israel have started directly attacking each other's infrastructures and territories.
- Israel launched 'Operation Rising Lion' against Iran and Iran launched 'Operation True Promise 3' in retaliation.

What are the significances of Israel and Iran to India?

- **Economic significance** - West Asia is not just the source of 40% of its remittances but also 54% of oil imports and the region accounts for over \$170 billion in trade.
- **Israel Defence Partner** - India's defence imports from Israel have soared in the past decade, from about \$5.6 million in 2015 to \$128 million presently.
- **Iran Energy Supplier** – Though trade with Iran dropped from about \$14 billion in 2017 to \$1.4 billion last year, it is still an important energy supplier to India.
- **Indian Diaspora** – There are about 10000 Indians in Israel and 25000 to 30000 in Iran as students and working professionals.
- **Connectivity** - India's connectivity plans for the India Middle East Europe Economic Corridor, International North-South Transport Corridor depends on Israel and Iran respectively.



What are the impacts of the conflict on India?

- **Declining Trade** - India has had declining levels of trade with both Iran and Israel in the last few years due to tensions in the region.
 - **With Israel**- Tensions in the Gulf region post-attacks as well as Israeli operations on Gaza have also sent trade with Israel down from \$11 billion in 2022 to \$3.75 billion last year.
 - **With Iran** - India's imports from Iran dropped to \$441 million in FY2025, down from \$625 million the previous year and exporters are increasingly cautious and some are holding back shipments due to payment delays and heightened risks.
- **Trade Route Disruptions** – The Tensions in the region will affect the trade through the red sea, particularly the Strait of Hormuz.
- **Impact on Energy Security** – About 60–65% of India's crude oil imports pass through the Strait of Hormuz, a critical maritime route bordered by Iran.
- Disruption in Strait Hormuz, could sharply increase oil and LNG prices, given that 40-50% of India's energy imports come through the area.
- **Impact on Connectivity Plans** - Prolonged Israel-Iran conflict will affect India's connectivity plans for the India Middle East Europe Economic Corridor, International North-South Transport Corridor.
- **Spiraling Economic Effect** – The rise in Shipping costs, security, and insurance premiums lead to more costly imports, less competitive exports, and inflation.

What are the geopolitical challenges for New Delhi?

- **Criticism of US and allies** - The U.S. and G-7 countries have largely backed Israel strikes as its “right to defend itself”.
- **Involvement of Pakistan** - The U.S. may ask Pakistan for support in a possible operation in Iran, from logistics to overflight and refuelling to intelligence sharing, will make India's path more difficult.
- **Global South Sympathizes Iran** - The Global South, which has been very critical of Israel's war in Gaza, has also expressed sympathies with Iran during the current crisis.
- **Iran in BRICS** – Since Iran joined the BRICS and has the support of BRICS members, India will face a harder challenge in separating itself from any statement that is issued there.
- **Gulf Challenge** - There's also the possible cost to India's ties with the Gulf region that has to be factored in.

What were the reactions of India?

- **Expressed Concerns** – India has shared Its concern and emphasized the need for early restoration of peace and stability in the region.
- **Dialogue with Iran** – Indian External Affairs Minister S. Jaishankar expressed deep concern of the international community at the turn of events,” and urged against retaliation and for diplomacy.

- **Balanced Approach** - The Ministry of External Affairs (MEA) played safe, calling for dialogue and diplomacy while making no criticism of Israel for launching the strikes.
- **Disassociation from SCO Statement** - India also disassociated from a statement of the Shanghai Cooperation Organisation (SCO), which includes China, Russia, Iran, Pakistan, Belarus and Central Asian states that had condemned Israel's "aggression".
- **Abstention from UN Resolution** - India had abstained in a UN resolution for a ceasefire in Gaza, even when every other member of BRICS, SCO and SAARC and even all G-7 members minus the U.S. had voted in favour of the resolution.
- **Operation Sindhu** – It was launched to evacuate Indian citizens from conflict-affected regions of Iran and Israel.

What lies ahead?

- Dealing with the Israel-Iran conflict has always meant a tricky tightrope balance for New Delhi, given its strong ties with both countries.
- India can actively advocate for diplomacy and dialogue, urging both parties to de-escalate and return to negotiations.
- To mitigate risks from disruptions in the Strait of Hormuz and trade with Iran, India can accelerate diversification of its energy sources and trade routes.
- India can leverage its upcoming G20 presidency and leadership within the Quad, India could initiate a "West Asia Stability Dialogue" – a Track II peace process involving the Arab League, the EU, Iran, and Israel under one neutral platform.

1.2 Center State Finances

Why in the News?

In the past years, the share of states in centre's revenue has declined.

What are the challenges in centre-state finances?

- **Shrinking Divisible Pool of Taxes** – The divisible pool includes all tax revenues collected by the Centre, excluding cesses, surcharges, and the cost of collection.
- Given that the share of cesses and surcharges has increased, the divisible pool has shrunk, and since the pandemic year 2020-21, it has fallen to less than ₹90 for every ₹100 that the Centre collects.
- **Decline in Vertical Devolution** – As the share of revenue collected through cesses and surcharges, which are kept outside the divisible pool, is rising, the amount of vertical devolution has declined.
 - As decided by the 15th FC, currently, 41% of the divisible pool of taxes is shared by the Centre with all the States.
- The share of cesses and surcharges, along with the cost of collection, reached a high of Rs. 13.5 for every ₹100 collected as taxes by the Centre in 2021-22 – the highest ratio in at least over a decade.
- Over the past year, 14 out of the 15 States that met with the 16th FC demanded that the devolution share be increased to 50% from 41%.
- **Dilution of Finance Commission Recommendations** - The consistent rise in the share of cesses and surcharges has meant that the FC's recommendations have been rendered less effective, as the divisible pool, upon which the FC's formula is applied, itself is shrinking.
- **Loss in States' Own Tax Revenue (SOTR)** – States' avenues for independent revenue generation are shrinking, and growth in SOTR remains sluggish, especially among many advanced States, limiting their fiscal autonomy.
- **Tight Borrowing Rules** – The rules governing how States can borrow have become another flashpoint, and States are subject to limits set by the Centre.
- **Borrowings made by State's entities** – such as public sector undertakings – are being counted as part of the State's debt, tightening the fiscal leash further.

Article 271 empowers the Union government to levy cess and surcharges.

What are the challenges in horizontal devolution?

- **Horizontal distribution** – It was based on several criteria – such as population, demographic performance (i.e. population control), forest cover, geographical area, and efficiency in tax collection.
- **Skewed Weightages in Horizontal Devolution**– The first three high-weightage factors of the horizontal devolution formulae– income distance, population, and area together accounted for 75% of the total.
- **Income Distance** – Due to the high weightage of 45% assigned to income distance criteria, States with lower per capita income receive a larger share to promote equity.
- **Population and Area** - 15% each for a state's population and area, meaning, the larger the population and land area, the higher the share.
- **Forest and Ecology** – It got 10%, based on a state's share of dense forests in India's total forest cover.
- **Inadequate Consideration of Development Factors** - Population control and tax efficiency factors collectively carried only 15% weight.
- If a State has successfully controlled its population and improved its economy, it ends up receiving a lower share, essentially disincentivizing those States.
- This makes the better-performing and efficiently administered states state in the lower rankings.

Horizontal Devolution among States

- The share of all the southern States has fallen with Kerala's share fell from 3.08% in FY02 to 2.5% in FY17 and is estimated to fall even further to 1.9% in FY26 (BE).
- Tamil Nadu's share shrank from 5.46% in FY02 to 4.02% in FY17 and is expected to remain at the same level in FY26.
- Karnataka's has come down from 4.98% in FY02 to 3.6% in FY26 BE.
- The share of Andhra Pradesh and Telangana together declined from 7.7% in FY02 to 6.75% in FY17 and is expected to drop to 6.1% in FY26.
- West Bengal and Odisha's shares have also come down consistently in the period.
- In contrast, the shares of Madhya Pradesh, Maharashtra, Rajasthan, and Gujarat have increased in this period.
- States such as Uttar Pradesh and Bihar continue to receive the bulk of the share.
- Bihar is expected to get 10.1% in FY26, slightly lower than 11.49% in FY02 and Uttar Pradesh is expected to get 17.9% in FY26, slightly lower than 19.15% in FY02.

Why has the state's own revenue been declining?

- **Sources of Own Tax Revenue of States** – It includes money raised through stamp duty, registration fees, motor vehicle tax, and other taxes, along with the State GST (SGST).
- **Decline in State Tax Revenue** – It's share in total revenue has remained considerably below the 50% mark, while in the 2000s and the early 2010s, it had crossed the 50% mark for many years or remained close to it.
- **Decline in Non-GST Revenue** - While the share of SGST in States' total revenue has increased from 15% in FY18 to 22%, the share of own tax revenue, without the contribution from SGST, has declined from 34% to 28%.
- **Decline in Taxation Autonomy of States** – As SGST is earned based on rates set by the GST Council, states have complained of GST limiting their autonomy in deciding how tax revenue is collected.
- **GST Impact on Producing States** - As the GST reform has made the consumption tax destination-based, the production-based states like Tamil Nadu, Karnataka, and Maharashtra got affected.
- **Decline in Non-Tax Revenue** - The share of non-tax revenue in States' total revenue is likely to go below the 24% mark in FY25 for the first time in the past 25 years.
- **Slump in Tax Receipts** - Interest receipts have not exceeded 5% of States' non-tax revenues in the last decade compared to the 2000s and first half of 2010s when it formed 5-9% of non-tax revenue.

Sales tax was giving States the buoyancy, before the GST was introduced, by contributing almost 60% of the tax revenues.

Non-tax revenue of States includes grants from the Centre, earnings from social, fiscal, economic, and general services rendered by the States, interest receipts, and dividends/profits from State public sector enterprises.

- **Low Contribution from State PSUs** - The share of dividends and profits garnered from State public sector enterprises has remained under 1%.
- **Stagnant Revenue from Services** - Earnings from services rendered, such as public health (social service) and power (economic service), did not cross the 30% mark in the last decade.

Status of Revenue Creation of States

- In the last decade (FY16 to FY25), 23-30% of the total revenue of States was collected from the Centre as transfers.
- In the 2000s and the first half of 2010, the share was lower at 20-24%.
- Close to 65-70% of the non-tax revenue of States was collected from the Centre as grants in the last decade, compared to the 2000s and the first half of the 2010s, when the share was lower at 55-65%.

What are the limits on state's borrowing capacity?

- **Constitutional Provision** - Article 293 allows the Centre to set a Net Borrowing Ceiling (NBC) for the States.
- It states that the States can borrow domestically, but if they are indebted to the Union government, they have to seek the latter's permission.
- **Borrowing Limit** - The ceiling is determined by the Centre based on the Fiscal Responsibility and Budget Management Act and the Finance Commission recommendations that allows States to borrow up to 3% of their GSDP.
- **Purpose** - The Centre sees this limit as a way to achieve fiscal consolidation by minimising the fiscal deficit.
- **View of States** - They see it as their liberty to borrow being curtailed, and their avenues to balance their budgets being limited.
- The FRBM Act for each State is passed by that State setting the limit.
- **Off-budget borrowings** - Centre wants the off-budget borrowings accounted for in the State's budget and the limit be applicable on their final debt position.

Off-Budget Borrowing

- Off-Budget borrowings are loans obtained by government entities, such as PSUs or special purpose vehicles, on behalf of the government to finance its expenditure.
- These borrowings are typically not included while computing the debt and the fiscal deficit of the State governments.
- However, the State government is responsible for repaying the loan and servicing the debt from its Budget.
- But now States have to show them in their books.

What lies ahead?

- States have also been demanding the Finance Commission to recommend a cap on the cesses and surcharges to a specific percentage of the gross tax revenue.
- It has also been demanded to consider anything above the cap as constituting a part of the divisible pool.
- Commission may consider suggesting tests for the cess and surcharges to qualify for exclusion from the divisible pool.
- Some states have demanded inclusion of state GDP, state's contribution to national economy and achievement in SDG goals as criteria for horizontal devolution.
- Improving tax administration and enforcement, reducing the number of tax rates under GST and including petroleum products in the GST calculation can boost tax revenues for the States.

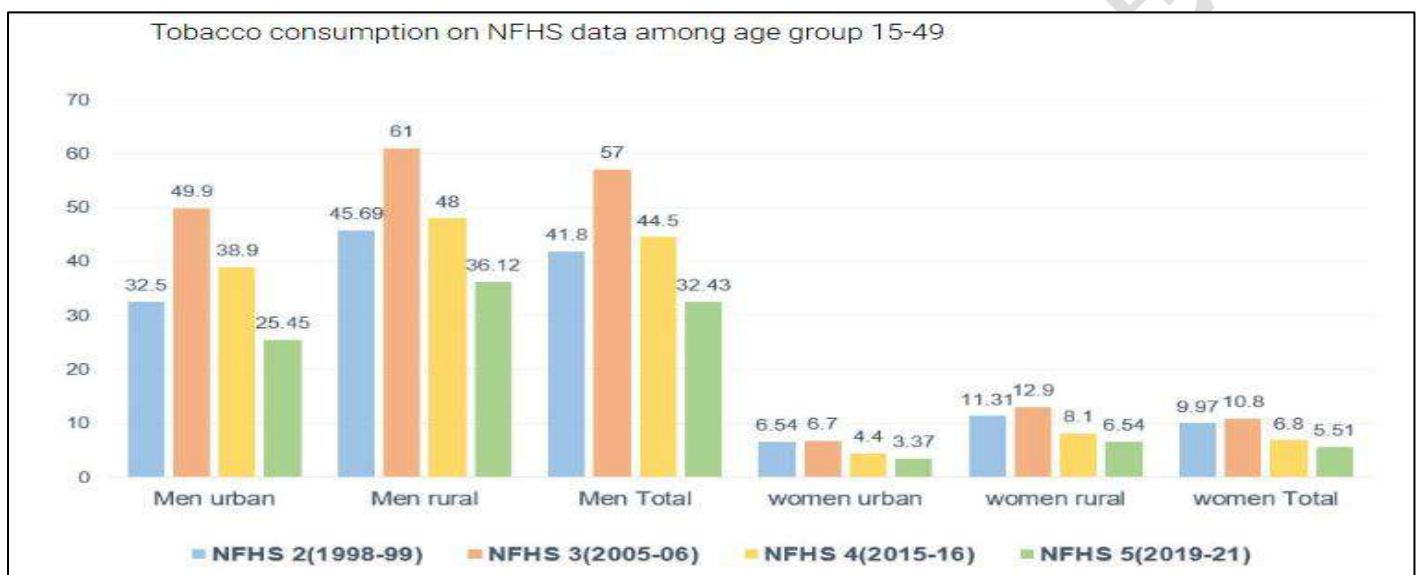
1.3 Tobacco Menace

Why in the News?

World No Tobacco Day is observed around the world every year on 31 May.

What is the status of tobacco usage in India?

- **Tobacco Usage** - India has one of the highest numbers of tobacco users globally, with 28.6%–29% of all adults in the country.
- **High Male Users** - According to Global Adult Tobacco Survey (GATS) GATS data, nearly 42% of men and 14% of women in India use tobacco.
- Prevalence is highest among men aged 50–64 (52.8%) and among women aged 65+ (18.6%).
- **Smokeless Tobacco Usage** - (SLT) Home to 70% of the world's smokeless tobacco (SLT) users, SLT is preferred over smoked tobacco.
- **Smoked Tobacco** - In smoked tobacco, the bidi is favored over cigarettes, especially in rural and low-income groups.
- **Increase in Usage of Cigarettes** - Despite the preference for bidis, India has seen the largest increase in the market share of cigarettes globally.
- **Regional Usage** - Most Indian states have seen a decline in the NFHS-5 survey in male tobacco use, except for Sikkim, Goa, Bihar, Gujarat, Himachal Pradesh, and Mizoram.



What are the impacts of tobacco usage?

- **Common Health Risk Factor** - Smoking is the most common risk factor for the five of the top 10 causes of mortality in the world.
- According to the World Health Organization, these include ischemic heart disease, stroke, chronic obstructive pulmonary disease (COPD), lower respiratory infections and trachea, bronchus and lung cancers.
 - Smoked tobacco products contain over 7,000 chemicals including at least 250 known to be toxic or to cause cancer, the WHO states.
- **Cancer** - Both SLT and smoked tobacco drastically increase cancer risk, particularly for lung, head, neck, stomach, and pancreatic cancers.
- India ranks first globally in male cancer incidence and mortality rates.
 - Over 1.3 million lives are lost every year to cancers caused by smoking tobacco across seven countries, including India, according to a study published in The Lancet's eClinical Medicine journal
- Among tobacco-related cancers in males, lung cancer leads globally, while in India, lip and oral cancers top the list, followed by lung cancer.
- **Affects Body Function** – Smoking also causes skin damage, hearing and vision loss, impact fertility and cause erectile dysfunction.
- **Reduction in Life Expectancy** - One cigarette can steal 20 minutes of your life expectancy, researchers in the U.K. estimate.
- **Loss of Productive Years** - Smoking primarily eats into the relatively healthy middle years rather than shortening the period at the end of life, which is often marked by chronic illness or disability.
- So, a 60-year-old smoker will typically have the health profile of a 70-year-old non-smoker.

- **Economic Burden** - Along with the health burden, tobacco use imposed an economic cost of 1.04% of India's GDP (Rs. 1.77 lakh crore) in 2017-2018.
- Smoking accounted for 74% of these costs, while SLT use made up 26%.

Government Initiatives on Tobacco Control

- **COPTA Act** - Cigarettes and Other Tobacco Products Act (COTPA) 2003, which is applicable in all states, prohibits smoking in public areas, around educational institutions, and in advertisements for tobacco products.
- **National Tobacco Control Programme (NTCP)** – It was introduced in 2007–2008 intended to improve the implementation of tobacco control policies under the COTPA.
- **mCessation Programme** - A digital initiative offering help to quit tobacco via mobile phones by sending an SMS (QUIT to 56161).
- **Tobacco-Free Educational Institutions (ToFEI) Guidelines** - Issued by the Ministry of Health and Family Welfare, it prohibits the sale and use of tobacco products within 100 yards of educational institutions.
- **FSSAI Regulation** - The use of tobacco and nicotine in food items is also prohibited by Regulation under Food Safety and Standards (Prohibition and Restrictions on Sales) Regulations 2011, which means that gutka is prohibited.
- **Prohibition of Electronic Cigarettes** - The production, manufacture, import, export, transport, sale, distribution, storage, and advertisement of electronic cigarettes has been prohibited under the Prohibition of Electronic Cigarettes Act, 2019.
- **Pictorial Health Warnings** - India mandates 85% of the packaging space must include graphic and text warnings on all tobacco product packages.
- **Media Health Warnings** - Films, including those released on OTT platforms, must include anti-tobacco health spots of at least 30 seconds at the beginning and middle of the film.
- On 31 May 2023, the Ministry of Health and Family Welfare (MOHFW) notified amendments to COTPA 2003, updated tobacco control guidelines to issue disclaimers and warnings in online content.
- **Periodic Survey** - Global Adult Tobacco Survey (GATS) & NFHS Survey are conducted to monitor the usage trend of tobacco in the country.
- **MPOWER measures** - The WHO Framework Convention on Tobacco Control (WHO FCTC) and its guidelines provide the foundation for countries to implement and manage tobacco control.
- MPOWER measures are intended to assist in the country-level implementation of effective interventions to reduce the demand for tobacco, contained in the WHO FCTC.

What are the challenges in controlling tobacco menace?

- **Lack of Enforcement** - Implementation of ban on public smoking remains patchy and so the public smoking has been rising.
- **Variety of Forms** – The widespread availability of tobacco in various forms makes them easily accessible and normalize their use, particularly among young people and vulnerable populations.
- **Illegal Sale** – Despite the various ban tobacco products, the illegal manufacturing, distribution and sales of electronic cigarettes and smokeless tobacco are flourishing.
- **Tobacco Industry's Influence** – Through policy interference, pricing tactics to maintain affordability, targeted marketing, dense tobacco shop networks ensure widespread tobacco accessibility.
- **Ineffectiveness of Price Deterrence** - Unlike in other countries where higher prices have deterred smoking, rising disposable incomes in India, particularly among the 450 million middle class have outpaced tax increases.
- With increased purchasing power, tobacco products continue to be affordable.
- **Under Shifting of Taxes** - Tobacco industry absorbs a portion of a tax increase instead of fully passing the increase on the prices to consumers to keep it affordable.
- **Unit Sales** - To enhance affordability, cigarettes are often sold as single sticks - a practice banned in 88 countries but not in India.
- Tobacco affordability undermines the government efforts in reducing tobacco usage.

- **Cultural Normalization** - Tobacco use has become socially acceptable as a result of cultural normalisation, with urban regions having higher cigarette smoking rates (5 %) than rural areas (3 %).

What needs to be done to control the tobacco usage?

- India faces a dual challenge of significant health and economic burdens from tobacco-related cancers and the complexities of lung cancer screening in a TB-endemic country.
- This underscores the urgent need for evidence-based anti-tobacco policies as a primary prevention strategy.
- **Reducing the Affordability** - Regular tax hikes that outpace income growth can make tobacco products unaffordable, discouraging their use
- As recommended by World Health Organization, all tobacco products can be taxed at 75% of its MRP to effectively deter use.
- **Price Fixation** - Along with tax increase, a minimum retail price can also be set and increased to prevent the under shifting tactics of tobacco industries.
- **Banning Loose Sales** - Banning single-stick sales can reinforce health warnings and curb impulse purchases.
- **Packaging Control** - Enforcing plain packaging with prominent health warnings can also reduce tobacco's appeal.
- **Robust Enforcement** - Sales near tea stalls needs to be restricted through regular inspections and penalties to help break the 'chai-sutta' association.
- **Public Outreach** - Prioritising cancer screening, tobacco-cessation programmes can further bolster tobacco control efforts, ultimately creating a comprehensive approach to tackle tobacco use.

*The **Tobacco GST rate** for all types of its products is 28%, except for tobacco leaves which is taxed at 5%.*

1.4 UNFPA 2025 State of World Population Report

Why in News?

Recently the United Nations Population Fund (UNFPA) released its 2025 State of World Population that highlighted millions across the world, including Indians, are unable to fulfil their reproductive goals due to unmet reproductive choices.

What is the UNFPA Report?

- **UNFPA Report** – It is an annual flagship report published by the United Nations Population Fund (UNFPA) on world population growth trend.
- **Title of 2025 edition** – “The Real Fertility Crisis”
- The report intended to explore the gap between desired and actual fertility worldwide.
- The findings of the report shift the global narrative from panic over falling fertility to addressing **unmet reproductive needs**.

Unmet reproductive choice

- **Unmet reproductive choice** – It refers to situations where individuals or couples cannot achieve their desired reproductive outcomes due to lack of access to family planning services, contraception, or reproductive health care.
- This can include unmet need for contraception (wanting to avoid pregnancy but lacking access to effective methods) or inability to access fertility treatments or safe abortion services.
- This gap contributes to unintended pregnancies, unsafe abortions, and maternal health risks.
- **Global Context** – Over 200 million women and girls globally, including in India, have an unmet need for modern contraception, leading to unintended pregnancies and maternal health risks.

What are the key findings related to India?

- **India's population dynamics** – India's population in 2025 is **1.46 billion**, highest in the world and expected to peak in early **2060s** at **1.7 billion**.
- **Total Fertility Rate (TFR)** – It has dropped to 1.9, below the replacement level of 2.1, indicating that India's population growth is decelerating.

- It has significantly declined from nearly 5 children per woman in 1970 to 1.9 in 2025.
- **Regional disparities** – High-fertility states like Bihar, Jharkhand, and Uttar Pradesh continue to have higher birth rates due to socioeconomic challenges.
- Low-fertility regions, such as New Delhi, Kerala, and Tamil Nadu, maintain TFRs below replacement levels, due to better education, healthcare access, and economic opportunities.
- **Dual fertility gap** – It refers to individuals who experience both **unintended pregnancies and unmet desires** regarding the number of children they wish to have.
 - India's 23% **dual fertility gap** is one of the highest among surveyed nations.
- **Unmet need for family planning** – It shows the difference between TFR and Total Wanted Fertility Rate (TWFR).
 - TFR measures average number of children a woman is expected to have in her lifetime, while TWFR is the **average number of children women they would like to have**.
- Greater the difference means the greater the undesired pregnancies.
 - For Bihar TFR is 3.0 and TWFR is 2.2 and for Meghalaya TFR is 2.9 and TWFR is 2.2 which illustrates the unmet need for family planning.
- On other hand low-fertility state Sikkim (TFR 1.0 and TWFR: 0.91.0) the variation is comparatively smaller.
- **Adolescent fertility concerns** – India's adolescent fertility rate (births per 1,000 women aged 15-19) is **14.1 per 1,000** which is higher than China (6.6), Sri Lanka (7.3), Thailand (8.3).
- It impacts education, maternal & child health of adolescent girls.
- **Rising infertility** – The reasons for rising infertility are due to changing lifestyle, financial constraints, Job security, lack of child care and medical conditions like polycystic ovary syndrome (PCOS).
 - An estimated 25–30 million people in India face infertility, with rates rising from 22.4% in 1992–93 to 30.7% in 2015–16.
- **Access barriers to treatment** – Only 2% of those facing infertility seek medical help due to social stigma, high costs, and limited availability of treatments.
- **Education and urbanization** – Higher education levels, particularly among women and urbanization (increases living costs, shifts the preferences toward smaller families in metropolitan areas).
- **Cultural norms** – Social stigma restricts access to reproductive health services to fertility centers.
- **Policy and healthcare gaps** – Despite progress, millions lack access to modern contraception, particularly in rural and economically disadvantaged areas.
- The report highlights the need for equitable distribution of family planning resources to address unmet contraceptive needs.
- **Outdated policies** – Many family planning programs focus on population control rather than empowering individual reproductive choices.

What are the suggested measures by the report?

- **Rights-based demographic resilience** – It suggests for a rights-based, demographic resilience, societies' ability to adapt to population change without sacrificing human rights.
- **Structural support** – Investment in childcare, housing, education, job security.
- **Inclusive policy framework** – Expanding sexual reproductive health services with universal access to contraception, safe abortion, maternal health, and infertility care,
- Tracking unmet family planning needs and bodily autonomy, not just fertility.
- **Community engagement** – Fostering social change through community initiatives challenging stigma and building health literacy.

G.S PAPER I

2. HISTORY

2.1 Magna Carta

Why in the news?

Magna Carta Day 2025 was celebrated on June 15.

What is the Magna Carta?

- **Magna Carta** - Also known as the Great Charter, it is a document issued in 1215 that limited the power of the English monarchy and established the principle that everyone, including the king, was subject to the law.
- **Signed by** - It was sealed by King John of England at Runnymede on June 15, 1215, under pressure from English barons.
- **Aim** - The charter aimed to restrict the king's arbitrary actions and ensure that he acted within the bounds of law.
- **Clauses** - There are 63 clauses in the Magna Carta including regulation of feudal customs, the operation of the justice system, granting of taxes, the extent and regulation of the royal forest, debt, the Church and the restoration of peace.
- **Popularization** - Copies of Magna Carta were sent out to be read out in each county to popularize it.
- **Annulment** - Within three months, fearing the loss of his power, John sought to annul it with the help of Pope Innocent III.
- The barons then renounced their support and invited the son of the king of France to take the crown of England.
- **Reissue** - After the death of King John, several versions of the document were reissued over the years and at present, four copies of the original have survived.

Magna Carta was not intended to be a great charter of rights for all people, but designed by the barons to ensure that their rights were protected against the king's power.

Major Provisions of Magna Carta

- **Limiting the King's Power** - The Magna Carta explicitly stated that the king was not above the law and could not rule arbitrarily.
- **Golden Clauses** - Clause 39 prevents arbitrary imprisonment or seizure of a freeman without lawful judgment or due process.
- Clause 40 ensures that justice is not sold, denied, or delayed to anyone.
- **Protection of Liberties** - It guaranteed certain rights to free men, including the right to justice, property ownership, and freedom from excessive taxation.
- **Protection of Widows' Rights** - The document included provisions to protect the rights of widows, specifically the right to choose whether or not to remarry after their husband's death.
- **Right to Rebel** - The Magna Carta even included provisions allowing barons to declare war on the king if he failed to uphold the document's terms, showcasing a bold step in limiting royal authority.

What are the significances of Magna Carta?

- **Foundation of Human Rights** - By declaring the sovereign to be subject to the rule of law and documenting the liberties held by "free men," the Magna Carta provided the foundation for individual rights.
- **Symbol of Freedom** - It remains a powerful symbol of individual liberty and the rule of law.
- **Basis of Constitution** - Magna Carta has formed the basis of constitutions around the world.
- **Rule of Law** - Today, clauses 39 and 40 are still on the UK statutes and are seen as the basis of concepts such as rule of law and habeas corpus (guarding against arbitrary detention).
- **Due Process and Equality** - It established principles of due process and equality before the law, meaning that individuals were entitled to a fair trial and equal treatment under the law.
- **Development of Democracy** - While primarily focused on the rights of barons and the church, the Magna Carta set a precedent for limiting the power of the monarch and paved the way for the development of democratic principles.

2.2 North Dravidian Languages

Why in the News?

Recent controversy between Tamil and Kannada language has led to discussions on Dravidian languages.

What are Dravidian languages?

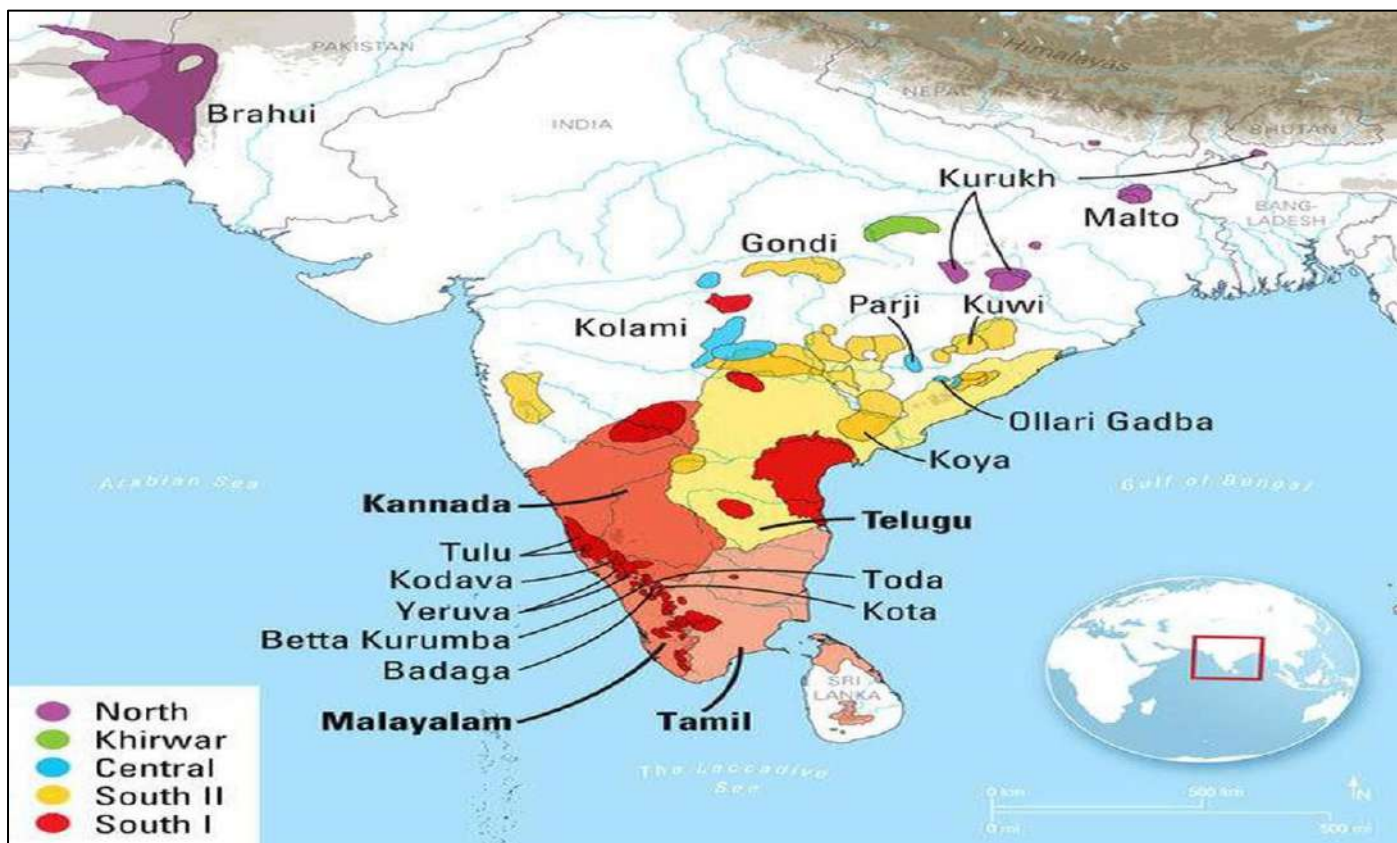
- **Dravidian Languages** – It is a family of some 70 languages spoken primarily in South Asia.
- **Major Languages** - The Dravidian language family's four largest languages are Kannada, Malayalam, Tamil and Telugu.

British missionary Robert Caldwell was the first to use 'Dravidian' as a generic name for the major language family.

Groups	Language	Speakers	Area
<i>Northern</i>			
	Brahui	2,200,000	Baluchistan province in Pakistan
	Kurux (Kurukh)	2,100,000	Jharkhand, Bihar, Chhattisgarh, Orissa, West Bengal ¹
	Malto	136,000	Jharkhand, Bihar, Bangladesh
<i>Central</i>			
	Kolami	120,000	East Maharashtra, NW Andhra Pradesh
	Naiki	10,000	NW Andhra Pradesh, East Maharashtra
	Parji (Duruwa)	50,000	South Chhattisgarh, South Orissa
	Gadaba	25,000	South Orissa, NE Andhra Pradesh
<i>South-Central</i>			
	Telugu	86,000,000	Andhra Pradesh
	Gondi ²	3,200,000	Maharashtra, Madhya Pradesh, Chhattisgarh, A. Pradesh
	Konda (Kubi)	20,000	NE Andhra Pradesh
	Kui	765,000	South Orissa
	Kuvi	350,000	South Orissa, NE Andhra Pradesh
	Manda	4,000	South Orissa (Navrangpur district)
	Pengo	1,300	South Orissa (Navrangpur district)
<i>Southern</i>			
	Tamil	78,000,000	Tamilnadu, North Sri Lanka, Malaysia
	Kannada	44,000,000	Karnataka
	Malayalam	39,000,000	Kerala
	Tulu	2,000,000	Southwest Karnataka
	Kodagu	200,000	South Karnataka near Kerala border
	Badaga	135,000	Nilgiri Hills, Tamilnadu
	Irula	5,000	Nilgiri Hills, Tamilnadu
	Toda	1,100	Nilgiri Hills, Tamilnadu
	Kota	900	Nilgiri Hills, Tamilnadu

1. There are some minorities in Bangladesh, Bhutan, Nepal
2. Includes de Koya dialect of Andhra Pradesh

- **Geographical Distribution** - While its speakers in India are primarily concentrated in the southern and central belts, these languages are also spoken in other South Asian countries, including Bangladesh, Nepal, Pakistan, and Sri Lanka.



- **Differences** - The North Dravidian language subgroup is distinguished from the other Dravidian languages by various phonological, morphological, and lexical features.
- Kurux shares 73% of its Dravidian-sourced words with Malto, but only 12% with Tamil and 14.5% with Telugu.
- **Greatness** - In the book *The Dravidian Languages* (2015), American linguist Sanford B Steever argues that the Dravidian language family is the fourth or fifth largest language family in the world.
- **Historical Significance** – This language family may have been spoken for millennia in different parts of South Asia and is believed by many scholars to have been spoken in the Indus Valley.
- **Contribution to Other Languages** – Dravidian system of languages have loaned generously to vocabularies of other families.

Northern Dravidian Family	
Kurux	<ul style="list-style-type: none"> • It goes by several names, including Kurukh/Oraon/Dhangar/Uraon/Kisan. • Oraon appears to be a ‘clan’ name. • Dhangar is the name of Kurux spoken in the Terai in Nepal. • Kisan is spoken by a subset of Kurux speakers, involved in agriculture. • Approximately two million people speak these languages across India, Bangladesh, and Nepal, where it reached through a group of migrant labourers.
Malto or ‘Hillman’	<ul style="list-style-type: none"> • It is classified as the northernmost of Dravidian languages in India, is spoken by nearly 100,000 people in the Rajmahal hills of Bihar, West Bengal, Tripura, and Odisha. • According to Steever, Malto has at least three dialects (Kumarbhag, Malpaharia, and Sawriya) distinguished based on phonology, morphology, and lexicon.
Brahui	<ul style="list-style-type: none"> • As per Krishnamurti, every language is separated from Brahui by over 5,000 years, including its closest ‘sisters’ Kurux (by 5,505 years) and Malto (5,874 years). • Brahui has traditionally been written in Perso-Arabic and “might well constitute its own subgroup, the first to branch off from the Dravidian proto-languages,” says Steever.

How have Dravidian languages evolved?

The 1981 Census required a language to have at least 10,000 speakers to be listed, mentioned Malto and Kurux as non-scheduled languages while omitting Brahui as it had no speakers living within the Indian Union.

- **Split from Proto Dravidian** - According to Krishnamurti, the first branch to split off from the Proto Dravidian family was the North subgroup, comprising Kurux, Malto, and Brahui.
- The fact that Kurux, Malto and Brahui share past forms with the suffix -k/-g made scholars believe that these languages branched off first from the rest of Dravidian.
- **Emergence of Other Groups** - Subsequently, Central Dravidian emerged with languages like Kolami, Parji, followed by Proto-South, which further split into South-Central, comprising Telugu, Kuwi, and Southern, which includes Tamil and Tulu.
- **Branching Out** - The main branches of Dravidian—South Dravidian I (including pre-Tamil), South Dravidian II (including pre-Telugu), and others—began to split around the 11th century BCE, with earlier splits likely occurring in the millennia prior
- **Indigenous vs. Migratory Origins** - While some theories propose that Dravidian languages were brought to India by migrations from the Iranian Plateau, the majority of linguistic and genetic evidence supports the view that the Dravidian language family is indigenous to the Indian subcontinent.
- **Contact with Indo-Aryan Languages** - Dravidian languages influenced early Sanskrit, especially through loanwords and the introduction of retroflex consonants.
- This indicates contact between Dravidian and Indo-Aryan speakers by at least the 2nd millennium BCE, well before Sanskrit had a significant impact on southern India.
- **Indus Valley Linkage** – Presence of Brahui speakers across the continent- Karachi, Hyderabad, Sukkur, and Larkana led to the conjecture that Dravidian was the language of the Indus Valley Civilisation.
- The presence of Brahui in the highlands of southwestern Pakistan is also cited as a determining factor in associating the Indus Valley Civilisation with Dravidian.

3. GEOGRAPHY

3.1 Ocean Darkening

Why in the News?

Over 21% of the world's oceans have darkened significantly in the last two decades.

What are the causes of Ocean darkening?

- **Ocean darkening** – It refers to the reduction in water clarity that limits how far sunlight can penetrate into the ocean.

Status of Ocean Darkening

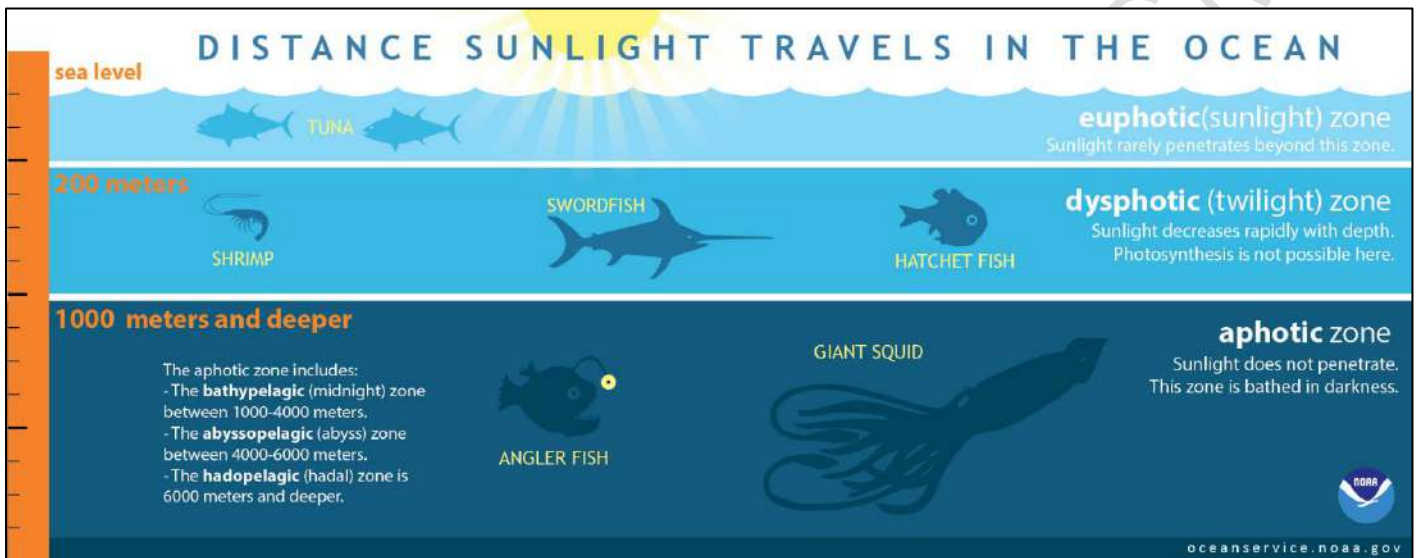
- 21% of ocean area darkened, totalling over 75 million square kilometres
 - 9% of the ocean saw photic zones shrink by over 50 metres
 - 2.6% saw declines of more than 100 metres.
 - While 10% of the ocean became lighter, the darkening trend dominates
 - Geographically, some of the most significant changes were observed in the Arctic and Antarctic regions, and in areas influenced by the Gulf Stream.
- **Heavy Rainfall** – It causes high sedimentation run into ocean and reduces the transparency and increases the opaqueness along the coastal waters.
 - **Land Use Changes** – Deforestation, urbanization along the coastal areas can significantly contribute to ocean darkening by increasing the runoff of sediments, nutrients, and organic matter into the ocean.

- **Algal Bloom** – Nutrient run off from agricultural field, industrial effluents through river and drainage discharge from cities causes algal bloom along the coastal areas.
- **Rising Sea Surface Temperatures** - Warming oceans affect the distribution and productivity of marine organisms, including phytoplankton, which can influence water clarity.
- **Altered Ocean Circulation** - Changes in global ocean currents can redistribute nutrients and organic matter, impacting the concentration of particles that scatter or absorb light.

What are the impacts of ocean darkening?

- **Shrinkage of Photic Zone** – Darkening of ocean affects the penetration of light into the photic zone and reduces its width.

The photic zone in the ocean is the upper layer where sunlight penetrates, which typically extends to about 200 meters below the surface, though the exact depth can vary depending on water clarity and other factors.



- **Threatens Marine biodiversity** – The sunlit upper layer is where the photosynthesis happens and supports over 90% of marine life and the darkening of ocean weakens the ocean's ability to support life.
- **Disruption in Marine Food Web** - If the photic zone is reducing by around 50m in large swathes of the ocean, animals that need light will be forced closer to the surface where they will have to compete for food and the other resources they need.
- **Planetary Impact** – Photic zone underpins key planetary processes such as oxygen production and carbon cycling.
- Hence the shrinkage of this zone will have impact at planetary level and disrupts the role of ocean regulating climate, and producing oxygen.

What lies ahead?

- Protecting the marine ecosystem along the coast and in the open waters is essential for the survival of entire planetary ecosystem.
- Land use changes near the coastal land needs to be regulated focusing on the marine ecosystem.
- Coastal zone regulations can be updated to include the changes in optical properties of coastal waters.
- International collaboration is essential for protecting marine ecosystem in the open waters.

3.2 Rainforests

Why in the News?

World Rainforest Day is observed on 22 June.

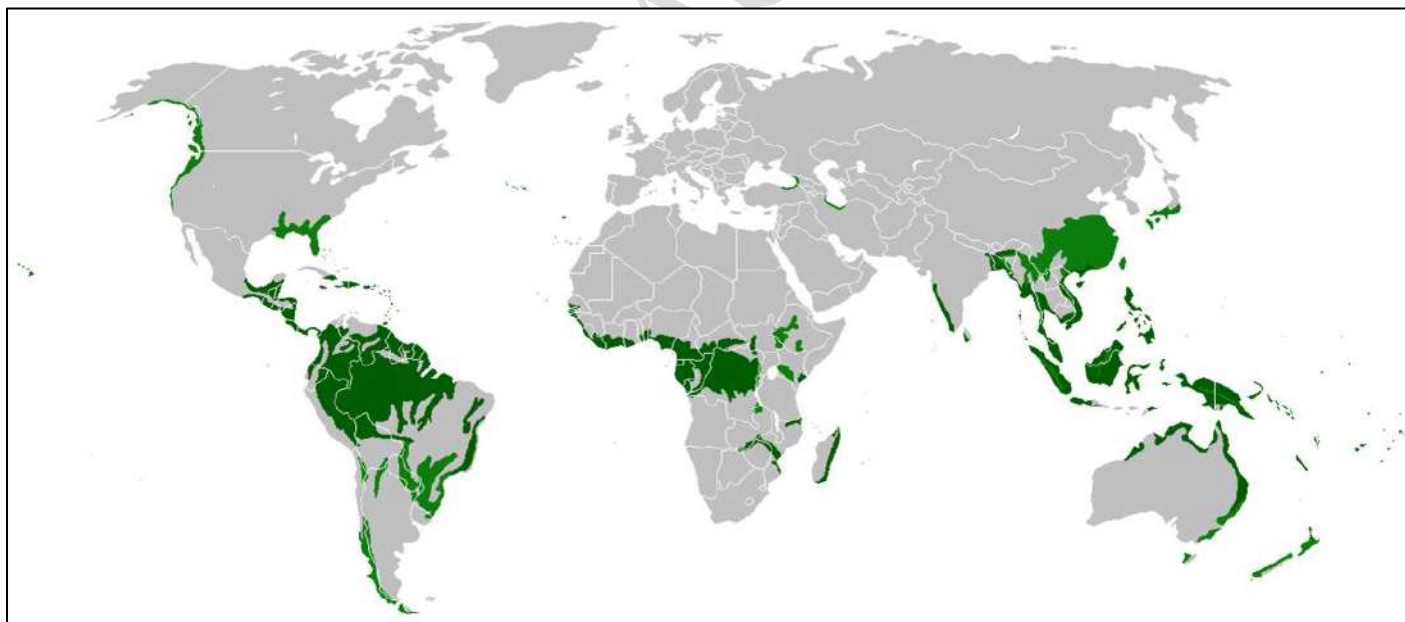
What are rainforests?

- **Rainforests** - It an area of tall, mostly evergreen trees that receives a high amount of rainfall.

- **Oldest Living Ecosystem** - Rainforests are likely Earth's oldest living ecosystems, with some surviving in their present form for at least 60 million years.
- **Coverage** - Tropical rainforests cover approximately 6% of the Earth's land surface thriving every continent except Antarctica.
- **Rainforest Structure** - Most rainforests are structured in four layers as emergent, canopy, understory and forest floor.
- Each layer has unique characteristics based on differing levels of water, sunlight and air circulation.

*The **rainforest floor** gets so little sunlight that plants have to stretch, climb, and even grow on other trees just to catch a few rays.*

Types of Rainforests		
	Tropical Rainforests	Temperate Rainforests
About	<ul style="list-style-type: none"> • These grow near the equator, where it's warm and rains almost every day. • These are the greenest and most biodiverse places on Earth. 	<ul style="list-style-type: none"> • These grow in cooler places where it still rains a lot, but the temperatures are lower.
Places	<ul style="list-style-type: none"> • Amazon Rainforest in South America – the largest rainforest in the world. • Congo Basin in Africa – home to gorillas, elephants, and ancient trees. • Southeast Asia – rich with orangutans, giant flowers, and thick tree canopies • The Western Ghats and Northeast India, especially places like Assam and Arunachal Pradesh, have patches of tropical rainforest 	<ul style="list-style-type: none"> • Pacific Northwest in the USA • Chile in South America • New Zealand – with mossy forests that look like they're from a fairy tale.



What are the significances of rainforests?

- **Lungs of the Earth** - Rainforests absorb carbon dioxide and give us back clean oxygen.
- **Cools Earth** - They absorb vast amounts of carbon dioxide, a greenhouse gas, and their dense canopies reflect sunlight, reducing heat absorption.
- **Rainfall** – Rainforests release water vapour through transpiration and this vapour contributes to cloud formation.
- **Freshwater Storage** - They act as natural sponges, absorbing rainwater and releasing it slowly into rivers and aquifers, and also serve as areas for rainwater harvesting.

- **Biodiversity** – They are home to more than half of all the plant and animal species.
- **Global Climate Regulation** - Through carbon sequestration, moisture recycling, and heat absorption, they play a crucial role in earth climate regulation.
- **Medicines** - Approximately 25% of modern medicines derived from rainforest plants.
 - **Example-** Quinine, derived from the cinchona tree, found in the Andes, is a well-known treatment for malaria.
 - Anti-cancer drugs Vincristine and Vinblastine used for treating leukemia and Hodgkin's disease, are extracted from the Madagascar periwinkle.

A well matured big tree in the Amazon can “drink” up to 1,000 litres of water a day.

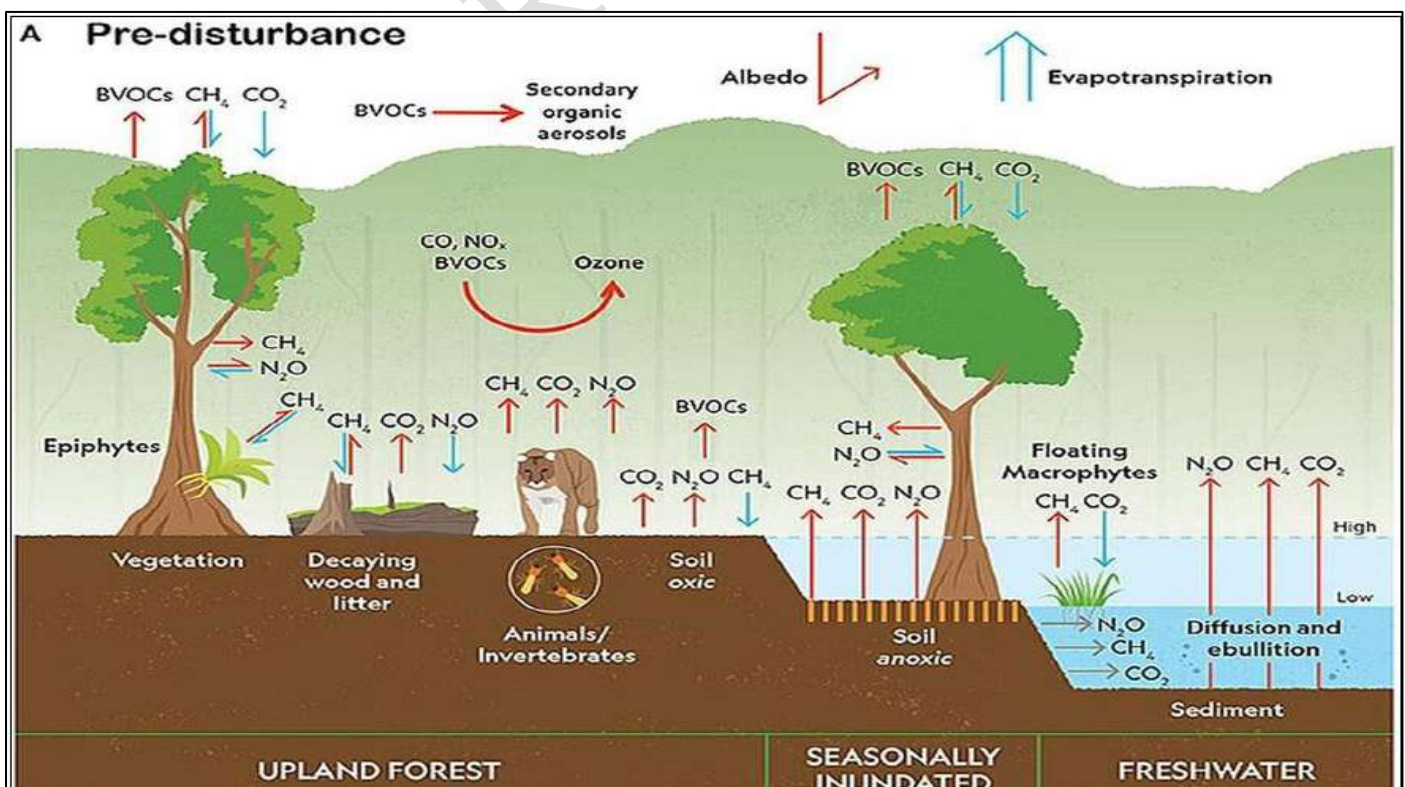
Sloths in rainforests grow algae on their fur and this creates a tiny home for insects and even giving sloths a bit of camouflage.

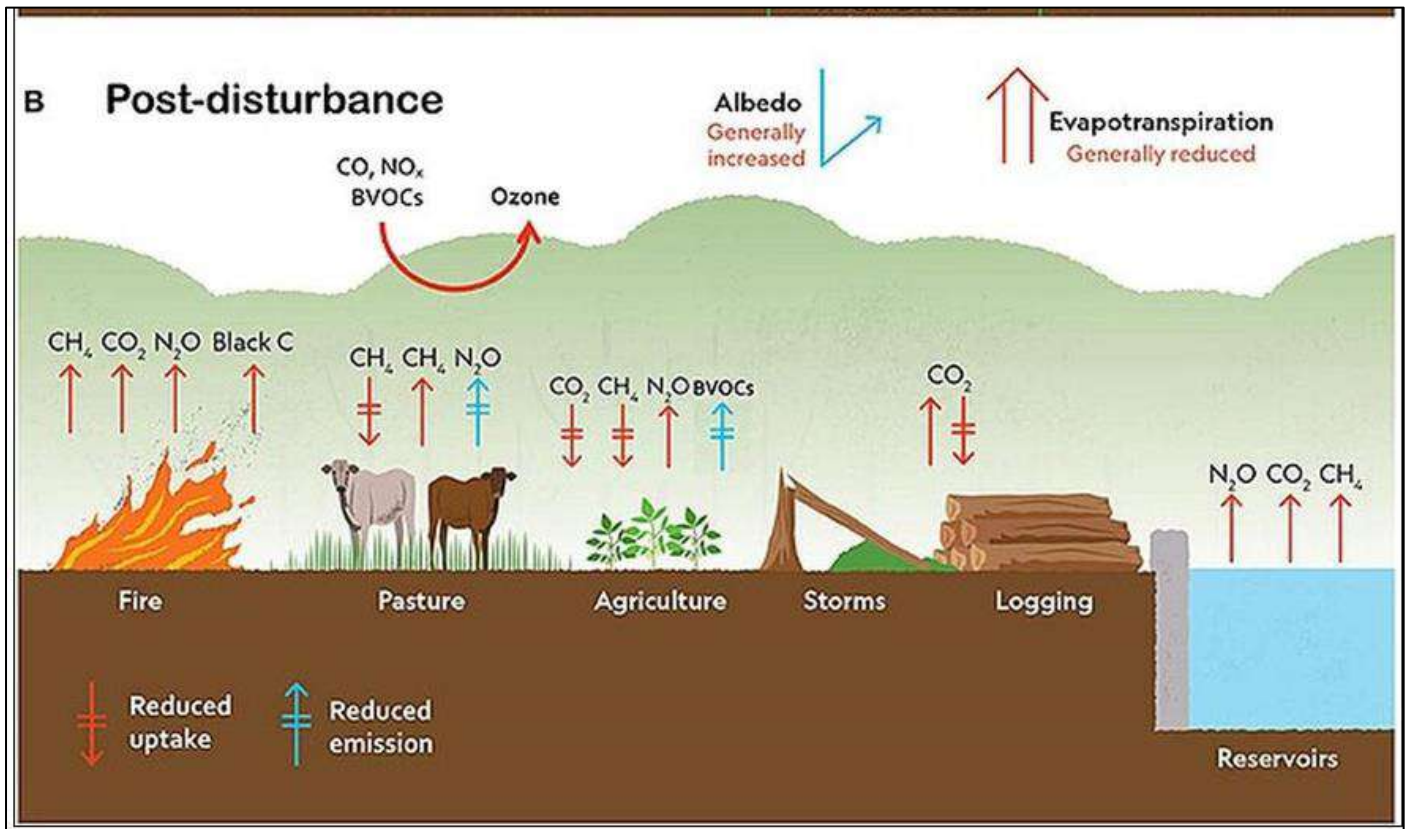
What are the threats to rainforests?

- **Logging** - When too many trees are removed for timber, furniture, and paper, the forest can't grow back the same way.
- **Farming and Plantations** - To grow palm oil, soy, or to make space for cattle, large chunks of forest are cleared.
- **Climate Change** - Rising temperatures and shifting rain patterns make it harder for rainforests to survive.
- **Fires** - Many rainforest fires are started by humans – to clear land and these fires often get out of control and destroy more than intended.

What are the impacts of loss of rainforests?

- **Global Warming** – With loss of rainforests, more carbon dioxide stays in the air, making the Earth hotter and speeding up climate change.
- **Health Impact** – As rain forest is the source of several existing medicines and potential future medicines, their loss will significantly affect the treatment of diseases.
- **Disease Spread** – With loss of rainforests ecosystem, the pathogens of rainforest will spread to new locations for their survival.
- **Economic Loss** – Rainforests provides valuable material resources and are one of the most favoured eco-tourism destinations.
- Their loss would significantly affect their contributions through goods and services.





What lies ahead?

- Rainforests don't just belong to Brazil, Congo, or Indonesia – they belong to all of us.
- Every tree, every drop of rain, every breath of fresh air they give is a gift to the whole planet.
- When we protect rainforests, we're not just saving plants and animals – we're protecting the air we breathe, the water we drink, and the future we dream of.

G. S. PAPER II

4. SOCIAL JUSTICE

4.1 India's Progress in Food Safety Standards

Why in the News?

World Food Safety Day is observed on June 7.

What is India's Journey in food safety?

- **Preventing Food Adulteration** - India's journey on food safety began with the Prevention of Food Adulteration (PFA) Act of 1954, which viewed food safety as a simple, binary issue – food being adulterated or not.
- This approach treated all contaminants alike, whether they were intentionally added adulterants, food additives, pesticide residues, veterinary drug residues, or even naturally occurring toxins.
- **Risk Based Approach** - Food Safety and Standards Act, 2006 established the Food Safety and Standards Authority of India (FSSAI).
- It draws on international best practices, particularly those of the Codex Alimentarius Commission such as
 - Maximum residue limits (MRLs) for pesticides
 - Defining safe levels for food additives
 - Adopting standards for contaminants
 - Veterinary drug residues

- By 2020, the FSSAI managed to develop and align India's food safety standards so that they were almost on a par with those in advanced countries.

What are the challenges in India's food safety measures?

- **Lack of India-Specific Toxicological Studies** - Most safety standards, including o Maximum residue limits MRLs for pesticides and acceptable daily intake (ADI) values for food additives, are based on international data.
- This may not accurately reflect Indian dietary habits, agricultural practices or environmental conditions.
- **Absence of Total Diet Study (TDS)**- Such studies are essential to assess the cumulative exposure of consumers to various contaminants through their entire diet.
- Without TDS, India relies on fragmented data, which weaken the scientific basis of its safety standards.
- **Ineffective Risk Communication** - Technical terms such as MRLs and ADIs are expressed in minute quantities (parts per million, or ppm, or parts per billion, or ppb) – that are difficult for consumers to understand.
- These can lead to confusion, especially when safety limits are revised.
- For instance, the decision to revise the MRL for pesticides from a highly restrictive 0.01 mg/kg to a more practical 0.1 mg/kg led to public concern, with many interpreting it as a reduction in safety.
- **Regulation of Monosodium Glutamate (MSG)** – In India, it was only allowed in meat products, but its use has gradually been permitted in all foods, but with a mandatory warning label that it is unsafe for infants.
- This is in sharp contrast to other countries, where MSG is recognized as a safe food additive, and outdated warning labels have been removed.

*Naturally occurring compounds chemically identical to **Monosodium Glutamate (MSG)**, are abundant in everyday foods such as tomato, mushroom and garlic, as well as breast milk.*

What lies ahead?

- India has made significant strides in food safety, but sustaining this progress requires targeted efforts.
- Investing in India-specific research, including localised toxicological studies and a comprehensive TDS, is vital to understand cumulative exposure to contaminants.
- Risk communication can be improved by simplifying scientific messages and replacing confusing labels, such as those for MSG, with clear, evidence-based information.
- Strengthening the capacity of risk assessors through continuous training ensures that they stay updated with the latest science for sound decision-making.

4.2 Velpur Model of Eradication of Child Labour

Why in News?

On the occasion of World Day Against Child Labour (June 12), it is significant to study the remarkable success of Velpur Mandal in Telangana which was declared as a child-labour-free zone in 2001.

What is status of child labour crisis?

- **Global crisis of child labour** – According to International Labour Organization (ILO), 160 million children are involved in child labour globally.
- Around 9 out of 10 such children are from Africa, Asia, and the Pacific.
- COVID-19 exacerbated the crisis, pushing more children into labour due to school closures and economic stress.
- **Child labour in India** – As per Census 2011, India had 43.53 lakh child labourers (5-14 years).
- Common industries employing children: beedi, carpet-weaving, fireworks.

*According to ILO **Child labour** is defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental wellbeing.*

Constitution provisions for eradication of child labour in India

- **Article 24** – It prohibits employment of children below **14 years** in factories, mines, or hazardous jobs.

- **Article 39(e & f)** – It directs the State to protect children from exploitation and ensure healthy childhood.
- **Article 45** – To provide free and compulsory education for all children until they complete the age of 14 years
- **Article 21A** – Right to free & compulsory education (6–14 years).

Legal framework for eradication of child labour in India

- **Child Labour (Prohibition and Regulation) Act, 1986** – It prohibits employment of children below **14 years** in specified hazardous occupations and processes.
- It also regulates conditions of work for children in other occupations.
- **Child Labour (Prohibition and Regulation) Amendment Act, 2016** – It prohibits employment of children (<14 yrs) in all occupations, except if helping family after school hours.
- It prohibits adolescents (14–18 yrs) in hazardous occupations and makes child labour a **cognizable offence**.
- It introduces stricter penalties:
 - Employer – Rs 20,000–50,000 fine and/or imprisonment up to 2 years.
 - Repeat offence - Imprisonment up to 3 years.
- **Commission for Protection of Child Rights Act, 2005** – It establishes National & State Commissions for Protection of Child Rights (NCPDR & SCPDRs).
- To protect children from abuse, exploitation, neglect, and ensure their rights to education, health, survival, and development.
- **Right of Children to Free and Compulsory Education Act, 2009 (RTE Act)** – It ensures free and compulsory education for children aged 6–14 years.
- It helps to prevent child labour by keeping children in school.
- **Juvenile Justice (Care and Protection of Children) Act, 2015** – It treats working children as children in need of care and protection.
- It empowers Child Welfare Committees (CWCs) to rescue and rehabilitate working children.

Government measures for eradication of child labour in India

- **National Child Labour Project (NCLP) Scheme** – Targeted intervention in **districts with high incidence of child labour**.
- **Launched in** – 1988
- Rescued children are:
 - Put into Special Training Centres (STCs).
 - Provided bridge education, stipend, healthcare, vocational training.
 - After preparation, they are mainstreamed into formal schools.
- **PENCIL Portal** (Platform for Effective Enforcement for No Child Labour) – It is launched in 2017 by Ministry of Labour & Employment.
- It is an online portal to:
 - Report instances of child labour.
 - Track rescue & rehabilitation.
 - Coordinate between stakeholders
- **Operation Smile (Also called as Operation Muskaan)** - Launched by Ministry of Home Affairs in 2014.
- It is special police drives to rescue missing and trafficked children including those in labour.
- India is a signatory to **UN Convention on the Rights of the Child (UNCRC)**, 1989 which ensures child's right to education, protection, and development.

How Velpur mandal is able to become child labour free zone?

- Velpur, once noted for child labour but on October 2, 2001, Velpur was declared child-labour-free.

- It is started with initiative of **100-day community-driven campaign** in June 2001.
- **Strong community involvement** – Village panchayats, parents, and local volunteers actively participated in identifying and rescuing child labourers.
- Local campaigns raised awareness on the importance of schooling over work.
- **Employer cooperation** – Debts of child labour families that were tied to bonded or child labour was waived by employers.
- This removed financial dependency that often forces families to send children to work.
- **School enrolment drives** – Special enrolment drives ensured every child was admitted to school.
- Dropouts and working children were tracked and reintegrated into the education system.
- **Convergence of Government Departments** – Coordinated efforts between education, labour, police, and revenue departments helped in enforcement.
- Regular inspections and surveys ensured compliance.
- **Support from NGOs** – They played a key role in mobilizing communities and providing bridge courses for child workers.
- Awareness programs and community dialogue sustained momentum.
- **Local governance leadership** – Mandal-level authorities showed strong political will and accountability.
- **Strict Enforcement and Follow-up** – Rescued children were monitored to prevent relapse into work.
- **Institutional support** – All village heads signed Memorandum of Understanding with the government under Andhra Pradesh Compulsory Primary Education Rules (1982).

Even 24 years later, Velpur maintains 100% school retention and zero child labour.

What lies ahead?

- Replicating the Velpur Model in other high-burden regions.
- Promoting awareness campaigns to counter social resistance by imparting the importance of education.
- Ensuring universal access to schools, especially in rural areas.

Legal Backing + Social Push = Sustainable Reform – Synergy between law and grassroots participation yields better outcomes.

4.3 Global Gender Gap Report 2025

Why in the News?

Recently, the World Economic Forum has released Global Gender Gap Index Report 2025.

What is Global Gender Gap Index?

- **Global Gender Gap Index** - It annually benchmarks the current state and evolution of gender parity across four key dimensions (subindexes).

Composition of Global Gender Gap Index	
Economic Participation and Opportunity	<ol style="list-style-type: none"> 1. Participation gap 2. Remuneration gap 3. Advancement gap
Educational Attainment	<ol style="list-style-type: none"> 1. Literacy rate, % (females-to-males ratio) 2. Enrolment in primary education, % (females-to-males ratio) 3. Enrolment in secondary education, % (females-to-males ratio) 4. Enrolment in tertiary education, % (females-to-males ratio)
Health and Survival	<ol style="list-style-type: none"> 1. Sex ratio at birth

Political Empowerment	<ol style="list-style-type: none"> 2. Gap between women's and men's healthy life expectancy
	<ol style="list-style-type: none"> 1. Ratio of women to men in ministerial positions 2. Ratio of women to men in parliamentary positions. 3. Ratio of women to men in terms of years in executive office (prime minister or president) for the last 50 years

- **19th Edition** - It benchmarks gender parity across 148 economies, providing a basis for the analysis of gender parity developments across two-thirds of the world's economies
- **Scale** - The Global Gender Gap Index measures scores on a 0-1 scale, and scores can be interpreted as the distance covered towards parity i.e. the percentage of the gender gap that has been closed, numbers rounded.
- **Cross-economy Comparisons** – It supports the identification of the most effective policies to close gender gaps.

What is the position of India in the index?

- **India's Rank** - In 2025 India ranks 131st, with an overall gender parity score of 64.4%.
- **Relative Drop in Rank** - Compared to the 2024 edition, India sees a relative drop in rank (-3) due to the performance of other economies.
- **Overall Improvement** – India's overall performance improves in absolute terms by +0.3 points.
- **Increase in Economic Participation and Opportunity** – In this sub index, India has improved by +0.9 percentage points with the parity in estimated earned income rises from 28.6% to 29.9%.
- **Stable Labor Participation** - Scores in labor force participation rate remained the same (45.9%) as last year – India's highest achieved to date.
- **Improvement in Educational Attainment** - India scores 97.1%, reflecting positive shifts in female shares for literacy and tertiary education enrolment.
- **Higher parity in Health and Survival** – It is driven by improved scores in sex ratio at birth and in healthy life expectancy.
- **Drop in Political Empowerment** - Female representation in parliament falls from 14.7% to 13.8% in 2025 and the share of women in ministerial roles falls from 6.5% to 5.6% lowering the indicator score for the second year in a row below 2023 levels.

What lies ahead?

- There is a need to consolidate and improve on the gains and make efforts to set right the lacunae with policies and political will.
- Political parties can be encouraged from increasing women's participation in the electoral process, even before the law necessitates it.
- Effective implementation of women reservation act will help in reducing the gap in political participation.

4.4 Rethinking Alcohol Control in India

Why in the News?

Recently Maharashtra has increased excise duty on Indian Made Foreign Liquor (IMFL) by 50% - 60% last week.

What are the determinants of alcohol consumption?

- **Biological Factors**- Some individuals are genetically predisposed to addiction.
- Alcohol activates the brain's reward system - similar to nicotine or cocaine, praise, and money - making it habit-forming.
- **Psychological Drive** - People drink to relieve stress, anxiety, or experience euphoria and become habituated.
- **Social Environments** - Urban lifestyles, peer pressure, and glamourised portrayals in media have normalised alcohol use.
- **Commercial determinants** - The industry has broadened its product portfolio with offerings such as fruit-flavoured spirits, pre-mixed cocktails, and other ready-to-drink options, making alcohol more appealing to new and younger users.

- **Promotional Tactics** - Despite legal advertising restrictions, promotional tactics persist through surrogate advertising.
- It involves brand sponsorships, and strategic product placements in Bollywood films and OTT content, where the depiction of alcohol has doubled over the past two decades.
- **Social Media Influence** - Alcohol-related contents (ARC) have amplified in social media.
- **Easy Accessibility** - The placement of liquor stores in residential and high-traffic areas, ensures easy access and everyday visibility.
- **Branding and Marketing** - Packaging shapes consumer perception - sleek bottles, international labels, and premium branding enhance the aspirational value of alcohol.
- **Affordability** - Indian Made Indian Liquor (IMIL) remains cheap and accessible to lower-income groups, especially in rural areas, while growing disposable incomes in cities have made alcohol increasingly affordable for the urban middle class.
- **Policy Influence** - The alcohol industry wields significant influence over regulation, often resisting stricter laws by emphasising its contribution to State revenues through excise taxes.

Status Of Alcohol Consumption in India

- **Consumption Status** - 23% of Indian men and 1% of women consume alcohol (NFHS-5).
- **Heavy Episodic Drinking** - India also records one of the highest rates of heavy episodic drinking, with lakhs needing clinical and social support.
- **Increase in Per Capita Consumption** - It has increased by ~240% in the last two decades.

What are the impacts of alcohol consumption problem?

- **Personal Health Issue** - Alcohol consumption significantly raises the risk of injuries, mental illness, and non-communicable diseases, including cancer.
- **Personal Social Violence** - Beyond health, alcohol use is associated with aggression, intimate partner violence, crime, suicides, and risky behaviour.
- **Family Issues** - It drives households into financial distress, often reinforcing generational poverty.
- **Productivity Losses** - In 2021, alcohol-use contributed to approximately 2.6 million DALYs (Disability-Adjusted Life Years) in India, reflecting the combined toll of premature deaths and years lived with illness or disability.
- **Economic Cost** - The estimated societal cost of alcohol-related health is Rs. 6.24 trillion.

What is the alcohol-policy landscape in India?

- **State Jurisdiction** - Alcohol regulation in India falls under State jurisdiction, granting each State authority over legislation, excise taxes, supply chain, licensing and manufacturing, sale and consumption restrictions, prohibition, and pricing.
- **Regulatory Variations Across States** - Bihar, Gujarat, Mizoram, and Nagaland enforce prohibition, while Andhra Pradesh, Haryana, Kerala, Manipur, and Tamil Nadu had previously imposed similar bans.
- **Toddy Regulations** - Kerala's new Akbari Policy markets toddy as a "natural, traditional beverage," while Andhra Pradesh is introducing a policy offering alcohol for ₹99 to ensure "quality, quantity, and affordability."
- **Online Delivery** - Meanwhile, some States are exploring online alcohol delivery through platforms like Swiggy, Zomato, and Blinkit, contradicting efforts to restrict alcohol access.
- **Difference in Drinking Age** - The legal drinking age differs across States, ranging from 18 to 25 years.
- **Pricing Regulations** - Alcohol pricing regulation exists in 19 of 33 States/UTs, with nine States setting only maximum prices while others setting both maximum and minimum prices.
- **Taxation** - The GST Act excludes liquor from sales tax, leaving alcohol taxes to States, often vaguely defined in excise policies.

What are the national policies around alcohol regulation?

- **National Policies** - India lacks a unified national policy on alcohol regulation but some policies addressing single aspects such as drunk driving or prevention of alcohol use exists.

- **Exclusion from Narcotic Drugs Policy** - Alcohol was excluded from the National Policy on Narcotic Drugs and Psychotropic Substances (NDPS) 2012 despite being a common psychoactive substance followed by cannabis and opioids.
- **Nasha Mukta Bharat Abhiyan** - Alcohol regulation was included in the National Action Plan for Drug Demand Reduction (NAPDDR) 2021-22 under Nasha Mukta Bharat Abhiyan.
- **Scattered Regulations** - The Ministry of Social Justice leads demand reduction, while supply and harm reduction are handled by the Ministries of Home Affairs, Finance, and Health.
- **National Mental Health Policy (NMHP) 2014** – It recognized the role of alcohol in mental illness and suicide prevention and suggested the need for a specific action plan.
- **National Health Policy (NHP) 2017** – It has mentioned curbing alcohol use through higher taxation.
- **National Suicide Prevention Strategy (NSPS) 2022** – It has identified alcohol as a major risk factor for suicides, advocating for a national alcohol control policy and measures to limit alcohol accessibility.
- **Non-communicable Diseases Control** -National Action Plan and Monitoring Framework for Prevention and Control of Noncommunicable Diseases (NMAP) 2017-2022 also echoed the call for a national alcohol policy.

What needs to be done to address the issue?

- **Affordability** - Alcohol pricing needs to deter excessive use without pushing the poor toward dangerous alternatives like illicit liquor.
- Higher excise taxes, paired with strong enforcement against illicit trade, can reduce harmful consumption.
- **Allocation** - Ear-marking these funds for public health, combined with transparent governance, can improve trust and accountability - and prevent corporate lobbying from redirecting them.
- **Accessibility** - Alcohol access can be curbed beyond geographic distance and Urban policy must reduce availability in everyday spaces to signal a shift toward alcohol-free environments.
- **Advertisement** - Regulating social media influence including algorithmic amplification - is key to reducing social appeal.
- **Attractiveness** - Plain packaging, visible warning labels, and controls on point-of-sale promotion are needed to disrupt the cycle of normalisation.
- **Awareness** - Public understanding of alcohol's health harms - especially its link to cancer, mental illness, and generational poverty needs to be increased.
- **Artificial Intelligence** - AI tools can be used to detect and suppress alcohol-related content on digital platforms and flag misinformation.

HEALTH

4.5 Public Health Spending in India

Why in the News?

Recently, a report titled “Benefit Incidence of Public Health Expenditure in India: Urban–Rural Equity Matters for Universal Health Coverage” has been published in the Journal of Health Management.

What is the benefit incidence analysis?

- **Benefit Incidence Analysis (BIA)** – It is a tool to estimate the equity of healthcare benefits accrued to individuals across socio-economic groups.
- The study was done by a team of researchers led by faculty from the Indian Council of Medical Research (ICMR) and M.S. Ramaiah University of Applied Sciences, Bengaluru.
- **Data Used** - The 75th round of the National Sample Survey (NSS), which was performed between July 2017 and June 2018, focused on social consumption of health and provided secondary data for the current study.
- **Considered Factors** - Disease burden, out-of-pocket expenses, and non-utilisation of public health services for outpatient and inpatient care were analysed.
- **Benefit of BIA** - The results help illustrate the extent of the effectiveness of resource allocation on public health by the government in meeting the needs of vulnerable populations.

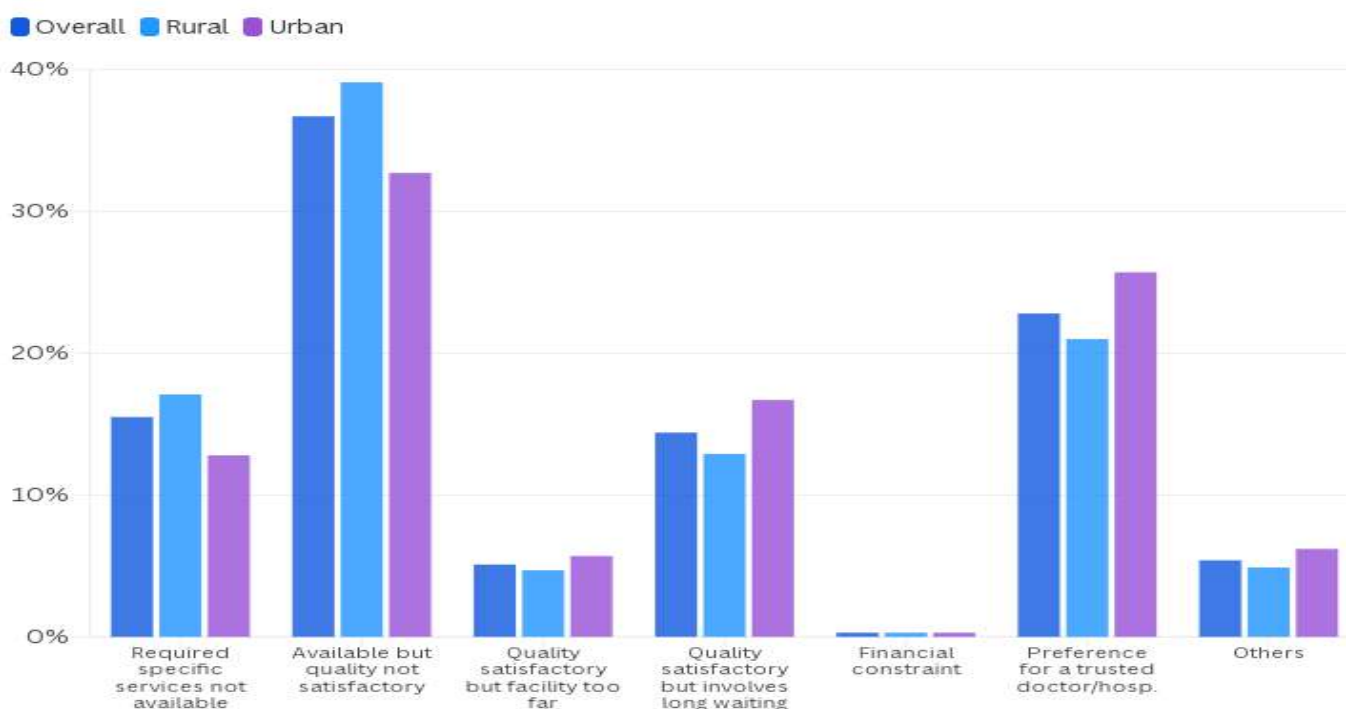
What is the status of public health spending in India?

- **Public Health Spending** - Total public health spending on healthcare in 2016–2017 was Rs.11900.39 million, with a share of public and private spending of 26.6% and 73.4%, respectively.
- **Higher Inpatient Spending** - It accounted for 66% of all public spending, and outpatient care accounted for 34%.
- **Equitable Distribution** - When both outpatient and inpatient care are considered together, public health spending approaches a more equitable distribution.
- **Pro-Poor Inpatient Care** - For inpatient care, public health spending is more pro-poor oriented.
- **Pro-Rich Outpatient Care** - In the outpatient care ecosystem, the public health spending is more pro rich oriented.
- **Rural Urban Disparity** - Results at the national level show a patchy distribution of equality in public spending between urban and rural people.
- **Better Equity in Rural Public Healthcare** - In rural areas, public health spending on outpatient and inpatient care is more pro-poor compared to urban areas, where it tends to be more pro-rich.
- **Non-Poor Usage** - Overall, at the national level, the non-poor are the main users of public health facilities for both inpatient and outpatient care.

What are the causes for the discrepancies in the system?

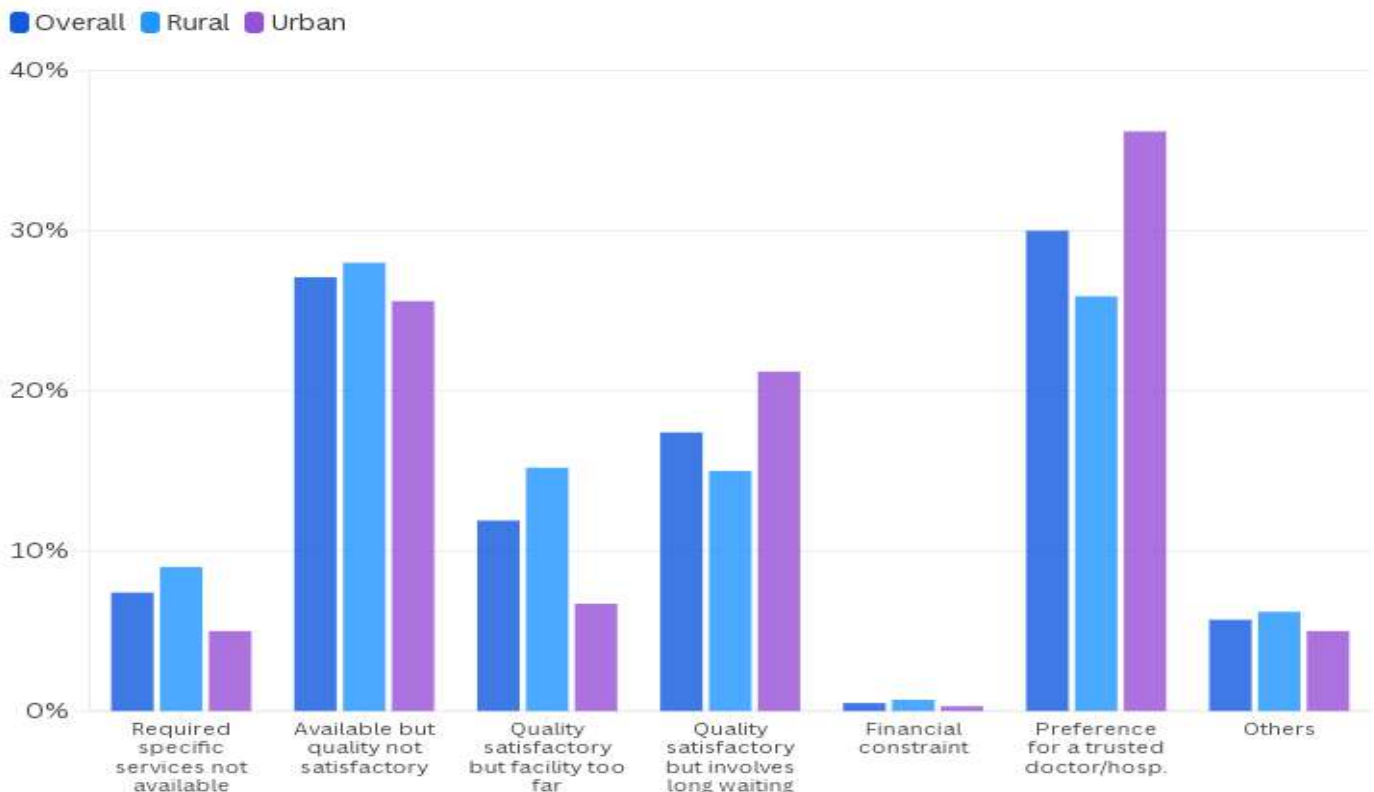
- **Inadequate Finances** - Only 1.28% of India's GDP, or roughly ₹1.58 trillion, is allocated to public health spending, one of the lowest rates in the world.
- **Inadequate Investment in Rural Health Infrastructure** - In India, metropolitan healthcare facilities typically receive a bigger share of public funding, leading to fewer investments in rural health infrastructure.
- **Unsatisfactory Quality** - The main barrier to urban and rural residents receiving treatment at public health facilities for inpatient care was the availability of services, but unsatisfactory quality.
- **Reliability Issues** - The main deterrent for urban and rural residents to seek treatment from public health institutions for outpatient care was their desire for a reliable hospital.

Percentage Distribution of Reasons for Not Taking Treatment for Inpatient Care from Public Health Facilities by Place of Residence in India, 2017–2018.



- **Human Resource Issues** - Inadequate administration, staff absenteeism at healthcare facilities and a lack of training for healthcare workers are further problems in rural healthcare.

Percentage Distribution of Reasons for Not Taking Treatment for Outpatient Care from Public Health Facilities by Place of Residence in India, 2017–2018



- **High Private Sector Expenses** - Higher-income quintiles in metropolitan regions may use outpatient care and inpatient treatment at higher rates due to their higher levels of education, poor health insurance coverage, and high private sector expenses.

What lies ahead?

- To fulfil the health needs of the urban and rural populations, public health funding needs to be appropriately allocated.
- In order to better target the underprivileged in rural and urban areas and achieve UHC in India, policymakers need to use these statistics to increase the amount of detail in their work and monitor levels and equity patterns in government health spending.

4.6 Vaccination Gap

Why in the News?

Recent Lancet study revealed that there are 1.44 million children with zero dose of vaccination in India.

What is the status of vaccination gap?

- **Early Efforts** - The world has made unprecedented progress in vaccinating children against life-threatening disease since World Health Organisation (WHO) established the Expanded Programme on Immunization (EPI) in 1974.
- Over the past 50 years, EPI has vaccinated more than 4 billion children, preventing the deaths of an estimated 154 million children worldwide and providing a total of 10.2 billion years of full health.
- **Decline in Vaccination Momentum** - Despite significant progress in expanding vaccine coverage between 1980 and 2023, the momentum has significantly faltered since 2010.
- **Stagnation in Worldwide Immunisation** – By 2023, an estimated 15.7 million children globally had received no doses of the diphtheria, tetanus, and pertussis (DTP) vaccine in their first year of life.
- The study was reported in the Global Burden of Disease Study Vaccine Coverage Collaborators, published in the Lancet.

- **Hotspot Countries** - More than half of these 15.7 million unvaccinated children reside in just eight countries, with Nigeria largest and India the 2nd largest.
- **Vaccination Gap in India** – India had a 1.44 million children classified as “zero-dose” in 2023 out of the 15.7 million.
- **South Asia Concentration** - This region account for a substantial 13% of these vulnerable children, emphasising the concentrated nature of this crisis within the subcontinent.
- **Decline in Measles Coverage** – It has declined in 100 of 204 countries between 2010 and 2019.
- **Drop-in High-Income Countries** - 21 of 36 high-income countries experienced declines in coverage for at least one vaccine dose against diphtheria, tetanus, whooping cough, measles, polio, or tuberculosis.

Vaccination Coverage Status in India

- Until 2023, 12 phases of Mission Indradhanush (MI) or Intensified Mission Indradhanush (IMI) have been conducted where 5.46 crore children and 1.32 crore pregnant women have been vaccinated.
- As a percentage, zero dose or unvaccinated children account for 0.11 per cent of the country's total population.
- There has been a commensurate decrease in drop-out percentages from DTP-1 to DTP-3 from 7 % in 2013 to 2% in 2023.
- Measles coverage is increased from 83 % in 2013 to 93% in 2023.
- The number of unvaccinated children has dropped from 26 lakh zero dose children in 2013 to 16 lakh zero dose children in 2023.
- The vaccination coverage of over 90 per cent for most antigens covered under the programme is also at par with many high-income countries.
- India's 83.46 per cent exceeds the global vaccine coverage average (72.77 pc) for WHO recommended vaccines.
- India has been maintaining its polio free status since 2014 onwards.

Vaccination Initiatives in India

- **Mission Indradhanush (MI)** – It is a focused immunization drive in India, launched in December 2014, to increase full immunization coverage for children under two years of age and pregnant women.
- **Intensified Mission Indradhanush (IMI)** – It is a focused, time-bound initiative to rapidly increase routine immunization coverage, particularly for children and pregnant women who have been missed or left out of the standard vaccination program.
- The goal is to achieve high immunization coverage, aiming for over 90% full immunization in targeted areas.
- **Zero Dose Implementation Plan 2024** – It has been developed for 143 districts in 11 States in India that have a high number of unvaccinated children
- **Special Campaigns** - National Immunisation days (NIDs) and Sub National Immunisation days (SNIDs) for Pulse Polio programme are special vaccination campaigns carried out every year.
- VHND (Village Health and Nutrition Day) on designated days for immunisation activities are hosted.
- State Task Force on Immunisation (STFI), District Task Force on Immunisation (DTFI) and Block Task Force on Immunisation (BTFI) ensure effective implementation of the drives that are regularly undertaken.
- **UWIN Portal** - The Ministry of Health and Family Welfare has also developed the UWIN portal for the registration and recording of all vaccination events of children and pregnant women.

What are causes of increase in vaccination gap?

- **COVID-19 Pandemic** - It severely exacerbated existing challenges, leading to sharp declines in global vaccine coverage rates from 2020 onwards.
- **Persistent Global Inequalities** – Low-income countries, most of the African countries, island countries are at disadvantaged position in receiving vaccinations.
- **Growth of Vaccine Misinformation** - The recent measles outbreak in the United States, a nation with advanced healthcare infrastructure, underscores the consequences of vaccine hesitancy due to misinformation.

- **Regional Armed Conflicts** – The Israel-Palestine conflict in West Asia, Ukraine-Russia conflict and the consequent political instability have affected the vaccination program in those regions.
- **Decline in International Aid** - In 2025, aid cuts by the US, along with reductions by other nations have affected the vaccination efforts in under developed countries.

What are the impacts of the vaccination gap?

- **Health Impact** - Stagnation in worldwide immunisation efforts, leaving millions of vulnerable children, particularly in India and other South Asian nations, susceptible to deadly, preventable diseases.
- **Disease Outbreak** - These trends increase the risk of outbreaks of vaccine-preventable diseases, including measles, polio, and diphtheria.
- **Hampers Achieving Global Immunization Target** – The current level of vaccination gap will affect in achieving the global immunisation targets for 2030.
- **Increase in Treatment Cost** – Outbreak of vaccine preventable disease will cause hospitalization and increase the treatment cost.
- **Affects Human Resource Development** – The consequent morbidities will affect the educational and skill development capabilities of people.

What needs to be done?

- There is a critical need for targeted improvements to ensure that all children can benefit from lifesaving immunisations.
- Routine childhood vaccinations are among the most powerful and cost-effective public health interventions available.
- Prioritizing trust-building, engaging community leaders, and tailoring interventions with more culturally appropriate local strategies to combat vaccine misinformation and to improve vaccine confidence and uptake.
- Sustained investment and targeted strategies will be essential to maintain progress, close immunisation gaps, and ensure equitable access to life-saving vaccines.
- For a country as diverse as India, a highly localised and culturally sensitive vaccination programmes is needed to address the gaps.

4.7 Re-emergence of Leprosy

Why in the News?

Recently, the rise of new leprosy cases and its transmission has been observed.

What is the status of leprosy in India?

- **Leprosy** – It is a chronic infectious disease caused by the *Mycobacterium leprae* bacteria.
- **Infection** - The disease predominantly affects the skin and peripheral nerves and if left untreated, it may cause progressive and permanent disabilities.
- **Two Types** - In leprosy, paucibacillary (PB) leprosy refers to a milder form with fewer than five skin lesions and negative skin smears.
- Multibacillary (MB) leprosy is a more severe form with six or more skin lesions, potentially positive skin smears, and a weaker immune response
- PB patients have fewer bacteria visible and show no signs of advanced disease in biopsies, while MB patients have visible bacteria and may show signs of more advanced disease in biopsies.
- **Transmission** - The bacteria are transmitted via droplets from the nose and mouth during close and frequent contact with untreated cases.
- **Treatment** - Leprosy, reported from all the six WHO regions, is curable with multi-drug therapy (MDT).

3 Drug Multi Drug Therapy (MDT) Regime

- The WHO's recommended treatment regimen consists of three drugs – *dapsone, rifampicin and clofazimine*.

- The duration of treatment is six months for PB and 12 months for MB cases. MDT kills the pathogen and cures the patient.
- **Elimination in India** - Leprosy was eliminated as a public health problem in India as per the World Health Organization's criteria of less than 1 case per 10,000 population, at the national level, in 2005.
- **Reemergence** - Experts say, it is quietly resurfacing, particularly in climate stressed States including West Bengal and Bihar.
- The majority of new cases detected annually are from South East Asia.
- India reported over 1 lakh (1,03,819) new leprosy cases for the year 2022-23 out of which grade 2 disability (G2D) cases were 2,363 (2.28%), amounting to 25% of the new G2D cases of the world.

What are the causes of recent rise in leprosy?

- **Climatic Condition** - Leprosy is a tropical disease and in tropical areas, there is a higher chance of this bacteria multiplying at a very rapid pace, and it is quite possible that it will multiply quickly.
- **Extreme Climate Events** - floods, cyclones and droughts increase risk factors like malnutrition, limit access to clean water and poor hygiene which are known to contribute to leprosy spread.
- **Poverty** - States including Bihar, Jharkhand, Uttar Pradesh, Odisha and Chhattisgarh are also home to the largest proportion of people living in multidimensional poverty, meaning poverty that goes beyond money and wealth.
- Kishanganj in Bihar, Raigarh in Chhattisgarh and Nuapada in Odisha have reported leprosy prevalence rates above 3% coexisting with poverty levels that exceed 60% in some cases.
- **Displacement** - When residents of rural areas face climate shocks like floods or droughts, they tend to migrate to urban areas.
- Many can only afford to live in overcrowded slums and high population density increases the transmission risk.
- **Tribal Vulnerability** - Even in relatively better-off states like Maharashtra and West Bengal, vulnerability in clusters exists especially in tribal areas like Nandurbar and Jhargram.

How does climate-induced disasters disproportionately affect leprosy-affected communities?

- India is ranked amongst the most climate-vulnerable nations globally and the intersection of disease, climate change and economic deprivation can further deepen the gaps.
- **Extreme Weather Events** - They do not affect all communities equally, and people affected by leprosy often face risks far beyond those encountered by the general population.
- **Increased Vulnerability to Climate Effects** - Leprosy affects the peripheral nervous system, which can lead to temperature sensitivity issues.
- Exposure to extreme heat or cold (more common in climate-induced disasters) can be dangerous for people with leprosy, as they may not feel pain or discomfort, leading to burns or frostbite.
- **Loss of Shelter** - Floods cause the loss of homes, crops and in some cases even access to shelters.
- **Discrimination** - Those with leprosy-related disabilities are often left behind in evacuation efforts and many face discrimination at relief camps.
- **Loss of Access to Healthcare** - People with leprosy typically rely on long-term treatment, including multi-drug therapy (MDT), to manage their condition and prevent disabilities.
- When these services are disrupted due to disasters, it can result in the interruption of treatment and worsening of the disease.

Initiatives on Leprosy Elimination

- Global Leprosy Strategy 2021-2030 – This WHO strategy has a vision of zero disease, zero disability and zero stigma and discrimination.
- National Leprosy Elimination Programme – Launched in 1983, it focuses on early detection, free of cost treatment to prevent development of disabilities and deformities, and medical rehabilitation of those with existing deformities.
- National Strategic Plan & Roadmap for Leprosy (2023-27) and National Guidelines for Antimicrobial resistance (AMR) Surveillance in leprosy were also released during the event along with launch of Nikusth 2.0 Portal.

- ABSULS - ASHA-based Surveillance for Leprosy Suspects where grassroots level workers constantly engaged in examining and reporting suspects.
- Leprosy Mukta Bharat – It is a national campaign launched by the Indian government to eradicate leprosy by 2027, three years ahead of the Sustainable Development Goals (SDGs) target.
- New Drug Regime - Ministry of Health and Family Welfare has decided to introduce a three-drug regimen for Pauci-Bacillary (PB) cases in place of a two-drug regimen.

What lies ahead?

- Community resilience needs to be built alongside awareness programmes on climate-adaptive health behaviour.
- Strengthening health systems in leprosy endemic districts to mitigate climate shocks as well as hyper-local climate and health risk assessments are essential.
- As the triple burdens often affect specific districts and not entire States, these districts should receive prioritised resources and support.
- Investments need to be made in local health systems to make them capable of reading and reacting to climate data.

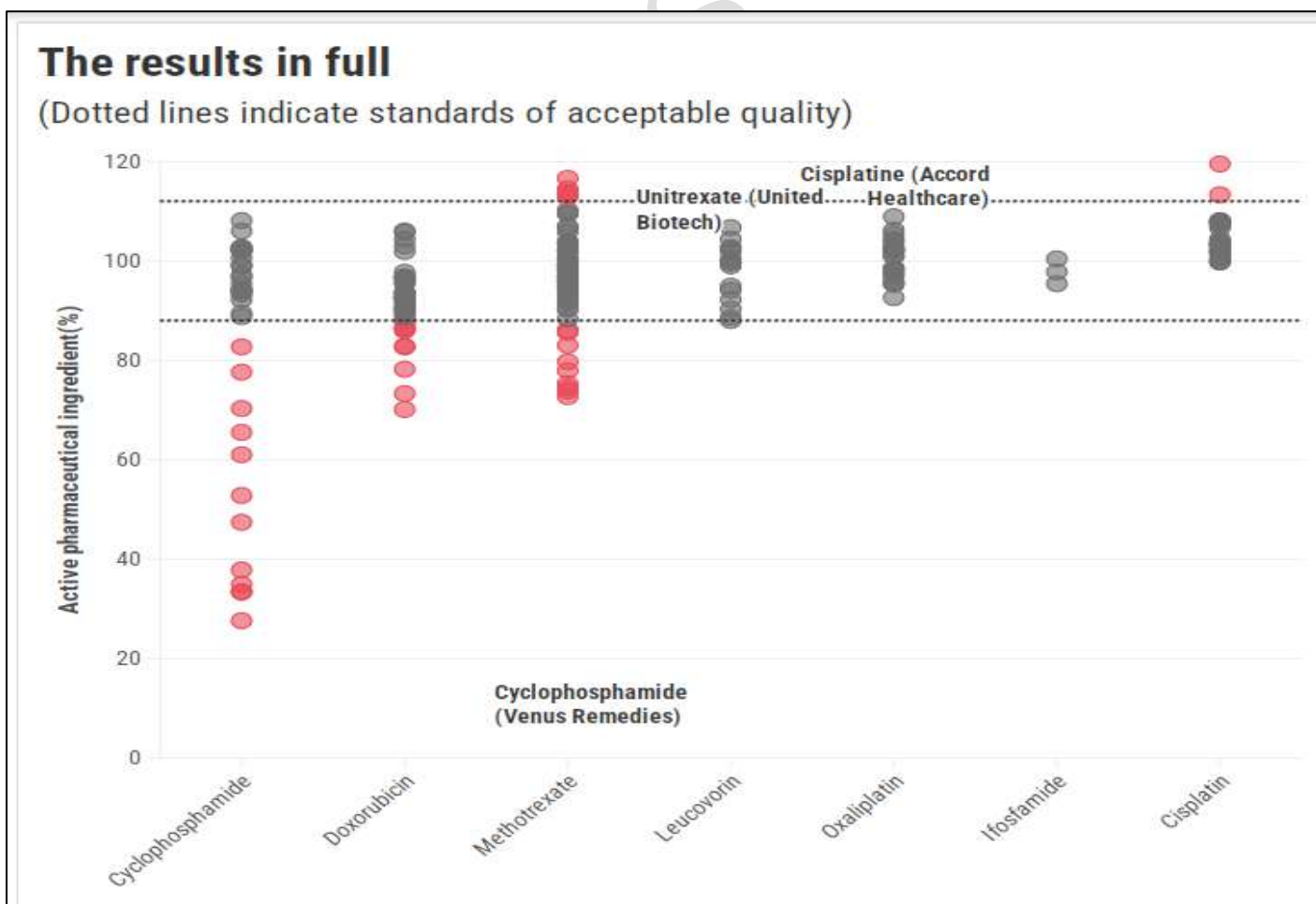
4.8 Generic Cancer Drugs

Why in the News?

A landmark study published recently has reported that about a fifth of cancer drugs tested failed quality tests and 16 of the 17 implicated manufacturers are India-based.

What are the issues with cancer drugs?

- **Low Quality Drugs** - Vital chemotherapy drugs used around the world have failed quality tests, leaving cancer patients in more than 100 countries at risk of ineffective treatments and potentially fatal side effects.



- **Essentiality of the Drugs** – They form the backbone of treatment plans for numerous common cancers – including breast, ovarian and leukaemia.
- **Toxic Nature of Ingredients** - In chemotherapy drugs, the active ingredient – which fights cancer cells – is also highly toxic.
- Patients need to receive enough of it to treat the cancer but not so much that they overdose and suffer damaging side effects.
- **Inadequate Key Ingredient** - Some drugs contained so little of their key ingredient that pharmacists said giving them to patients would be as good as doing nothing.
- **Over Dosage**- Other drugs, containing too much active ingredient, put patients at risk of severe organ damage or even death.
- **Ingredient Variance** - In some cases, pills from the same blister pack contained different amounts.
- **Limited Coverage under Essential Medicine** – Only 2 drugs, rituximab and trastuzumab, were included in the WHO's essential medicine list.
- **Fatal Impacts** – Low quality drugs leave patients suddenly unresponsive to treatment.
- Overdosed drugs make patients suffer side effects due to the toxicity of the ingredient and the patients become no longer tolerate the medicine.
- **Economic Deprivation** - In low-income countries, the cost of 58% of essential cancer medicines is paid by patients, compared with 1.8% in upper-middle-income countries.

What is the significance of generic drugs for cancer treatment?

- **Cancer** – It is one of the biggest killers worldwide, linked to around 10 million deaths every year – roughly one in six.
- **Increasing Burden** - The burden of cancer is growing, particularly in low- and middle-income regions.
- In sub-Saharan Africa, for example, instances of cancer have doubled in the last 30 years.
- **Generic Drugs in Cancer Treatment** - Much of the global demand for treatment is met by so-called generic drugs.
- **Significance for Poor Countries** - Generics are widely used in all countries but are most crucial in those with fewer resources, where costlier treatments might be beyond reach.

Generic drugs are versions of a drug that can be made once the original maker's exclusivity rights have expired, and are typically made far more cheaply.

What are the issues with generic drugs supply?

- **Profit Motive** – The pharmaceutical market, especially the generic drug, is often motivated by high profit.
- **Unfair Competition** – The drug market in which those operating under a less watchful eye find ways to undercut their competitors.
- **Monopoly** - The price-driven market creates a dangerous dynamic in which the number of companies making a particular drug shrink and shrinks until global supply is precariously dependent on just a handful of manufacturers.
- **Impact on Quality** - This could mean scrimping on the amount or quality of the active ingredient – the most expensive component – or using cheap or outdated machinery.
- **Production Issues** - Research shows that the majority of substandard drugs occur due to problems with manufacturing, quality control, packaging or storage.

How have the safety nets failed?

- **Safety Nets** - Countries all over the world have systems in place to stop bad drugs reaching patients.
- **Ineffectiveness in Domestic Control** – Around 70% of countries cannot take care of their own medicine quality.
- **Inadequate Resources of Regulators** - Most governments have a national regulator – but their remit and resources vary hugely and even the better-funded regulators are far from foolproof.
- Even the US Food and Drug Administration (FDA), for instance, is struggling to keep up with inspections of manufacturing plants domestically and in India and China, and has admitted that its inspections have not been a reliable indicator of drug quality.
- **Inadequate Facilities** – Many countries that import cancer drugs, don't have the facility to test those drugs.

- **Lack of Willingness** –There is lack of political will to take responsibility for ensuring proper treatment for cancer patients.

What lies ahead?

- Unannounced inspections especially at foreign manufacturing facilities, can be increased to expose those who falsify records or hide violations.
- World Health Organization can expand the list of essential medicine to include more cancer drugs.
- Global regulations and standards can be strengthened on testing of drugs and inspection of manufacturing plants.

5. INDIAN POLITY & GOVERNANCE

5.1 Census 2027

Why in the News?

Recently, the government has decided to conduct Population Census-2027 in two phases along with enumeration of castes.

How will the census 2027 be conducted?

- **Two Phases & Caste Enumeration** - It has been decided to conduct Population Census-2027 in two phases along with enumeration of castes.
 - Two phases of census are House Listing phase and then Population Enumeration phase which will be completed 5-6 months and 1 month respectively.
- **Reference Date** – It will be 00:00 hours of the first day of March, 2027.
 - For the Union Territory of Ladakh and the non-synchronous snow-bound areas of the UT of Jammu and Kashmir and States of Himachal Pradesh and Uttarakhand, the reference date will be 00.00 hours of the first day of October, 2026.
- **Period** - Phase I will be conducted during April-September 2020 and second phase in February 2021.
- **Digital Method** - The 2027 Census in India will be the first digital census, using a mobile app for data collection and a centralized management portal for data security and accessibility.
 - All the preparations for the first phase of the Census to be conducted in 2021 were completed, but the outbreak of COVID-19 pandemic across the country stalled the census work further.
- **Self-Enumeration** - Office of the Registrar General of India, which conducts the census, had developed a self-enumeration portal in English for the planned 2021 census.
- This option, however, will only be available to those households that have updated the NPR online.

*The Census of India is conducted under the provisions of the **Census Act, 1948** and the **Census Rules, 1990**.*

*The **reference date** is the specific point of time for which the data on population is*

Census 2011

- The last Census of India was conducted in 2011 in two phases,
 - **Phase I** – House Listing (HLO) (1 April to 30 September 2010)
 - **Phase II** – Population Enumeration (PE) (09 February to 28 February 2011)
- **Reference Date** - The last Census provided population data as on March 1, 2011.
- For snow-bound non-synchronous areas of Jammu and Kashmir, Uttarakhand and Himachal Pradesh, It was conducted during 11 to 30 September 2010 with reference date as 00.00 hours of the first day of October 2010.

What are the challenges in conducting census 2027?

- **Timeline** – The many processes of the census exercise need to be completed before the next Lok Sabha elections in 2029.
 - The 2011 Census data was released only in April 2013, 2 years after the enumeration.

- **Enumerators** – Around 30 lakh enumerators, including a sizeable number of government school teachers, will be trained afresh on the mobile application, caste enumeration.
- **Removal of Discrepancies** – Usually the provisional data of the population becomes available within 10 days and removal of discrepancies through verification may take six months.
- **Caste Census** – Conducting the caste enumeration alongside the census would be difficult task in terms of listing & categorization of castes, training enumerators, and logistics issue.
- **Fair Demilitation** – It has been a contentious subject with parties ruling the southern states fearing that they will lose representation in Parliament if delimitation is conducted based on population enumeration of the latest Census.
- **Women's Reservation** – The Constitution (106th Amendment) Act, 2023, reserving one-third of Lok Sabha and assembly seats for women, makes the reservation contingent upon the delimitation process.
- The Act states that the quota “shall come into effect after an exercise of delimitation is undertaken for this purpose after the relevant figures for the first census taken after the commencement of The Constitution (One Hundred and Twenty-eighth Amendment) Bill 2023.
- **NPR Update** – There is a lack of clarity on updating the National Population Register (NPR), which already has a database of 119 crore residents.
- The population register was to be updated during the first phase of the planned 2021 census and the collection of these details has been opposed by several Opposition-ruled States in the past.

According to the **Citizenship Rules 2003**, the NPR is the first step towards compilation of a National Register of Indian Citizens (NRIC/NRC).

How will the delimitation be conducted after Census 2027?

- **Delimitation** - It is mandated under Articles 81 and 82 of the Constitution and is required to be carried out after every Census.
 - This happened thrice, based on the Census of 1951, 1961 and 1971.
- **First Freeze** - The 42nd Amendment to the Constitution, passed during the Emergency, froze the total number of Parliamentary and state Assembly seats until the 2001 Census.
- **Present Delimitation** – At present, Parliamentary constituencies within states, are organized based on the 2001 Census, under the provisions of Delimitation Act, 2002.
- However, only the boundaries of constituencies have been altered and not the number of seats which remain the same as based on the 1971 Census.
- **Freeze till 2026** - The Constitution of India was specifically amended (84th amendment) in 2002, not to have interstate delimitation of constituencies until the first Census conducted after the year 2026.
- **Delimitation 2027** - Once the final data of census 2027 is out, which could be in late 2027 itself, it will open the doors to start the process of delimitation.
- **Delimitation Commission** - Parliament will have to pass a Delimitation Act to pave the way for formation of a Delimitation Commission.
- **Delimitation Formula** - This Commission would then devise a formula (population per constituency), in consultation with various stakeholders including state governments, based on which the delimitation exercise would be conducted.
- **Composition of the Commission** - According to the Delimitation Act of 2002, the Delimitation Commission will have
 - Chairperson - A retired Supreme Court judge
 - Members - Chief Election Commissioner and State Election Commissioner
 - Associates - MPs and MLAs from states will be associated but none of these members have voting rights.
- **Changing the Parliamentary Seats** - A Constitutional amendment Bill will have to be brought to increase the seats in Parliament which remain frozen at 543.

According to **Article 81** of the Constitution, the total number of seats in Lok Sabha cannot exceed 550.

What lies ahead?

- Census 2027 is a much anticipated and significant exercise that engenders other important exercises such as delimitation, caste census and women reservation.

- Detailed planning, sufficient allocation of resources will be required to conduct the exercise stress-free and error free.
- Proper training and education of people, enumerators and all the stake holders are essential to get the co-operation of the stakeholders to conduct the exercise.

5.2 Significance of India's Upcoming Census

Why in news?

The Government of India has announced that the next Census will be conducted in two phases during 2026 and 2027, with the reference date for the data being March 1, 2027.

Census

- A Census is the total process of collecting, compiling, analyzing and disseminating demographic, economic and social data pertaining, at a specific time, of all persons in a country or a well-defined part of a country.
- It provides the trends in population characteristics.
- The Office of the Registrar General and Census Commissioner, *Ministry of Home Affairs* conducts the decennial Census.
- Census is conducted under the provisions of the Census Act, 1948.
- **Historical Context** – The *first systematic attempt at a census in India was the Census of 1872*, undertaken by actual headcounts in most parts of the country, though it did not cover all British-controlled territories.
- The *Census of 1881*, led by *W.C. Plowden* (Census Commissioner of India), marked a significant step towards a modern, synchronous census, *covering the entire continent of British India* (except Kashmir) and feudatory states.
- Since then, censuses were undertaken uninterruptedly every ten years until the COVID-19 pandemic in 2021.
- Since then, censuses have been undertaken uninterruptedly once every ten years until the Covid 19 in 2021.

Why was the 2021 Census Delayed?

- **COVID-19 pandemic** – The pandemic significantly disrupted operations, leading to the postponement of the 2021 Census and breaking India's long-standing decadal chain.
- **Disruption to primary education** – The Ministry of Home Affairs cited the need for approximately 30 lakh enumerators, mostly primary schoolteachers.
- Conducting the Census during or immediately after the pandemic could have severely disrupted primary education.

What is the significance of census for the Indian economy?

- **Fundamental statistical basis** – The national Census serves as India's foundational reality check, providing a comprehensive statistical image of its population and their socio-economic status.
- This vital data informs how the country has evolved over the past decade and offers crucial insights for *future policy-making and development*.
- **Inflation control and Interest rates** – The Monetary Policy Committee of the Reserve Bank of India decides inflation rates and interest rates base on a consumption survey.
- The *Census provides the fundamental "reality" and baseline data* that these surveys rely on for accurate weighting and representation of consumption patterns.
- **Migration and Urbanization** – The 2011 Census revealed that *most Indian migration is local, not inter-state*, with a significant rural-to-rural flow.
- However, this *outdated data hinders effective policymaking for urbanization and migration's impact on resource allocation, employment, and social cohesion*.
- A new Census is crucial for accurate insights to guide governance and economic growth as India's reality has undoubtedly shifted.

What are the other Implications and Consequences of the Delay?

- **Data Quality Concerns** – The politicization of certain questions (like caste and language) could "vitiating the quality and credibility of the Census data" if individuals provide biased responses for political reasons.
- **Rising Costs of Accuracy** – With each passing year of delay, obtaining an accurate picture of reality becomes increasingly costly for surveys and analyses attempting to model India's current state.
- **Lack of Alternatives** – While administrative data from various government departments exists, it is often unreliable and inconsistent.
- Issues arise from varying definitions, collection methods, and potential bias from departments reporting their own successes, making it a poor substitute for a comprehensive and unbiased Census.
- **Outdated Policy Foundation** – India has been operating largely on over a decade-old data due to this extended six-year gap, creating an outdated foundation for policymaking and economic analysis.

What lies ahead?

- **Political Battleground** – The Census will fuel intense debates over caste data and delimitation (rebalancing political representation), significantly impacting federal dynamics and electoral strategies.
- **Economic Policy Reset** – New data will force critical revisions in inflation calculation (CPI weights) and resource allocation for welfare schemes and infrastructure, impacting RBI's monetary policy and government spending.
- **Foundation for Governance** – It will provide the updated reality of migration patterns and urbanization levels, essential for effective urban planning, service delivery, and understanding social cohesion in a rapidly changing India.
- **Data Integrity and Timeliness** – Key challenges will include ensuring data quality amidst politicization and achieving timely release to bridge the significant knowledge gap created by the delay.

Conclusion

- The *Census is not just a statistical exercise but also a critical tool for governance, policy and planning.*
- After a delay of over a decade, Census 2027 will serve as a much-needed reset for India's economy, governance, and democracy.
- Its timely and accurate execution will be essential to meet the aspirations of a rapidly changing India.

5.3 Civil Registration and Vital Statistics (CRVS)

Why in the News?

Recently, the third ministerial conference on Civil Registration and Vital Statistics for Asia and the Pacific was held in Bangkok, Thailand.

What are CRVS?

- **CRVS** - The United Nations defines civil registration and vital statistics as the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events of the population in accordance with the law.
- **Vital Events** – It includes births, deaths and marriages, divorces, besides causes of death.
- **CRVS Decade** - In 2014, the United Nations' Economic and Social Commission for Asia and the Pacific (ESCAP), launched the "CRVS Decade" to 'Get every one in the picture.'
- **Increase in Registration** - Over the last decade, in the countries in the Asia Pacific region, the number of children under 5 who are unregistered had dropped to 51 million, from 135 million in 2012, a reduction of more than 60%.
- 29 countries currently have reported over 90% registration of births in a year, and 30 countries have achieved this for death registration.
- **Missing Registrations** - Despite this progress, an estimated 14 million children across the region still do not have their births registered by their first birthday and every year, an approximate 6.9 million deaths also go unrecorded.
- **Target Extension** - With the chosen decade complete, but 100% registration still not achieved, the Governments across Asia and the Pacific, on June 25, 2025, signed off on a landmark decision to ensure the all births are registered and all deaths are recorded by 2030.

What are the significances of the system?

- **Establishment of Legal Identity** - Registering births and deaths is a fundamental aspect of a person's legal identity, and besides, grant access to a whole range of life cycle benefits/functions for any one living in a society.
- **Access to Essential Services** - Birth registration grants individuals' formal legal recognition, enabling access to essential rights and services, including health services.
- **Legal Evidence Document** - Death certificates serve as legal proof of death, supporting families with matters such as inheritance, insurance and other administrative processes.
- **Resilient CRVS System** - It aims to create a universal, inclusive and resilient CRVS systems a step closer to reality.
- **Protect Populations in Vulnerable Situations** - As birth and marriage registration can serve as safeguards against child marriage, trafficking and modern slavery by verifying age and identity.
- **Intergenerational Impact** - Birth registration empowers registered mothers to secure legal identity and rights for their children, breaking cycles of invisibility and exclusion.
- **Achieving Sustainable Development Goal (SDG)** - Acknowledging legal identity in good governance and justice, is also target 16.9 of the Sustainable Development Goals (SDGs).

What is the status of civil registration system in India?

- **Nodal Authority** - In India, the Registrar General and Census Commissioner (RGCI) is responsible for civil registration as well as the production of vital statistics.
- **Nodal Ministry** - Though the commissionerate comes under the Union Home Ministry, the Ministry of Health supports the civil registration system providing incentives for registration, manpower and logistics support under the National Health Mission.
- **Cost of Registration** - There is no fee for birth registration within the prescribed period of 21 days, although fees for birth certificates may vary according to State/local body.
- **National CRVS System** - The Indian national CRVS coordination mechanism was established in August 2015, while a national CRVS strategy and a comprehensive assessment are still in progress.
- **Registration of Births and Deaths (RBD) Act, 1969** - The registration of births and deaths is mandatory under the act.
- Amendments to it, have made possible digital registration of births and deaths, and the recognition of electronic documents that can be stored safely and securely in the Digilocker by all.
- **Reporting Cause of Death** - It has been made mandatory for medical institutions to provide cause of death certificates to the Registrar.
- **Increase in Registration** - As a result of these proactive policies, the registration of births had increased from just over 86% at the beginning of the CRVS decade to over 96% in India.

In India, legal provisions now cover the registration of adopted, orphaned, abandoned, surrendered, and surrogate children, along with children of single parents or unmarried mothers.

Initiatives on Registration System

- **Civil Registration System** - It is a centralized portal for online and offline registration of birth and death covering the entire gamut of the civil registration system
 - Registration of events,
 - Generation of certificates
 - Generation of statistical tables and reports
- **Data Digitization Project** - It has been started with the support of UNICEF, to keep old records in easy to retrieve digital form has started.
- This will help in storage of registers in electronic format and allow easy access to the records.

What are the challenges in civil registration?

- **Lack of Awareness** - Most people are not aware of the need and importance of registration of vital events such as birth, death and still birth.

- **Low Priority** – States and Union Territories accorded to priority to civil registration system in terms of budget allocation, man power allocation and infrastructure creation.
- **Lack of Coordination** – There is inadequate coordination among concerned departments of home ministries and health ministries in sharing the data.
- **Low level of Reporting** – There are impediments in registration units such as hospitals in reporting the births and deaths.
 - Under the Civil Registration System (CRS), controlled by the RGI, government hospitals have been entrusted with the responsibility of functioning as registrar.
- Private hospitals are supposed to report the events in their jurisdiction to the registrar so that certificates can be issued to the family.

For more information on Registration system in India, Click [Here](#)

- **Deficiencies in Digital Infrastructures** – This makes the adoption of CRVS system difficult to implement.

What lies ahead?

- Achieving 100% coverage requires inclusive and accessible service delivery, harnessing the power of digital transformation, strengthening legal foundations and building inter-operable data systems.
- Ensuring gender equity in registration, safeguarding personal data and privacy is also essential.

5.4 Designation of Senior Advocates

Why in the News?

Recently, the Supreme Court of India decided to refix the methodology and the criteria for designating lawyers as senior lawyers.

What is the classification advocates?

- **Classification of Advocates** - Advocates Act, 1961 classifies advocates into two: senior advocates and advocates.
- **Objective** – The designation keeps the advocates motivated towards the legal as they are awarded for their excellence and on the basis of their meritorious record.
- The designated senior advocate is awarded this privilege as a mark of excellence for significant contribution to the legal profession.
- **Criteria** - Based on ability, standing at the Bar or special knowledge or experience in law, a 'deserving' advocate could be designated by the constitutional courts as a senior advocate.
- **Designation Process** - Advocates Act, 1961 provides the power to the High Courts and Supreme Court to designate an advocate as senior advocate with his consent.
- It is truly based on the discretion of the Full Bench Court who decide through vote by secret ballot.

Privileges of Senior Advocate

- **Pre-audience** - Senior Advocates generally have the right of pre-audience in court, meaning their cases are heard before those of other advocates.
- **Distinctive Gown** - In a symbolic gesture, their black gowns have a distinctive flap at the back, setting them apart from other counsels. This harkens back to the historical distinction between barristers and solicitors.
- **Inner Bar** - They enjoy the privilege of sitting in the 'Inner Bar', the front row of seats in a courtroom, while junior advocates sit in the 'Outer Bar'.
- **Cases Called First** - Customarily, their cases can also be called first or whenever they step into court.

What are issues with the classification of advocates?

- **Inequality** – The classification of advocates is an Orwellian notion that makes some are more equal than the others.
- **Unequal Treatment** - The very incorporation of this provision is often contended as problematic as it accepted the idea of unequal treatment of those who are otherwise equals.

- **Division in Legal Fraternity** - This led to a sharp division in the legal profession and created a legal oligarchy, which in turn deeply impacted our idea of justice.
- **Creation of Legal Plutocracy** - Jurist F.S. Nariman lamented that the system has established a caste system among lawyers.
- **Sideline of Women and Marginalized** – Most of the designated senior advocates are men from a family legacy of judicial history.
- **Commercialization of Legal Profession** - The division also had the tendency to accelerate the commercialization of the legal profession, making it almost resemble the scene in the United States.

What is the situation in the US?

- **Elite Cadre of Lawyers** - A Reuters report titled 'The Echo Chamber' (2014) says that in the U.S, "an elite cadre of lawyers has emerged as first among equals, giving their clients a disproportionate chance to influence the law of the land".
- **Disproportionate Success Rate** - The report added that a survey of cases between 2004 and 2012 showed that "66 of the 17,000 lawyers who petitioned the Supreme Court succeeded at getting their clients' appeals heard at a remarkable rate".
- **Dominance in Appeals** - The report demonstrates that during this period, less than 1% of lawyers were handling 43% of the appeals to the U.S. Supreme Court.
- **Corporatism in Judiciary** – The most influential members of the profession represented the corporate firms and this resulted in "a decided advantage for corporate America, and a growing insularity at the court".

What is the status of cases filed on this issue?

- **Indira Jaising Case 2017** - The question was raised on the power of the Court to designate senior advocates.
- It sought for transparency and objectivity in the designation process and constitution of a permanent Selection Committee for such purpose.
- **The Judgement** - The Supreme Court considering the discrepancy in the process, laid down guidelines for consistency in the designation process and also provided for constitution of the Permanent Committee.

Supreme Court Guidelines on Indira Jaising 2017 Judgment

- **Permanent Committee** – It provided for the constitution of a five-member Permanent Committee comprising of
 - Chief Justice
 - Two senior-most Judges
 - The Attorney General/Advocate General of the state; and
 - A member from the Bar, nominated by the other four.
- **Point-based Format** - The PC could assess applications based on a point-based format consisting of
 - 10 points for 10-20 years of practice;
 - 20 points for years of practice beyond 20 years;
 - 40 points for Judgements which indicate the legal formulations advanced by the concerned advocate in the course of the proceedings of the case, pro bono work, and domain expertise;
 - 15 points for publications; and
 - 25 points for the interview.

- **Indira Jaising 1** was effectuated by the Supreme Court Guidelines to Regulate Conferment of Designation of Senior Advocates, 2018.
- **2023 refinements** - In Indira Jaising-II, the Court held that the process of voting by secret ballot (by Judges in the Full Court) was an exception and not the rule.
- **Reversals and changes in 2025** - In Jitender @ Kalla, the Oka-Bench made a decisive departure from the reforms introduced through the Indira Jaising judgments.
- Finally, the judgment held that no new designation processes should be initiated until the Supreme Court and the High Courts formulate a new regime of rules and guidelines.

What are the issues with the 2018 guidelines?

- **Lack of Objectiveness** - The Court found the point-based assessment to be highly subjective and practically unworkable.
- **Voluminous Work** - Permanent Committee (PC) could not assign 50 marks based on voluminous written submissions and judgments.
- **Misalignment with Practical Demands** - The Bench also criticised the provision for awarding 5 points to publications as unjust and misaligned with the practical demands of the legal profession.
- **Inadequate Fairness of Interviews** - Short interviews were insufficient to assess a candidate's suitability and that articulate but less meritorious individuals could receive disproportionate marks.
- **Violation of Dignity of Legal Profession** - Subjecting experienced advocates to a brief interaction, the Court held, was inadequate and violated the dignity of the legal profession.
- **Weightage on Year of Practice** -- The criterion of assigning marks based on years of practice, could unfairly reward mediocrity and that mere longevity at the Bar was not a rational basis for designation.

What needs to be done?

- India needs to guard against the perils of growing inequality in the legal profession.
- The system of designating and classification of senior advocates needs to be evaluated from the perspective equality, diversity, just and fairness.
- The role, benefits and perks of the designation also should be examined to ensure that it does not create inequality in judicial system.
- The designation process needs to be made transparent, fair, objective and diverse.

6. GOVERNMENT POLICIES AND INTERVENTIONS

6.1 Virtual Digital Asset (VDA) Regulations in India

Why in the News?

In May 2025, the Supreme Court of India questioned the absence of comprehensive and clear crypto regulation in India.

What is the status of Virtual Digital Assets (VDA) in India?

- **Virtual Asset** – It is a digital representation of value of assets such as cryptocurrencies, non-fungible tokens (NFTs), gaming tokens, and governance tokens.

A non-fungible token is a unique digital identifier that is recorded on a blockchain and is used to certify ownership and authenticity.

[To Know More about, NFTs Click Here.](#)

- **Grass Root Crypto Adoption** - India continues to lead in grassroots crypto adoption, for the second consecutive year in the 'Geography of Crypto' report by Chainalysis (2024).
- **Retail Investment in VDA** - A National Association of Software and Service Companies (NASSCOM) report finds that Indian retail investors poured \$6.6 billion into crypto assets.
- **Trading Rate** - Between December 2023 and October 2024, Indians traded over Rs 2.63 trillion on offshore platforms.
- **Employment Potential** – NASSCOM report predicts that the industry could create over eight lakh jobs by 2030.
- **Strong Developer Base** - India also boasts one of the largest and fastest-growing web3 developer cohorts.

What is the role of Virtual Asset Service Providers (VASP)?

- **Virtual Asset Service Provider (VASP)** – These are entities that carry out exchanges between different forms of virtual assets or between virtual assets and fiat currencies.
- **Examples of Virtual Asset Service Providers** – They include cryptocurrency exchanges, ATMs, wallet custodians, and crypto hedge funds.
- **Intermediaries** - They act as intermediaries, enabling users to engage in actions such as exchanging, transferring, or safekeeping virtual assets.

- **Cryptocurrency Exchanges** - These organizations facilitate the trading of cryptocurrencies, both for other digital currencies and for fiat money.

Some of the Top Cryptocurrency Exchanges in India

Exchange	Key Security Features	Regulatory Status	No. of Coins	Unique Offering
Mudrex	Video KYC, cold storage, and insured funds	FIU-India	650+	Coin Sets, copy trading, education
CoinSwitch	Non-custodial, KYC, aggregation	FIU-India	320+	ISO/ IEC 27001:2022, liquid aggregation
ZebPay	Multi-sig wallets, audits	FIU-India	100	Staking, lending, zero deposit fees
CoinDCX	Encryption, insurance, and audits	FIU-India	500	Staking, margin/futures, DCX Learn
Paxful	Escrow, global KYC, P2P model	Global/India-compliant	BTC, USDT	500+ payment methods, P2P flexibility

- **ATMs** - Bitcoin ATMs allow customers to buy Bitcoin in exchange for cash, and sometimes to sell it too.
- **Wallet Custodians** – These organizations administer and store virtual assets, as well as exchange and transfer them.
- **Crypto Hedge Funds** - Some high-value investors use crypto hedge funds as their investment vehicles.
- **Regulation of VDA Industry** - These intermediaries facilitate the alignment of the VDA industry with existing laws and enforcement of policies.

What are the current Indian regulations on VDA?

- **Definition-** The term “Virtual Digital Asset” is defined under Income Tax Act, 1961 and includes cryptocurrencies, non-fungible tokens (NFTs), and any other digital assets notified by the central government.
- **Legal Status** - Cryptocurrencies and other VDAs are not recognized as legal tender in India.
- This means they cannot be used as official currency for payments, but buying, selling, and holding these assets is legal.
- **No Dedicated Regulatory Statute** - There is no outright ban on crypto trading or mining, but there is also no dedicated law specifically regulating cryptocurrencies or NFTs as of now.
- **Regulatory Oversight** - The Reserve Bank of India (RBI), Ministry of Finance, and Securities and Exchange Board of India (SEBI) are the principal authorities overseeing aspects of VDAs.
- **AML/CFT Framework** – VDA service providers were brought into the ambit of Anti Money Laundering/Counter Financing of Terrorism (AML-CFT) framework under the provisions of the Prevention of Money Laundering Act (PML) Act, 2002 in March 2023.
- The obligation is activity-based and is not contingent on physical presence in India.
- **Financial Intelligence Unit-India Registration** –VDA SPs operating in India (both offshore and onshore) are required to be registered with FIU IND as Reporting Entity.

What is the taxation regime on VDAs?

- **Taxation** - The Finance Act, 2022 imposed a flat tax rate of 30% on all income arising from the transfer of VDAs.
- This rate applies to both long-term and short-term gains, with no distinction made between the two.

- **No Deductions** - The law does not allow any deductions or exemptions other than the cost of acquisition, meaning that expenses such as exchange fees, transaction costs, or mining-related expenses cannot be claimed.
- **Denial of Loss Adjustment** - Losses from the transfer of VDAs cannot be set off against any other income—whether salary, business profits, or capital gains from other assets.
- Moreover, such losses cannot be carried forward to future years.
- **Taxation of Crypto Gift** - If a person receives cryptocurrency as a gift, the value of the crypto would be taxed in the hands of the recipient under the head "Income from Other Sources," unless it is received from a relative or falls within other exempt categories.
- **GST on Cryptos** - Goods and Services Tax (GST) laws may also apply to crypto-related activities, depending on the nature of the transaction.
- Crypto exchanges that provide a platform for buying and selling digital assets are generally considered to be offering a taxable service and are required to pay 18% GST on their commission or platform fees.
- **Taxation on Crypto Mining** - If mining activity is carried out as a business and crosses the applicable turnover threshold, it may also be treated as a taxable supply of service, attracting 18% GST.
- **Payment Taxation** - In cases where cryptocurrencies are used as a mode of payment to purchase goods or services, such transactions may be treated as barter and taxed based on the fair market value of the goods or services exchanged.
- When crypto is used to pay for imported services from outside India, such as Web3 development or NFT art, reverse charge GST obligations may arise.

Reverse Charging of GST means the GST will have to be paid directly by the receiver instead of the supplier.

What are the challenges in crypto currency regulation?

- **Decentralized Nature of VDAs** - India, as a country of strict capital controls and tightly regulated payment systems, has found it difficult to reconcile these frameworks with the decentralised nature of VDAs.
- **Ambiguity on VDA** - The Reserve Bank of India (RBI), as the domestic regulator of monetary policy, began expressing concerns about the potential threats of crypto as early as 2013.
 - In 2018, RBI barred financial institutions from dealing with VDA-related entities which was overturned by the Court.
- **Limited Effectiveness of Regulations** – Despite restrictive and cautious warning by the government, the VDA market in India saw unassail growth in India.
- **Dominance of Non-compliant Platforms** - Estimates by various industry reports and think tanks show that between July 2022 and December 2023, Indians traded over Rs. 1.03 trillion worth of VDAs on non-compliant platforms.
- Only 9% of the estimated Rs. 1.12 trillion in VDAs is held on domestic exchanges.
- **Limited Success in Banning Platforms** - Efforts to block access to non-compliant platforms, such as URL blocking, had limited success.
- **Continued Trading in Blocked Platforms** - Trade volumes on blocked exchanges rebounded after temporary declines, and web traffic to these platforms rose by 57%.
- **Bypassing Restrictions** - Users continued to bypass restrictions using virtual private networks (VPN), mirror platforms or servers, and by migrating to other non-compliant exchanges.
- **Increasing Crypto Theft** - Stolen crypto funds spiked by approximately 21.07% year-over-year (YoY) in 2024 to reach a volume of \$2.2 billion.

What lies ahead?

- While the Indian crypto market is yet to be governed by a unified legal code, the introduction of a tax regime and PMLA coverage signifies the government's intent to regulate and not ban.
- Combined with their contributions to national value creation and economic growth, VDA platforms present a more viable and constructive channel for funds to flow through under the oversight of Indian regulators.
- To move beyond the current policy stasis — where tax is levied without meaningful regulation — a balanced, pragmatic and future-proof regulatory framework is necessary.
- Guidelines by global standard-setting bodies, such as the International Monetary Fund, Financial Stability Board, and the Financial Action Task Force, recommends comprehensive and risk-based regulation that is harmonised with international standards.

6.2 Inclusive Pension System

Why in the News?

The Economic Survey 2025-26 reports that Indian pension assets amount to just 17% of GDP, compared with up to 80% in many advanced economies.

What is the status of pension coverage in India?

- **Coverage** - Currently, only around 12% of India's workforce is covered by formal pension schemes.
- **Share in GDP** - The Economic Survey 2025-26 reports that Indian pension assets amount to just 17% of GDP, compared with up to 80% in many advanced economies.
- **High Coverage in Formal Sector** - Public sector and organised private sector workers are protected under multiple parallel schemes.
- **Inadequate coverage of informal workers** - In contrast, the only protection for the informal sector is voluntary adoption under the National Pension System and Atal Pension Yojana.
- These two schemes accounted for about 5.3 % of the total population in FY24.

*India took the last position out of 48 countries surveyed to measure people's pension status after retirement in the Mercer CFA Institute **Global Pension Index (MCGPI) 2024.***

What are the significances of expanding the inclusive pension system?

- **High Share of Informal Labour Force** - Almost 85% of the informal labour force is generating more than half of the country's GDP.
- As markets evolve and the gig economy expands, their exclusion from the pension framework is not only a policy gap but also a looming financial crisis in the making.
- **Increasing Old-age Population** - Since India's old-age dependency ratio will increase to 20% by 2050, one out of five citizens will be requiring retirement income support.
- **Societal Change** – Increasing urbanization and nuclear structuration of society necessitates a strong pension system for the social security of old age people.
- **Silver Economy** – Effective pension system will act as a pillar to the silver economy serviced by the care institutions for the old age people.
- **Increasing Medical Cost** – Pension system will help addressing the increasing cost in geriatric care.

Pension Schemes of India

- **National Pension System (NPS)** – It is a defined contribution pension and is voluntary for subscription by an individual to make contributions to his/her Individual Pension Account during the working life.
- NPS is mandatory for the Central Government recruits w.e.f. 1st Jan 2004 (except armed forces) which replaced the earlier defined benefit pension.
- **Unified Pension Scheme** – It has been introduced as an option under the National Pension System (NPS) for the Central Government employees covered under NPS so that they may receive an assured payout after their retirement.
- It is a 'fund-based' payout system which relies on the regular and timely accumulation and investment of applicable contributions (from both the employee and the employer (the Central Government)) for grant of monthly payout to the retiree.
- **NPS Vatsalya** – It is a National Pension System (NPS) scheme designed for minor Indian citizens, enabling parents or guardians to contribute towards the child's retirement savings.
- **Atal Pension Yojana (APY)** – It is a voluntary pension scheme launched by the Government of India for all Citizens of India, especially the poor, the under-privileged and the workers in the unorganised sector.
- **Employees' Provident Fund (EPF)** – It is a retirement savings scheme in India managed by the Employees' Provident Fund Organisation (EPFO).
- **Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM)** – It is a pension scheme for unorganized sector workers with a monthly income of ₹15,000 or less and aged between 18-40 years.

What are the challenges in expanding the insurance coverage?

- **Fragmented Pension Frameworks** - Although the government has introduced social security for gig workers, funded in part by aggregators, this only addresses a fraction of the informal sector and adds another parallel scheme to an already complex web.
- **Lack of Awareness** - As a large proportion of the current pension coverage for the informal sector is voluntary, the expansion of the insurance coverage depends on the awareness of the beneficiaries.
- **Inadequate Benefits** - Many retirees in India receive low pension amounts, with a substantial portion receiving less than Rs 1,500 per month.
- **Systemic Exclusions** - The pension system faces challenges in reaching a large segment of the population, particularly those in the unorganized sector.
- **Sustainability Concerns** - Falling birth rates and increasing longevity place pressure on the sustainability of pension systems, as fewer young people are available to support a growing number of pensioners.

What needs to be done to make the pension system inclusive?

- **Structuring the System** - As in most mature economies, India needs a well-structured pension ecosystem with multiple tiers that cater to the diverse needs of the entire population.

Pension System in Developed Countries

- **Japan** – It operates a mandatory flat-rate contributory scheme for all residents between the ages 20 to 59 years, encompassing the self-employed, farmers, public and private employees, and their dependents.
- **New Zealand** – It offers a universal, flat-rate public pension to residents aged 65 years and over, subject to a 10-year residency requirement and roughly 40% rely on it as their main income during old age.
- **Netherlands** – Its occupational pension funds provide annual disclosures of accrued pension rights to active participants.
- **United Kingdom** – It runs an opt-out pension scheme for its employees, which promotes participation by default.

- **Sensitizing the Public** - As financial literacy in India remains low, efforts at sensitisation need to start at the grass-root level.
- For example, the financial literacy policy in Australia enables the school curriculum to incorporate a component on superannuation planning.
- **Increasing Accessibility** - Sensitisation is also linked with increasing accessibility of pension products, such as in Nigeria, which has invested heavily in a digital pension infrastructure to increase the reach of its pension system.
- **Ensuring Sustainability and Liquidity** - Sustaining the financial health and liquidity of pension funds are critical to securing sufficient resources for a dignified retirement.
- **Integrating Pension and Silver Economy** – Pension funds can be utilized for supporting and building the silver economy, the benefits of which can later be harnessed in cash and kinds.

6.3 Foreign Educational Campuses

Why in the News?

Recently, five foreign educational institutions have been granted letter of intent to set up branch campuses in India.

What are the benefits of establishing foreign campuses in India?

- **Access to World Class Education** – Setting foreign campuses in India enable students to access a world-class education at home without travelling abroad, avoiding the stringent visa restrictions, and making higher education more affordable.
- **Fulfilling Higher Education Demand** - India has a growing demand for higher education, with a large population of young people (52%) under the age of 30.
- A rising middle class willing to invest in premium education creates a substantial market for foreign universities.
- **Capacity Development of Home Institutions** - Collaborating with Indian institutions can enhance research capabilities, lead to innovative solutions, and attract talent and funding, thereby fostering a vibrant academic and research environment.

- **Healthy Competition** – Foreign campuses will provide a healthy challenge to domestic premier institutions like IITs, IIMs, NITs and push them to increase their capabilities.
- **Human Capital Development** - Foreign universities can contribute to the skill development of Indian students by offering programs aligned with global industry standards and creating partnerships with industries for internships and practical training.
- **Promote Bilateral Collaboration** – Foreign campuses will encourage cooperation between countries through joint high tech research programs in defence, biotech, aerospace.

Existing Foreign Campuses in India

- Deakin University and the University of Wollongong – in Gujarat’s GIFT City
- U.K.’s University of Southampton in Gurugram, near Delhi.

Upcoming Campuses in Mumbai

- University of York
- University of Aberdeen
- University of Western Australia
- Illinois Institute of Technology
- Italy’s Istituto Europeo di Design (IED)

Government Initiatives

- **New Education Policy (NEP) 2020** – It aims to attract foreign universities and simplify regulatory processes through incentives like tax benefits and easier land acquisition.
- **UGC Guidelines** - In July 2023, the University Grants Commission (UGC) released guidelines for the internationalization of higher education in India.
- These guidelines, aligned with the National Education Policy (NEP) 2020, aim to facilitate the entry of top global universities into India and promote academic collaborations.

What are the challenges of foreign campuses in India?

- **Inadequate Information Transparency** - Admissions were announced often before essential details, such as information about the faculty and other key elements, were made publicly available.
- **Uncertain Global Political Landscape** – Changes in the politics of the foreign institution’s home country, might affect their function in India.
- **Competitive Domestic Higher Education Landscape** - India already boasts renowned public institutions such as the Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs).
- A growing number of elite and semi-elite private universities in India now offer joint and double-degree programmes in collaboration with foreign institutions.
- **Low Ranking Foreign Institutions** - Most of the institutions seeking to enter the Indian market are not top-tier schools in their own countries.
- In India, they risk being seen as just one among several “elite” options available to students.
- **Narrow Academic Focus** - These branch campuses follow a market-driven model, offering programmes in high-demand fields such as business, computer science, and data analytics.
- While this approach may be financially strategic, the narrow academic focus risks making them indistinguishable from India’s better-performing private colleges and universities.
- **Establishing Clear Academic Identity** - Without a clear identity, they risk being perceived as little more than diploma mills, ultimately undermining the reputation of the very universities they represent.
- Most of the branches already established or planning to be established are not comprehensive universities with diverse offerings and research focus, but rather are small specialised schools.
- **Disproportionate Reliance on Marketing Strategies** - Flashy campaigns without academic depth or meaningful student engagement will not build lasting trust.

- Students and parents are increasingly examining publicly available information on faculty credentials, curriculum design, industry relevance, and student support systems.
- **Insufficient Campus Infrastructure** - Most of these branch campuses operate out of vertical buildings, often renting space.
- While such structures may offer operational efficiency, they often lack the vibrancy, openness, and spatial identity characteristic of traditional Indian universities.

What lies ahead?

- The establishment of foreign university branch campuses in India marks a significant milestone in the higher education landscape.
- India will need to carefully evaluate whether a particular branch proposal is suitable for local needs, and whether it is from a foreign institution that is attractive.
- Collaboration with foreign universities can be promoted alongside as done in the case of IIT Delhi with the University of Queensland and IIT Bombay with Monash University.
- If foreign universities wish to be perceived as full-fledged institutions, they must invest in essential “soft” infrastructure as well.

7. INTERNATIONAL RELATIONS

7.1 India Australia Defence Ties

Why in the News?

Recently Defence Minister and Deputy Prime Minister of Australia Richard Marles visited New Delhi.

What are the significances of Australia in India’s security landscape?

- **Australia’s Strategic Geography** – Australia bridges the Indian and Pacific Oceans with territories and military presence near Southeast Asia, complements India’s maritime ambitions.
- **Coalition Operations** - The Australian Defence Force (ADF) is experienced in coalition operations and can effectively enable Indian military capabilities, as seen in the recently implemented air-to-air refuelling arrangement.
- **Pacific Island Relations** - Australia’s established relationships with Pacific Island nations align with India’s growing interests.
- **Countering China** - Both nations share concerns about China’s assertiveness and a common vision for sovereign resilience and regional stability.
- **Balancing America** - Canberra viewing New Delhi as a “top-tier security partner” helps India navigate a world where American security guarantees appear increasingly conditional.

What are the security agreements and partnerships between India and Australia?

- **Comprehensive Strategic Partnership (CSP)** - In June 2020, India and Australia elevated their relationship from a "Strategic Partnership" to a "Comprehensive Strategic Partnership" (CSP).
- **2+2 Ministerial Dialogue** – Defence and External Affairs ministers of India and Australia regularly meet to discuss a wide range of strategic, defence and security issues.
- **Mutual Logistics Support Agreement (MLSA)** - It streamlines logistical support during joint exercises and humanitarian missions.
- **Air-to-Air Refuelling Arrangement** - Signed in 2024, It allows the Royal Australian Air Force to extend the operational reach of Indian aircraft.
- **Military Exercises** - AUSTRAHIND (Army), AUSINDEX (Navy), and participation in multilateral exercises such as Pitch Black and Malabar, demonstrate a decade of careful relationship-building.

What are the challenges in strengthening India – Australia defence ties?

- **Geopolitical Divergences** - Australia’s close alliance with the United States contrasts with India’s tradition of strategic autonomy.

- This difference sometimes creates hesitation in aligning their geopolitical strategies, especially when it comes to joint military operations or intelligence sharing.
- **Asymmetric Threat Perceptions** - India and Australia do not always perceive security threats in the Indo-Pacific in the same way.
- **Institutional Barriers**- There are gaps in institutional capacity, such as understaffed defense liaison offices and limited people-to-people military exchanges.
- **Reduced Efficacy of Strategic Forums** - Too often, strategic dialogues become exercises in diplomatic niceties rather than forums for hard truths.

How can India and Australia can strengthen regional security architecture?

- **Rebalancing Defence Engagement** - While Navy-to-Navy cooperation has flourished, there is a need to break down service barriers.
- This could be achieved through joint military exercises that reflect real world operations, and moving towards a dedicated forum for joint staff talks.
- **Reflecting Strategic Importance in Defence** - Defence Adviser (DA) position in Canberra can be upgraded to a one-star rank with the addition of dedicated Army and Air Force personnel as assistants to help balance the service participation.
 - Defence Adviser (DA) position in Canberra has always been held by a Navy official.
- **Strengthening Discussion Forums** - Including more uniformed professionals with operational insights and creating spaces for classified discussions can generate fresh thinking that both nations need.
- **Building Mutual Understanding** - Simple initiatives such as fellowships for staff college graduates or regular war-gaming exchanges would build the mutual understanding that underpins genuine cooperation.
- **Deepen MRO** - India can explore cooperation with Australia in the Maintenance, Repair and Overhaul (MRO) of naval vessels.
- **Showcasing Joint Intentions and Capabilities** - Joint manufacturing and provision of patrol boats for small island security forces in the Indian Ocean Region and in the Pacific can be undertaken.

7.2 India – UK Cultural Relation

Why in the News?

Recently India and UK signed the signed the Programme of Cultural Cooperation (POCC).

What are the features of the India – UK POCC agreement?

- In May 2025, India and the UK finalized a landmark Free Trade Agreement (FTA).
- **Objectives** - To facilitate mutual understanding and support between the peoples of the two countries in the field of arts and culture.
- To strengthen and support the diasporic relationship between the two countries in the field of culture.

Areas of Co-Operation of India – UK POCC

Digital technologies	<ul style="list-style-type: none"> • Nurturing and supporting museums, archives, libraries, and galleries with the digitisation of collections and supporting information-sharing initiatives. • Recognising the benefits and opportunities of new digital technologies, exploring new digital collaborations for the promotion, research, and preservation of culture.
Exhibitions and collections	<ul style="list-style-type: none"> • Jointly encourages such joint projects and displays that will improve museum and library management. • Endeavour to provide technical support and share expertise with each other on core museum and library activities such as curation, conservation, collections.

Performances and events	<ul style="list-style-type: none"> • Endeavour to encourage arts and cultural events in the territory of both countries to include works and performances from artists of the other country into their respective programmes.
Cultural property	<ul style="list-style-type: none"> • Endeavour to cooperate with each other in the protection of their respective cultural heritage. • Encouragr the cooperation and exchange of expertise among national conservation institutions, and supporting organisations with conservation skills.
Sustainability	<ul style="list-style-type: none"> • Promoting sustainability in the cultural arena in the face of global climate change and together support multilateral efforts in this area.
Other areas	<ul style="list-style-type: none"> • Any other areas of cooperation that the participants will agree as appropriate.

- **Implementation Agencies** - For the United Kingdom of Great Britain and Northern Ireland: the British Council Division, High Commission in New Delhi as the main implementing body.
- For the Republic of India Ministry of Culture and Cultural Centre in Indian Mission in UK.
- **Means of Implementation** - Reciprocal exchange of officials and experts in various cultural fields.
- Facilitating training programmes, workshops and seminars for and/or exchange programmes for cultural sector professionals and artists from both parties.

What are the significances of the agreement?

- **Promotes Cultural Co-operation** – The agreement brings together the Indian Ministry of Culture, the U.K.’s Department for Digital, Culture, Media & Sport and the British Council in India, alongside major U.K. cultural institutions.
- **Sharing Expertise** - With over 1,700 accredited museums in the U.K., the partnerships will help leveraging digital technology for sharing cultural experiences and heritage.
- **Growth of Creative Sector** - Globally, the creative arts sector is rapidly growing and projected to reach 10% of global GDP by 2030 and India’s creative economy, valued at \$35 billion, employs nearly 8% of its workforce, second only to agriculture.
- **Capacity Building** - International collaborations can help empower creative professionals with global competencies and best practices and address the shortages in creative economy.
- **Employment Potential** - The creative economy can foster a more inclusive future, encompassing tech-driven sectors such as gaming, digital content, film, OTT, television and more – creating opportunities for skilled workers and innovators.
- **Cultural Preservation** - Co-operation with UK will help in protecting the culture from decline and promoting them in the global arena.
 - For example, Royal Enfield, the iconic U.K.-India motorcycle brand, is working in the Himalayas through its Social Mission to safeguard intangible cultural heritage
 - It is working with over 580 artisans through its textile conservation project, The Himalayan Knot.

What lies ahead?

- In a world grappling with conflict and uncertainty, culture and creativity remain among the most time-tested healers of relations between people and nations.
- India’s creative canvas is expanding, driven by cultural wealth, youth potential, and a bold vision.
- It will require sustained cooperation between government, industry and academia to make that vision a reality.

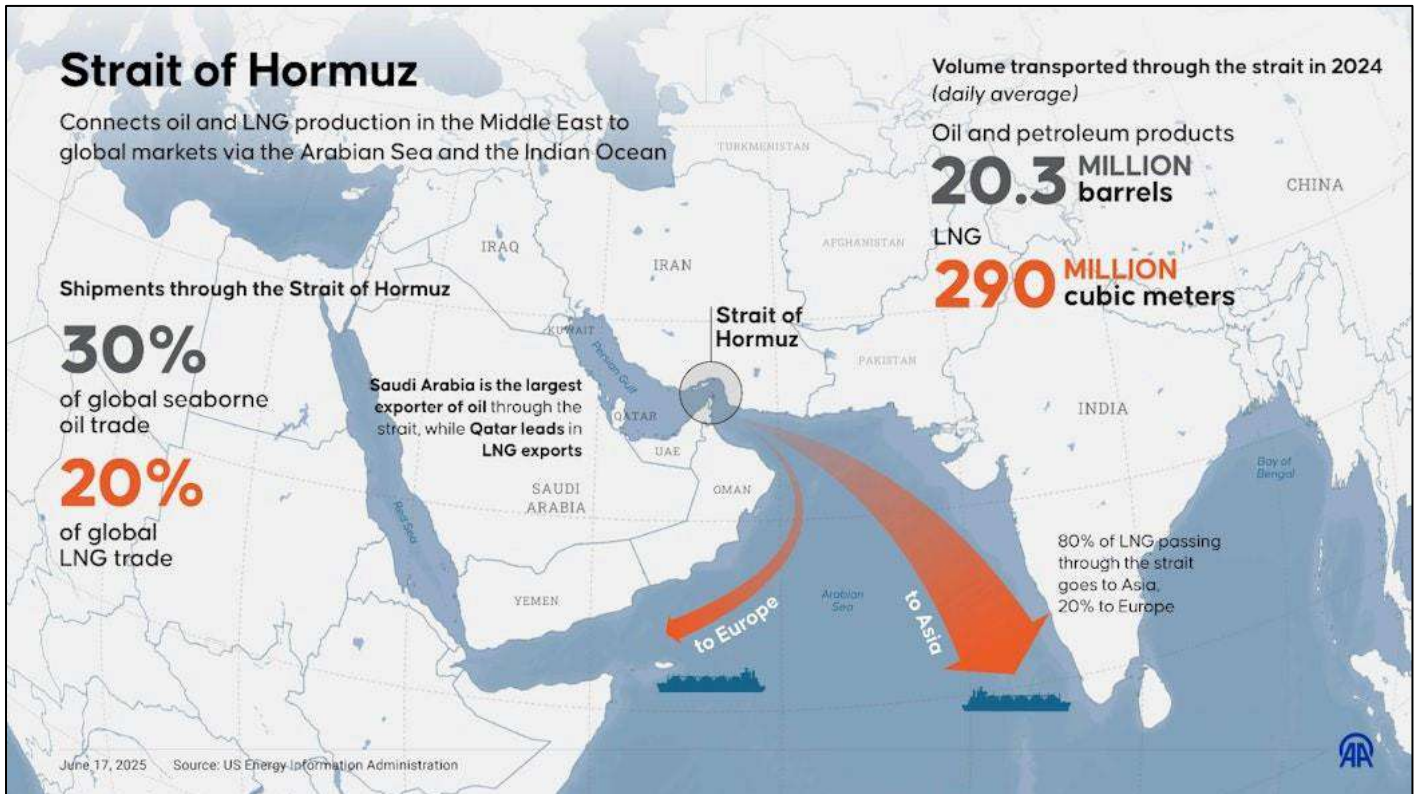
7.3 Strait of Hormuz

Why in the News?

Recently, Iranian parliament recommended the closure of Strait of Hormuz.

What is Strait of Hormuz?

- **Strait of Hormuz** – It is a critical narrow waterway between Iran and Oman, and connects the Persian Gulf with the Gulf of Oman and the Arabian Sea.
- **Narrow Path** - It is just 33 km at its narrowest point, while the width of the shipping lane in the to and fro directions is only 3 km



- **Oil Transit Chokepoint** - Around one-fifth of global liquid petroleum fuel consumption and global liquefied natural gas (LNG) trade transiting the strait.
- **LNG Transit** - Around one-fifth of global liquefied natural gas trade also transited the Strait of Hormuz in 2024, primarily from Qatar.
- **Unique Route** - Because of its geographic location, there is no sea route alternative to the Strait of Hormuz.
- **Significance for India** - Much of India's oil from key West Asian suppliers like Iraq, Saudi Arabia, and the UAE reaches Indian ports via the Strait of Hormuz.
- A bulk of India's LNG imports, which come predominantly from Qatar, also come through this vital choke point.
- **Significance for Iran** - Iran itself depends on the Strait of Hormuz for its trade, particularly oil exports to China, any blockade could impact Tehran considerably, experts pointed out.
- **West Asian Oil&Energy Export** – Almost all of the west Asian countries depend on this route to export their oils to rest of the world.

*India is the world's **third-largest consumer of crude oil** and depends on imports to meet over 85% of its requirement.*

What are the potential impacts of closure of Strait of Hormuz on India?

- **Disrupting Global Energy Market** – West Asian region is a critical cog in the international oil and gas flows.
- Hence, the closure is bound to raise concerns globally, including in India, particularly with regard to oil and gas supply security, and could lead to a jump in energy prices.
- **Increase in Shipping Cost** - Shipping and insurance rates along the route have gone up notably due to higher geopolitical risk premium.
- **Energy Crisis in India** - India's largest source of crude oil is Russia, followed by West Asian suppliers Iraq, Saudi Arabia, and the UAE and India also buys oil from other countries in the region like Kuwait, Qatar, and Oman.

- Nearly 47 % of crude oil imported by Indian refiners was likely to have been transported via the Strait of Hormuz.
- Closure of the Hormuz route will affect energy transport from these regions.
- **Impact of Increased Energy Cost** - Apart from supply disruption for India, the surge in international energy prices due to any such blockade would hit India due to its heavy reliance on imported oil.
- **Affecting Indian Economy** – The oil price rise also has a bearing on the country's trade deficit, foreign exchange reserves, the rupee's exchange rate, and inflation rate, among others.
- **Impact on Entire Economy** - Any fluctuation in oil prices has a trickle-down effect on the prices of many other goods and commodities.

Indian refiners do not purchase Iranian crude as Iran's energy sector is under US sanctions.

What lies ahead?

- The alternatives to the Strait of Hormuz involve transporting oil overland to ports on the Red Sea or on the Gulf of Oman.
- India's Strategic Petroleum Reserves (SPR) in rock caves or caverns in Andhra Pradesh, Karnataka, and Tamil Nadu will help in any temporary price fluctuations.
- India's diversified energy importers and major supply from Russia will reduce the impact of any disruption from the West Asian market.

7.4 China-led Trilateral Nexus

Why in the News?

Recently, China, Pakistan and Bangladesh held their first trilateral meeting in Kunming, China.

What is the China-led trilateral nexus?

- **Trilateral Nexus** – It is the strategy of China to isolate India from its neighbouring countries like Nepal, Bangladesh and Sri Lanka.
- **Objective** – To weaken India's geopolitical and economic position and influence in the region and increase its iron clad.
- **Previous Attempts** - In 1965, Pakistan flirted with the idea of using East Pakistan, China and Nepal to cut off India from its strategic Siliguri corridor.
- **Bangladesh Trilateral**- China, Pakistan and Bangladesh held discussions focused on furthering cooperation and exploring the possibilities of deeper engagement.
- **Afghanistan Trilateral** - This meeting closely follows another trilateral meeting between China, Pakistan, and Afghanistan, held in May, with the aim of extending the China-Pakistan Economic Corridor and increasing cooperation.
- **Political Climate in the Region** - These trilaterals, led by China, come at a time of
 - Pakistan's little relevance to the region
 - India's increasing relations with Afghanistan
 - New Delhi's deteriorating ties with Bangladesh
- **Implications of the Trilateral** - The use of trilaterals underscores China's fresh attempts at making Pakistan a stakeholder in the region and keeping New Delhi preoccupied with immediate concerns.

What were the impacts of 1962 India China war?

- The 1962 war between India and China has largely shaped regional alignments and geopolitics.
- **Shaped Regional Alignments** - Following the war, China found Pakistan to be an ally that could keep India engaged with immediate threats and limit it from challenging Beijing's interests, security, and status.
- **China Dependency in the Region** - Pakistan deemed China to be a country that would unquestionably offer economic and military assistance to support its aggression against India.
- To date, Pakistan is highly dependent on China for assistance, investments and infrastructure development.
- **Increased Economic Dependency on China** - By the end of 2024, Pakistan had a loan of over \$29 billion from China.

- **Arms Supply** - It is estimated that over 80% of Pakistan's arms imports are from China.
- **Growth of Terrorism** - China has also shielded Pakistan-backed terrorists at the United Nations Security Council and other multilateral platforms.
- **Strengthened Pakistan in Border Issues** - Pakistan deployed various Chinese-made hardware and weapons that ranged from surveillance radars, drones, missiles, guidance systems, and fighter jets.

Why is China reinitiating the trilateral nexus?

- **Rise of Strong India** - This idea of using South Asian countries seems to have resurfaced as both China and Pakistan face a confident India.
- **Strong Retaliations of India** - Pakistan-sponsored terror attacks in Uri (2016), Pulwama (2019), and Pahalgam have seen India retaliate in a befitting manner.
- India suspended the Indus Waters Treaty, halted the trade, restricted port access, and targeted the military installations of Pakistan in response to the Pahalgam attack.
- **India's Increasing Geopolitical Prowess** - India has also used its diplomatic clout and growing economy to isolate Pakistan.
- **India's Response to Chinese Intrusion** - India's military and diplomatic responses to Chinese border intrusions in Doklam and Galwan have also likely taken Beijing by surprise.
- **Expanding Diplomacy of India** - New Delhi has also increased close cooperation with like-minded countries to limit Chinese aggressions.
- **Declining Influence of China** - India's pragmatic engagement and domestic politics of the region have slowed down China's momentum in South Asia.
- These anxieties are likely to have motivated China to push for trilaterals with Afghanistan and Bangladesh.
- **Improving Pakistan Bangladesh Relationship** – With Bangladesh's regime change, It held military and economic engagement with Pakistan.
- Bangladeshi Navy participated in Aman 2025 in Karachi after a gap of 12 years and In a historic first since 1971, the two states started direct trade from March 2025.

GeoPolitical Climate in South Asian Region

- In the Maldives, Beijing appears reluctant to trust President Mohamed Muizzu and the country's economy, despite his initial anti-India rhetoric.
- In Nepal, despite signing the framework for Belt and Road Initiative (BRI) cooperation, major differences in funding remain unresolved and the progress of projects has been slow.
- In Sri Lanka, President Anura Kumara Dissanayake is developing close ties with India.
- In the case of Bangladesh, despite differences, India has not hindered the trilateral energy cooperation with Nepal.

What are the potential impacts of these nexuses?

- **Security Challenges** - Pakistan's influence, supported by China and its economic clout, could thus create new terror and security-related challenges.
- **Reduction in India's Influence** – The nexus will help Pakistan become a relevant country in the region, create rifts between India and its neighbours.
- **China Challenge** - With both Pakistan and China confronting a confident India, China sees an opportunity to challenge India through the trilateral nexus.
- **Increase in Chinese Stronghold** – By keep Delhi preoccupied with immediate security and terror-related challenges, China will make way for Chinese BRI projects, interests and investments in the region.
- **Undermines India's Security Efforts** - At a time when India is seeking support from South Asian countries to fight terrorism, Chinese efforts will create new setbacks.
- **Changes South Asian Politics** - South Asian countries will balance between India and China, as Beijing uses Islamabad to create new complexities in the region.

What lies ahead?

- The developments in the region demonstrate, that China, and not Pakistan, is India’s biggest challenge.
- As China, Pakistan, and Bangladesh inch closer to each other, India must explore feasible diplomatic options.
- India can strengthen bilateral talks with the countries and regional platforms such as SAARC, BIMSTEC.
- Delhi can express redlines and convey the point that any misadventures by its neighbours could have severe economic, military, and political costs.

G.S PAPER III

8. ECONOMY

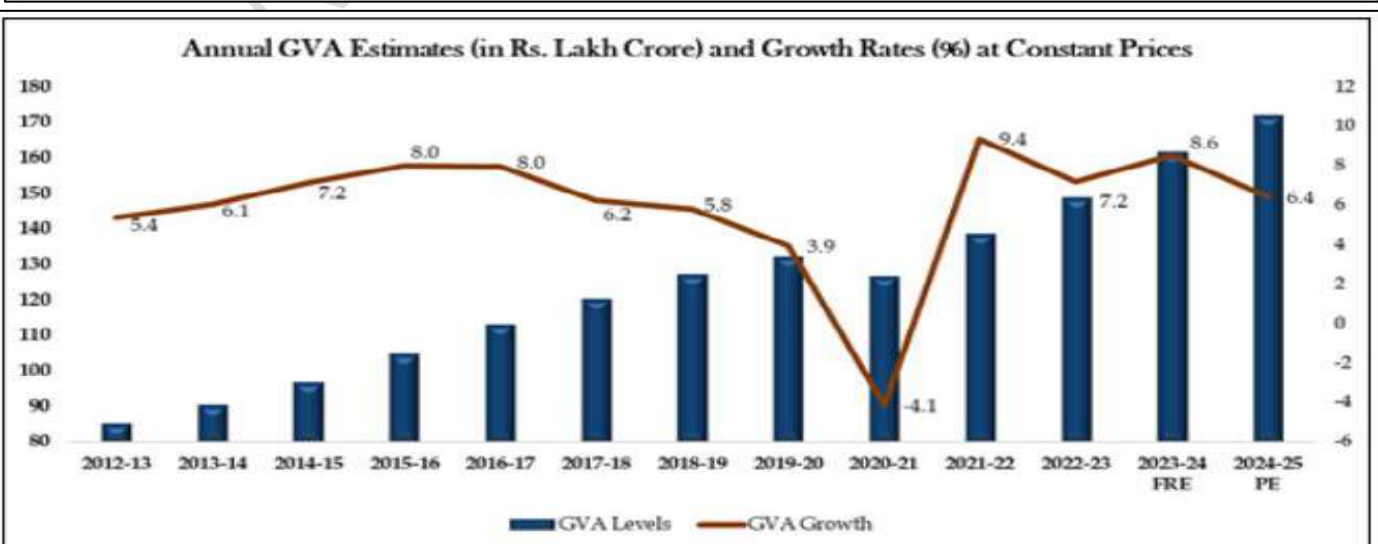
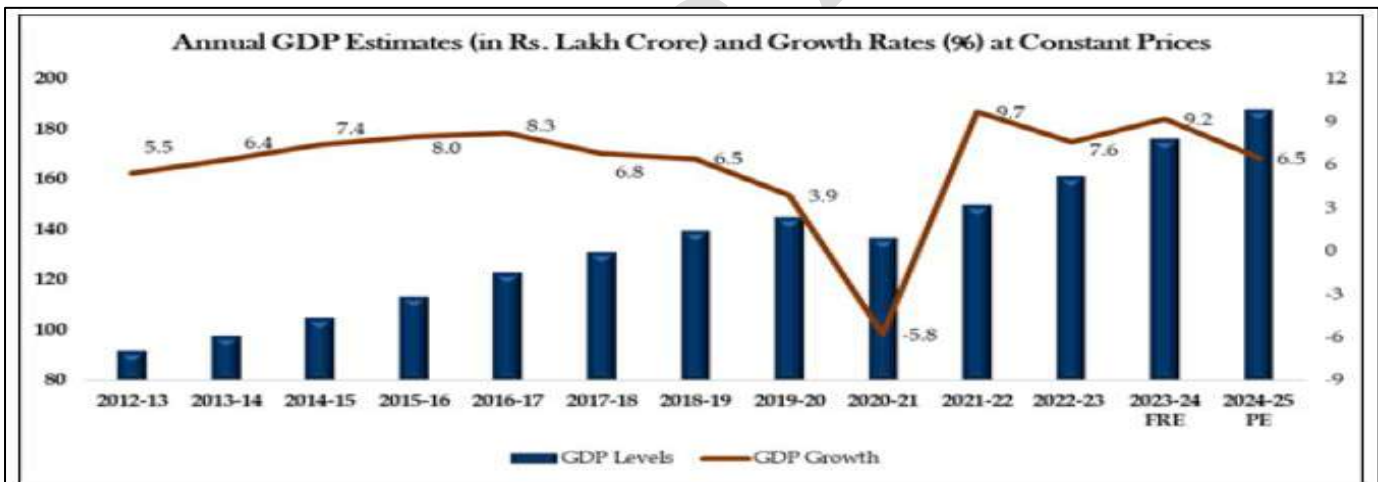
8.1 India Economic Performance 2024-25

Why in the News?

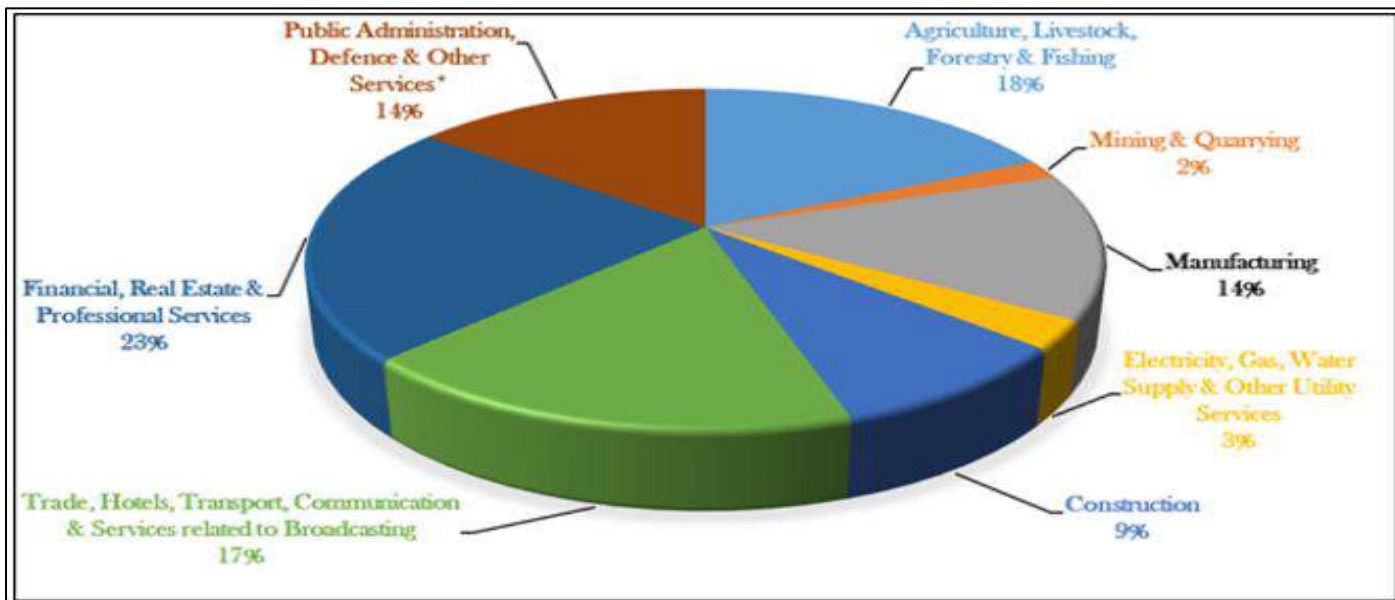
Recently, provisional estimates of annual gross domestic product for 2024-25 was released.

What was the economic performance of India in 2024-25?

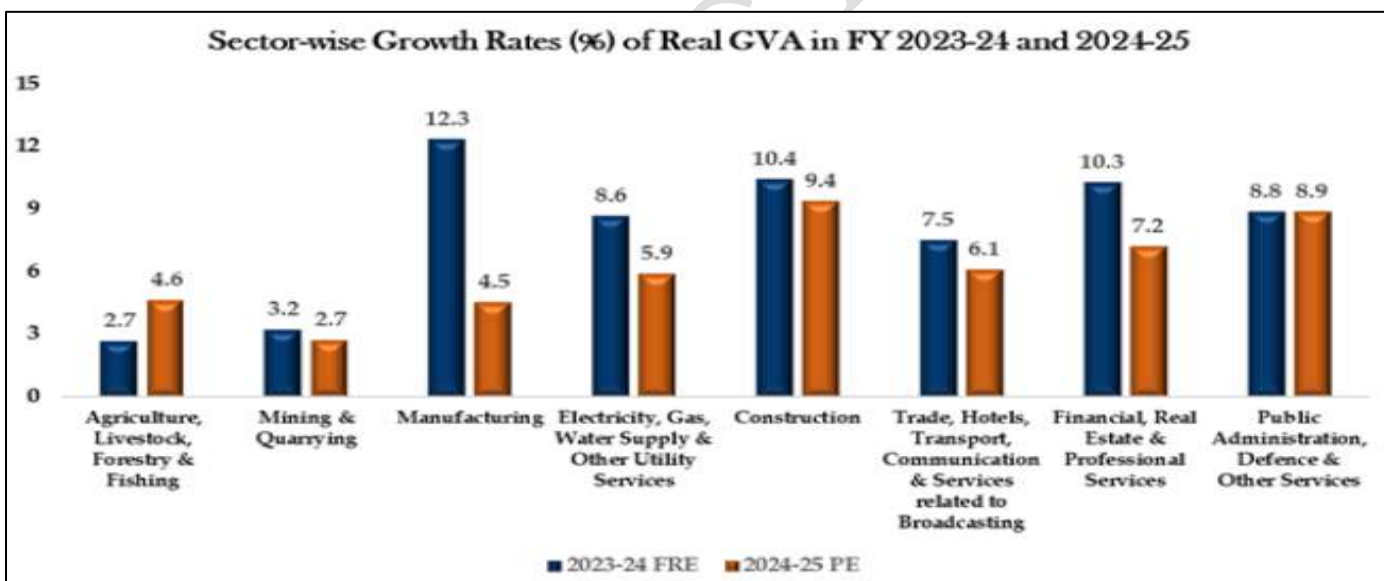
- The National Statistics Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI) releases the Provisional Estimates (PE) of Annual Gross Domestic Product (GDP) for the Financial Year (FY) 2024-25.
- **Real GDP Growth** - GDP at Constant Prices is estimated to attain a level of Rs. 187.97 lakh crore in FY 2024-25 registering a growth rate of 6.5%.
- **Nominal GDP Growth** – GDP at Current Prices is estimated to attain a level of Rs. 330.68 lakh crore in the FY 2024-25, against Rs. 301.23 lakh crore in FY 2023-24, showing a growth rate of 9.8%.



- **Real GVA Growth** – It is estimated at Rs. 171.87 lakh crore in the FY 2024-25, registering a growth rate of 6.4%.
- **Last Quarter Growth** - In Q4 of FY 2024-25, Real GDP and Nominal GDP has been estimated to grow by 7.4% and 10.8% respectively.
- **Sectoral Composition of GVA** – Financial, Real Estates & Professional Services accounts for 23% of Nominal GVA in FY 2024-25.



- **Sector-wise Estimate** - 'Construction' sector is estimated to record a growth rate of 9.4% in FY 2024-25, followed by 8.9% growth rate in 'Public Administration, Defence & Other Services' sector.



- **Primary Sector:** Agriculture, Livestock, Forestry & Fishing and Mining & Quarrying
- **Secondary Sector:** Manufacturing, Electricity, Gas, Water supply & Other Utility Services and Construction
- **Tertiary Sector:** Trade, Hotels, Transport, Communication and Services related to Broadcasting, Financial, Real Estate & Professional Services and Public Administration, Defence & Other Services
- **PFCE Growth** - Private Final Consumption Expenditure (PFCE) has reported 7.2% growth rate during FY 2024-25 as compared to 5.6% growth rate in the previous financial year.
- **GFCF Expansion** - Gross Fixed Capital Formation (GFCF) has a measure of asset creation by the public and private sector, saw growth slowing to 7.1% in 2024-25 from 8.8% in 2023-24.
- **Growth of Primary Sector** - Primary Sector, has seen 4.4% growth rate as compared to growth rate of 2.7% observed in previous financial year.

What is the takeaway from the provisional estimate report?

- **Slow but Comparatively Better Growth** - The 6.5% growth in 2024-25, the slowest since the pandemic but the fastest among major economies.
- In a growth-scarce environment, post-COVID and despite the rising uncertainties due to political conflicts and trade tensions, India is holding up its growth numbers better than many advanced economies.
- **Robust Growth in Fourth Quarter** – The real GDP growth in Q4 of 2024-25 accelerated to 7.4%, the fastest quarterly growth in the year.
- But it was slower than the 8.4% seen in the fourth quarter of the previous financial year.
- **Main Drivers of Growth** - The construction sector returned to double-digit growth, and the agriculture sector posted a strong performance and these are also two major employment drivers.
- **Decline in Manufacturing** - The manufacturing sector grew at just 4.8%, down from 11.3% in Q4 of the previous year.
- **Major Role of Taxes** - The GDP growth rate of 7.4% was achieved in large part due to a 12.7% growth in net taxes.
- This bump in tax collections provided a statistical boost without which growth in actual economic activity would have come in at around 6.8%.

What lies ahead?

- To keep pace with the country's growing requirements and achieve a 'Viksit Bharat' by 2047, the growth must be held to a higher standard in line with its aspirations.
- As the Economic Survey points out, Viksit Bharat by 2047 requires "sustained economic growth of close to 8% every year for at least a decade.

8.2 Revision of GDP Base Year

Why in the News?

Ministry of Statistics and Programme Implementation, is in the process of revising the "base year" for the calculation of Gross Domestic Product (GDP).

What is the need for revising the base year?

- **Reference Point** - The GDP is the central metric to assess the annual economic growth or the overall size of an economy and the 'base year' refers to the year that works as a starting point for calculations.
- **Accurate Economic Measurement** – Revision of base year provides a more accurate picture of the "real" economic growth, which is the economic growth after removing the effect of inflation.
- **Understanding the Growth** – It also provides a more accurate understanding of how the real economy is growing.
- **Better Policy Making** - An accurate reporting, in turn, is an essential requirement both for policymakers as well as all the other economic agents (from large business firms to budding entrepreneurs).
- **Reflecting the Changes in Economy** – The base year revision captures the changes in the way India's economy functions – new industries can be included and outdated ones removed from the calculations.
- India started off as a predominantly agrarian economy, but today, most of the GDP (around 55%) comes from the so-called "services" sector while agriculture etc. contribute less than 20%.
- **Informal Sector Workforce Estimation** - Since the 1993-94 series, the CSO started using the work force estimates from the results of Employment and Unemployment Surveys of National Sample Survey Organisation (NSSO), which are conducted once in every five years.
- As a result, since 1999, the base year has been changed every five years (until 2015).
- This practice was also in line with the recommendation of the National Statistical Commission that all economic indices should be "rebased" at least once in every five years.

GDP measures the current market value of all final goods and services produced within a country in a given period of time. At present, the base year is 2011-12 and this is used to find the real growth rate of an economy.

Previous Base Year Revisions

- The first set of estimates of national income (GDP) for India was compiled by the “National Income Committee”, under the chairmanship of PC Mahalanobis in 1949.
- The first and final reports of national income by this committee were brought out in 1951 and 1954 respectively.
- The base year of national accounts have been **revised on 7 different occasions**:
 - From 1948-49 to 1960-61 in August 1967;
 - From 1960-61 to 1970-71 in January 1978;
 - From 1970-71 to 1980-81 in February 1988;
 - From 1980-81 to 1993-94 in February 1999;
 - From 1993-94 to 1999-2000 in January 2006;
 - From 1999-2000 to 2004-05 in January 2010; and
 - From 2004-05 to 2011-12 on January 30, 2015.
- The revision slated for 2026 will be the eighth such.
 - The new base year for GDP calculations will be 2022-23 and the revised series of data will be released on February 27, 2026.
 - The base year for Index of Industrial Production (IIP) will also be revised to 2022-23 while the base year for Consumer Price Index, which is used to assess the rate of inflation faced by consumers, will be revised to 2023-24.
- Revisions in base year and the broader updates in the methodology of estimating the GDP go together.

What are the challenges in revision base year?

- **Qualities of Survey Data** - In 2017, It was announced that a new GDP series will be released with 2017-18 as the new base year and the results of Consumer Expenditure Survey (CES) as well as the Periodic Labour Force Survey were to be used.
- However, both the surveys ran into trouble with the government itself raising data quality issues.
- **Key Policy Led-Disruptions** –Government’s decision such as to demonetise 86% of India’s currency base in November 2016 as well as the introduction of a Goods and Services Tax regime (replacing multiple indirect taxes) in July 2017 affects the economic measurement and projections.
- India’s GDP growth rate registered a sharp deceleration starting 2017-18, falling from more than 8% in 2016-17 to less than 4% in 2019-20.
- **COVID Pandemic Impact**- Since the start of 2020, the Covid pandemic-induced disruptions have meant that neither 2020 nor the years immediately after it could be treated as “normal” years.
- **Data Gaps** – Delay in conducting censuses affect the accurate evaluation of economic data and their validation.
- **Controversies** - Although it is true that each revision improved the estimation of India’s GDP, yet the last revision in 2015 created a lot of controversy that dented India’s global standing.

Till 1993, the workforce estimates for the unorganised sector were obtained from the Population Census conducted decennially in the years ending with 1.

What lies ahead?

- The new series will also come at a time when India will be on the verge of becoming the third-largest economy after the US and China (in nominal GDP terms).
- That, in turn, means global investors and analysts are likely to scrutinize the results very carefully.
- Accuracy of the new series will be central not just for the fortunes of billions of dollars of investor money but also for the credibility of India’s data and its usefulness for domestic policymaking.

8.3 Reduction of Poverty in India

Why in news?

Recently, World Bank updated its extreme poverty threshold to \$3/day (2021 prices) from \$2.15/day (2017 prices) to account for global inflation and released a revised estimate on India’s poverty rate.

What is the World Bank's International Poverty Line (IPL)?

- **International Poverty Line (IPL)** – The World Bank introduced the International Poverty Line (IPL) in 1990 to enable cross-country comparisons using Purchasing Power Parity (PPP).
- According to world bank the poverty line is defined as the minimum level of spending required to meet basic needs like food, clothing, and shelter.
- **Purpose of the IPL** – The IPL adjusts for price level differences between countries using PPP.
- Initially IPL was set at \$1/day (1985 PPP), revised over the years with inflation and updated PPPs.

What changes were made in poverty line?

- **Updated IPL** – It improved measurement of consumption, particularly food and non-food items.
- The integration of **2021 purchasing power parity (PPP) estimates**.
- The poverty rates were categorized into three based on income levels.
- **Extreme Poverty (Low-Income Countries)** – Raised from \$2.15 to \$3/day.
- **Lower-Middle-Income Countries (LMIC)** – Raised from \$3.65 to \$4.20/day.
- **Upper-Middle-Income Countries (UMIC)** – Raised from \$6.85 to \$8.40/day.
- **Reason for revision** – It reflects updated price data, improved consumption surveys, and changes in national poverty lines.
- It also provides a more accurate and stringent measure of poverty.
- **Impact of revision globally** – The global poverty rate for 2022 **increased from 9% to 10.5%**.
- Additional 125 million people worldwide classified as poor under the new threshold.

How has India's poverty rate changed under new methodology?

- **Reduction of extreme poverty** (\$3/day) – India's extreme poverty fell from **27.1%** in 2011–12 to **5.3%** in 2022–23.
- The absolute number of people in extreme poverty dropped from 344.47 million to 75.24 million during this period.
- This implies nearly 270 million Indians were lifted out of extreme poverty in the past decade.
- **LMIC category (\$4.20/day)** – India's poverty rate fell to **23.9% in 2022–23**, down from 57.7% in 2011–12.
- In absolute numbers, those below LMIC poverty line dropped from 732.48 million to 342.32 million.
- **Rural and Urban Poverty Gap** – LMIC poverty in Rural areas fell from 69% to 32.5%, urban from 43.5% to 17.2%.
- The gap declined from 25 to 15 percentage points, with a 7% annual fall.
- The NITI Aayog has estimated that India's population living in multidimensional poverty fell to 11.28 % in 2022-23 from 29.17 % in 2013-14.

World Bank's multidimensional poverty index (MPI), non-monetary poverty in India declined from 53.8 % in 2005-06 to 15.5 % in 2022-23.

Year	Poverty Line (PPP/day)	Poverty Rate	People Below Poverty Line
2011–12	\$2.15 (2017)	16.22%	~205.9 million
2011–12	\$3.00 (2021)	27.12%	~344.47 million
2022–23	\$2.15 (2017)	2.35%	~33.6 million
2022–23	\$3.00 (2021)	5.25%	~75.2 million

What led to the significant drop in poverty in India?

- **Improved household consumption data** – Recent Household Consumption Expenditure Survey (HCES) 2023–24 showed higher household spending due to better design and inclusion of subsidised items.
- **Welfare and subsidy schemes** – Free foodgrains and government welfare schemes boosted basic consumption and reduced poverty.

- **Strong rural consumption** – Rural poverty fell sharply, and the rural-urban poverty gap narrowed due to targeted rural programs.
- **Economic growth over the decade** – Steady GDP growth improved incomes and created opportunities, helping people rise above poverty lines.
- **Methodological updates and adjustments** – New PPP-based global poverty lines provided more accurate and favourable comparisons for India.
- **Frequent and transparent data publication** – Regular surveys post-COVID improved tracking and reliability of poverty estimates.

What lies ahead?

- The data affirms India's success in reducing extreme poverty by effective implementation of welfare schemes and inclusive growth policies.
- Updated metrics support better-targeted poverty alleviation programs.
- It Can aid in refining the National Multidimensional Poverty Index.
- India's poverty reduction achievements may bolster global development narratives.

Quick Facts

The Household Consumption Expenditure Survey (HCES) 2023–24

- **HCES** – It is designed to collect information on consumption and expenditure of the households on goods and services.
- **Nodal Ministry** - Ministry of Statistics & Programme Implementation.
- In the latest Household Consumption Expenditure Survey India adopted **Modified Mixed Recall Period (MMRP)** method, replacing the outdated Uniform Reference Period (URP).
- In 2011–12, applying MMRP the poverty rate fell from **22.9% to 16.22%**, even under the **older \$2.15 poverty line**.
- In 2022–23, poverty under the **new \$3.00 line** stood at **5.25%**, while under the older \$2.15 line it dropped further to **2.35%**.

To know more about this, click [here](#)

AGRICULTURE

8.4 Cotton Production in India

Why in the News?

Cotton production has declined in the last decade.

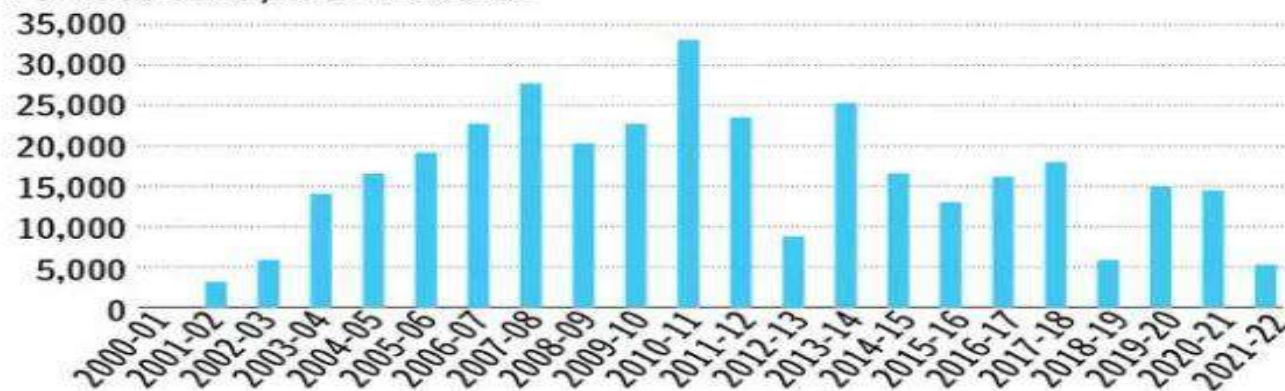
What are the benefits of introduction of Bt cotton in India?

- **Bt Cotton** – It is “genetically modified for resistance to bollworms”, was introduced in India in 2002, and has commanded over 95 % of India's cotton cultivation area by 2014.
- **2nd Largest Producer** – Adoption of Bt Cotton made, India the world's second-largest cotton producer and top exporter, while halving insecticide use and doubling yields.
- **Increase in Yield** - Between 2002 and 2016, the Yields soared from an average of 8.4 kg per hectare to 77.9 kg per ha.
- **Livelihood Sector** - The cotton sector, which supports 60 lakh farmers and supplies raw material to the textile industry, provides livelihood opportunities for over 10 crore people directly or indirectly.
- **Production Cost Reduction** - The yield surge, coupled with “reduced pesticide usage”, led to lower input costs and enhanced farmer incomes.

Cotton tales

Total cost savings due to Bt cotton moves lower

₹ cr at constant prices of 2011-12



China overtakes India as top cotton producer

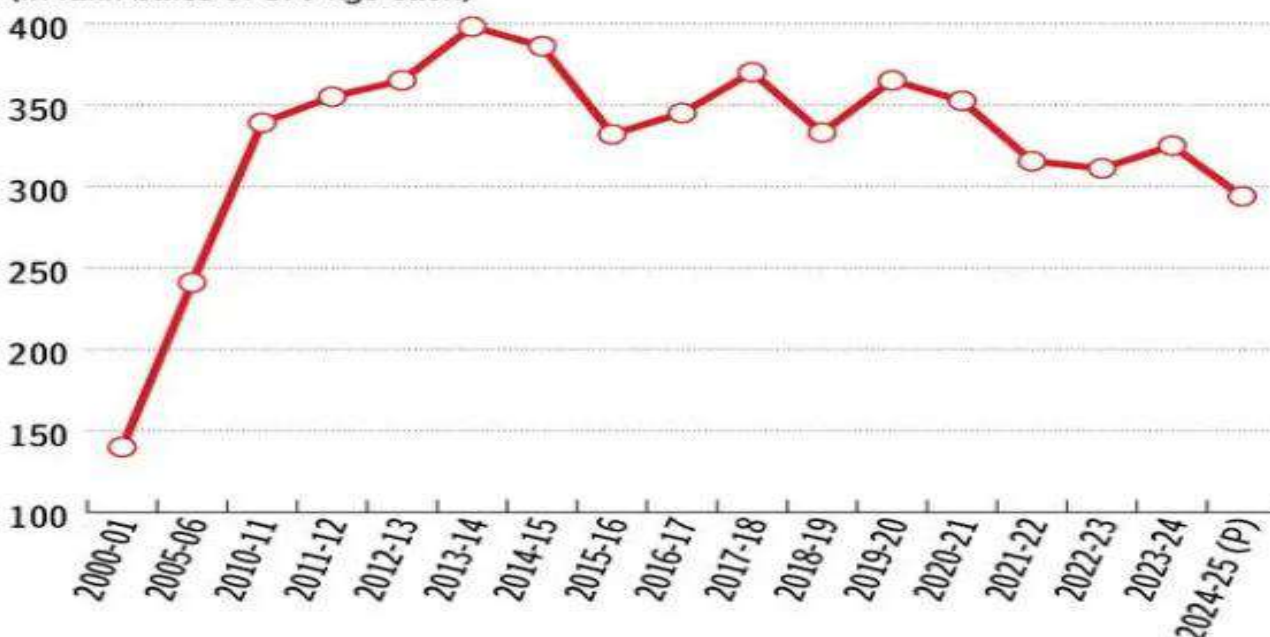
Countries	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
World	27.00	25.98	26.26	23.96	25.24	25.10	24.58
India	6.29	5.66	6.21	5.99	5.29	5.72	5.50
China	5.89	6.04	5.80	5.91	5.73	5.98	5.60
US	4.56	4.00	4.34	3.18	3.82	3.15	2.63
Brazil	2.00	2.78	3.00	2.36	2.55	3.27	3.56
Pakistan	1.80	1.67	1.46	0.96	1.27	0.84	1.35

What are the reasons for the declining in cotton production?

- India's Cotton production has been on a declining path since the peak of 398 lb (lb; 1 lb=170 kg), in 2013-14 and reaching in the 2024-25 marketing year (October-September) to just over 294 lakh bales.

Cotton production declines despite Bt cotton adoption

(in lakh bales of 170 kgs each)



- **Stagnant Yields** - In recent years, yields have stagnated and even declined, from 566 kg/ha in 2013-14 to about 436 kg/ha by 2023-24.
- At this level, India has the lowest yield levels among the top-5 cotton-producing countries in the world.
- **Increasing Cost of Production** - Though the Bt cotton reduced the use of insecticide, the fertilizer usage has increased over the years from 90 kg/ha to 200 kg/ha.
- **Increasing Pest Resistance** – Development of resistance in bollworms, particularly the pink bollworm is causing stagnation in productivity.
- The estimated loss from pink bollworm alone is equivalent to 13.2 lakh bales, valued at ₹3,900 crores annually.
- **Secondary Pest Pressure** - The rise of secondary pests like jassids and thrips has necessitated increased insecticide use in some areas, counteracting the initial pesticide reduction benefits.

What lies ahead?

- The long-term sustainability of Bt cotton is being questioned citing environmental impacts on biodiversity and soil health, and socio-economic implications like income disparity and reduced human labour usage.
- Research and development can be made for novel GM solutions, particularly those with stacked traits to address pest resistance and adapt to climate change.
- Informed policy discourse on GM cotton and comprehensive support for farmers is needed.
- A focus on High-Density Planting Systems and Integrated Pest Management is suggested to bridge yield gaps and manage emerging challenges effectively.

INDUSTRIES, INFRASTRUCTURE & INVESTMENTS

8.5 India's Energy Strategy

Why in the News?

Recently Union Energy Minister held meeting on energy reforms and infrastructure.

What is the energy strategy of India?

- India's energy demand is expected to grow two and a half times by 2047 and 25% of incremental global demand set to come from India.
- **Diversification of Sources & Suppliers** – India is actively diversifying its energy sources among renewable and fossil fuels and suppliers to enhance energy security and reduce reliance on fossil fuels.
- India increased the number of its crude oil suppliers from 27 countries in 2006-07 to 39 in 2021-22, adding new suppliers like Columbia, Russia, Libya, Gabon, Equatorial Guinea etc.
- **Expansion of Domestic Production** – Government has aimed covering one million square kilometres by 2030 to unlock 42 billion tonnes of oil and oil-equivalent gas.
- **Transition to Renewables** - India is heavily investing in renewable energy as a key component of its energy strategy, aiming for a 50% share of non-fossil fuel sources by 2030 and net-zero emissions by 2070.
- **Affordability** - Fuel prices in India have been kept stable through excise cuts, insulating citizens from volatility seen in neighbouring countries.
- Despite global LPG prices rising by 58%, Pradhan Mantri Ujjwala Yojana (PMUY) beneficiaries pay Rs. 553 per cylinder, supported by targeted subsidies and compensation to oil companies.

India is now the third largest energy and oil consumer, fourth-largest refiner, and fourth-largest LNG importer globally.

What are the recent initiatives to promote energy sector?

- **Reduction of 'No-Go' areas** - India has cleared 1 million square kilometers of its 3.5 million square kilometers of sedimentary basin for oil and gas exploration with 99% reduction in 'No-Go' areas in India's Exclusive Economic Zone.

- **Open Acreage Licensing Policy (OALP)** – It allows investors to select and propose blocks for oil and gas exploration based on available data, without waiting for a formal government bid round.
- **Attractive Pricing Incentives** - The revised gas pricing mechanism, linking prices to 10% of the Indian crude basket and offering a 20% premium for new wells, has enhanced gas availability for city gas networks and industrial usage.
- The Indian crude basket is a derived blend comprising sour grade (Oman and Dubai average) and sweet grade (Brent Dated) crude oil, processed in domestic refineries, with the current ratio standing at 78.50:21.50.
- **Revenue Sharing Contracts** - To reduce costs and accelerate monetisation, new revenue-sharing contracts allow shared infrastructure among Exploration and Production (E&P) players.
- **Exploration of Basins** - National Seismic Programme, Mission Anveshan, airborne gravity gradiometry (AGG) surveys, and continental shelf mapping have expanded exploration in frontier basins such as the Andamans, the Mahanadi, and the Cauvery.
 - **National Seismic Programme (NSP)** – It is to appraise sedimentary basins for hydrocarbon resources.
 - **Mission Anveshan** – It is to incentivize seismic surveys for mapping oil and gas deposits in India's sedimentary basins.
 - **Airborne gravity gradiometry (AGG)** – It measures the changes in the Earth's gravitational field as an aircraft flies over an area, providing detailed information about subsurface geological structures.
- **Unlocking Marginal Fields** - Discovered small fields (DSF) fields now operate under simplified contracts with minimal compliance burdens, unlocking marginal fields across basins.
- **Unified Pipeline Tariffs** - This aims to create a uniform pricing mechanism for transporting natural gas across the National Gas Grid (NGGS).
- This means that the cost of transporting gas will be the same regardless of the distance, location, or pipeline involved.
- **Collaborations with Global Majors** - ONGC's partnership with British Petroleum Inc. (BP) is projected to boost output from Mumbai High by 44% for oil and 89% for gas.
- **Attracting International Investors** - A data centre at the University of Houston now facilitates access to India's exploration datasets for international investors.
- **Digital Mapping of Assets** – Though PM Gati Shakti, the Ministry of Petroleum and Natural Gas has digitally mapped over one lakh assets and pipelines.
- **Synergy Across Ministries** - Integration with the National Master Plan ensures real-time project visibility and synergy across ministries.

What are the recent progresses in India's energy sector?

- **Expansion of Upstream Activities** - In the upstream oil and gas sector, India's exploration acreage has doubled from 8% in 2021 to 16% in 2025.
- **Expansion in Downstream Infrastructure** - India now operates 24,000 kilometres of product pipelines, nearly 96,000 retail outlets, and has significantly strengthened its strategic reserves and LPG storage.
- **Increase in Natural Gas Production** - It has increased steadily from 28.7 billion cubic metre (BCM) in 2020-21 to 36.4 BCM in 2023-24, with further growth projected.
- **Widening City Gas Network** – It has grown from 55 geographic areas in 2014 to 307 in 2025, with piped natural gas (PNG) connections up from 25 lakh to 1.5 crore.
- India's natural gas pipeline network now spans over 25,000 km and it targets 33,000 km by 2030.
- **New Discoveries in Basins** - The Oil and Natural Gas Corporation Limited (ONGC) and Oil India have together made over 25 hydrocarbon discoveries across the Mumbai Offshore, Cambay, Mahanadi, and Assam basins in the last four years.
- Noteworthy among these are the Suryamani and Vajramani wells on the west coast offshore and the Utkal and Konark fields on the east coast deep waters.
- **Increase in Reserves** - These discoveries add over 75 MMtoe (million metric tonnes of oil equivalent) and 2,700 MMSCM (million metric standard cubic metres) of gas to India's reserves.

What is the status of India's green strategy?

- **Ethanol Blending** - Biofuels have emerged as a cornerstone of India's green strategy and the Ethanol blending in petrol has surged from 1.5% in 2013 to 19.7% in 2025.
- This has saved 1.26 lakh crore in foreign exchange, reduced emissions by 643 lakh MT, and paid Rs. 1.79 lakh crore to distillers and over Rs. 1 lakh crore to farmers.
- **Feedstock Diversification** – The allowed feedstocks for biofuels production have been expanded ranging from molasses to maize to a robust ethanol ecosystem.
- **SATAT Initiative** - Sustainable Alternative Towards Affordable Transportation (SATAT) initiative has commissioned over 100 compressed biogas (CBG) plants and aims for a 5% CBG blending mandate by 2028.
- **Green Hydrogen** – It has been given a massive thrust with 8.62 lakh tonnes of production and 3,000 MW of electrolyser tenders awarded.
 - Numaligarh Refinery Limited (NRL)'s green hydrogen unit in Assam is poised to become a first in the northeast.
- **Hybrid Leases** - Oilfields (Regulation and Development) Amendment Act 2024 has enabled hybrid leases, allowing renewables alongside hydrocarbons.

What lies ahead?

- Energy is not just a commodity but catalyst for sovereignty, security and sustainable development.
- Potential global disruptions in energy supply chain due to the changing geo political set up needs to be taken in to account to strengthen the energy supply.
- Energy diplomacy relationships need to be balanced among Russia, the US, and Gulf nations, ensuring stable supplies despite global tensions.

8.6 Sustainable Textile Industry

Why in the News?

World Environment Day is observed annually on June 5.

What are the sustainability challenges faced by India's textile industry?

- **Geopolitical Tensions** – Trade restrictions, trade wars, and conflicts negatively affect the global textile trade, impacting Indian manufacturers.
- **Fragmented Supply Chains** – The textile value chain in India, from raw material sourcing to final product, is highly fragmented.
 - Cotton is grown in Gujarat, Maharashtra, Madhya Pradesh, Andhra Pradesh and Rajasthan, but 45 % of spindles are installed in Tamil Nadu alone.
- The fragmented nature of the supply chain makes it difficult to coordinate logistics, leading to longer lead times, higher transportation costs, and potential disruptions.
- **Product Price Volatility** – Unprecedented volatility in cotton prices, both domestically and internationally, has been a major concern.
- **Evolving Consumer Demands** – Consumers are increasingly aware of the environmental impact of their choices and are demanding sustainable and eco-friendly textiles like organic cotton, recycled polyester, and Tencel.
- In this evolving landscape, to achieve a market competitive edge businesses should explore beyond financial goals, as adaptability, purpose-led innovation, and resilience are also essential.

How does regenerative farming help India's textile industry?

- Regenerative farming, also known as regenerative agriculture, is a holistic approach to food and farming systems that aims to restore and enhance the health of soils, ecosystems, and communities.
- **Viable Model** - In India, regenerative (regen) farming is a viable model amidst concerns of raw material sourcing, climate change, land degradation, and soil erosion.
- **Growth Tracking** - Real-time data sharing is enabled for growth tracking and transparency.
- **Integrated Model** - This ecosystem leads to a business model where farmers remain connected with certification bodies, manufacturers, and global market brands.

- **Better Risk Management and Stable Income** – It provides higher yields, improved climate resilience, reduced reliance on chemical fertilizers, and more cost-effective inputs.
- **Tackles Business Concerns** – The method helps in achieving rural engagement, multi-stakeholder collaborations, and even breaking gender stereotypes in farming.
- **Supply Chain Enhancement** - It can also enhance traceability, sustainability compliance, and product quality assurance across the supply chain.



Government Initiatives on Regen Farming

- Regen farming practices are already under way in India, with the Ministry of Agriculture and Farmers Welfare considering approximately over one million hectares of farmland for further pilot projects in the coming years.
- Farmers are equipped with digital resource-based training on regen farming practices.
- In Aurangabad, Maharashtra, over 6,000 farmers have joined the Regenerative Cotton Program, which has already shown positive impacts.

How do traceability solution benefit textile sector?

- **Traceability** - It is the ability to trace all processes from procurement of raw materials to production, consumption and disposal to clarify "when and where the product was produced by whom."
- Robust AI and tech-driven traceability solutions are the next big strategies that the Indian textile sector can adopt.

- **Ensure Product Credibility** - Traceable supply chains have a strong potential to ensure product credibility across all stages- sourcing, production, and distribution.
- Over 37% consumers in the 2023 Consumer Circularity Survey identified sustainability and traceability as important criteria in their purchases.
- **Strengthens Authenticity and Accountability** - Traceability has already transformed from the logistical tracking of a product to delivering a narrative of authenticity and brand accountability.
- **Meeting International Criteria** - The EU also emphasises transparency and traceability in the textile industry through international frameworks to protect consumer and environmental concerns.
- **Expanding Market Presence** - With the concessions for textiles addressed by the India-U.K. FTA, traceability solutions can help industry players leverage sustainability stories and thereby expand their market presence.

How does product circularity help textile industry?

- Product circularity, a key aspect of the circular economy, focuses on extending the lifespan of products and recovering or repurposing them at the end of their useful life.
- **Reducing Waste** – Factory waste can be reengineered for newer designs and eventually returned to the soil after a longer product lifecycle.
- **Competitive Edge** – A well-functioning circular economy can lead to product innovation, generating more jobs, and an economic competitive edge.
- **Sustainability** – With the circularity model, India can therefore reduce its reliance on unused raw materials and build a better, self-reliant, and globally relevant system for generations
- **Longer Life Cycle of Product** – In circularity model, Product designs evolve from recyclability to also having a longer lifecycle.

What lies ahead?

- The textile industry is projected to grow to \$350 billion by 2030 and could add 35 million new jobs.
- For India to establish its global trade authority, the cultivation, sourcing, and manufacturing practices must be re-examined with a sustainable lens.
- Concepts such as regenerative farming, traceability solutions, and product circularity are becoming the operational standards and core manufacturing actions in the industry.
- As the sixth-largest exporter of textiles globally, adopting these practices would help the textile industry in strengthening its leadership.

8.7 Semiconductor Special Economic Zone

Why in the News?

Recently government has relaxed the key rules related to Special Economic Zones (SEZs) to further encourage the domestic manufacture of semiconductors and electronics.

What are special economic zones?

- **Special Economic Zones** - A designated duty-free enclave to be treated as a territory outside the customs territory of India for the purpose of authorised operations in the SEZ.
- **Objectives**
 - Generation of additional economic activity
 - Promotion of exports of goods and services
 - Promotion of investment from domestic and foreign sources
 - Creation of employment opportunities
 - Development of infrastructure facilities
- **Statuses** - Special Economic Zones (SEZs) Policy was announced in April 2000 and Special Economic Zones Act, was passed by Parliament in May, 2005.

*India was one of the first in Asia to recognize the effectiveness of the **Export Processing Zone (EPZ) model** in promoting exports, with Asia's first EPZ set up in Kandla in 1965.*

Features of SEZ

- No licence required for import.
- Manufacturing or service activities allowed.
- The Units are only required to achieve Positive Net Foreign Exchange to be calculated cumulatively for a period of five years from the commencement of production.
- Domestic sales subject to full customs duty and import policy in force.
- Full freedom for subcontracting.
- No routine examination by customs authorities of export/import cargo.
- SEZ Developers /Co-Developers and Units enjoy Direct Tax and Indirect Tax benefits as prescribed in the SEZs Act, 2005.

- **Existing SEZ** – There are 276 SEZ are operation across the country as on 31 st January, 2025.
- **Approval mechanism for setting up SEZ** - The developer submits the proposal for establishment of SEZ to the concerned State Government.
- The State Government has to forward the proposal with its recommendation within 45 days from the date of receipt of such proposal to the Board of Approval.
- **Administrative set up** - The functioning of the SEZs is governed by a three-tier administrative set up.
 - **Board of Approval** – It is the apex body and is headed by the Secretary, Department of Commerce.
 - **Approval Committee at the Zone level** - It deals with approval of units in the SEZs and other related issues.
 - Each Zone is headed by a Development Commissioner, who is ex-officio chairperson of the Approval Committee.
- Once an SEZ has been approved by the Board of Approval and Central Government has notified the area of the SEZ, units are allowed to be set up in the SEZ.
- **Recent Changes** - An SEZ set up exclusively for the manufacturing of semiconductors or electronic components will require a minimum contiguous land area of only 10 hectares, reduced from the earlier requirement of 50 hectares.
- Board of Approval for SEZs has been approved to relax the condition requiring SEZ land to be encumbrance-free in cases where it is mortgaged or leased to the Central or State Government or their authorized agencies.

What are the significances of establishing SEZ for semiconductors?

- India is set to launch its first domestically produced semiconductor chip by the end of 2025, using 28 to 90 nanometre technology.
- As of May 2025, six chip fabrication units are under development, marking a major step forward in the country's semiconductor mission, which was initiated in 2022.
- **Heart of Electronics** - Semiconductors lie at the heart of an increasingly electronic society, with AI and machine learning being the latest in a long trend of increased digitisation and automation.
- **Boost high-tech manufacturing** – Special zones with relaxed norms and rules will facilitate setting up semiconductor manufacturing industries.
- This makes it feasible for more companies, including MSMEs and startups, to enter the sector, fostering competition and innovation
- **Spur growth of semiconductor manufacturing ecosystem** – Semiconductor SEZ will bring all subsidiary, allied industries under a single complex, thus improving the product supply chain in semiconductor industry.
- **Attract Investments** - By setting up SEZs specifically for semiconductors, India aims to attract both domestic and foreign investments
- **Creates high skilled jobs** – It will create high skilled jobs in semiconductor design, research and manufacturing.
- **Meeting Domestic Needs** - India's semiconductor demand, currently at \$45-50 billion, is expected to reach \$100-110 billion by 2030.

According to the Semiconductor Industry Association, China accounted for about 35% of all semiconductors manufactured in the world in 2021.

- SEZ for semiconductors will help in meeting this requirement and reduce import dependency on semiconductors.

What lies ahead?

- The recent changes are significant step towards boosting the domestic semiconductor ecosystem.
- Human skill set on semiconductor needs to be upgraded to provide adequate human capital to the sector.
- New specialized courses on semiconductor manufacturing can be created.
- Public Private Partnerships can be encouraged to support private investments in creating SEZs.

9. ENVIRONMENT

9.1 Kerala Seeks to Amend Wildlife Protection Act

Why in news?

Recently, Kerala has urged the Centre to amend the Wildlife (Protection) Act, 1972 to allow selective culling of wild animals entering human habitats due to rising human-wildlife conflicts, crop damage, and ineffective current control measures.

Wildlife (Protection) Act, 1972

- **Comprehensive Legal Framework** – It provides the legal foundation for the protection of wild animals, birds, and plants across India, and prohibits their hunting, capture, and trade.
- **Creation of Protected Areas** – The Act empowers the government to declare areas as wildlife sanctuaries, national parks, conservation reserves, and community reserves.
- **Schedules for Protection** – Species are classified under six Schedules; Schedule I and II provide the highest level of protection, while Schedule V lists species that can be hunted (declared as vermin).
- **Regulation of Trade and Poaching** – It prohibits trade in wildlife products and includes stringent penalties for poaching and illegal trafficking of protected species.
- **Amendments for Better Enforcement** – Major amendments (e.g., in 2002, 2006, and 2022) have introduced stricter penalties, expanded definitions, and improved enforcement mechanisms.
- **Establishment of Authorities** – The Act provides for institutions like the **National Board for Wildlife (NBWL)** and **Wildlife Crime Control Bureau (WCCB)** to advise and enforce wildlife conservation measures.

Why does Kerala want to amend the Wildlife (Protection) Act, 1972?

- **Demand for limited culling powers** – Kerala seeks the Centre's approval to kill wild animals that pose a threat to human lives or crops, particularly in conflict-prone areas.
- The state proposes region- and season-specific exemptions rather than blanket culling.
- **Wild boars to be declared vermin** – Under Section 62 of the Act, Kerala wants wild boars declared vermin for a temporary period.
- This would allow easier elimination without requiring full wildlife protections during that window.
- **Removal of bonnet macaque from schedule I** – The bonnet macaque was moved to Schedule I in 2022, limiting the state's power to act.
- Kerala now wants it downgraded, allowing capture or relocation of crop-damaging monkeys without central clearance.
- **Failures of current control mechanisms** – Kerala's wild boar control scheme, which requires use of licensed shooters, has failed.
- Regulations such as checking whether a wild boar is pregnant before shooting are considered impractical by state officials.
- **Ineffectiveness of fencing and deterrents** – Despite using fencing, trenches, and other barriers, animals continue to invade human settlements, especially during crop seasons.

Once a species is declared "vermin", the species loses all legal protection, allowing unrestricted hunting.

What is the scale and impact of the human-wildlife conflict in Kerala?

- **Rising human casualties** – Between 2016–17 and January 2025, 919 deaths and 8,967 injuries occurred due to wildlife attacks in Kerala.
- This illustrates a severe threat to public safety.
- **Conflict hotspots identified** – Out of 941 local bodies, 273 have been designated human-wildlife conflict hotspots.
- These are mainly in forested or fringe areas.
- **Range of problematic species** – Key animals responsible for conflict include elephants, tigers, leopards, wild boars, bison, bonnet macaques, and peafowl.
 - Elephants and big cats are life-threatening.
 - Monkeys and peafowl, while not deadly, cause economic loss by destroying crops.
- **Agricultural abandonment** – Repeated raids by monkeys and wild pigs have led farmers to abandon cultivation in some areas, impacting rural livelihoods and food security.

What are the causes of rising human-wildlife conflict in Kerala?

- **Habitat degradation** – Deforestation and declining habitat quality are forcing wild animals to move into human-inhabited zones, escalating conflict.
- **Increased wildlife populations** – There has been a population boom in certain species, especially wild boars and monkeys, leading to frequent raids into villages.
- **Grazing pressure from domestic animals** – Grazing of livestock inside forests competes with wildlife for resources and increases chances of direct encounters.
- **Cropping pattern shifts** – Farmers are growing commercial and fruit crops that attract wildlife, such as bananas and jackfruit, making farmlands more vulnerable.
- **Legal and bureaucratic constraints** – The Wildlife Act requires detailed justification before any animal can be killed. Even in emergencies, wildlife wardens must prove that capture or relocation is impossible.
- Courts have also **barred district magistrates** from invoking general nuisance laws to eliminate wild animals.

What lies ahead?

- Union Government could consider amending the Wildlife (Protection) Act, 1972, especially regarding emergency culling provisions for specific species.
- Bonnet macaques might be removed from Schedule I, and wild boars temporarily declared vermin under Section 62, allowing more flexible local control measures.
- It could set a precedent for other human-wildlife conflict-prone states to demand similar legal relaxations.
- Crafting a framework that allows limited culling without weakening wildlife protection laws or conservation ethics.

9.2 Dhole Conservation Breeding Programme

Why in news?

Recently, the Indira Gandhi Zoological Park announced the successful birth of 14 dhole puppies, showcased a thriving breeding effort for this endangered species.

What is the dhole conservation breeding programme?

- **Dhole conservation breeding programme** – It is a **captive breeding and release program focused** on increasing the population of the Asiatic Wild Dog (dhole).
- It aims to mitigate threats like **inbreeding and habitat loss**, and to improve understanding of the species for better conservation efforts.
- The first dedicated conservation breeding facility for dholes in India was established in 2014.
- **Location** – Indira Gandhi Zoological Park (IGZP), Visakhapatnam, Andhra Pradesh
- **Implemented by** – Indira Gandhi Zoological Park (IGZP) and supported by Central Zoo Authority (CZA).
- **Research and technical support** - Wildlife Institute of India (WII), Dehradun and LACONES, Hyderabad

- **Partner zoos for genetic exchange:**
 - Nehru Zoological Park (Hyderabad)
 - Arignar Anna Zoological Park (Vandalur)
 - Sri Venkateswara Zoological Park (Tirupati)
- **Main objectives of the programme**
 - Breed endangered dholes in captivity & Maintain a healthy gene pool
 - Understand its behaviour and social dynamics
 - Generate data for scientific research
 - Support potential future reintroductions into protected habitats

Dhole (Asiatic Wild Dog)

- **Scientific Name** – *Cuon alpinus*
- **Common Names** – Dhole, Asiatic Wild Dog, Indian Wild Dog
- **Physical Features** – Rusty-red coat, bushy black-tipped tail. Slim, agile body with long legs.
- **Habitat** – It is found in forests, grasslands, and scrublands and it prefers **densely vegetated regions** with access to water.
- In India it is found in Western Ghats, Eastern Ghats, central India, northeast, and Himalayas.
- **Conservation Status**
 - **IUCN Status** – Endangered
 - **Indian Wildlife Protection Act** – Schedule II
- **Major Threats** – Habitat loss due to deforestation and human encroachment, decline in prey species, disease transmission from domestic dogs.



What is the methodology involved in breeding?

- **Careful pair selection** – Potential breeding pairs are identified based on health, age, and compatibility.
- **Gradual introduction** – Once deemed compatible, pairs are moved into a shared enclosure (day kraal) for natural mating over 3–5 days.
- **Simulated natural habitat** – Breeding areas are designed to mimic wild habitats with trees, dens, water pools, and space for natural behaviours.
- **Low-interference monitoring** – Pregnant females and new mothers are left undisturbed and caretakers observe from a distance to minimize stress.
- **Monitoring and documentation** – Each dhole are tagged, and records such as health, breeding status, and behaviour are maintained in studbooks for long-term genetic tracking and population management.

What are the positive outcomes of the programme?

- Conservation breeding centre at Visakhapatnam Zoo has successfully bred over 40 dholes, including 16 pups and it is recognised as a national centre for dhole conservation
- It provides a captive safety net for a declining wild species and led and contributed crucial insights into dhole social and reproductive biology.
- It encourages research into lesser-known carnivores and provide valuable insights on Dhole conservation across India.
- It educates zookeepers and researchers through observation and shows the potential of well-managed conservation breeding.

*Indira Gandhi Zoological Park has been formally recognised by the Central Zoo Authority as **India's flagship conservation breeding centre for Asiatic wild dogs.***

What are the other major challenges encountered?

- **Limited founder population** – The breeding programme started with a very small number of wild-caught dholes, leading to a restricted genetic base, which risks inbreeding and reduces long-term viability.
- **Genetic bottlenecks** – Due to the low genetic diversity, there's an increased risk of inherited health problems and poor reproductive success, making it difficult to build a strong, diverse captive population.
- **Unpredictable breeding behaviour** – Dholes have complex social hierarchies, and successful mating often depends on stable pack dynamics.
- **Stress and handling issues** – Dholes are highly alert and fidgety, making it difficult to handle them for medical care or tagging.
- Physical restraint causes stress, so veterinarians rely on non-invasive techniques like blowpipes and remote monitoring.
- **Lack of awareness and research gaps** – There is limited scientific data on dhole behaviour, reproductive biology, and disease management.

What lies ahead?

- Developing a genetically strong and behaviourally stable captive population
- It serves as a referral and knowledge hub for dhole conservation in India
- Expanding collaboration across more zoos and wildlife centres.
- Preparing for eventual reintroduction into suitable protected habitats

10. SCIENCE & TECHNOLOGY

10.1 Technofeudalism

Why in the News?

Recently, the removal of purchased contents from digital libraries across various digital platforms like Sony, google books stirred debates on technofeudalism.

What is technofeudalism?

- **Technofeudalism** – It is a digital form of feudalism that is propelled by the humongous power of tech platforms and algorithms.
- **Digital Landlords** – In the world of Techno-feudalism, corporations act as digital landlords, renting things that users once believed they owned.
- **Ownership of Digital Space** – Big Tech firms, like Amazon, Google, Facebook, and Apple, have moved beyond being mere market participants and they now act as owners of the digital spaces where most economic activities occur.
- **Terms of Service Restrictions** - While physical goods follow a 'first-sale doctrine' allowing buyers to resell, digital goods, on the contrary, are constrained by terms of service.
- **Physical vs Digital Ownership** - Most of these platforms work under a licensing model, meaning users 'pay for accesses and not ownership.
- **Subscription Models** - Digital ownership has branched out into subscription models that essentially want consumers to rent, renew, and repeat their engagement.
- It is being increasingly applied, ranging from creative software to car features.
- **Recurring Revenue Model** – The subscription-based model generates revenue by charging customers a recurring fee that is processed at regular intervals.
- **Provisional Ownership** – In the technofeudal system, the ownership on digital goods is only provisional and can't be transferred or inherited.
- **Monetization of Platforms** - Tech tycoons are accumulating wealth through platform ownership and not through traditional capital investment and risk-taking.

First sale doctrine is a legal standard that accords one the right to resell or gift physical items.

Comparison: Feudalism vs. Technofeudalism		
Aspect	Medieval Feudalism	Technofeudalism
Resource Controlled	Land	Digital platforms, data, cloud
Ruling Class	Nobles, lords	Tech company owners, platform operators
Subjects	Serfs, peasants	Users, consumers, digital workers
Value Extraction	Agricultural labour, taxes	Data, attention, digital rents
Power Structure	Hereditary, local	Corporate, global
Autonomy	Limited by lord's rules	Limited by platform algorithms/rules

What are the impacts of technofeudalism?

- This feudalism dominates the global markets, labour, and even the private lives of people.
- **Breaking the Foundation of Capitalism** - Monopolistic dominance by tech giants is breaking the foundational structures of capitalism, such as competition, private property rights, and open access.
- **Concentration of Economic Power** - It centralises economic power among a few digital platform owners.
 - Several Big Tech companies, including Apple, Microsoft, and Alphabet, have market capitalizations exceeding the GDP of many countries.
- **Controlling Human Behaviour** - Digital lords can use their platforms to monitor, predict, and even manipulate human behaviour.
- **Extension of Subscription** - Subscription models have entered other domains such as printers and cars beyond the digital space.
 - **Example** - Companies like HP and Brother now offer monthly plans that can deactivate cartridges if the user cancels.
- **Infringe on Customer Rights** - These practices sparked debates about consumer rights and the ethics of charging extra for accessing existing hardware capabilities.
- **Loss of Contents** - In case any of the platforms shut down, in all likelihood, one's purchases will vanish into thin air.
- By contrast, physical books and cards retain value and can be used for a lifetime.
- **Monopolistic Dominance**- Tech giant companies do not simply compete in markets and in essence, they are the markets that are dictating terms for both consumers and producers.
- **Energy Crisis** – The streaming culture of data, audio, video consumes lot of energy than the traditional purchase model where data is kept in the local space/physical storage format (DVD/Hard drive/PDF).

In traditional capitalism, ownership and control were distributed among entrepreneurs, shareholders, and business owners.

What lies ahead?

- State policies need to be crafted to meet the emerging trend of technofeudalism and balance the power among state, private and people.
- Clear policies on the ownership of digital contents is need of the hour to prevent the exploitation of users by the tech giants.
- In the realm of subscription-based model, consumer rights of the users need to be protected by appropriate state interventions.
- Educating citizens about digital rights, privacy, and the workings of digital platforms is crucial.
- Open-source and community-driven platforms offer practical pathways to challenge the dominance of tech giants by shifting power, ownership, and control back to users, developers, and local communities.
