

MONTHLY

EPIC!

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

AN EXCLUSIVE CURRENT AFFAIRS MAGAZINE FOR

PRELIMS + MAINS

PREPARATION

September 2023

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Congratulations

Celebrating our CSE 2022 Topper's Remarkable Achievement!

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8 Selections
in Top 10

64 Selections
in Top 100

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

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


GARIMA LOHIA
AIR 2

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

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

Smriti Mishra
AIR 4, CSE 2022



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

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Mains: Focus Article

G20 Leaders' Summit and Outcomes

News: The 18th G20 Summit was held in New Delhi under India's Presidency.

What are the major outcomes of G20 Summit?

• **African Union (AU) added as a permanent member of G20**

○ **Geopolitical Significance**

- G20 becomes **more representative** with the inclusion of 55-member African Union.
- It will add to **role of the Global South** within the group and check the disproportionate influence of G7.
- It **reinforced the image of India as the Voice of Global South** as India lobbied hard to include AU.
- It has **provided fresh momentum** to India's relationship with African nations.

○ **Geo-economic Significance**

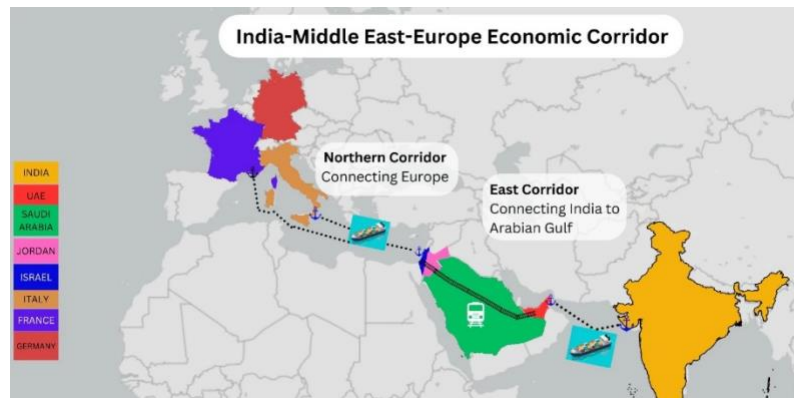
- Africa may **emerge as the next global growth hub** with enhanced engagement with G20 nations.
- Africa is **plush with natural resources**. It adds salience to Africa's role in ensuring global growth in the coming decades.

○ **Challenges**

- The **divide between developing** (Global South) and **developed** (Global North) **nations may become sharper** making it difficult to reach consensus in future. The ideological divide on issues like climate action, climate finance may become starker.

• **Launch of India-Middle East-Europe Corridor (IMEC)**

- The India-Middle East-Europe corridor aims at establishing **railway and sea connectivity** between **Europe, Middle East and Asia**. The project includes India, the UAE, Saudi Arabia, the European Union, France, Italy, Germany and the US. The Corridor is part of the **Partnership for Global Infrastructure Investment (PGII)** which is a collaborative effort by **G7 nations to fund infrastructure projects in developing nations**.



Source: India Today. Route of the proposed India-Middle East-Europe Corridor.

○ **Geo-Political Significance**

- The Corridor will act as counter to China's Belt and Road Initiative and debt trap diplomacy.
- It will counter the influence of China-Russia axis within G20.
- It will support geopolitical stability in Middle East and reduce turbulence in the region with greater economic integration.

○ **Geo-Economic Significance**

- Improved connectivity and economic integration will improve prosperity in the region.
- IMEC will help **deal with lack of infrastructure** and **act as green and digital bridge across continents**.

○ Possible Challenges

- Implementation of the project on ground will be challenging.
- The Corridor will require massive finance. Slow-down in the global economy may lead to resource crunch.
- China will force participating countries for push-back as it has already invested massive funds through BRI.

• Launch of Global Biofuel Alliance (GBA)

- Global Biofuels Alliance has been launched by **India, Brazil and the US**, which together account for **85% of global Ethanol Production**.

- It will be an international platform for sharing best practices, **promoting sustainable biofuel development** and enhancing its application.

○ Significance

- The transfer of technologies and mobilisation of international climate funds through the Alliance will help member countries move faster in the compressed biogas sector and third generation ethanol plant capacities.
- **Brazil has achieved E-85** (85% blending of biofuel with petrol). Indian and other countries can learn from the experience of Brazil through this platform by adopting their technology.
- According to **International Energy Agency (IEA)** global **biofuel production needs to be tripled by 2030** to put the world's energy systems on track to **achieve net zero by 2050**. GBA will enhance the production and consumption of biofuels which will help in reduction of global Warming.
- Use of Biofuels will help in decarbonization of transportation sector.
- Increased proportion of Biofuels will reduce dependence on OPEC nations.

○ Challenges

- The US has traditionally shared its technology only with allies (and not partners). Technology secrecy may hamper the achievement of objectives.
- China is expected to create hurdles for future expansion of the membership as the group has presence of the US.
- India's policies (like restrictions on trade in Biofuels) may create challenges in development of global biofuels market.
- The Alliance may face challenges related to sustainable financing of projects. Possibility of recession/slow-down in the US and resource crunch in global institutions like World Bank, IMF may pose funding challenges.

• Launch of One Future Alliance and Creation of a Global Digital Public Infrastructure Repository

- One Future Alliance is a voluntary initiative aimed at **building capacity, provide technical assistance and adequate funding support** for implementing **digital public infrastructure** in low- and middle-

WHAT IS THE BUZZ ALL ABOUT	
<p>WHAT ARE BIOFUELS?</p> <p>➤ Combustible liquids or gas derived from plants, grains, farm residue, algae or animal and food wastes are called biofuels</p> <p>WHEN DID BIOFUEL MAKE ITS DEBUT?</p> <p>➤ In 1890 when Rudolph Diesel, who lived in Paris and invented the engine bearing his name, used vegetable oils to run internal combustion engines for agriculture</p> <p>WHICH ARE THE COMMON BIOFUELS?</p> <p>➤ Biodiesel, ethanol and biogas or compressed biogas</p> <p>HOW ARE BIOFUELS MANUFACTURED?</p> <p>➤ In special 'refineries' categorised according to feedstocks: First-generation (1G) units process sugar crops and grain starch. Second-generation (2G) process non-edible plants, woody biomass or farm residues and wastes. Third generation (3G) bio-</p>	<p>fuels are made from algae and microbes</p> <p>WHY USE BIOFUELS?</p> <p>➤ Sustainable source of energy found in all regions of the world. Helps reduce vehicular emission, raise farmer income and dependence on imported oil for countries like India</p> <p>WHO ARE THE TOP BIOFUEL PRODUCERS?</p> <p>➤ International Energy Agency data pegs the US and Brazil as the world's top ethanol producers in 2022 with output of 57.5 and 35.6 billion litres, respectively. Europe was the top biodiesel producer with 17.7 billion litres, followed by 14.5 billion litres in the US. Indonesia was the other major biodiesel producer with output of 9.3 billion litres</p> <p>HOW MUCH BIOFUEL DOES INDIA PRODUCE?</p> <p>➤ Over 3 billion litres of ethanol</p>
<p>WHICH BIOFUELS ARE USED IN INDIA?</p> <p>➤ Mainly ethanol for blending petrol, some biodiesel and compressed biogas (CBG) for boosting city gas networks. Homegrown bio-ATF, also called sustainable aviation fuel, has been successfully tested in commercial passenger flights</p> <p>WHEN DID INDIA START THE BIOFUELS PROGRAMME?</p> <p>➤ The National Biofuels Policy was launched in 2009. It was revised in 2022 to advance the 20% ethanol blending of petrol by five years to 2025. The 10% blending target was achieved 5 months ahead of schedule in June 2022. SATAT scheme launched in 2018 to build 5,000 CBG plants for production of 15 million tonne of gas per annum by 2023-24</p>	

income countries. A voluntary framework for the development, deployment and governance of Digital Public Infrastructure (DPI) has been unanimously accepted by all G20 member countries.

○ Significance

- Digital Public Infrastructure (DPI) can be powerful mechanism for **financial inclusion and economic development** for the countries of global southern economies. It will help increase productivity and enhance capital output ratio.
- The adoption of **India Stack and UPI** would boost fintech, entrepreneurship and existing businesses and enhance India's leadership role in the global south economies.

○ Challenges

- Developing countries may lack investments to fund the digital public infrastructure.
- A data protection framework is necessary to prevent 'tech colonization'.

● Progress on Climate Change

- The G20 leaders agreed to pursue **tripling renewable energy capacity globally by 2030**.
- They accepted the need to **phase-down unabated coal power**.
- However, the group did not provide any plan to amend existing policies and targets to achieve the target of ramping of renewables. G20 estimated that US\$ 4 trillion a year would be needed to pay for a green energy transition but **did not lay out any pathway to it**. G20 stopped short of setting major climate goals.

● New Delhi Leaders' Declaration

- **Russia-Ukraine War:** The Declaration has been hailed for reaching consensus on the language related to the tricky Russia-Ukraine War issue.

- The declaration said that today's era must not be of war.

- The leaders underscored that all States must act in a manner consistent with **the Purposes and Principles of the UN Charter** in its entirety.

- It also acknowledged the impact of the war on global food and energy

security, supply chains, macro-financial stability, inflation and growth.

- **Economic Growth:** The Declaration acknowledged the challenges faced by MSMEs. It welcomed the Jaipur call for action to help in integration of MSMEs in international trade.

- The leaders have also committed to **strengthen Multilateral Development Banks (MDBs)**, which was a key agenda for the Indian presidency.

- It endorsed the FSBs recommendations on regulation of crypto-assets.

- **Gender Equality:** The declaration reaffirmed that **gender equality is of fundamental importance**, and that investing in the empowerment of all women and girls, has a multiplier effect in implementing the 2030 Agenda.

Decisions that will resonate for a long time

G20 summits are held every year. But rarely is it that a single presidency is able to deliver a declaration that has the potential to alter and shape the trajectory of global development in its multiple dimensions. The Indian Presidency can take justifiable pride in doing so. Here are the seven big takeaways from the New Delhi Declaration that will reverberate for years to come, even if the actual shape they take is unclear at the moment:

DIGITAL PUBLIC INFRASTRUCTURE

The G20 has accepted the idea of digital public infrastructure as a "set of shared digital systems, built and leveraged by both the public and private sectors, based on secure and resilient infrastructure" that can "enable delivery of services at societal-scale". By accepting a G20 framework for DPI systems, welcoming India's quest to build a Global DPI repository and noting its efforts to set up the One Future Alliance, the Delhi Declaration gives the world a new template and India a global role in an area where it is far ahead of almost every other country.



MDB REFORM

Multilateral development banks, set up after the Second World War, needed reform. The World Bank is in the middle of expanding from ending extreme poverty and boosting shared prosperity to incorporating transboundary challenges, global public good, and most importantly climate. But how would these additional mandates be supported financially? The Indian Presidency, and the independent expert group set up under it, has delivered a road map for additional resource mobilisation through a variety of mechanisms, including additional funding from shareholders, balance sheet optimisation and private finance involvement. If implemented, this will reshape the architecture of global development.



CLIMATE

The G20 declaration set a target of global net-zero emissions by 2050. It identified the financial need to meet the climate challenge for developing countries — \$5.8-5.9 trillion in the pre-2030 period to implement their NDCs, and another \$4 trillion per year for their transition to clean energy technologies by 2030 to reach net-zero emissions by 2050.



CRYPTO

The Indian Presidency has put the issue of regulation of crypto assets at the forefront of the global agenda. Consistently articulating the position that this required a global rather than national approach, it has built on an IMF-FSB synthesis paper to push forward a road map "for the regulation, supervision and oversight of crypto-assets activities and markets, and of global stablecoin arrangements".



AI

The Indian Presidency has, for the first time, also brought artificial intelligence into the conversation at G20, and got members to agree on principles of "the protection of human rights, transparency and explainability, fairness, accountability, regulation, safety, appropriate human oversight, ethics, biases, privacy, and data protection" for the development and deployment of AI.



DISASTERS

The Indian Presidency institutionalised the Disaster Risk Reduction (DRR) Working Group, while the declaration has asked for progress on early warning and action by strengthening national capacity and finances; it has welcomed the Global Platform for DRR, and has reiterated commitment to the Sendai Framework. In an uncertain world, the only certainty is that disasters will increase. India has put the issue on the global agenda.



IMMEDIATE CHALLENGES

The Delhi Declaration has tackled two immediate challenges with medium-term implications. On Ukraine, it has simply offered a road map of how the great geopolitical divide of our times can be prevented from crippling global cooperation. On debt, by pushing forward the management of debt crises in four nations — Zambia, Ghana, Sri Lanka, and Ethiopia — the Indian Presidency has provided a road map for other such cases.

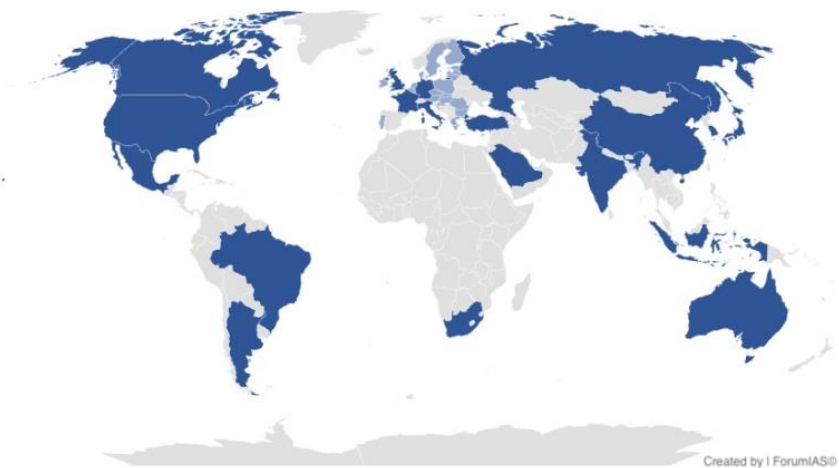


- **Terrorism:** The leaders condemned all forms of terrorism and committed to meet the needs of the Financial Action Task Force (FATF) and FATF Style Regional Bodies.
- **Green Development Pact for a Sustainable Future:** It stresses the need to implement clean, sustainable, just, affordable, and inclusive energy transitions.
 - One important element is the mention of the need to build reliable, diverse, responsible, and **sustainable value chains of critical minerals, semiconductors and related technologies.**
- **Multilateral Institutions for the 21st Century:** It called for managing debt vulnerabilities of low and middle-income countries and the start of exchange of tax-relevant information on crypto assets by 2027.
- **Technological Transformation:** This chapter contains elements of building digital public infrastructure, crypto-assets, and harnessing Artificial Intelligence (AI) responsibly.
 - On AI, the leaders agreed to pursue a **pro-innovation regulatory/governance approach** that maximizes the benefits and considers the risks associated with the use of AI.
 - It also talks about a comprehensive toolkit which is aimed at improving cyber education and cyber awareness for the protection and empowerment of children and youth.

What is the importance/significance of G-20?

• Geopolitical Significance

- G20 is more representative than groups like G7 which have traditionally ignored the interests of Global South. G20 has promoted more equitable distribution of power and provided a platform for developing nations to raise their concerns.
- G20 Summits have become a platform to bring countries with different ideologies, political systems and economic interests together.



G20 nations. The African Union has been added as the 21st member of the group.

It also provides an opportunity for leaders to hold bilateral meetings on the sidelines of Summits.

• Economic Significance

- Share of G20 countries in global economy has remained ~80%, while that of G7 countries has fallen from ~65% in 1990 to ~45% in 2020.
- G20 played a major role in responding to the 2008 Global Financial Crisis and 2010-11 Eurozone Debt Crisis.
- G20 countries suspended debt payments during the COVID-19 pandemic providing vital financial support to the indebted nations.
- The domain of G20 has gradually expanded, with the inclusion of Climate Change, sustainable development, money laundering, corruption, financial stability, humanitarian crisis, food security, gender equality etc. in the agenda of the G20. G20 nations pledged to vaccinate 70% of the world's population by mid-2022.

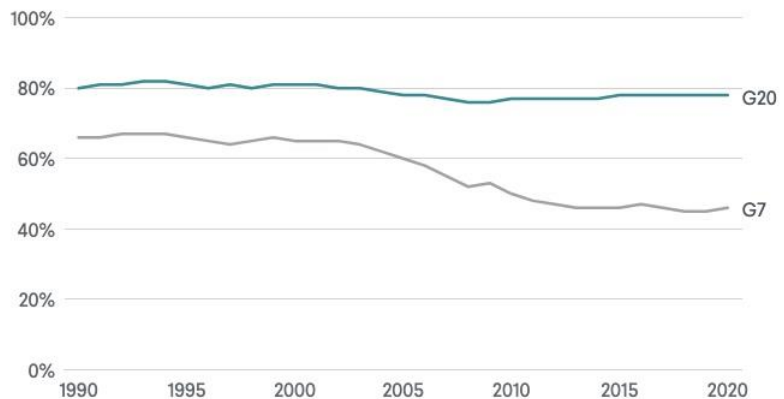
What are the Challenges faced by G-20?

• Structural Challenges

- G20 has **no permanent secretariat**. The agenda changes every year according to the priorities of the presiding nation. According to critics, G20 basically is an extension of the G7.
- The inclusion of AU has made the G20 more representative, yet a lot of poor countries, and Small Island Development States (SIDS) are not part of the G20.
- Member countries are **not legally bound** to implement the decisions made at G20 meetings e.g., the G20 countries had agreed to a set of guidelines for preventing the **financing of terrorism** but there has been **no mechanism to enforce compliance with these guidelines**. G20 declarations are not legally binding.

The G20's Share of the Global Economy

Share of global gross domestic product (GDP)



Note: Countries that are G20 members through the EU are excluded.

Source: World Bank.

• Geopolitical Challenges

- The rising tension between Russia/China and the West has threatened to divide the group into 2 blocs. The group may be rendered ineffective in future, if there is a lack of reconciliation.
- Decisions of G20 countries impact the smaller countries who are not part of the group e.g., the decision to end international financing for coal power plants adversely impacted small developing countries looking to expand their power generation capacity.

• Economic Challenges

- G-20 is facing a credibility crisis due to **deglobalisation and rising protectionism**. Countries around the world are choosing to be '**G-zero**' over the G7, G20, BRICS, P5 (UNSC Permanent Members) and others.
- Major developed economies along with China are facing slowdown due to various economic and geopolitical factors.
- In response to high inflation central banks across countries have raised interest rates which in turn have dampened economic activity further.

What should be the approach for G20 going ahead?

- The G20 must include **objectives, vision and mission statements**, a **permanent secretariat** and staff to oversee commitments and **ensure continuity in the agenda**.
- G20 can act as a bridge between the East and West. The global economic disruption caused by Western economic sanctions on Russia in global economic forums need initiatives from the countries like India, Indonesia and South Africa in G20. This will bridge out the differences.
- G20 should do more on climate action. It can act a platform to resolve the disputes between the developed and developing nations regarding climate action and climate finance.
- G20 nations should cooperate and collaborate with each other to formulate global regulatory standards on Data privacy, Artificial Intelligence, cryptocurrency and other emerging technologies.
- Public health and coordinated response to combat pandemics can also be taken up by the G20.

General Studies Paper I

1. Loss of Linguistic Diversity

News: Experts have expressed concerns over loss of linguistic diversity at a global level.

How is the linguistic diversity declining across the world?

- A mathematical model, forecasts that ~ **40% languages with fewer than 35,000 speakers** will become extinct within the next century.
- The **Index of Linguistic Diversity (ILD)** measures the quantitative trend of number of mother-tongue speakers. ILD has revealed a **20% global decline in linguistic diversity between 1970-2005**. Regionally, indigenous linguistic diversity has witnessed a 60% decline in the Americas, 30% drop in the Pacific region and 20% decline in Africa.
- A report by UNESCO (2018) highlighted that India is facing **potential extinction of 42 languages**. Majority of endangered languages are spoken by **indigenous tribal groups**.

UNESCO Classification of Endangered Languages

UNESCO provides a classification system in 'Atlas of Endangered languages' as:

Vulnerable: Most children speak the language, but it may be restricted to certain domains (e.g., home).

Definitely Endangered: Children no longer learn the language as a 'mother tongue' in the home.

Severely Endangered: Language is spoken by grandparents and older generations; while the parent generation may understand it, they do not speak it to children or among themselves.

Critically Endangered: the youngest speakers are grandparents and older, and they speak the language partially and infrequently.

Extinct: There are no speakers left.

What are the possible reasons behind loss of linguistic diversity?

- **Prevalence of Dominant Languages:** A growing number of people worldwide are shifting towards just a handful of **dominant languages**, at the expense of smaller ones. An increasingly interconnected global economy, digitalization of services, social media and absence of vernacular content has forced people away from their native languages. English has 340 million native speakers and 1.2 billion 2nd language speakers.
- **Migration:** Migrants have to adopt the language of their new home, in order to get integrated in the local society and to access social/economic benefits. The 2nd, 3rd and further generations of the migrants are gradually cut-off from their mother tongues.
- **Lack of Initiatives:** Speakers of endangered languages are electorally insignificant. There are limited incentives for private individuals or Governments to take initiatives to preserve the language.

What are the impacts of loss of linguistic diversity?

- **Loss of Heritage:** Extinction of language results in loss of associated cultural aspects like folklore, traditions, music, myths and legends which are part of collective heritage of the speaker community.
- **Loss of Traditional Knowledge:** A lot of traditional knowledge related to local ecology, crafts, local agricultural practices, traditional medicine, climate and other oral traditions. The knowledge is lost with the loss of language.
- **Loss of Identity:** The loss of collective heritage and traditional knowledge leads to loss of collective identity.
- Moreover, it has been scientifically acknowledged that imparting education in mother tongue has unique benefits and improves learning potential. The loss of mother tongue impacts the children negatively.

Extinction of languages thus results in reduction in cultural diversity and increased cultural homogenization.

How can linguistic diversity be preserved?

- The **Linguistic Society of America (LSA)** is making efforts to **study and document endangered languages**.

- They are creating **video and audio recordings**, and written records of these languages, along with translations. Such initiatives should be launched in India as well.
- **Communities should be mobilized** to preserve the languages e.g., community radios (with participation of community) can be used to deliver content in the endangered language like folk songs/poems, stories etc.
- **Technology and Social media** can be leveraged in raising awareness and creating content.
- **Non-Government sector** can be roped in to work along with Government initiatives like the **Scheme for Protection and Preservation of Endangered Languages (SPPEL)**.

Language Diversity Index (LDI)

It calculates the probability that **two randomly selected individuals** from a population will have **different mother tongues**. It ranges from **0** (everyone shares the same mother tongue) to **1** (no two individuals have the same mother tongue).

Countries with a **greater diversity** of mother tongues have a **higher LDI** e.g., the UK has an LDI of 0.139, compared to India's 0.930.

Lowest LDI: Haiti (0.0), Cuba (0.001), and Samoa (0.002).

Highest LDI: Papua Guinea (0.990), Vanuatu (0.972), and the Solomon Islands (0.965).

2. Women-led Climate Action








News: Climate Change disproportionately impacts women. Women's education and inclusion in climate change policy decision-making can help improve mitigation and adaptation outcomes.

How are women more vulnerable to Climate Change?

- In regions with **subsistence farming**, women and girls are the primary providers of food, water and fuel. Climate change causes resource scarcity, making these tasks increasingly difficult and dangerous. Hence, women and girls are often prevented from pursuing education and economic opportunities.
- Limited rights to land and property make **women more susceptible to displacement due to climate disasters**. A UNDP Policy Brief observes that **80% people displaced by Climate Change are women**. More than 70% of people who died in the 2004 Asian tsunami were women (Oxfam Report).
- Women displaced by disaster often **face increased risks** such as **sexual and gender-based violence** (SGBV), exploitation and trafficking.
- Displaced **women's adaptive capacities are often limited** due to socio-cultural norms, restricted livelihood options, lack of access to formalized safety nets and fewer possibilities to benefit from technologies and information.
- Limited access to healthcare can also impede women's access to life-saving health services, including reproductive and mental health services.
- Other impacts may include **increased hardship due to their lack of financial assets**. Lack of resources and freedom to move entraps women in areas with high climate and disaster risks.

How can investing in women help?

- Providing education and training to women can help them adapt to impacts of climate change e.g., SEWA teaches women sustainable farming in shifting climate patterns.
- It can help women to better manage water, energy and other resources. They can adopt sustainable practices for agriculture. This can improve adaptation and mitigation outcomes.
- Greater access to resources (land, finance) can strengthen livelihood opportunities for women. It can better equip them to rebuild their lives better post climate-disasters.
- Women representation at policy formulation level can add gender perspective into climate action policies and plans. A study has found that countries with higher levels of gender inequality usually see lower levels of climate action. It noted that improvements in gender equality contribute to climate resilience.

GENDER GAPS AROUND THE WORLD	CLIMATE CHANGE IMPACTS	IMPACTS EXACERBATE GENDER INEQUITIES
POVERTY OVER 50% OF THE 1.5 BILLION PEOPLE LIVING ON \$1 A DAY OR LESS ARE WOMEN (SOURCE: UNFPA)	CROP FAILURE 	Women experience increased agricultural work and overall household food production burden
WATER ON AVERAGE WOMEN AND CHILDREN SPEND 8 OR MORE HOURS PER DAY COLLECTING WATER (SOURCE: UN WOMEN)	FUEL SHORTAGE 	Many women in developing countries can spend between 2-9 hours a day collecting fuel and fodder, and performing cooking chores
GOVERNANCE GLOBALLY, WOMEN ARE 16.7% OF GOVERNMENT MINISTERS; 19.5% OF PARLIAMENTARIANS; AND 9% HEADS OF STATE (SOURCE: IPI)	WATER SCARCITY 	Increased burden on women walking further distances to access safe water, impacts the education and economic stability
FOOD WOMEN PRODUCE OVER 60% OF FOOD IN SOME COUNTRIES (SOURCE: FAO)	NATURAL DISASTER 	Women have a higher incidence of mortality in natural disasters; women can suffer from an increased threat of sexual violence
LITERACY TWO THIRDS OF THE 774 MILLION ILLITERATE ADULTS WORLDWIDE ARE WOMEN (SOURCE: UNSTATS)	DISEASE 	As caregivers women often experience an increased burden for caring for young, sick and elderly as well as lack of access to health care facilities
LAND WOMEN OWN JUST 2% OF THE WORLD'S LAND (SOURCE: UN WOMEN)	DISPLACEMENT  CONFLICT 	Forced migration could exacerbate women's vulnerability While men are more likely to be killed or injured in fighting, women suffer greatly from other consequences of conflict, such as rape, violence, anxiety and depression

COPYRIGHT (2012) - WOMEN'S ENVIRONMENT AND DEVELOPMENT ORGANIZATION (WEDO)

Source: Women's Environment and Development Organization. Existing Gender Gaps lead to disproportionate impact on women, which further exacerbates gender inequities.

3. Children from Voidable Marriage can inherit Parental Property: SC

News: The Supreme Court held that a child born out of a void or voidable marriage can inherit parents' share in a joint Hindu family property governed by the Mitakshara law.

What is Mitakshara law?

- 2 schools in Hindu law, **Mitakshara** and the **Dayabhaga** are concerned with the law of inheritance.
- **Mitakshara** school is practiced in all of India except in West Bengal and Assam. In this school, property is inherited by the successors (coparceners) only if they were born in the family of the property owners.
- **Dayabhaga** is mainly practiced in Assam and West Bengal. The property goes to the successors (coparceners) only when the property owner is dead. Under the **Dayabhaga**, a partition of the coparcenary property can be imposed by any adult coparcener whether male or female.
- Under **Mitakshara**, (before the 2005 amendment of the Hindu Succession Act), a female could not at all be a coparcener and was therefore not entitled to partition. But the 2005 amendment changed the status.

What did the Supreme Court say on inheritance for children born from void marriages?

- **Section 16 of the Hindu Marriage Act** grants **legitimacy** to children born from **void or voidable marriages**.
- The SC said that the intent of granting legitimacy to such children in the Hindu Marriage Act should also be reflected in the **Hindu Succession Act**, which governs inheritance.
- This is because children born from void(able) marriages come within the ambit of '**legitimate kinship**' and **cannot be regarded as illegitimate** by the Hindu Succession Act when it comes to inheritance.
- The SC also noted that after the enactment of the Hindu Succession (Amendment) Act, 2005, the share of a deceased person in a joint Hindu family governed by **Mitakshara** law **can be devolved to his heirs by testamentary or intestate succession**. Prior to the amendment, the devolution was only through survivorship. Besides, the amendment gave equal rights of succession to women as well as men.

General Studies Paper II

1. Fraternity in Indian Polity

News: Fraternity is one of the fundamental aspects of the Indian Constitution.

What is the concept of Fraternity and its Historic Evolution?

- Fraternity emphasizes the **emancipation and empowerment** of people in the political realm. Historically, it stands alongside liberty and equality as a cornerstone of liberal political philosophy.
- The concept can be traced back to Plato and ancient Greeks. The Greek term “*philia*” (love) denotes a strong desire to pursue wisdom and **making love and friendship more meaningful through sharing of knowledge**. The focus is on sharing. Aristotle **emphasized justice and friendship** (among citizens) within the “polis,” marking the birth of political fraternity.
- In the Middle Ages, **fraternity was linked with religion in Europe**. It gained political prominence during the French Revolution with the slogan “liberté, égalité, fraternité”.
- Fraternity was emphasized during India’s independence struggle, and it became a vital tenet of the Constitution.

Fraternity in the Constitution

Preamble: “We the people of India...EQUALITY of status and of opportunity and to promote among them all FRATERNITY assuring dignity of the individual and the unity and integrity of the Nation”.

Article 51A(e): to promote harmony and the spirit of common brotherhood amongst all people of India transcending religious, linguistic and regional or sectional diversities;

How important was Fraternity in India’s Independence?

- During India’s independence struggle and the subsequent rise of Constitutional democracy, the ideals of liberty, equality, and fraternity were central. They served as **guiding principles for a diverse Indian society transitioning to an independent republic**.
- Dr. Ambedkar stressed the inseparability of liberty, equality, and fraternity. He highlighted the importance of fraternity in India’s **diverse and divided society**.
- The framers of the Constitution of India were conscious of divided social hierarchies in India. They recognized the need to counter these divisions to maintain cohesion, and thus laid emphasis on fraternity.

What factors limit Fraternity in India?

- **Social Inequalities and Caste Divisions:** The social hierarchy based on caste is an antithesis to fraternity. There are fraternal ties within a caste group, but the inter-caste unity remains elusive. Caste system has worked a system of discrimination and denial of rights.
- **Religious Divide:** The periodic outburst of religious fundamentalism and communal riots prevent strong social bonding between communities.
- **Linguistic and Regional Divides:** Discrimination faced by migrants and language-based movements negatively impact fraternal ties among Indians. **Rising economic divide between States** (developing vs developed) can become a potential threat in future, if not addressed.

What should be done to further promote Fraternity in India?

- **Addressing Caste Dynamics:** For true political fraternity to emerge in India, **caste and its associated prejudices must be addressed**.
 - Caste and the idea of political fraternity cannot coexist, with one needing to make way for the other.

- **Role of Affirmative Actions:** The introduction of affirmative actions, like the reservation system, was aimed at building equality among varied social groups. This equality is essential to actualize fraternal relations in a society marked by structural hierarchies. However, it must be ensured that **the benefits reach those who need them the most.**
- **Politics of the Future:** As long as differences (caste, religion, region, language) remain the fundamental basis for political mobilization, true fraternity would be difficult to achieve. Future politics should be based on creating an equal and just society, with equitable access to opportunities and resources.

2. One Nation, One Election: Simultaneous Elections for Lok Sabha and State Assemblies

News: The Union Government has constituted a committee to analyse the feasibility of holding simultaneous elections for the Lok Sabha and the State Legislative Assemblies.

What is the proposal of One Nation, One Election (ONOE)?

- One Nation, One Election refers to the **idea of holding simultaneous elections for the Lok Sabha and the State Legislative Assemblies.** At present, the elections for various State Assemblies are staggered between two General Elections (for the Lok Sabha).
- Simultaneous elections for the Lok Sabha and State Assemblies were held in 1952, 1957, 1962 and 1967. However, the cycle was broken with **premature dissolution of some Legislative Assemblies** in 1968 and 1969. Lok Sabha was dissolved prematurely in December 1970 and elections were held in March 1971 (instead of scheduled in February 1972).

What are the arguments in favour of 'One Nation One Election'?

- **Financial Burden:** Simultaneous elections will reduce the financial burden on State Exchequer. The General Elections in 2014 cost INR 3,870 crore and Bihar State Elections (2015) cost INR 300 crore. The Election Commission has estimated cost of simultaneous elections to be INR 4,500 crore. Staggered elections cost much higher (excess of INR 10,000 crore).
- Similarly, simultaneous elections will **reduce expenditure by political parties** e.g., ~INR 55,000 crore were spent by political parties in 2019 General Elections. ~INR 600 crore were spent during Assembly elections in 5 States in March 2022 (UP, Punjab, Uttarakhand, Manipur, Goa). **Simultaneous elections will reduce the need to spend on campaigns multiple times between the General Election cycle.**
- **Money 'Power' in Electoral Politics:** High cost of campaigning associated with frequent and staggered elections forces political parties to raise large amount of funding. Simultaneous elections will **reduce the funding required by political parties.** Some experts argue this will reduce reliance of political parties on use of black money for raising political finance.
- **Code of Conduct:** Frequent invocation of Model Code of Conduct limits the development works and new announcements by Government(s). Development works can continue without break with joint elections.
- **Administrative Efficiency:** Frequent elections disrupt governance as the focus of administration shifts to conduct of elections. With simultaneous elections, Government machinery can focus on development work more efficiently.
- **Security:** Only 1 election every 5 years means that the armed police forces can focus on more pressing security issues instead of frequent deployment on election duties.
- **Populist Measures:** Frequent elections force the political parties to resort to populist measures for short-term gains. Simultaneous elections will reduce this tendency.
- **Voter Turnout:** Voter turnout is expected to increase, as voters can cast vote for both Lok Sabha and State Assembly together.

- **Social Harmony:** Often elections cause polarization on communal and caste lines which has a nationwide impact. Simultaneous elections will reduce these fault lines as political mobilization on religious and caste basis will be less frequent.

What are the arguments against 'One Nation One Election'?

- **Accountability:** Regular elections ensure that political parties engage with the electorate on a continuous basis. Electoral outcomes provide feedback to the parties. One election every 5 years may lead to autocratic tendencies in the Government.
- **Federalism:** Experts contend that in simultaneous elections, national issues may take precedence over local and regional (State) issues. This may impact regional political parties in a negative manner.
- **Electoral Outcomes:** Voters exercise their choice based on the issues affecting them. If national issues take precedence, voters may tend to choose the same party in both General and State Assembly elections. This may impact electoral outcomes, if the elections (General and State) were held separately. A report by the IDFC Institute observed that the winning party has 77% chance of victory if the Lok Sabha and Assembly elections are held together. However, only 61% voters will choose the same party if elections are held 6-months apart.

Simultaneous Elections: Maintaining Synchronization

- Simultaneous Elections have been recommended by the Election Commission (1983), Law Commission (170th Report, 1999) and the Parliamentary Standing Committee on Law and Justice (2015).
- The biggest hurdle is maintaining the cycle is premature dissolution (Parliament or State Assembly). Some solutions have been proposed to address.
- Coupling of 'vote of confidence' in an alternative government along with a 'vote of no-confidence' against the government in power. This approach can provide an immediate alternative should the Government in power fall, thus obviating need for fresh mid-term elections.
- To synchronize the State Assembly-General Elections at the start of the cycle, States can be divided into 2 sets. One set of States can have elections along with the General Elections, while other set of States can have elections after 30 months.

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What are the associated challenges?

- **Indecisive Mandate:** Premature dissolution/Hung Assembly of a Legislature may break the cycle as fresh elections must be held upon dissolution. A Constitutional or legal innovation would be required to address such situations (e.g., a run-off election or allowing minority government).
- **Syncing the Terms:** To introduce the ONOE system, duration of some State Assemblies would have to be extended and others to be curtailed. Reaching political consensus, especially for premature dissolution, would be difficult to achieve.
- **Amendments to the Constitution:** Implementing ONOE will require changes in Constitutional and Legal frameworks including Article 83, 85, 172, 174 and 356. The Amendments will require ratification by 50% States.
- **Logistical Challenge:** The Election Commission has to deploy ~30 Lakh EVMs and VVPAT machines to implement ONOE.

What should be the way forward on 'one nation one election'?

- The recommendations of the Committee should be thoroughly debated with regards to the implications as well as the measures it recommends to implement the system of joint elections. The proposal has merits but the concerns should be addressed through suitable measures.
- Several alternatives have been suggested to address the circumstances caused by hung mandates or premature dissolution. The decision on the proposal should be clearly thought through after taking into account of the impact on all stakeholders.
- The decision should be unanimous with all political parties on board, in true spirit of the democracy and the Constitution.

3. Reservation for Women in Legislatures

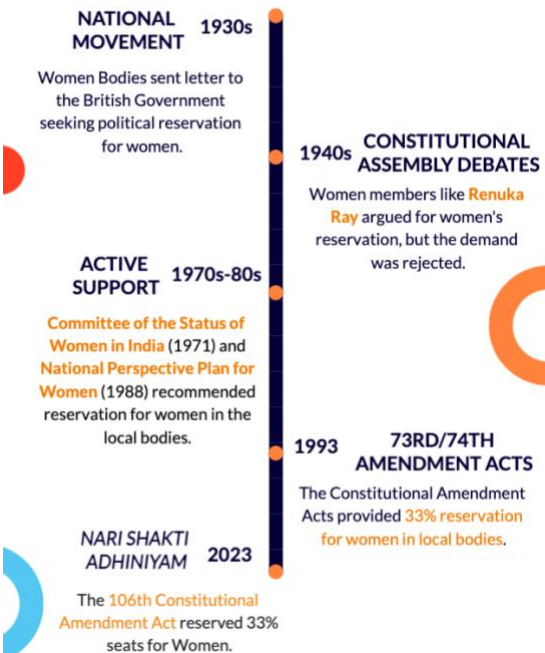
News: The Parliament has passed the 106th Constitutional Amendment Act reserving 33% seats for women in the Lok Sabha and State Legislative Assemblies.

What are the key provisions of the Act?

The salient provisions of the **Nari Shakti Adhiniyam 2023** are:

- **Reservation for Women:** The Act reserves **one-third of all seats for women** in the Lok Sabha, State Legislative Assemblies, and the Legislative Assembly of the National Capital Territory of Delhi. The reservation will also extend to the seats reserved for SCs and STs in Lok Sabha and State Legislative Assemblies.
- **Commencement of Reservation:** The reservation will be effective once the census has been conducted after the commencement of the Act. Based on census, delimitation will be undertaken to reserve seats for women.
- **Duration:** The reservation will be provided for a period of 15 years. However, the **duration of reservation can be extended by the Parliament** by law.
- **Rotation:** Seats reserved for women will be rotated after each delimitation, as determined by a law made by Parliament. (Read More on Women's Representation in Legislature).

Movement for Political Reservation for Women



What are the arguments in favour of the reservation for women?

- **Under-representation:** According to the Inter-Parliamentary Union (IPU) 'Women in Parliament' Report (2021), India ranks lower than 140 countries in terms of number of women in national legislatures. Current Lok Sabha has highest proportion of Women MPs (Lok Sabha) since Independence, but the share is still < 15%.
- **Focus on Gender issues:** According to UN Women, higher numbers of women in parliament generally contribute to stronger attention to women's issues. A study has pointed out that Panchayats headed by women tend to invest more in public goods closely linked to women's concerns.
- **Gender Equality:** Women's political participation is a fundamental prerequisite for gender equality and genuine democracy. Turnout of women voters has risen consistently. More political representation is the next logical step.
- **Accountability:** It facilitates women's direct engagement in public decision-making and is a means of ensuring better accountability to women.
- **Gender-sensitive Governance:** It helps in undertaking reforms that can help make all elected officials more effective at promoting gender equality in public policy and ensuring their implementation.

Political Empowerment of Women International Conventions

Human Right

- Universal Declaration of Human Rights, 1948 and The International Covenant on Civil and Political Rights, 1966 declare Political Participation as basic human right.

Eliminate Discrimination

- Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) adopted by the UNGA in 1979 calls for eliminating discrimination against women.
- Women must have equal rights to vote, hold public office and participate in policy making.

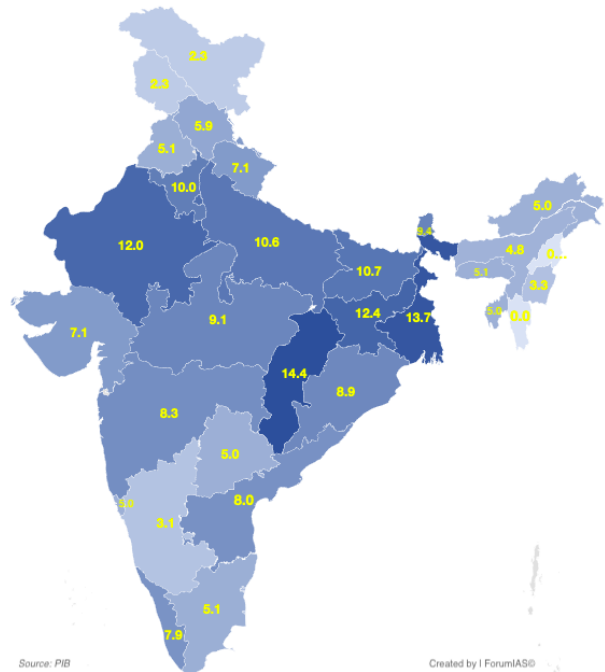
Several Global initiatives call for greater political participation of women.

Participation

- The 4th World Conference on Women (Beijing, 1995) considered 'Women in power and decision making' as one of the 12 critical areas in its Platform of Action.
- ECOSOC has endorsed a 30% target of women participation at decision-making levels (1995)

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- **De-Criminalization of Politics:** Only 11% women candidates faced serious criminal charges. The proportion is much higher for men. Rise of women in politics is expected to aid de-criminalization. It might also aid lowering crimes against women with gender-sensitive policies and policing.
- **Changing Stereotypes:** Improved representation of women will help in breaking gender stereotypes and patriarchal control of politics. Women are expected to get more powerful positions in leadership. (Read More).



Source: PIB

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Source: PIB. Percentage of Women Representatives in State Legislative Assemblies as on December 31, 2021. The proportion for Jammu and Kashmir/Ladakh is based on last elections held in 2014.

What are the arguments against reservation for women?

- **Women Representatives as Proxy:** Panchayats have witnessed the evolution of 'Sarpanch Patis' wherein male relatives (husbands, fathers, brothers, sons etc.) take important decisions, while women remain only as symbolic leaders. Similar phenomena may happen in the Parliament/State Legislatures with female relatives of sitting MPs/MLAs being elected.
- **Equality:** Reservation for women will be seen violating principles of equality and may perpetuate unequal status. It might be considered that women are getting elected because of reservation rather than merit. Women are not a homogeneous group like castes.
- **Choice of Voters:** Reservation of particular seats may limit the choice for the voters, with women candidate being pitted against each other in reserved seats. Rather, the political parties could have been mandated to field at least 33% women candidates in General and State Assembly elections.
- In addition, the Act has been criticized for **not providing reservation for women in the Rajya Sabha**, and the **delay in implementation** post census and delimitation.

What should be the approach going ahead?

- The reservation for women is a welcome development. However, the focus should be on **wider political reforms** including checking criminalization and the influence of black money.
- Women reservation should translate into **real change at the ground level**, and checking **day-to-day discrimination** and **crimes against women**. This requires a **social change** with **change in societal attitudes**. This should aid **improvement in women's participation across all domains** like higher education, economic participation, **leadership positions** in industry and academia etc. (Refer EPIC March 2023 (click) for On Women's Reservation in Parliament and State Legislatures and EPIC July 2022 (click) for Gender Representation in the Parliament).

4. Declaration of Assets by Judges and Judicial Accountability

News: There are no Constitutional or legal provisions that mandate declaration of assets by Judges.

What are the provisions related to declaration of assets by Public Officials?

- All public officials are obligated to submit an annual declaration of their assets.

- The terms of employment and the **Conduct Rules for Civil Servants** specify the **compulsory submission of annual property declarations** for their immovable assets.
- Other constitutional authorities, such as the Comptroller and Auditor General of India, adhere to their **Code of Ethics** by posting their most recent asset declarations on their website.
- Members of the **Council of Ministers** disclose their assets in accordance with the **Code of Conduct for Ministers** issued by the Ministry of Home Affairs.
- **Members of Parliament** are mandated to provide details of their **assets and liabilities** within 90 days of taking their oath of office.

What is the stand of the judiciary on declaration of assets by judges?

- There are no provisions related to **mandatory disclosure of assets** by the Judges of the Supreme Court or High Courts.
- In 1997, the Supreme Court adopted a resolution 'The **Restatement of Values of Judicial Life**'. It mandated every Judge of the SC and the HCs to **declare their assets and liabilities at the time of appointment** and at the beginning of **every year**.
- In August 2009, a full bench of the Supreme Court decided to disclose assets to the public by putting it on the website of the SC. However, the same bench made it a **voluntary provision** in September 2009.
- At present, only 55 sitting and former Judges have declared their assets (on the website). Only 5 High Court Judges have made the relevant information public, **indicating low compliance of the voluntary provision**.

Restatement of Values of Judicial Life, 1997

The Supreme Court had adopted the Charter in 1997. It has 16 points, the salient points include:

- The behaviour and conduct of members of the higher judiciary must **reaffirm the people's faith** in the impartiality of the judiciary. *Justice must not merely be done but it must also be seen to be done.*
- A Judge **should not contest the election** to any office of a club, society or other association.
- **Close association with individual members of the Bar**, particularly those who practice in the same court, shall be eschewed (avoided).
- A Judge should **not permit any member of his immediate family**, if a member of the Bar, **to appear before him** or even be associated in any manner with a cause to be dealt with by him.
- No member of his family, who is a member of the Bar, shall be permitted to use the residence in which the Judge actually resides or other facilities for professional work. **A Judge shall not hear and decide a matter in which a member of his family**, a close relation or a friend is concerned.
- A Judge shall not enter into public debate or express his views in public on political matters.
- A Judge shall not accept gifts or hospitality except from his family, close relations and friends.
- A Judge **shall not speculate in shares, stocks** or the like. A Judge **shall not hear and decide a matter in which a company in which he holds shares** is concerned unless he has disclosed his interest and no objection to his hearing and deciding the matter is raised.

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What were the salient provisions of Judicial Accountability Bill, 2010?

- The Bill had provisions to **enforce certain standards of conduct on judges**. Complaints and motions against judges could be made for **non-compliance with these standards** e.g., it prohibited hearing or deciding cases in which a relative or friend of the judge is concerned, **engaging in trade and speculation in securities**, entering into public debates on matters of politics or other matters which the judge concerned is likely to hear or decide and so on.
- Judges were to be required to **declare all their assets and liabilities**, including those of their spouse and dependents, within 30 days of taking an oath to enter office and every year thereafter.
- The Bill proposed to establish the **National Judicial Oversight Committee**, a Complaints Scrutiny Panel as well as an investigation committee. **Any person could have brought any complaint against a Judge** to the Oversight Committee. Frivolous complaints were to be penalized.

The Bill was passed by the Lok Sabha in 2012, but couldn't be passed in the Rajya Sabha.

What should be done going forward?

- A lot of concerns have been raised regarding functioning of the judiciary including **pendency of cases, quality of judgments** (including 'shocking' Judgments like groping a child without 'skin-to-skin contact with sexual intent' does not amount to the offence under the POCSO Act) and **general lack of accountability**.

- The Judiciary has given several progressive judgments in recent times requiring accountability from the Executive and Legislature. It's time the **judiciary holds itself to same standards**. As a beginning, the SC should clarify the extent of applicability of the RTI Act to the Judiciary.
- The **Judicial Accountability Bill should be revived**. To allay any fears regarding Government's interference, the **Judiciary should be extensively consulted** before finalizing the draft, so that **Judicial independence is not compromised**. (Refer EPIC June 2022 (click) for Judicial Accountability in India).

5. Expanding Social Security Cover in India

News: The extent of coverage of Social Security measures remains poor in India.

What is the extent of Social Security coverage in India?

- The Social Security Benefits under the **Code on Social Security** include:
 - Employees' Provident Fund Organisation (EPFO) for retirement pension, provident fund, life and disability insurance.
 - The Employees' State Insurance (ESI) for **healthcare and unemployment benefits**.
 - The National Pension System.
- According to the **Periodic Labour Force Survey** Annual Report 2021-22, ~53% of India's salaried workforce lacks social security benefits.
- Only 1.9% of the poorest 20% of workers enjoy any social security benefits. Only ~1.3% of active labour force members, who are gig workers, have access to social security.
- India's social security system is ranked very poorly, securing the **40th position out of 43 countries** in Mercer CFS's 2021 ranking.

What are the concerns with the existing social security benefits schemes?

- The social security schemes remain **under-funded** e.g., **The National Social Security Fund** for unorganized sector workers began with a corpus of INR 1,000 crore in 2011, intended for workers like weavers and rickshaw pullers. The Centre for Budget and Governance Accountability has estimated the fund requirement to be excess of INR 22,000 crore.
- A CAG report (2017) found that the entire INR 1,927 crore accumulated in the Fund remained unutilized since 2011.
- The **National Social Assistance Programme** was launched in 1990s to provide monthly pension to the elderly individuals. The Union Government's contribution to the scheme has remained INR 200 monthly since 2006, below the minimum wage. MGNREGA budget has been reduced as well.
- India's informal sector (91% of the workforce) is almost entirely uncovered under the social security measures.
 - In contrast, **Brazil's General Social Security Scheme** offers income for workers facing income loss from accidents, disabilities, death, medical leave, family duties, unemployment, or imprisonment. **Accessing benefits is easier in Brazil**.
- The existing social security framework for unorganised workers has become complex, with **overlapping areas of authority between the State and Centre**, and confusing definitions being used such as between a platform worker, an unorganised worker and someone who is self-employed.

What steps should be taken to improve India's Social Security Schemes?

- The **employer and employee contributions** within the EPFO for formal workers should be expanded.
- Informal workers who earn a decent income could contribute a part of their earnings. Informal enterprises should be persuaded to formalize and start making partial contribution towards social security.

- The Government can start contributing towards social security for the poor and the unemployed. The cost of providing social protection to the poorest 20% of the workforce would be INR 1.37 trillion (INR 1.37 lakh crore including those who are elderly, pregnant or disabled), ~0.69% of the GDP (2019-20).
- The e-Shram platform is one of the important measures taken for social security. However, it puts the onus of registration on informal workers, without any responsibility on the employer. Brining employers into the process would have led to more formalization. The provision for informal employers should be made mandatory.
- There is a need to **fund social security for India's large workforce**, beyond construction and gig workers. This includes a nationwide labor card and expanding successful schemes like the Building and Other Construction Workers Schemes to other categories of workers. Special attention is required for **female and migrant workers**.
- Existing schemes like the **Employees' Provident Fund (EPF)**, **Employees' State Insurance Scheme (ESI)**, and **National Social Assistance Programme (NSAP)** could be strengthened by **increasing budgetary support and extending coverage**.
- The administration of existing schemes should be simplified with clear demarcation of responsibilities of Union and State authorities, and simplifying the definitions and procedures.
- There is a need to **raise awareness about social security benefits among workers**. Organizations like the Self-Employed Women's Association, running worker facilitation centers, could receive funding to carry out campaigns, particularly for women.

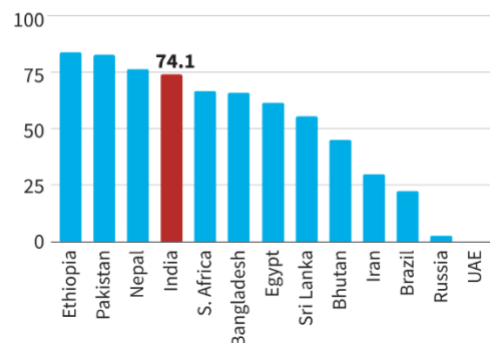
6. Addressing Malnutrition in India through Awareness and Outreach (Bemetara Model)

News: The State of Food Security and Nutrition in the World Report, 2023 has observed that the 74% of people in India can't afford a healthy diet. Addressing malnutrition remains a pressing challenge in India.

What are the key observations of the Report?

- India has the lowest cost of a healthy diet among BRICS and neighbouring countries. In India, a healthy diet costs 3.066 PPP dollars per person per day, the lowest among the countries considered.
- However, In India, **74% of the people are not able to afford a healthy diet**. India has been ranked 4th worst among the countries studied
- This is due to **rising food cost** and **stagnant incomes** e.g., meal costs in Mumbai increased by 65% in 5 years, while salaries/wages only grew by 28%-37%.

| The chart shows the share of the population that is unable to afford a healthy diet in 2021.



Source: The Hindu. 74% of Indians are unable to afford healthy diet. Only Ethiopia, Pakistan and Nepal fare poor than India.

What is nutrition security a challenge in India?

- **Affordability:** A vast majority of the poor people can't afford a healthy and balanced diet due to low-income levels. According to a global data repository, Indians consume 40% and 30% fewer vegetables and fruits respectively compared to global average. The consumption of millets, pulses, meats and dairy products is also low.
- **Government Initiatives:** The Government initiatives like Public Distribution System (PDS) are skewed towards food grains like wheat and rice. They do not provide wholesome nutrition.

- **Knowledge Gap:** Many individuals lack awareness regarding balanced diet. Pregnant and lactating women aren't aware of special nutritional requirements for themselves and the new-born babies. This results in high prevalence of stunting and wasting among Indian children, even among relatively well-off families.
- **Misconceptions:** Misbeliefs about food, combined with increased access to highly processed foods, hinder proper nutrition.
- **Inconsistent Counselling:** While various awareness programs exist, nutrition counselling hasn't been uniformly implemented across States.

State of Food Security and Nutrition Report

It is jointly prepared by the Food and Agriculture Organisation (FAO), International Fund for Agricultural Development (IFAD), United Nations Children's Fund (UNICEF), World Food Programme (WFP) and World Health Organisation (WHO). Its aim is to inform on progress towards **ending hunger, achieving food security and improving nutrition** and to provide an in-depth analysis of key challenges for achieving this goal in the context of the SDGs.

What steps have been taken in Bemetara to address malnutrition?

- Despite its agricultural richness and relative affluence, Bemetara (Chhattisgarh) has a high number of **Severe Acute Malnourished (SAM)** children. As of December 2022, there were 3,299 SAM children in Bemetara, which is comparable to tribal-dominated and naxal-affected Bastar district.
- The reason for high prevalence of acute malnutrition is not lack of access to food, but insufficient knowledge about proper feeding practices.
- **Potth Laika Abhiyan:** It is a **nutrition counseling program** in place in 72 most affected Anganwadi Centres (AWCs) within Bemetara. It operates with technical support from UNICEF. It involves **teaching parents about balanced diets, handwashing**, and dispelling myths. The counselling is provided in the **local language**.
 - Local leaders, including sarpanches and religious heads, have taken part in these counseling sessions.
 - Door-to-door visits by healthcare workers to monitor the progress of targeted children.
 - 53.8% of target children have witnessed improvement in the nutritional status within 9 months (December 2022 to July 2023).

What steps can be taken to ensure nutrition security in India?

- **Expand Nutrition Counselling:** Having been successful, the Bemetara model can be scaled-up and implemented across all States. The States should replicate the focused outreach like regular counselling, constant monitoring and the involvement of local leadership.
- **Training Field Staff:** Proper training in nutritional counselling is essential for field staff to effectively guide communities.
- **Food Initiatives:** The Union and State Governments must review their food security programmes. The programmes can be altered from the current food grain-centric interventions to a more nutritive support that includes millets. **Budgetary support** to initiatives like **ICDS** and **Mid-day Meal Scheme** must be improved.

Hidden Hunger

According to the IFPRI, Hidden hunger is a form of undernutrition that occurs when **intake and absorption of vitamins and minerals** (such as zinc, iodine, and iron) **are too low** to sustain good health and development. Factors that contribute to micronutrient deficiencies include **poor diet, increased micronutrient needs during certain life stages**, such as pregnancy and lactation, and **health conditions** such as diseases, infections, or parasites. According to the FAO, hidden hunger affects two billion people across the globe

7. Rising Cases of Student Suicides in India

News: More than 20 students have committed suicides in Kota this year. This indicates high pressure faced by students.

What is the status of student suicides in India?

- According to the Accidental Deaths and Suicides in India Report by the National Crime Records Bureau (NCRB), more than **13,000 students committed suicide in India in 2021** (1 suicide every 40 minute).
- According to the Ministry of Education, 122 students from IITs, NITs, Central Universities and other Central Institutions died by suicide over 2014-21. 68 students belonged to the SC, ST, or OBCs.

STUDENT SUICIDES OVER FIVE YEARS

YEAR	Total Student Suicides	Percent of male student suicides	Percent of female student suicides
2017	9,905	59.71%	47.56%
2018	10,159	52.85%	47.15%
2019	10,335	53.82%	46.17%
2020	12,526	55.62%	44.38%
2021	13,089	56.51%	43.49%

Source: Indian Express. Student suicides have risen by ~33% between 2017-2021.

What factors contribute to high rate of student suicides?

• Economic Factors

- Admission to IITs and top medical colleges is seen as a gateway to **financial freedom**. Hence the students are under immense pressure to clear the exam.
- Steep rise in cost of coaching classes have added **financial burden on parents**. When the students are unable to perform, they feel they have wasted parents' money and take extreme step.

Laws Related to Suicide

Section 309 of the IPC treated suicide as a criminal offence punishable with simple imprisonment for a term up to 1 year.

Mental Healthcare Act, 2017 has aimed to decriminalize attempt to suicide by offering rehabilitation instead of being tried for a crime.

However, Section 309 continues to be a part of the IPC.

• Social Factors

- Students face **high pressure from parents, relatives** (parental/family pressure) and friends (peer pressure) to excel in studies and get a good remunerative employment. In India, **academic performance solely is considered as indication of intelligence**. Many children are forced towards a particular career (medical or engineering) by parents, rather than their own choice.
- Strained relationships** with family members, friends, break-ups can **disturb emotional balance**, which some students find difficult to deal with. The problem becomes acute in the **absence of emotional support** especially in place like Kota where most students live in isolation. Breakdown of traditional large families into nuclear families has increased isolation and has **constricted the family support system**.
- Stigma associated with mental illness**, depression etc. acts as a **deterrent to seek counselling**.
- Rising instance of **cyber-bullying, addiction to social media** and associated detachment from the society have also contributed to suicides.
- Rising substance abuse** is another cause. According to NFHS-4, 22% of India's population over 18 years suffers from substance disorder like alcoholism, use of tobacco and drug abuse.

• Academic Factors

- High competition** (large number of aspirants for few seats) means that only few students can join an institution of their choice. Inability to get selected leads to loss of confidence and a **sense of failure**.
- Educational Institutions **lack focus on ensuring mental well-being of the students**. Students from marginalized communities face peer pressure if they are unable to perform. The existing mechanisms like preparatory courses are **unable to address their anxieties**.

What initiatives should be taken to reduce student suicides?

- **Improving employment opportunities** will reduce pressure on the students. It is also necessary to realize the demographic dividend.
- **Increasing subsidies to the education sector**, and providing **affordable student loans** can reduce the financial burden.
- Educational Institutions should start providing **extensive mental healthcare support**.
 - They must take steps to **break the stigma around mental healthcare** (or seeking counselling) through sensitization measures.
 - **Teachers must be trained to recognize and respond** to students' mental healthcare needs.
 - Mental well-being should be taught as a compulsory subject. Mental healthcare, meditation can be added in school curriculum as well.
 - 24x7 helplines should be available at the campus to deal with anxiety, depression-related issues.
- The Government should **increase expenditure of mental healthcare facilities and services**.
- There is a need to **review the 'competitive-exam-oriented' education and selection system**. Institutions should consider multiple selection criteria rather than performance in just single exam. Focus of school education should be on **overall personality development including sports** etc.
- **Parents and teachers should closely monitor the behaviour of their children**, especially the time spent online and on the social media. They should guide the children about constructive utilization of internet for educational and learning purposes. This can help check cyber-bullying as well.
- Adolescent students should be **sensitized about substance abuse** and its harmful effects to keep them away from harmful substances. They should be provided with rehab services in case of addiction.

Initiatives to Check Suicides

- **Mental Healthcare Act, 2017** aims to provide mental healthcare services for persons with mental illness.
- **KIRAN**: It is **24x7 toll-free helpline** launched by the **Ministry of Social Justice**. It provides support to people facing anxiety, stress, depression, suicidal thoughts and other mental health concerns.
- **Manodarpan Initiative**: It is an initiative of the **Ministry of Education** under Atmanirbhar Bharat Abhiyan. It provided **psychosocial support** to students, family members and teachers for their mental health and well-being during the times of COVID-19.
- **National Suicide Prevention Strategy**: It aims to formulate time-bound action plans and multi-sectoral collaborations to achieve **reduction in suicide mortality by 10% by 2030**.

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8. BRICS Plus: Significance and Implications

News: 6 new countries have been added to the BRICS grouping during the 15th BRICS Summit held in Johannesburg. This has significant implications for the Group as well as India.

What are the advantages of BRICS-Plus?

- **Geopolitical**
 - It has made the group **more representative**, with the inclusion of nations from South America, Africa and the Middle East. It has now 2 members from South America, 3 from Africa, 5 from Asia and 1 from Europe (Russia).
 - BRICS will now have a **greater political standing** with increased representation from the **Global South**.
 - BRICS Plus can provide an **alternative to the Western development model led by the G7**. It will promote a **multi-polar global order**.

6 New Members of BRICS

Argentina (Latin America); Ethiopia, Egypt (Africa), Iran, Saudi Arabia and the UAE (Middle East) have been added to the BRICS Group.

• Geo-economic

- BRICS Plus can provide fresh impetus to the **goal of de-dollarization**, by using their own set of currencies for settlement of trade.
- BRICS Plus accounts for **45% of global oil production**. The decisions of BRICS Plus can have marked impact on global oil and energy markets.
- Inclusion of Saudi Arabia and the UAE will **strengthen the financial position of the New Development Bank** as they are flush with funds. In the long run, NDB can finance sustainable development projects in the Global South and act as an alternative to the Bretton Woods System (IMF and the World Bank).
- BRICS Plus can work towards addressing the issues concerning Global South like poverty, hunger-malnutrition, and achievement of SDGs.

What are the concerns associated with BRICS-Plus?

• Geo-political Concerns

- Group members like Russia, Iran and China are vehement opponents of the US. The **group may be viewed as an Anti-West platform**, rather than as an alternate to current global order.
- Many countries in the group **lack democratic credentials** like Russia, China, Saudi Arabia, Iran etc. The stand of BRICS Plus on issues related to democratic and human rights, peace etc. will remain open to criticism.
- With the expansion, it may be **difficult to reach consensus** on issues, especially with the inclusion of both Saudi Arabia and Iran. There are **other rivalries within the group** like India-China, Argentina-Brazil etc. which might lead to internal strain within the group.

• Geo-Economic Concerns

- China has disproportionately high economic influence in the group. China may try to push for Yuan as an alternate currency to the US\$.
- The trade and investments within the group are low, and are heavily skewed towards China.

BRICS Johannesburg Summit: Major Outcomes

- **Adoption of Johannesburg II Declaration:** Reflects key BRICS messages on matters of global economic, financial and political importance.
- The first ever in person engagement with leaders of BRICS with the members of **BRICS Women's Business Alliance** which was an important step in **women empowerment**.
- BRICS Finance Ministers/Central Bank Governors to consider the **issue of local currencies, payment instruments** and platforms and to report back to the BRICS leaders by the next summit.
- Celebration of the 10th Anniversary of **BRICS Business Council**. Vision laid down for increasing interstate trade between member countries.

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What should be India's Role in BRICS-Plus?

- India has agreed for expansion of BRICS but has **insisted on finalization of membership criterion** for expansion.
- Of the new members, India enjoys close relationship with the UAE, Saudi Arabia, and Egypt. But India must proactively engage with Argentina and Ethiopia. India must remain alert to China's effort to make BRICS a China-centric group.
- India should **push for a basket of currencies of BRICS Plus**, as an alternate for US\$ and counter any Chinese measures to make Yuan as the sole currency for Intra-BRICS Plus trade.

What are the other challenges faced by BRICS/BRICS-Plus?

- BRICS has to decide whether it would remain as an **economy-focused** (finance, infrastructure) group or transition to become a **bigger geopolitical coalition** with more nations.

- There are wide **economic disparities within BRICS Plus**. In addition, Russia-India-China (RIC) wield much greater power than other member. Within RIC, **China has disproportionate influence**, with China alone accounting for 38% of total BRICS exports.
- BRICS has so far not been able to provide a **viable alternative to the Bretton Woods system**. NDB has remained much small compared to the IMF/World Bank.

What should be the way forward for BRICS-Plus?

- BRICS-Plus should be based on **rule-based order** and the forum should not leave any room for 'economic hegemony' and 'anti-West agenda'.
- There must be a **clear definition of principles and criteria for membership** for further addition of countries to BRICS-Plus.
- India must find creative ways of **blunting Chinese strategy** in BRICS-Plus to ensure **equitable distribution** of power in the group.

9. India-Saudi Arabia Relationship

News: The first Summit meeting of the India-Saudi Arabia Strategic Partnership Council (SPC) was held just after the G20 Summit.

How has the India-Saudi Arabia Relationship evolved?

- **A Warm Beginning:** India and Saudi Arabia established diplomatic relationship in 1947. The King of Saudi Arabia visited India in 1955 and PM Jawaharlal Nehru visited the Kingdom in 1956.
- **Cold Phase during the Cold War:** During the cold war, Saudi Arabia was part of the US-led group while India followed the policy of non-alignment, putting India and Saudi Arabia at odds. The 1971 war and the Kashmir issue further strained the relationship.
- **Normalization:** The King Abdullah visited India in 2006, a visit by Saudi King after 51 years. The **Delhi Declaration, 2006** aimed to strengthen bilateral ties in areas of energy, trade, science and technology, education, health and cooperation on regional and international issues.
- **Deepening Strategic Relationship:** The **Riyadh Declaration 2010** further **expanded domains of cooperation** to include counter-terrorism, money laundering, narcotics, arms and human trafficking, and defence. The PM of India visited Saudi Arabia in 2016. The India-Saudi Arabia Strategic Partnership Council (SPC) was established in 2019 and the first summit was held recently after the G20 Summit.

Strategic Partnership Council (SPC)

- The India-Saudi Arabia Strategic Partnership Council was **established in 2019**.
- This is the 4th such Council established by Saudi Arabia. The 3 other Councils have been established with the UK, France and China.
- The aim of the SPC is to establish a high-level council to **steer the Indo-Saudi relationship**.
- It has 2 main pillars:
 - Committee on Political, Security, Social and Cultural Cooperation.
 - Committee on Economy and Investments.
- Both committees have **4 functional levels of engagements**:
 - Summit level (Prime Minister & Crown Prince);
 - Ministerial-level.
 - Senior Officials Meetings.
 - Joint Working Groups (JWGs).

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What is the significance of India-Saudi Arabia relations?

- **Geo-Political Significance**
 - Saudi Arabia has significant influence in the Middle-east. It is a central player in the Israel-Palestine peace process. It enjoys close ties with the US as well as China. It is considered as the **voice of the Muslim and the Arab world**. Its geopolitical heft makes Saudi Arabia a valuable partner for India.

- China's influence in the Middle-east is rising. China brokered a peace deal between Saudi Arabia and Iran. It becomes imperative for India to have close ties with Saudi Arabia to counter Chinese influence.

- **Security Cooperation:** India and Saudi Arabia have enhanced mutual engagement with each other in the domain of security including **counter-terrorism** and **defence**. They are exploring the possibilities of joint development and production of defence equipment.

First Summit of SPC: Major Outcomes

- Upgradation of the hydrocarbon energy partnership to a **comprehensive energy partnership** for renewable, petroleum and strategic reserves.
- Expedite the implementation of the **US\$ 50 billion West Coast Refinery project**.
- Creation of a joint task force for **channelising the US\$100 billion Saudi investment in India**.
- Expedite negotiations for a **free trade agreement** between **India and the Gulf Cooperation Council** of which Saudi Arabia is a member.
- Exploration of possibility of **trading in local currencies** including the **acceptance of RuPAY card in Saudi Arabia** for the benefit of the Indian community.

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• Economic Significance

- **Saudi Arabia's Vision 2030** calls for **diversification of the oil-dependent economy** by attracting tourism and foreign investment and turning it into a global hub for business and culture. Saudi Arabia needs India's technological assistance to execute Vision 2030. It opens up **immense opportunities for Indian businesses**.
- Saudi Arabia is a **major supplier of crude oil to India** to meet the domestic energy requirements.
- Saudi Arabia's Sovereign Fund has invested significantly in the **National Infrastructure and Investment Fund**. Saudi Arabia has acquired 50% stake in the US\$ 44 billion upcoming refinery project in Ratnagiri, Maharashtra.
- **India is Saudi Arabia's 2nd largest trade partner** and Saudi Arabia is India's 4th largest. The bilateral trade stood at US\$ 52 billion in 2022-23 with scope for improvement.

• Cultural/Social Significance

- Saudi Arabia is home to **2.7 million strong Indian community**. They send over US\$ 11 billion to India every year. Lakhs of Indian Muslims visit Saudi Arabia every year for Hajj pilgrimage.

What are the challenges in India-Saudi Arabia Relations?

- **Complexity of Middle East Politics:** The politics of the Middle East is complex and multidimensional. There exist several fault-lines like Saudi Arabia-Iran Rivalry and fractured relationship between Saudi Arabia and Israel. India faces a complex task in balancing relationship with all Middle-east nations.
- Pakistan has enjoyed a historically close relationship with Saudi Arabia. It is one of the largest donors to Pakistan. Kashmir issue is also an irritating factor. Although, Saudi Arabia has altered its stance (both on Kashmir and Pakistan) in recent times.
- The **Nitaqat** programme (increase the proportion of Saudi nationals in jobs) has impacted the job opportunities for Indians in Saudi Arabia.

What should be the way forward for India-Saudi Arabia Relations?

- Both India and Saudi Arabia should build on the recent momentum in bilateral ties and **expand the cooperation in new domains** like agriculture, IT and new technologies including the Space and AI. ISRO can provide guidance to the recently created (2018) Saudi Space Agency.
- Both nations should **leverage their complementarities**. Saudi Arabia should enhance its investments in India, while India can provide valuable expertise in services, technology and infrastructure.

General Studies Paper III

1. Status of Unemployment in India

News: CMIE's Economic Outlook Data has pointed out that India's workforce is ageing, which appears in contrast to India's young population profile. Though PLFS data are in contrast to the CMIE's observations, most economists recognize the unemployment challenge before the Indian economy.

What is the current status of unemployment in India?

- According to the **Economic Outlook Data** published by the **Centre for Monitoring of the Indian Economy (CMIE)**, the **share of the young people (15-30 years)** in the workforce **has declined from 25% in 2017-17 to 17% in 2022-23**, while the share of old people (> 45 years of age) has risen from 37% (2016-17) to 49% (2022-23). This shows India's workforce is ageing.
- The overall count of the employed people has decreased from 41.27 crore to 40.58 crore.
- The **PLFS data**, in contrast, indicate that **youth employment has risen to 36.8% in 2021-22 compared to 31.4% in 2017-18**. The overall employment (> 15 years) has risen to 52.9% in 2021-22.
- According to the **State of Working India, 2023** (released by the Centre for Sustainable Employment, Azim Premji University):
 - The **overall unemployment rate has reduced to 6.6% (2021-22)** from 8.7% in 2017-18.
 - Over **42% graduates under 25 years were unemployed** in 2021-22. For persons with secondary education and less than 25 years of age the unemployment is 21.4%.
 - 60% of the women are self-employed**, compared to 50% before the pandemic. However, the earnings of women have decreased by 15% in comparison to pre-pandemic levels.
 - In 2021, **40% of the scheduled caste workers were involved in casual employment**, compared to 13% general category workers.
 - The **ability of the economy to generate more formal jobs for each percentage increase in the GDP has fallen**. Most workers who moved out of agriculture sector have been absorbed by the informal sector with contractual employment.

Types of Unemployment

- Frictional** : Workers are in between jobs or are searching for a job. It is a temporary and natural part of the labour market.
- Structural**: Mismatch between the skills of workers and the skills required for available jobs. It can be caused by **changes in the economy**, like technological advancements.
- Cyclical**: **Changes in the business cycle**, like recessions or economic downturns.
- Seasonal**: Workers are employed only during **certain times of the year**, such as during the time of harvest in the agricultural sector.
- Underemployment**: Workers are employed but are working in jobs below their skill levels, or are unable to work as much as they would like.

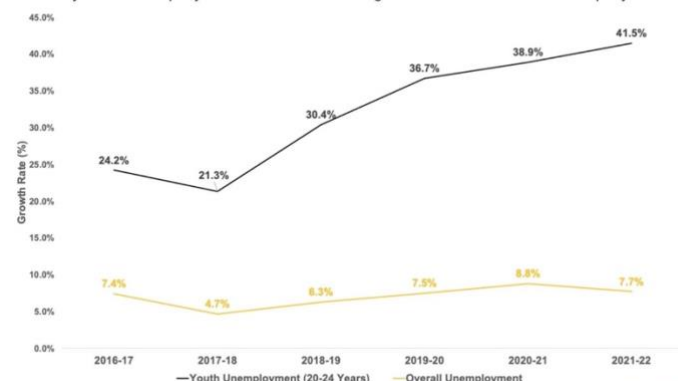
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What are the reasons for high unemployment?

- The share of Manufacturing sector in the economy has remained low. This sector has the greatest capacity to create low-

Youth Unemployment (20-24 Years)

India's youth unemployment rate is much higher than the overall unemployment rate



Source: CMIE, Bloomberg

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and semi-skilled jobs. The MSME sector faces several challenges due to which its **ability to create employment opportunities have been limited.**

- infrastructure development in India has focused largely on Urban areas. But India's manufacturing sector is rapidly **de-urbanizing** and is moving away from urban to rural areas in order to remain competitive. As the rural areas lack the necessary physical and human capital, the **growth of manufacturing sector has slowed down** resulting in increased unemployment.
- India's shift of focus towards **capital-intensive sectors** (from small cottage industries) has also contributed to loss of jobs in the rural areas.
- Most former agricultural workers have been absorbed in **contractual and informal jobs** in the gig economy. There is lack of job and social security in such jobs and churn rate is high.
- **Agriculture sector** still has the largest share in employment. The sector has **seasonal employment cycle** marked with periods of no or little employment opportunities.
- As the access to higher education rises, the youth are **less willing to accept informal and low-paying jobs.**
- Most higher education institutions are not equipped to provide high quality skills required for jobs in the modern economy.
- Many educated young people **seek only Government jobs** and are not willing to take any other employment. Many such young people choose to remain unemployed despite having access to opportunities.
- The Government has invested heavily in creating high-class infrastructure. However, the **investment in social infrastructure** (education, health) hasn't been commensurate.

Methods of Measuring Unemployment

- **Usual Status:** It looks at the employment of the preceding year. It estimates the number of persons who remained unemployed for a major part of the year. It gives the **lowest estimates of unemployment.**
- **Current Weekly Status (CWS):** It focuses on an individual's employment status over the past week. A person is deemed employed if **they've worked at least an hour in the past week.** This method often shows higher unemployment rates than usual status because it captures short-term joblessness.
- **Current Daily Status:** It considers the activity status of a person for **each day of the preceding week (7 days).** If a person did not find work on a day or some days, he/she is regarded as unemployed. It is considered **most comprehensive measure.**
- **CMIE Approach:** It classifies people based on their activity the day before the survey. It often reports a higher unemployment rate but lower labor force participation rates because of its focus on daily activity.

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What is the need to address the state of high unemployment?

- The Government has set a target of **making India a developed nation by 2047.** To achieve this, the per capita income must be raised from the current ~US\$ 2,600 to excess of US\$ 13,000 (present level of classification of High-Income Nations by the World Bank). This can be achieved only through creation of **large number of high-quality jobs.**
- India has a large share of youthful population. To **reap the demographic dividend,** it is essential to create jobs for the youth, which can ensure faster economic growth.
- **Increasing share of women in the workforce** has several long term associated benefits including on health outcomes like child mortality rate through **increased awareness** and **financial independence of women.**
- Job opportunities for the poor will help **alleviate poverty in India.**

What steps should be taken to improve employment opportunities in India?

- The **private sector should be given greater support** especially the budding start-ups which can cumulatively generate a large number of jobs. Effective implementation of current schemes like MUDRA, Start-up India etc. is needed
- The Government can provide **special packages for labour intensive industries** and the MSMEs to enable them to scale-up their operations and provide more jobs.

- The Government should promote **decentralized industrialization**, away from existing and urban centres. This can promote development in remote underdeveloped areas like Jharkhand and help reduce the pressure of migrants on large urban areas. Tier II and III cities should be promoted as growth centres.
- Faster clearances, access to affordable finance, simple mechanisms for **commercial dispute settlement** etc. can promote investments and help create new jobs.
- A more focused approach is necessary with respect to **skilling and educating the youth** according to the demand of the 21st century. They should be encouraged to **learn new age skills** like 5G technology, Big Data, Digital Marketing etc. that would enhance their employability.
- The educational institutions must focus on **inculcating an entrepreneurial mindset** in the students. This will ensure that students become job givers rather than job seekers thereby helping to solve the unemployment crisis in the long-term.
- The Government should invest more to improve **social infrastructure**, with health and education as top priority.
- The barriers to entry of women into employment should be addressed. SHGs like *Kudumbashree* played a vital role in mainstreaming economic participation of women. This model must be extended all over India. (Refer EPIC August 2022 (click) for the Issue of Jobless Growth in India).

2. Reforms in International Financial Architecture

News: India has been pushing for reforms in the functioning of the International Financial Architecture and the Multilateral Development Banks (MDBs).

What is the need for reforms in the current International Financial Architecture?

- **Underrepresentation of Global South:** The current International Financial Architecture was established in 1940s post the 2nd World War. Only 44 delegations were present at the Bretton Woods Conference that created the IMF and the World Bank. There are more than 190 countries now. The developing countries remain underrepresented in the institutions. The Governments of developed countries continue to hold veto powers with respect to decision making.
- **Debt Crisis:** The cost of borrowing for poor countries remain very high. Many poor countries are facing debt crisis. Africa received only 5.2% of the latest issuance of Special Drawing Rights (SDRs) in August 2021.
- **Climate Finance:** Climate change is a reality and poor countries are disproportionately more vulnerable to its effects. They lack access to sustainable Climate Finance in order to adapt to and mitigate the effects of global warming. The development finance and lending terms need to factor in climate risks.
- **Banking and Financial Markets' Regulation:** Recent Bank failures indicate gap in financial regulatory architecture. Technology has enabled ultra-fast financial transactions. Modes of Communication have revolutionized flow of information. Financial systems are connected globally and financial contagion can spread fast as evident from the 2008 financial crisis. Emerging technologies like cryptocurrency pose new challenges for which a coordinated response is necessary for regulation.
- **Taxation Regimes:** In a globalized economy, operations of Multinational Companies (MNCs) transcend sovereign boundaries. New models of business based on digital technologies like online advertising have posed new challenges from taxation purposes. MNCs have used the gaps in the regulation to shift profits to low tax jurisdictions. The Governments of developing countries end up losing tax revenue.

What steps should be taken to reform the international financial system?

- **Update IMF Quotas:** The IMF quotas should be updated to reflect the changed global economic landscape. Voting rights and decision-making rules should be made more democratic. Lending by IMF should be made

more flexible with less conditionalities. SDR allocations need to be revamped and should be based on need. Share of developing countries should be enhanced.

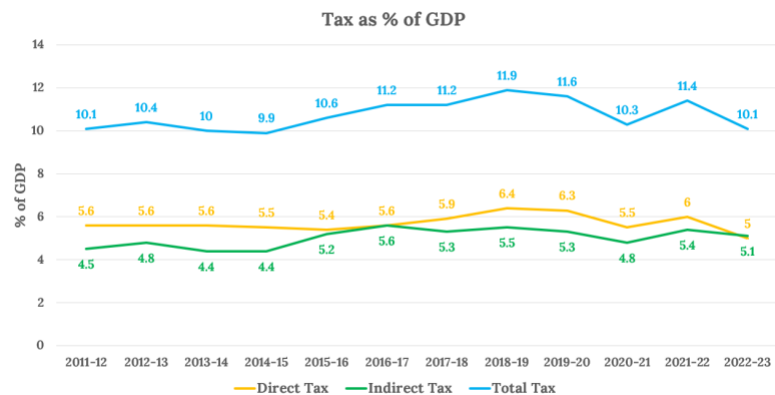
- **Apex Coordination Body:** A policy brief by International Institute for Sustainable Development has suggested creation of an apex representative body to systematically enhance coherence in the international system.
- **Transparent Lending:** The principles of borrowing and lending by global institutions should be updated to reflect changing global environment and human rights obligations of States. Debt sustainability analysis and credit ratings should be improved and made more transparent.
- **Climate Finance:** Climate finance and development lending should be massively enhanced. The development lending should account for long-term impacts of climate change, and should focus on sustainable projects.
- **Reduce Market Volatility:** Capital market volatility (e.g., FPIs pulling out money from India after increases in interest rate by US Federal Reserve Bank) should be enhanced through coordinated response by Central Banks and Financial Regulators.
- **Check Illegal Practices:** Global Financial Integrity Standards should be made more robust. Professionals and firms engaged in illicit financial flows should be held accountable through coordinated response.
- **Tax Cooperation:** International tax cooperation should be strengthened to address gaps created by digitalization and globalization of economic processes. Tax information exchange should be made more transparent, so that Governments of developing countries can improve their tax proceeds by checking evasion through tax havens.

3. Improving India's Tax-to-GDP Ratio

News: India's tax base is widening, yet there remains scope to considerably improve the tax-to-GDP ratio.

What are the reasons for growth in India's tax base?

- **Direct Taxpayer Growth:** The number of registered companies paying tax has surged from 7.46 lakhs in 2014-15 to 10.7 lakhs in 2022-23. The number of individual tax payers have jumped from 5.38 crore to 8.9 crore. Retired employees and those earning from interests or rentals are also paying taxes indicating a broadened tax base, beyond regular workers.
- **Role of GST:** The number of active GST payers has risen from 1.2 crore in 2019 to 1.4 crore in 2023. Certain features of GST like input tax credit have driven more businesses to pay taxes.
- **New Measures:** Government has introduced Tax Deduction at Source on multiple types of transactions.
- **Formalization of Firms:** ~22% of Indian firms are now formally engaged in tax-paying activities.
- **Economic Expansion & Formalization:** The growth in the tax base can be attributed to the economy's growth. The formalization of the economy and monitoring mechanisms have made tax evasion tougher.

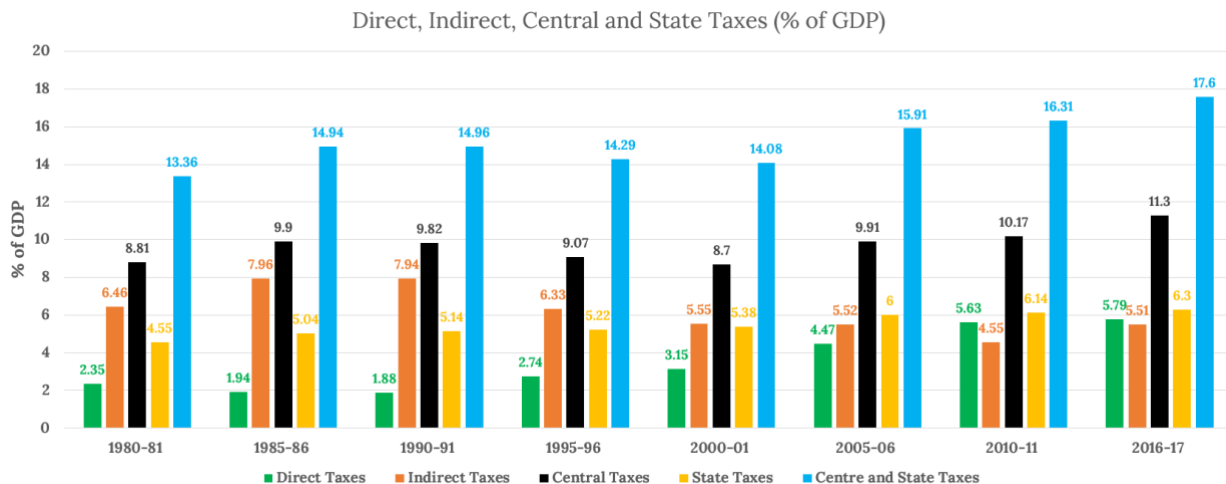


Data Source: Economic Survey. The Tax-to-GDP Ratio (Central Taxes) has remained nearly constant in the last 10 years.

What are the challenges faced by India's tax system?

- **Low Base:** Despite the expansion in tax base, India's Tax-to-GDP ratio has hovered around 17-18% (Union + State Government). If Union Taxes are considered alone, the ratio is ~11%.

- **Tax Breaks and Exemptions:** Several experts lament policy decisions related to tax breaks and exemptions that have limited Government's tax revenues e.g., the Corporate Tax Rate has been reduced to 22% from 30% earlier (with certain conditions). The revenue forgone has been estimated to be ~INR 2.3 lakh crore between 2019-21. The Corporate Tax-to-GDP ratio has fallen from 3.5% (2018-19) to 3.1% (2022-23).
- A majority of individuals fall in the exempted income tax category (income < INR 5 Lakh). Their number has risen from 2.9 crore in 2019-20 to 5.16 crore in 2022-23. The raise in the exemption limit to INR 7 lakh will further reduce Government's direct tax revenue.
- **Reduced GST Rates:** The weighted average GST rate fell from 14.4% during its introduction to 11.6% in 2019 due to tax cuts in 2017 and 2018.



Data Source: CBDT. India's Tax-to-GDP Ratio (Union + States) has improved marginally from 13.4% in 1980-81 to 17.6% in 2016-17.

What can be done to improve Tax-to-GDP Ratio?

- Several experts have suggested to relook at the corporate tax exemptions. Analysis has indicated historically high corporate profits since 2020. The benefits with respect to rise in investments or economic growth may not have been commensurate. (Refer EPIC July 2023 (click) for Greedflation).
- **Arbind Modi Panel on Income Tax Reforms** has recommended **simplification of rules of direct taxes on cross border transactions**. It will **reduce Base erosion and profit shifting and Indirect Transfers**. This will reduce International litigation cases like **Cairn case**.
- Some experts have also recommended reintroduction of Wealth Tax in order to check rising inequality and boost Government's tax revenue.
- The Government has implemented **several technological solutions** like e-way Bills, linking of Aadhar and PAN etc. to **check evasion**. Such technological solutions should be scaled up further.
- The issues facing the GST should be resolved to improve compliance and check evasion.

4. Addressing Issues Faced by GST

News: The GST regime has not been able to achieve all the expected benefits. Addressing the issues may help increase the tax revenues and GDP growth.

What were the expected benefits from the GST Regime?

- **Tax Collection Buoyancy:** Due to inbuilt incentives of compliance, there was expected to be less scope of leakage.

- **Avoid Cascading of Tax:** The tax burden would only apply to the added value in the economic chain, preventing 'tax on tax' (or cascading of tax).
- **Greater Compliance:** It was expected that the suppliers would prefer dealing with parties who have proof of tax payment, ensuring a chain of compliance.
- **Boost to Inter-State Commerce:** The removal of barriers to inter-state commerce was expected to boost economic activities and economic growth.
- **Economic Growth:** A 2009 study by NCAER estimated that the GDP growth rate would rise by 2-2.5% annually because of GST.
- **Boost in Exports:** The tax reform was expected to increase Indian exports by 10-14% year after year.

What are the reasons for below-expectations performance of the GST Regime?

Indirect taxes haven't increased as expected e.g., GST revenues haven't grown commensurately with the nominal GDP growth. The actual tax rate was only 11.4% compared to the expected 17% (according to Prime Minister's Economic Advisory Council).

- **Rate Slabs Proliferation:** Multiple rate slabs, with items at 28% or higher, and others at 0% or 3%, caused complexity and imbalance.
- **Revenue Neutral Rate (RNR):** Focusing on RNR led to misjudgement in predicting tax compliance behaviour between pre and post-GST regimes.
- **Exemptions and Classifications:** Many exemptions and arbitrary classifications resulted in disputes, litigation, and pending refunds.
- **Exclusions from GST:** Large parts of the economy were left out of GST (e.g., petroleum products and liquor), which prevented lowering the overall tax rate.
- **Impact on Small Businesses:** High rates and compliance costs hurt small businesses, even with a composite rate of 6%.

What should be done to address the issues?

- **Rationalize Tax Slabs:** The number of tax slabs should be rationalized and slabs with high rates should be reduced.
- **Simplify Compliance:** The compliance procedures should be simplified. User-friendly Apps can be launched for GST procedures especially for small businesses. It can encourage better compliance.
- **Expand Coverage:** The sectors exempted from GST should be brought under the regime. Union Government should address the concerns of the State Governments related to bringing Petrol/Diesel and alcohol under GST coverage.
- **Simplify Classification:** Overly specific exemptions and classifications lead to litigation. Reducing these can streamline the system.

5. Animal Husbandry Sector in India: Potential and Challenges

News: Animal Husbandry plays a critical role in supporting farm incomes and ensuring growth in the agriculture sector.

What is the significance of animal husbandry in India?

- **Economic Contribution:** According to the Economic Survey 2022-23, the economic contribution of animal husbandry to total agriculture Gross Value Added (GVA) has risen from 24.3% (2014-15) to 30.1% (2020-21).
- **Socio-economic Development:** The sector is almost entirely concentrated in the rural areas. ~88% of the livestock is owned by the farmers of marginal, small or semi-medium operational holdings. It provides ~50% direct and indirect employment to women. Hence it is central to India's socio-economic development.

- **Employment:** Employment in agriculture is **highly seasonal**. Animal husbandry provides employment opportunities during the lean season. The animal husbandry and dairy sector collectively **employs more than 100 million people**. The milk industry alone supports some 80 million dairy farmers.

- **Food and Income Security:** The sector provides food and income security. The income from the sector provides economic cushion in the event of crop failure. Dairy products are important part of diet in both rural and urban areas.

Status of Animal Husbandry in India

20th Livestock Census

- 303.76 million bovines (cattle, buffalo, mithun and yak), 74.26 million sheep, 148.88 million goats, 9.06 million pigs and about 851.81 million poultry.

Dairy

- Milk Production: 221 million tonnes (23% of global production), 1st in the world.
- Per Capita Availability: 444 gm/day (global 394 gm/day).
- Milk is now the largest agriculture commodity in India (production values).

Poultry

- Growth Rate: 6% annual.
- Production of Eggs: 130 billion, 3rd in the world.
- Per Capita Availability: 95 eggs/year.
- Production of Meat: 9.29 million tonnes, 8th in the world.
- Meat of buffaloes, sheep and goats is major export item. Buffalo meat alone accounted for nearly two-thirds (~67%) of the export of animal products.

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What are the challenges faced by animal husbandry in India?

- **Productivity:** The productivity of the livestock sector is low e.g.; the average annual milk yield of Indian cattle is 1172 kg which is ~50% of the global average.
- **Diseases:** The sector has witnessed a jump in the contagious diseases recently, the most recent being the lumpy skin disease. Persistent outbreak of foot and mouth disease, black quarter infection, influenza etc. continue to reduce their productivity.
- **Scarcity of Fodder:** The natural pastures and common grazing grounds are shrinking due to encroachments, degradation of vegetative cover etc. The price of fodder is rising.
- The Indian Grassland and Fodder Research Institute estimates the deficit of green fodder, dry fodder, and the grains-based concentrated animal feeds to be as high as 12%, 23% and 30%, respectively
- **Policy Support:** The bulk of agriculture subsidies by Union and State Governments go to the crops sector e.g., in the Union Budget 2023-24, INR 4 trillion were allocated to food, fertilizer and other agriculture subsidies. The allocation to Department of Animal Husbandry was INR 4,328 crore. Animal-based products and commodities do not enjoy same price support and official procurement like the crop-based commodities.
- **Institutional Finance:** The share of livestock in the total agricultural credit has hardly ever exceeded 4% in the total (short-term, medium-term and long-term). The institutional mechanisms to protect animals against risk are not strong enough. Only a small proportion of the animal heads (excluding poultry) are provided insurance cover.

What steps should be taken to promote the sector in India?

- Livestock productivity should be improved by **good breeding, health care and feeding practices**.
- **Adequate feed and fodder at affordable prices** should be ensured. In India, 501 million metric tons (MMT) of crop

Schemes to Promote Animal Husbandry in India

- **Rashtriya Gokul Mission (RGM)** is focused on development and conservation of **indigenous bovine breeds** since December 2014. It has helped **enhance milk production** and **productivity of bovines**. It is making dairying more remunerative to the farmers of the country.
- **Animal Husbandry Infrastructure Development Fund (AHIDF)** worth ₹15,000 crore was launched in 2020 under the *Aatmanirbhar Bharat* (ANB) stimulus package. The Union Government provides a **3% interest subvention to the borrower** and **credit guarantees up to 25% of total borrowing**.
- **National Livestock Mission (NLM)** focuses on **entrepreneurship development and breed improvement** in poultry, sheep, goat and piggery, including feed and fodder development.
- **Livestock Health and Disease Control (LH&DC) Scheme** is focused towards preventing, controlling and **containing animal diseases** of economic and zoonotic importance by vaccination.
- **National Animal Disease Control Programme (NADCP)** is being implemented to control **Foot & Mouth Disease and Brucellosis** by completely vaccinating farm animal populations against Foot & Mouth Disease and bovine female calves of 4-8 months of age against brucellosis.

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residues are generated annually out of which 70% are from cereal crops (rice, wheat, maize and millet). NITI Aayog has said that crop residues from rice and wheat crops can be used as fodder for animals.

- To manage livestock diseases, **mandatory primary vaccination** for livestock should be enforced, and timely veterinary surveillance must be carried out consistently.
- Efforts should be made to guarantee **sufficient vaccine production**, establish vaccination infrastructure, maintain high vaccine quality standards, and adhere to a well-structured vaccination schedule.

6. Cyber-threats to the Financial System

News: At the Global Fintech Fest, 2023, the delegates including India's Finance Minister raised concerns regarding threats posed by cybercrimes to the financial sector in India.

What are the effects of cyberthreats to the Financial System?

• **Disruption of Economic Systems:**

Cyber-attacks on critical financial and banking infrastructure can disrupt the whole economic system e.g., a cyberattack on Stock Exchange servers can wipe out billions out of wealth of investors. The interconnected financial systems have a contagion effect, where financial shocks in one region can quickly spread to other areas beyond the national borders.

- **Long-term Impacts:** The instability in the financial and banking systems because of disruptive effects can make the monetary policy ineffective. The foreign investors may pull out their investments, impacting long-term economic growth and adding to volatility in the financial sector.
- **Impact on the Common People:** Thousands of innocent and unsuspecting people have lost their hard-earned money to online thefts, extortion etc.
- **Criminal Activities:** Proceeds from cybercrimes are used for illegal activities like drug trafficking. Easy money through cybercrimes also attracts the youth towards cybercriminal activities, rather than contributing productively to India's economic growth.

Cyberthreats to Financial Sector

- **Ransomware:** Ransomware **encrypts the computer systems with malware** and locks the victims out of their systems. Financial services organizations are forced to comply with ransom demands as they are **threatened of data leakages on the dark web** e.g., Wannacry ransomware was one of the worst ransomware attack.
- **Phishing:** Phishing is act of tricking users into **divulging login credentials to gain access to an internal network**. According to Akamai's 2019 State of the Internet report, **~50% of observed phishing attacks** were linked to the **financial services sector**.
- **Data Thefts:** Mining of customer data which results in **leakage of customer information**, results of product surveys, and generic market information e.g., Airtel payment bank data was mined like name, DoB, phone numbers, address were **put up for sale on dark web**.
- **Cyberhacking:** According to the Bank for International Settlements, the financial sector experiences **second largest share** of cyberhacking attacks after health sector e.g., Cyberhacking of Juspay systems **resulted in the theft of masked card data and card fingerprint data**.

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What are the challenges in countering the cyberthreats?

- **Lack of specialists:** Globally India ranks 2nd in terms of the number of Internet users after China (Internet World Stats, 2017). However, India has a **negligible base of cyber-security specialists** when compared to internet user base.
- **Law Enforcement:** India's approach to cyber security has so far been **ad hoc and unsystematic**. Despite a number of agencies, policies and initiatives, their implementation has been far from satisfactory.
- There are **multiple agencies with overlapping functions** like the Serious Fraud Investigation committee (SFIO), Regulatory bodies like **RBI, SEBI** and National Critical Information Infrastructure Protection Centre (NPIIC) in the field of cyber security. However, there is lack of proper coordination between these agencies.

- **Lack of Awareness:** Lack of digital literacy and awareness about cyber-security increases the vulnerability to cyberthreats. This is a major factor in proliferation of cybercrimes like smishing where fraud SMSs are used to hack into users' phones and access their bank accounts.
- **Social Media:** Rising adoption of social media has also been exploited by hackers e.g., to steal the personal information (like date of birth) which can then be used to crack passwords or hack into digital devices.
- **Access Management:** Companies with large database of users have poor access and safety protocols. Hackers have been able to access the entire enterprise network and user database (with phone number, email IDs and other personal information) through one hacked credential. The user data are then put up for sale on dark net for other hackers to exploit.

Steps Taken to Counter Threats

- **Information Act 2000:** It is the primary law for dealing with cybercrime in India.
- **National Cyber Security Policy 2013:** The policy provides the vision and strategic direction to protect the national cyberspace.
- **Cyber Emergency Response Team India (CERT-In):** It is the national nodal agency for responding to computer security incidents as and when they occur. It was launched in 2004.
- **Cyber Swachhta Kendra:** It provides a platform for users to analyse and clean their systems of various viruses, bots/ malware, Trojans. It was launched in 2017.
- **Cyber Surakshit Bharat:** This initiative was launched to spread awareness about cybercrime and building capacity for safety measures for Chief Information Security Officers (CISOs) and frontline IT staff across all government departments.
- **Indian Cyber Crime Coordination Centre:** It will be apex coordination centre to deal with cybercrimes.
- **National Critical Information Infrastructure Protection Centre (NCIIPC):** It has been established for protection of critical infrastructure like the financial sector information.

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How can cybersecurity be enhanced?

- **Investment in Security Systems:** Fintech companies must invest heavily in robust security measures utilising **advanced encryption** to protect user data and financial transactions. A secured system will build trust and therefore it is a must for the financial ecosystem.
- **Strengthening of State Cyber Resilience:** Governments and industry should strengthen security by sharing information on threats. The Government should create a **financial computer emergency response teams (CERTs)** modelled on **Israel's FinCERT**.
- **Building Capabilities:** There is an urgent need to build capabilities and capacity for application, equipment and infrastructure testing. The human resource with expertise in cyber-security should be enhanced both in terms of numbers and capabilities.
- **Research & Development:** Investments should be made on R&D to develop more innovative technologies to address increasing cyber security threats.
- **Public Awareness:** A periodic awareness campaign by the Government and private sector should be conducted to make people aware about cyber security threats. **Usual practice of digital hygiene** like keeping the phone security software up to date can be done and doing financial transactions on secured VPNs.
- **Strengthening Private Partnership:** It is important to strengthen the public-private partnership on cyber security threats to Indian Financial systems.

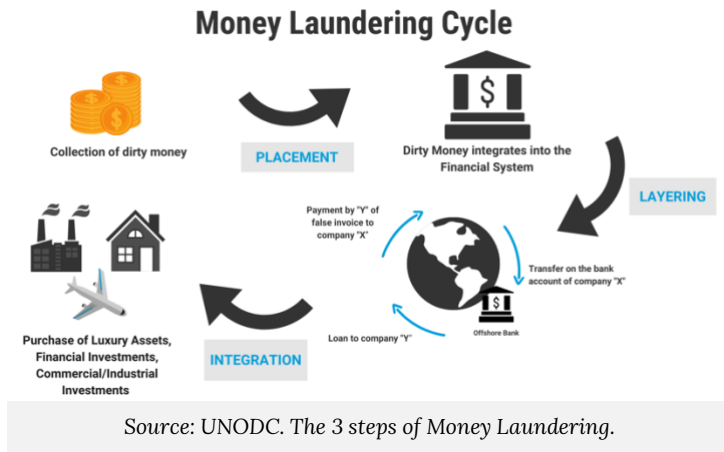
7. Money Laundering: Meaning and Challenges

News: A Pandora Papers probe has found a link between the Adani Group with a shell company that invested in stocks of Adani Group companies. This has raised concerns regarding money laundering.

What is Money Laundering?

- According to the **UN Office on Drugs and Crime (UNODC)**, money laundering is the **processing of money obtained from criminal activities to disguise their illegal origin**. These criminal activities include financial fraud, drug trafficking and terrorist activities.

- The UN Vienna Convention (1988), has defined money laundering as, “The conversion or transfer of property, knowing that such property is derived from any offense(s), for the purpose of concealing or disguising the illicit origin of the property or of assisting any person who is involved in such offense(s) to evade the legal consequences of actions”. (Article 3.1).
- Money laundering involves 3 steps: Placement, Layering and Integration.



- **Placement** is the injection of dirty money into the financial system.
- **Layering** is the concealment of the source of money through a series of transactions and accounting tricks.
- **Integration** is the withdrawal of laundered money from the legitimate financial system and making it available to the criminal from **what seem to be legitimate sources**.

What are the impacts of money laundering?

- **Destabilisation of Economy:** According to the IMF, laundered money accounted for ~2-5% of global GDP. Large scale movement of unaccounted money and pumping of illegal money into specific assets (like real estate) can destabilize certain sectors or the economy in general.
- **Loss to Exchequer:** Money laundering decreases tax proceeds to the Government. It impacts social welfare measures programmes of the Government. It indirectly leads to **transfer of wealth** from the poor to the rich.
- **Criminal Activities:** Generally, proceeds of money laundering are used in criminal activities like drugs and arms trafficking, terrorism etc.
- **Social Impacts:** Destabilization of the economy can hamper the economic growth in the long run. The use of money laundering for drug trafficking can damage the youth of the nation, turning demographic dividend into disaster.

What are the challenges in combating money laundering?

- **New Technologies:** Advent of new technologies like cryptocurrency has provided a new and convenient way to launder money. Cryptocurrencies transcend national boundaries and are difficult to track and check. According to IMF, US\$ 2.5 billion have been laundered since 2019 in cryptocurrencies.
- **Tax Havens:** Strict financial secrecy laws in tax havens like the Bahamas, Cayman Islands etc. incentivize and facilitate money laundering.
- **Role of Banks:** Some experts argue that the increased competition in the banking sector is realigning the incentives for the banks to get more business and not scrutinize the transactions closely (which might deter investors) which can aid money laundering.
- **Collusion:** Some employees of the banks and financial institutions collude with the money launderers and facilitate illegal transactions. The PNB fraud case is a prime example.
- **Law Enforcement:** Law enforcement agencies work in silos and lack of sharing of intelligence contributes to money laundering and other crimes including cyber-crimes, terrorism, trafficking etc.

What should be the way forward to combat money laundering?

- **International Cooperation:** International cooperation among the agencies should be enhanced.
 - There should be **regular sharing of information** that can help establish chain of illegal transactions.

- The **tax haven countries** should be pushed to provide **more information**, and their secrecy laws should not be allowed to stall investigations or implementation of recommendations of FATF.
- There should be **global consensus on regulation of cryptocurrencies** and restrict their use in money laundering activities.

Steps Taken to Counter Money Laundering

- **Prevention of Money Laundering Act, 2002:** The Act was passed with the objective of combating money laundering in India. It provides powers to the Government agencies in attachment and confiscation of properties and provides for stricter bail conditions.
- **Enforcement Directorate:** Investigation and prosecution of cases under the PMLA have been entrusted to Enforcement Directorate.
- **Financial Intelligence Unit India (FIU-IND):** It has been established in 2004 to serve as the primary national organization in charge of gathering, analyzing, and disseminating data about improbable financial transactions.
- **International Cooperation:** India as a member of the Financial Action Task Force (FATF) has effectively used the grouping to push for sanctions against countries like Pakistan, engaged in money laundering to breed terrorism.
- India is signatory to International Convention for Suppression of Financing of Terrorism (1999); the UN Convention against Transnational Organised Crime (2000) and UN Convention against Corruption (2003).
- **Capabilities:** The capabilities of the domestic agencies should be enhanced in terms of **technical surveillance capabilities and human resources**.
 - **Inter-agency cooperation** should be promoted.
 - Banks should also track the movement of large amounts of money.
- **Use of Technology:** Modern technologies like AI can be used to **track large number of transactions** simultaneously and **flag suspicious transactions**. **Data analytics** can be used to establish patterns of financial transactions related to money laundering.
- **Promote Digitalization:** Promoting digital transactions and **adding restrictions on cash payments and movements** (e.g., limit on amount of cash withdrawal per day) can reduce avenues for money laundering. (Refer EPIC August 2023 (click) for Enforcement Directorate (ED): Functioning and Challenges and EPIC August 2022 (click) for Supreme Court's Judgment on PMLA).

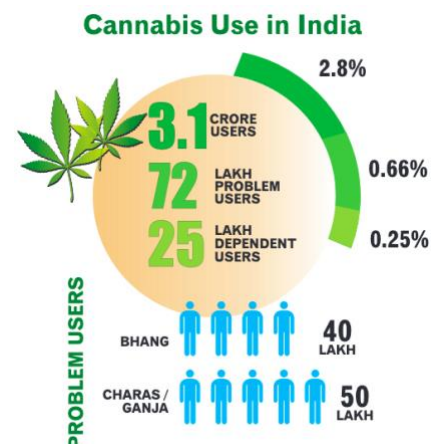
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8. The Menace of Drug Abuse in India

News: A report in the Indian Express revealed the drug addiction in the youth sweeping across the Kashmir valley. Widespread drug addiction will add another dimension to the security challenge in J&K.

What is the magnitude of drug abuse in India?

- According to the **Ministry of Social Justice and Empowerment:**
 - 16 crore people (14.6%) between the age of 10–75 years are current users of alcohol.
 - 3.1 crore individuals (2.8%) are users of **cannabis** and 72 lakh (0.66%) people suffer from cannabis problems.
 - Users of **opioid** are 2.06% and nearly 0.55% (60 lakh) require treatment services.
 - 18 crore (1.08%) are current users of **sedatives** (non-medical use).
 - 7% of children and adolescents are **inhalant users** (spray paints, markers, glues etc.).
 - It is estimated that about 8.5 lakh people are **injecting drugs**.
- The most worrying category of drugs in India are **opioids**, with the prevalence of opioid use in India being **3 times the global average** (0.7% Vs 2.1%). The drugs in the opioid group (particularly heroin) are associated with the **highest rates of disease, death and disability**.
- India's location between the **Golden Crescent** (Iran-Afghanistan-Pakistan) and the **Golden Triangle** (Laos-Thailand-Myanmar) provides easy access to opioids.



- The **World Drug Report** (2022) ranked India 4th in terms of the quantity of seized opium in 2020, with a total of 5.2 tons confiscated. Additionally, India was ranked 3rd for the amount of seized morphine (0.7 tons).

What are the impacts of drug abuse?

- **Health Consequences:** Drug abuse can lead to a range of physical health problems, including liver disease (alcohol), infectious diseases (like HIV, due to injection of drugs through shared needles), overdose-related deaths among others.
 - Substance abuse is closely linked to **mental health disorders** like depression, anxiety and hallucinations.
- **Social and Family Impacts:** Drug abuse can lead to family breakdowns, increased conflicts, and emotional trauma within families.
 - Children in households affected by drug abuse may experience neglect, abuse, and disrupted education, affecting their overall well-being.
 - Individuals struggling with drug addiction often face social stigma, which can hinder their recovery and reintegration into society.
- **Economic Consequences:** Families often face financial hardships due to the costs of supporting a family member's addiction and the associated medical expenses.
 - High prevalence of addiction in the youth can lead to higher unemployment that hampers economic productivity. It can turn potential demographic dividend into disaster.
- **Crime:** High incidence of drug abuse results in high crime rate. Addicts often resort to crime to buy drugs.
 - Drugs remove inhibition and impair judgement, encouraging one to commit offences. The incidence of eve-teasing, group clashes, assault, and impulsive murders increases with drug abuse.

What are the challenges associated with drug abuse in India?

- **Lack of Awareness:** There is limited awareness about the risks of drug abuse and its consequences among the general population, particularly in the rural areas. Educational programs in schools and communities to inform people and raise awareness are insufficient.
- **Stigma and Discrimination:** Stigmatization of individuals with substance use disorders can discourage them from seeking help and support. Discrimination in healthcare facilities and society at large can hinder access to treatment and rehabilitation services.
- **Limited Access to Treatment and Rehabilitation:** There is large shortage of drug addiction treatment facilities and qualified healthcare professionals.
- **Inadequate Data:** There is limited research on the **prevalence and patterns of drug abuse**, which hampers **evidence-based policymaking** and program development. There are also challenges in **collecting accurate data** due to the hidden, secretive and stigmatized nature of drug abuse.
- **Easy availability of drugs:** India's geographic proximity to **major opium producing regions** leads to **easy availability** of such drugs. According to the NCB, there is a growing trend of using the '**dark net**' and **crypto-currency** for illicit drug trade.
- **New substances:** Consumption of new psychoactive substances is increasing in India. These substances often fall outside the scope of existing drug control regulations, posing challenges for law enforcement agencies to effectively monitor and regulate them.

What steps should be taken to combat drug abuse?

- **Drug Trade:** Drug supply chains should be broken down through technological and human interventions.
 - **Increased border surveillance** (through drones) and building strong human intelligence networks to crack supply networks and impound drug supplies can break the supply chains.
- **Strengthen Capacity:** Law enforcement agencies (Customs, NCB, State Police) should be strengthened.

- This can be achieved through improved human resources, better training and access to better surveillance technologies. **Political interference** in their operations should be eliminated.
- **Rehabilitation:** Drug addicts should be considered as victims (rather than perpetrators). Removing social stigma associated with addiction will allow victims of substance abuse to come forward and seek help. Rehab facilities should be improved, in terms of numbers and quality of infrastructure and resources. They should be easily accessible to the needy.
- **Community Participation (Jan Bhagidari):** Demand should be checked through community participation. Education and awareness can deter the youth from seeking drugs. Parents and teachers can play a crucial role in instilling awareness. (Refer EPIC April 2023 (click) for Issue of Drug Trafficking in India).

Steps Taken to Counter Drug Abuse

- **Legal Aspects:** Drugs and Cosmetics Act, 1940; Narcotics Drugs and Psychotropic Substances Act, 1985; Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988 deal with the issues related to drugs and associated activities.
- **Narcotics Control Bureau (NCB):** It is the nodal agency for drug law enforcement in India.
- **National Narcotics Coordination Portal:** The Ministry of Home Affairs has constituted a 4-tier coordination mechanism for increasing coordination amongst the nationwide stakeholders and effectively combating the menace of drugs. There are Apex, Executive, State and District CORDs.
- **Integrated Rehabilitation Centers for Addicts (IRCA):** The Ministry of Social Justice and Empowerment provides financial assistance to NGOs for the maintenance of IRCAs. IRCAs offer comprehensive rehabilitation services to individuals with substance abuse disorders.
- **Nasha Mukht Bharat Abhiyaan:** It has been launched in 272 most vulnerable districts in terms of drug abuse. More than 500 voluntary organizations are involved which are financially assisted through the National Action Plan for Drug Demand Reduction (NAPDDR).
- **International Treaties:** India is signatory to UN Convention on Narcotic Drugs (1961), UN Convention on Psychotropic Substances (1971), UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988) and UN Convention against Transnational Organized Crime (UNTOC, 2000).

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9. One Year of Project Cheetah (Reintroduction)

News: The Cheetah Reintroduction Project has completed 1 year in September 2023. The project has faced criticism because of deaths of 9 cheetahs translocated from South Africa and Namibia.

What is the Project Cheetah?

It is the world's **first intercontinental large wild carnivore translocation project**. The project is aimed at the **reintroduction of Cheetahs in India** which had become extinct in 1950s (in India).

Cheetah Introduction	Status	Future Action
First Batch: In September 2022, 8 cheetahs from Namibia introduced at Kuno Palpur National Park. Second Batch: In February 2023, 12 cheetahs from South Africa introduced at Kuno National Park. Procreation: In March 2023, a female cheetah gave birth to 4 cubs which were conceived in India.	6 cheetahs have died and 14 are remaining. All the 14 cheetahs and 1 cub are in captivity 3 of the 4 cubs have died. 1 cub is being hand-reared as the mother has rejected it.	There are talks of cheetahs being radio-collared again and released once the winter sets in. The project authorities are talking of additional sites being prepared for releasing the cheetahs such as the Gandhi Sagar Wildlife Sanctuary and Nauradehi Wildlife Sanctuary in Madhya Pradesh.

What is the Significance of Project Cheetah?

- **Biodiversity:** Reintroduction of cheetahs will help in restoring the natural balance of the ecosystem. Cheetahs had been an important components of this ecosystem till they became extinct in 1950s. Cheetahs are **top predators** in the grassland ecosystem.
- **Conservation:** The success of the project will serve as role model for other such projects which can be pursued for protecting critically endangered species like Great Indian Bustard.
- **Research Opportunities:** The projects will provide information to the wildlife experts and conservationists regarding the behaviour of Cheetah and their adjustment to the new location.
- **Tourism:** Presence of cheetahs will boost wildlife tourism, generate revenue and enhance livelihood opportunities for the locals (e.g., Cheetah Mitras).
- **Social Awareness:** The media attention around the project has created awareness among general people regarding wildlife conservation and the importance of protecting endangered species.

What are the possible reasons for high mortality of translocated cheetahs?

- **Period of Quarantine:** After being shifted from Africa, the cheetahs were kept in quarantine for 60 days. Livestock Importation Act, 1898 provides for 30 days of quarantine. Experts say prolonged period of quarantine adversely impacted the ability to adapt and has led to issues in psychological adjustment.

Challenges to the Cheetah Reintroduction Project

- **Population Density:** Typically, 1-2 cheetahs survive in 100 sq. km area. Cheetahs require ~5,000 sq. km. area for viable population of 50-100 cheetahs. Kuno National Park is much smaller (~750 sq. km. in area).
- **Prey Availability:** Higher cheetah density reduces the per capita availability of prey. Cheetahs roam a large distance for hunting. More cheetahs in less area may lead to conflicts.
- **Fragility:** Cheetahs are relatively more fragile than tigers and leopards and are more prone to sustain injuries in the wild.
- **Inter-species Competition:** Tigers from Ranthambore Tiger Reserve have migrated into Kuno, which has led to inter-species competition.
- **Genetic Differences:** Experts say, Asiatic cheetahs would have been more suitable than African cheetahs considering historical survival of species in the region. Created by I ForumIAS®
- **Scientific Assessment:** Critics say there was an improper scientific assessment of the prevalence of potential carnivore pathogens and diseases. The assessment reports are not in public domain. Some Cheetahs have died due to **infection caused by local pathogens** in the wounds caused by tracking collars put on cheetahs.
- **Verification:** Action Plan for Reintroduction of Cheetah had laid down detailed guidelines for proper verification of Cheetahs for their relocation. Critics point to the laxity in following the detailed Verification guidelines. The cause of the first death has been attributed to a pre-existing renal disease.
- **Release Procedure:** The procedure for release of cheetahs as prescribed by the Action Plan was not followed stringently.

What is the way forward for the Project Cheetah?

- **Monitoring:** Regular health checks and early detection of health issues can prevent deaths.
- **Cooperation:** There should be closer cooperation between Indian forest officials and foreign experts and conservationists who have long experience of working with cheetahs.
- **Expand Area:** The Kuno National Park may not be able to support large cheetah population. Hence alternate sites should like Gandhi Sagar and Nauradehi Wildlife Sanctuary should be used for relocation.

Community Participation (Jan Bhagidari): Local communities should be involved in conservation efforts and community-led wildlife management.

Prelims

Polity

1. Special Session of the Parliament

News: The Government has called for a Special Session for the Parliament between September 18-22, 2023.

About Sitzings of the Parliament

- The dates and duration of the Parliamentary sessions are determined by the Union Government and there is no fixed calendar.
- The decision is taken by the **Cabinet Committee on Parliamentary Affairs**. According the latest notification (May 2023), the Committee has 10 ministers viz., Home, Defence, Finance, Agriculture, Commerce and Industry, Parliamentary Affairs, Tribal Affairs, Social Justice, Information and Broadcasting, and Earth Sciences (composition keeps on changing).
- The decision of the Committee is conveyed to the President and she summons the Parliament accordingly.
- The **duration between two consecutive Parliament sessions should not exceed 6 months**. This provision has been borrowed from the Government of India Act, 1935. The 1935 Act allowed the British Governor General to call a session of the Central Legislature at his discretion, with the gap between 2 sessions not exceeding 12 months. The Constituent Assembly reduced the gap to 6 months.
- Some members of the Constituent Assembly had advocated year-long meetings of the Parliament with breaks in-between. Others wanted longer duration of sittings (like in the US, UK with more than 100 days a year). However, their suggestions were not accepted.
- The National Commission to Review the Working of the Constitution (2000) had recommended that the Parliament should meet for more than 100 days annually.
- It has become a convention** that Parliament of India meets for 3 sessions in a year. **Budget** (January-April/May with a recess in-between), **Monsoon** (July-August) and **Winter** (November-December).

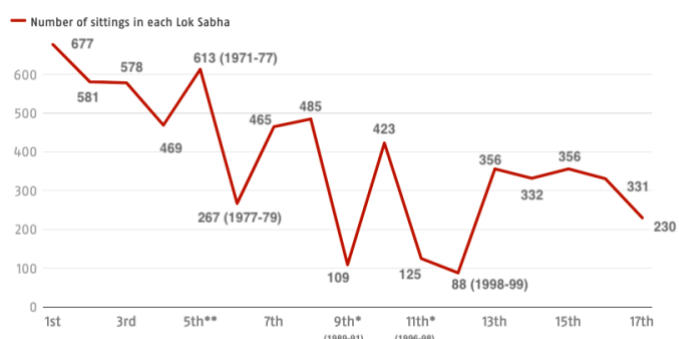
Article 85

The President shall from time to time summon each House of Parliament to meet at such time and place as he thinks fit, but **6 months** shall not intervene between its last sitting in one session and the date appointed for its first sitting in the next session.

Trend of Sitzings

- Before Independence, the Central Assembly met for a little more than 60 days a year.
- After Independence, the Parliament sat for 120 days on average (annually) during the first 20 years. Since then, the duration has fallen gradually. Between 2002-2021, the Lok Sabha has averaged 67 working days. In 2023, the Parliament has met for 42 days so far.
- In 2022, 28 State Assemblies met for 21 days on average.

Fewer sittings than 16th Lok Sabha



Note: Shortest is with reference to those with a term of five years. Terms less than five years may have had fewer sittings because of the lower tenure. Figures marked with a single asterisk (*) indicate term less than 5 years; and two asterisks (**) indicates a 6 year term. Figures for the 17th Lok Sabha are till the Budget Session 2023.

Source: PRS Legislative Research

About Special Session

- The Constitution has not used the term "special session".

- The term sometimes refers to sessions the Government convenes for **specific occasions** like commemorating Parliamentary or National milestones.
- Article 352 (Proclamation of Emergency) of the Constitution refers to a “**special sitting of the House**”. The provision was added through the 44th Constitutional Amendment Act (1978) to add safeguards to the power of proclaiming Emergency.
 - It specifies that if a Proclamation of Emergency is issued and Parliament is not in session, then 1/10th of Lok Sabha MPs can ask the President to convene a special meeting to disapprove the Emergency. (Refer EPIC April 2023 (click) for Low Number of Sittings in the 17th Lok Sabha and Refer EPIC October 2022 for Referral of Bills to Department Related Standing Committees).

Article 352(8)

Where a notice in writing signed by not less than **1/10th of the total number of members of the House of the People** has been given of, their intention to move a **resolution for disapproving**, a Proclamation issued under clause (1) to the President, if the House is not in session, a **special sitting of the House shall be held** within 14 days from the date on which such notice is received by the President.

2. Use of VVPAT Machines

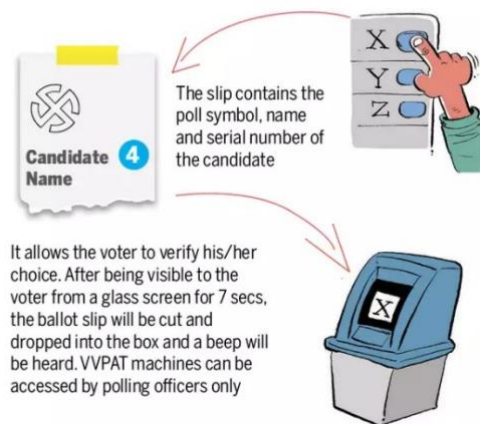
News: A petition has been filed by Association of Democratic Reforms (ADR) in the Supreme Court seeking 100% counting of Voter Verifiable Paper Audit Trail (VVPAT).

About VVPAT

- VVPAT is a **ballot-less system** connected to the Electronic Voting Machine (EVM). It acts as a **verification tool** for a voter to ensure that her vote has been correctly recorded against the candidate of her choice.
- When a voter casts her vote, the VVPAT prints a **paper slip displaying the name of the candidate voted** and the **symbol of her political party**. The slip is **displayed for ~7 seconds** (through a transparent window), and goes into a sealed box in the machine thereafter.
- It was first used in all 21 polling stations of the Noksen Assembly constituency of Nagaland in 2013, after which the Election Commission of India (ECI) decided to introduce VVPATs in a phased manner.
- From June 2017, **100% of VVPATs began to be used in polls**, and the 2019 Lok Sabha elections became the first general election to have 100% of EVMs being attached to VVPATs.

How do VVPAT machines work?

When a voter presses a button in the EVM, a paper slip is printed through the VVPAT



Verification of VVPAT Slips

- In 2018, the Election Commission mandated the counting of VVPAT slips of one **randomly selected polling station per Assembly constituency**. After a Supreme Court Judgment in 2019, it was increased to **5 polling stations per Assembly seat**.
- The present petition by ADR has requested the SC to declare **every voter has the fundamental right to ensure that her vote has been accurately recorded**. They argue that the current practice of displaying the VVPAT slip for 7 seconds does not guarantee this. They are seeking a 100% counting of VVPAT slips to fulfil the Supreme Court's judgment in **Subramanian Swamy vs. Election Commission of India** (2013), where it held the VVPAT is an indispensable requirement of free and fair elections.

- The ECI has said the VVPAT was “essentially an audit trail” so the voter could verify the vote at that instant but following Supreme Court orders, the **slips were being tallied on a “statistically robust basis”**.
- Going for 100% counting of VVPAT slips in every election would be akin to going back to time of manual polling and re-introduction of paper ballots by indirect means.
- The ECI had consulted the Indian Statistical Institute (ISI) to recommend a mathematically sound, statistically robust and practically cogent sample size for the internal audit of VVPAT slips. **The ISI report had recommended a sample size of 479 machines.** The ECI has told the SC that its process of verification of VVPATs of 5 randomly selected polling stations per Assembly seat, with more than 4,000 total Assembly seats in India, translated to 20,600 EVM-VVPAT systems which is well above the ISI's recommendation of 479.

3. National Judicial Data Grid

News: The Chief Justice of India has announced that the SC has come ‘onboard’ the National Judicial Data Grid (NJDG) Portal.

About the National Judicial Data Grid

- It is a database of orders, judgments and case details of 18,735 District & Subordinate Courts and High Courts. It has been created as an **online platform under the e-Courts Project**. It provides information related to cases instituted, pending and disposed of in the Courts across the country.
- Data related to cases are updated on the grid on a **near real-time basis** by the connected District and Taluka courts.
- The Grid provides data relating to judicial proceedings/decisions of all computerized district and subordinate courts of the country.
- Case data are available for **both civil and criminal cases** with the ability to perform drill-down analysis based on the age of the case as well as the State and District.
- NJDG works as a **monitoring tool to identify, manage and reduce pendency of cases**. It is helping in **providing timely inputs for making policy decisions to reduce delays** in disposing of cases.
- It also **facilitates better monitoring of court performance and systemic bottlenecks**. It serves as an efficient resource management tool e.g., for 2023, the total pendency of registered cases in SC is 64,854. Cases instituted in August 2023 were 5,412 while cases disposed were 5,033. This shows that the **pendency in SC is largely due to legacy cases** since the Court is currently disposing of approximately the same number of cases filed on an annual basis.
- The **World Bank has praised the National Judicial Data Grid in the Ease of Doing Business report** (2018). It has said that the grid has made it possible to generate case management reports, thereby **making it easier to enforce contracts**.
- It has helped generate inputs related to particular areas of law e.g., to track cases related to land disputes, **land records data of 26 States have been linked with NJDG**.
- The portal has been developed by the **National Informatics Centre (NIC)** in close coordination with the Computer Cell, Registry of the Supreme Court.

4. e-Courts Project and ICJS

News: The Union Cabinet has approved the Phase III of the e-Courts project.

About the e-Courts Project

- Its aim is to create a **unified technology platform** for the judiciary.
 - It will provide a **seamless and paperless interface** between courts, litigants, and other stakeholders.

- e-Courts have been conceptualized on the basis of the '**National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary – 2005**' submitted by the **e-Committee, Supreme Court of India**.
- Phase I of the project was launched in 2007. In Phase II, from 2015 onward, 18,735 District & Subordinate courts have been computerized so far. Phase III will extend from 2023 to 2027.
- Phase III will cover:
 - **Digitisation** of entire court records, both legacy and pending cases.
 - Establishment and expanding the scope of **virtual courts** for hearing of cases by **creating a robust digital infrastructure**.
 - Integration of duty holders such as courts, jails, police stations, and forensic laboratories with the **Interoperable Criminal Justice System (ICJS)**.
 - Add **Artificial Intelligence into the judicial system** and introduce features like Optical Character Recognition (OCR) for analysis of case pendency and forecasting future litigation.
 - A tripartite agreement between State Governments, the Union Government and the 25 High Courts for maintenance and upkeep of equipment by State Governments with funds and hardware provided by the Union Government.
- Citizens without access to technology can access judicial services from **eSewa Kendras** to bridge the digital divide.
- The benefits of project include digitization of court proceedings **reducing the costs, reducing paperwork** making the process environment friendly, **reducing process time** through e-filing and **enhanced transparency** in court proceedings.

About ICJS

- The **Inter-operable Criminal Justice System (ICJS)**, was conceptualised by the **e-Committee, Supreme Court of India**.
- It seeks to **enable seamless transfer of data** and information **among different pillars of the criminal justice system**, like courts, police, jails and forensic science laboratories, from one platform.
- ICJS will help make the **crime and criminal data available at a centralized application** for search across data from all pillars using key identify fields such as FIR, Case No., Prison ID, etc. This shall help in tracing a record right from registering FIR against suspects to imprisonment of convicts. It will cover court case details, trials/ judgments, prosecution & forensics information.
- Another objective of ICJS is to have **Data Analytics for Forecasting/Predictive Trends in Crimes** reported region-wise, category-wise, and basis other parameters for effective management & control of crimes in future.
- ICJS has been **made functional from February 2021**.

5. SC Judgment Regarding Prior Approval for Corruption Cases Against Government Officials

News: A Constitution Bench has held that the SC Judgment (2014) declaring Section 6A of the Delhi Special Police Establishment (DSPE) Act as invalid has a retrospective effect.

About Section 6A of the DSPE Act

- Section 6A was inserted into the DSPE Act **through Section 26 of the Central Vigilance Commission Act (2003)**. The section mandated **prior sanction of the Government** to proceed in corruption cases against Government officers of the rank Joint Secretary or above. Section 6A(2) had an exception that such approval was not necessary for cases involving arrest of a person on the spot on the charge of accepting or attempting to accept a bribe.

- The section was added to protect senior officials, who need to exercise discretion in decision-making, from frivolous complaints.

About 2014 SC Judgment

- In May 2014, a 5-Judge Bench of the SC had **struck down Section 6A**. It ruled that the status or position cannot shield an officer from an unconstrained probe by the CBI in cases of corruption.
- The Court had termed it a “**discriminatory provision**” that “impedes tracking down the corrupt senior bureaucrats”. It had observed that the section **might help in shielding corrupt officials** at senior level. It classified offenders differently based on their official ‘status’.
- However, the SC had not clarified about the (then) existing cases being probed by the CBI. In 2016, a 2-Judge SC Bench dealing with a corruption case (from 2004) related to prior sanction transferred the case to a Constitution Bench for clarification.

Central Bureau of Investigation (CBI)

The CBI is a crime investigating agency functioning under the **Ministry of Personnel, Pension and Public Grievances**. The CBI derives its powers to investigate under **Section 2 of Delhi Special Police Establishment Act, 1946**. The Central Government can extend the jurisdiction of the agency (under Section 5). But the **consent of the State Government is necessary under Section 6**.

It has 3 divisions: **Anti-corruption, Economic Offences, and Special Crimes Division**.

It is also the **nodal police agency** in India for **coordinating investigations with Interpol member countries**.

About 2023 SC Judgment

- The SC has held that the **2014 ruling invalidating Section 6A will apply retrospectively**.
- The SC also said that Section 6A was a **procedural provision** and that the 2014 decision on its validity had nothing to do with the applicability of Article 20(1) of the Constitution.
- Hence, there would be no protection to the public servants on the premise of non-grant of sanction under Section 6A in cases prior to May 2014.

Article 20(1)

No person shall be convicted of any offence except for violation of a law **in force at the time of the commission of the Act** charged as an offence, **nor be subjected to a penalty greater than** that which might have been inflicted under the law **in force at the time of the commission of the offence**.

6. The Post Office Bill, 2023

News: The Post Office Bill, 2023 has been introduced in the Rajya Sabha.

Salient Provisions of the Bill

- **Pricing Autonomy:** The postal department can now set service prices **without requiring parliamentary approval**, allowing for quicker market response.
- **Expanded Services:** The Post Office shall provide such services as the Central Government may prescribe.
- **Security Enhancements:** The Government can intercept, open, or detain postal items for reasons such as security of the State, public order, friendly relations with a foreign state, emergency or contraventions of the Act.
- **Removal of Exclusive Rights:** The Government’s exclusive privilege to deliver letters has been removed, resolving long-standing ambiguities between ‘letters’ and ‘documents’.
- **Digital Addressing:** The Bill introduces standards for digital addressing using geo-spatial coordinates, potentially revolutionizing delivery methods.

- **Future-Proofing Deliveries:** With digital addressing, the Bill hints at futuristic delivery methods, like drone deliveries.

Concerns Associated with the Bill

- **Security Limitations:** Even though the Bill allows items to be intercepted for security reasons, **India Post's market share is less than 15%** in the courier/express/parcels (CEP) industry. It limits the effectiveness of these security provisions. Given the dominance of courier firms in the market, similar legislation should be applied to them to ensure uniformity in security measures.
- **Uncontrolled Courier Segment:** The Bill lacks provisions requiring medium and small courier operators to register with a designated authority. Controlling the movement of contraband goods in parcels sent by couriers remains a challenge. Small operators should be mandated to register with the authority.
- **Ambiguity in Implementation:** The idea of replacing physical addresses with digital codes using geo-spatial coordinates is futuristic. The practical application and public acceptance of this could be challenging.
- **Market Dynamics:** The removal of the government's exclusive right to deliver letters acknowledges couriers but also intensifies competition and market dynamics for India Post.

Snippets

1. Pro Bono Legal Services and Nyaya Bandhu App

Pro Bono Legal services programme was launched in April 2017 by the Department of Justice. It is aimed at fulfilling the Department's mandate of **enhancing "access to justice" for marginalised sections** of the society and the State's constitutional obligation of **providing "free legal aid" for all**. It facilitates delivery of quality legal assistance to the marginalised communities. It also ensures that the **volunteer lawyers are duly recognized for their contribution**.

Nyaya Bandhu App has been launched under this initiative, based on the premise of **using technology to enhance access to justice for all**. It will allow marginalised individuals ("Applicants"), seeking legal advice and counsel, to **connect via a mobile application with Advocates** who have volunteered their time and services on this platform.

2. Eligible Beneficiaries under The Legal Services Authority Act (1987)

Beneficiaries eligible for Pro Bono Services include **(a)** Member of a Scheduled Caste and Schedule Tribe; **(b)** Victim of trafficking in human beings or begar (as referred in Article 23 of the Constitution); **(c)** Woman or a Child; **(d)** Person with disability; **(e)** Person in custody; **(f)** An industrial workman; **(g)** Victim of a mass disaster, ethnic violence, caste atrocity, flood, drought, earthquake or industrial disaster; **(h)** Person with annual income less than as specified under law and Others.

Policy

1. National Curriculum Framework for School Education

News: The National Curriculum Framework for School Education has been released by the Government.

About NCF

- The Ministry of Education has been working on the development of 4 National Curriculum Frameworks (NCF), namely NCF for **School Education**, NCF for **Early Childhood Care and Education**, NCF for **Teacher Education**, and NCF for **Adult Education**.
- The National Curriculum Framework for School Education (NCF-SE) is the curriculum framework for the **5+3+3+4 design of schooling** as proposed by the National Education Policy 2020 (NEP 2020).

- The NCF views curriculum as the entire experience of children in schools, covering **learning goals, syllabus, teaching methods, materials, classroom practices**, and the overall culture of schools
- The framework ensures that it **covers all stages of schooling**. It sets **clear learning standards** and competencies, enabling teachers to **foster critical thinking, creativity, and genuine understanding**.
- The framework **empowers educators**, encourages **engaging pedagogies** and **emphasizes the importance of school culture and values**.
- The National Education Policy (NEP) 2020 and the NCFs **are not binding on the States**.

Key Recommendations of the NCF

- **Languages:** Students in class 9 and 10 will need to learn 3 languages, at least 2 should be native to India.

- In Classes 11 and 12, students will learn two languages, including one of Indian origin.

- **Board Exams:** All students will be allowed to take Board exams on at **least two occasions during any given school year**, with only the best score being retained.

- **No Restriction on stream:** For grade 11 and 12, the previously followed system of science, commerce and humanities streams has been eliminated.

- The NCF says that the students will be offered **“choice-based courses”** that will enable flexibility and remove hard separations between disciplines and academic areas.

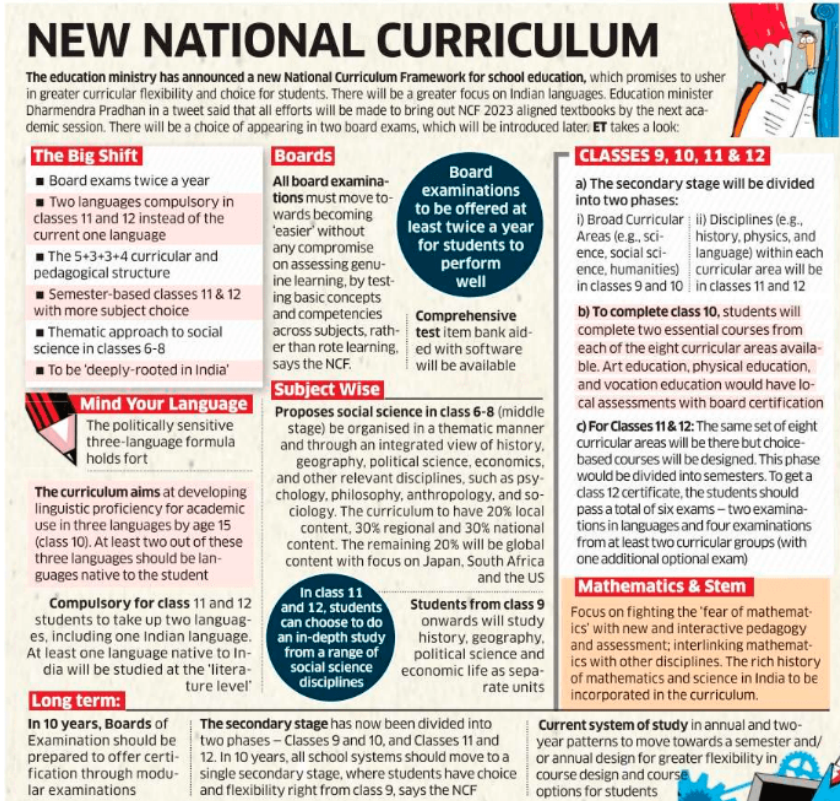
- **Mandatory Subjects:** At present, students from Classes 9 to 12 study 5 mandatory subjects, with an option of adding one more subject. Now, the number of mandatory subjects for Classes 9 and 10 is 7 and for Classes 11 and 12 is 6.

- **Semester system:** In the long term, all Boards should change to **semester or term-based systems**. In term-based system students are tested as soon as they have completed the subject. This would reduce the content load being tested in any one examination.

- **Classes 6 to 8:** NCF states that 20% content would be from the local level for the Social Science curriculum, 30% content would be from the regional level, 30% would be from the national level and 20% content would be global.

- **Environmental Education** is given due emphasis across all stages of schooling, culminating in a separate area of study in the Secondary Stage.

- **Moral Development:** It focuses on the moral development of a child through **panchakosha vikas** (5-fold development). This concept is an ancient explanation of the **importance of the body-mind link in human**



NEW NATIONAL CURRICULUM

The education ministry has announced a new National Curriculum Framework for school education, which promises to usher in greater curricular flexibility and choice for students. There will be a greater focus on Indian languages. Education minister Dharmendra Pradhan in a tweet said that all efforts will be made to bring out NCF 2023 aligned textbooks by the next academic session. There will be a choice of appearing in two board exams, which will be introduced later. ET takes a look:

The Big Shift

- Board exams twice a year
- Two languages compulsory in classes 11 and 12 instead of the current one language
- The 5+3+3+4 curricular and pedagogical structure
- Semester-based classes 11 & 12 with more subject choice
- Thematic approach to social science in classes 6-8
- To be 'deeply-rooted in India'

Boards

All board examinations must move towards becoming 'easier' without any compromise on assessing genuine learning, by testing basic concepts and competencies across subjects, rather than rote learning, says the NCF.

Board examinations to be offered at least twice a year for students to perform well

Comprehensive test item bank aided with software will be available

Subject Wise

Proposes social science in class 6-8 (middle stage) be organised in a thematic manner and through an integrated view of history, geography, political science, economics, and other relevant disciplines, such as psychology, philosophy, anthropology, and sociology. The curriculum to have 20% local content, 30% regional and 30% national content. The remaining 20% will be global content with focus on Japan, South Africa and the US

In class 11 and 12, students can choose to do an in-depth study from a range of social science disciplines

Students from class 9 onwards will study history, geography, political science and economic life as separate units

Mind Your Language

The politically sensitive three-language formula holds fort

The curriculum aims at developing linguistic proficiency for academic use in three languages by age 15 (class 10). At least two out of these three languages should be languages native to the student

Compulsory for class 11 and 12 students to take up two languages, including one Indian language. At least one language native to India will be studied at the 'literature level'

Long term:

In 10 years, Boards of Examination should be prepared to offer certification through modular examinations

The secondary stage has now been divided into two phases – Classes 9 and 10, and Classes 11 and 12. In 10 years, all school systems should move to a single secondary stage, where students have choice and flexibility right from class 9, says the NCF

Current system of study in annual and two-year patterns to move towards a semester and/or annual design for greater flexibility in course design and course options for students

CLASSES 9, 10, 11 & 12

a) The secondary stage will be divided into two phases:

- i) Broad Curricular Areas (e.g., science, social science, humanities) within each curricular area will be in classes 9 and 10
- ii) Disciplines (e.g., history, physics, and language) within each curricular area will be in classes 11 and 12

b) To complete class 10, students will complete two essential courses from each of the eight curricular areas available. Art education, physical education, and vocation education would have local assessments with board certification

c) For Classes 11 & 12: The same set of eight curricular areas will be there but choice-based courses will be designed. This phase would be divided into semesters. To get a class 12 certificate, the students should pass a total of six exams – two examinations in languages and four examinations from at least two curricular groups (with one additional optional exam)

Mathematics & Stem

Focus on fighting the 'fear of mathematics' with new and interactive pedagogy and assessment; interlinking mathematics with other disciplines. The rich history of mathematics and science in India to be incorporated in the curriculum.

experience and understanding. It recommends developing moral values for the child through a **balanced diet, traditional games, yoga asanas**, and a wide variety of stories, songs, lullabies, poems, and prayers to develop a love for cultural context.

Key Challenges

- Key challenges include resource constraint before schools to implement NCF, challenges in implementation especially in terms of skilled teachers, changing popular fixation on exams and results (instead of on learning outcomes) etc. (Refer EPIC April 2023 (click) for Pre-Draft of National Curriculum Framework (NCF) for School Education Released).

2. DIKSHA Platform and Adaptive Learning

News: The National e-Governance Division (under MeitY) is planning to integrate Personalized Adaptive Learning (PAL) into its Digital Infrastructure for Knowledge Sharing (DIKSHA) Platform.

About Personalized Adaptive Learning (PAL)

- It is a **software-based approach** that will allow each student to have an **individualized learning experience** over the course of the curriculum based on their unique needs and abilities.

About DIKSHA Platform

- It is an initiative of the **Ministry of Education** for **digital online education**.
- It provides quality **e-content for school education** in States/UTs and QR coded Energized Textbooks for all grades.
- It has **embedded assistive technologies** for learners with **visual or hearing impairments**.
- DIKSHA also hosts 2.43 lakh contributions by 11,624 academics by way of teaching videos, explainers and practice questions.



Integration of PAL with DIKSHA Platform

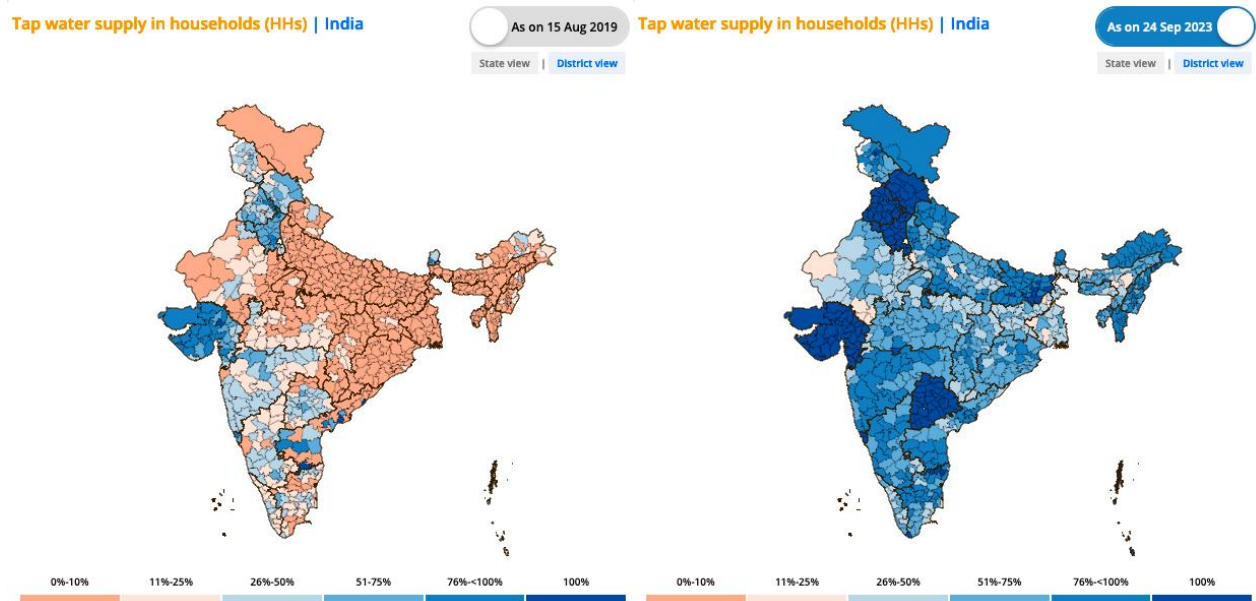
- The integration of PAL into DIKSHA is expected to revolutionize the platform by **leveraging Artificial Intelligence (AI)** to cater to the **specific learning needs of students** e.g., if a student of Class 9 is learning the Pythagoras theorem and makes a calculation mistake, the AI learning system flags it and loops the student back to a basic video of how to make the calculation.
- Building PAL is a massive exercise. Content from across subjects will have to be categorized and different chunks will have to be tagged. New content may also have to be created.
- Several states like Andhra Pradesh, Assam, and Haryana have experimented with PAL with the help of private players but are facing budget constraints.

3. Challenges Associated with the Jal Jeevan Mission

News: According to Government Data, Jal Jeevan Mission has made impressive progress. Yet, several challenges remain unaddressed.

About the Status of Jal Jeevan Mission

- Out of total 19.23 crore households, **13.16 crore households (68.4%) have tap water connections** as of September 2023. The number of households with tap water connection was only 3.23 crore (16.8%) in August 2019. The Mission has provided connections to **~10 crore houses in 4 years**.
- At present, **Goa, Telangana, Haryana, Gujarat, Punjab, Himachal Pradesh, Puducherry, Dadra and Nagar Haveli and Daman and Diu and Andaman and Nicobar Islands** have reported **100% coverage**.
- Bihar (96.4%), Mizoram (92.7%), Arunachal Pradesh (89.8%), Sikkim (87.4%), Ladakh (84.2%), Uttarakhand (83.8%), Maharashtra (79.6%), Nagaland (78.3%) and Manipur (77%) have **greater than 75% coverage**.
- Tap water supply has been provided to **915,000 (88.73%) schools**, and **952,000 (84.69%) Anganwadi centers**. (Refer EPIC March 2023 (click) for Status of Jal Jeevan Mission).



Source: **JJM Dashboard**. In most districts, especially Central and Eastern India, the tap water coverage was < 10% in 2019. This has risen to > 75% in most districts now, including in East and North-east India.

Challenges Before JJM

- **Data Discrepancy:** Some villages with '100% coverage' under official records still have houses that do not have tap water connection.
- **Infrastructure:** Many households lack the necessary pipes and taps to access water.
- **Inconsistent Supply:** Water supply is inconsistent, with some villages/households receiving water for only 2 hours/day.
- **Reliance on Old Sources:** Villages continue to rely on traditional sources like handpumps due to inadequate tap water supply.
- **Terrain:** Laying pipelines is difficult in tough terrains and remote areas, causing disruptions. Maintenance of existing infrastructure is difficult in such areas.

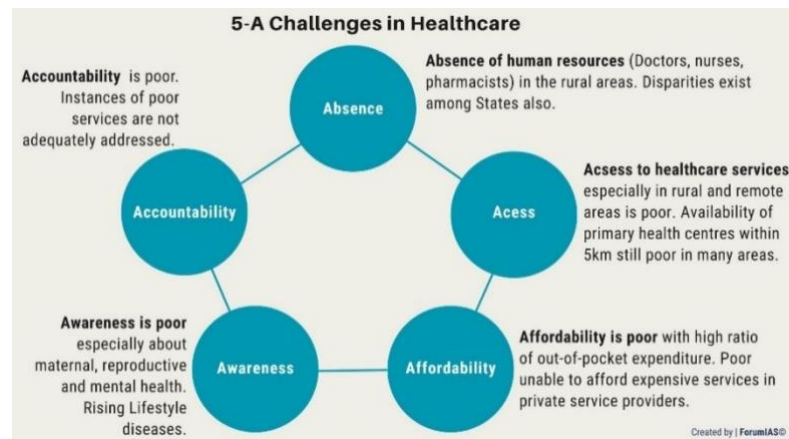
4. Ayushman Bhav Campaign

News: The Government has launched the Ayushman Bhav Campaign.

About the Ayushman Bhav Campaign

- The Ministry of Health and Family Welfare is the nodal ministry for the campaign.

- It is a comprehensive nationwide healthcare initiative that aims to **extend healthcare coverage to every village and town** transcending geographical barriers and ensuring that no one is left behind.
- The campaign aims to extend comprehensive coverage of health services through its 3 components:
 - **Ayushman Ape Dwar 3.0:** This initiative aims to provide Ayushman cards to remaining eligible beneficiaries enrolled under the **PM-JAY scheme**, ensuring that more individuals have access to essential health services. (Refer EPIC August 2023 (click) for Performance of the PM Jan Arogya Yojana (PM JAY)).
 - **Ayushman Melas at HWCs and CHCs:** These Melas at HWCs and CHCs will facilitate the creation of ABHA IDs (Health IDs) and issuance of Ayushman Bharat Cards. They will also offer early diagnosis, comprehensive primary health care services, tele consultation with specialists, and appropriate referrals.
 - **Ayushman Sabhas:** These gatherings in every village and Panchayat will help in distributing Ayushman cards, **generating ABHA IDs**, and raising awareness about vital health schemes and disease conditions such as non-communicable diseases, tuberculosis (Nikshay Mitra), sickle cell disease as well as blood donation and organ donation drives.
- **Recognition:** Panchayats that successfully extend comprehensive coverage of health services will earn the prestigious title of '**Ayushman Gram Panchayat**' or '**Ayushman Urban Ward**,' symbolizing their dedication to equitable healthcare provision.
- **Ayushman Bhav campaign** is aligned with the vision of creating 'Healthy Villages' and 'Healthy Gram Panchayats,' laying the foundation for **achieving Universal Health Coverage** in India (Refer EPIC May 2023 (click) for Universal Health Coverage in India).
- The Mission aims to promote **social accountability** within the health-care systems and exemplify the principle of "**jan bhagidari se jan kalyan**".



5. Disease Adjusted Life Years (DALYs) and Healthcare Research in India

News: Healthcare experts have pointed out that healthcare research in India may not be aligned with actual healthcare challenges in India.

About Disability Adjusted Life Years (DALYs)

- DALY is a measure to gauge the **overall disease burden on a population** including both reduction in life expectancy and diminished quality of life.
- It combines 2 aspects: **Years of Life Lost due to premature mortality (YLL)** and **Years Lived with Disability or reduced health (or Years Lost to Disability, YLD)**. DALY is thus expressed as $DALY = YLL + YLD$.
 - YLL is calculated as the number of deaths (n) x the standard life expectancy at age of death (L1). This measures the reduction in life expectancy.
 - YLD is the number of new cases of a disease (I) x a disability weight (DW) x the average time a person lives with the disease before remission or death (L2). This measure represents the diminished quality of life experienced for an individual with injury or illness.
- The WHO employs DALYs to represent both **mortality and morbidity in populations**.

Issues with Healthcare Research in India

• Mismatch in Research Priorities and Disease Burden:

A study by the Indian Institute of Science, Bangalore has revealed discrepancies between India's health research and domestic disease burden:

- Cancer, making up less than 5% of India's DALYs, dominates research with 22% of publications.
- Diabetes Mellitus had 3.1% of DALYs, its research accounted for 7.5% (number of papers published).
- Neonatal conditions made up ~14% of DALYs but received only 1.3% of research attention. (Refer EPIC June 2023 (click) Gender Discrimination in the Field of Medicine and Medical Research).

• Under-researched Healthcare Challenges:

Cardiovascular diseases represent 16% of India's disease burden, yet only 5% of research focuses on them. In high-income countries, these diseases account for over 20% of DALYs but only 10% of research.

• Global Threats Over Domestic Needs:

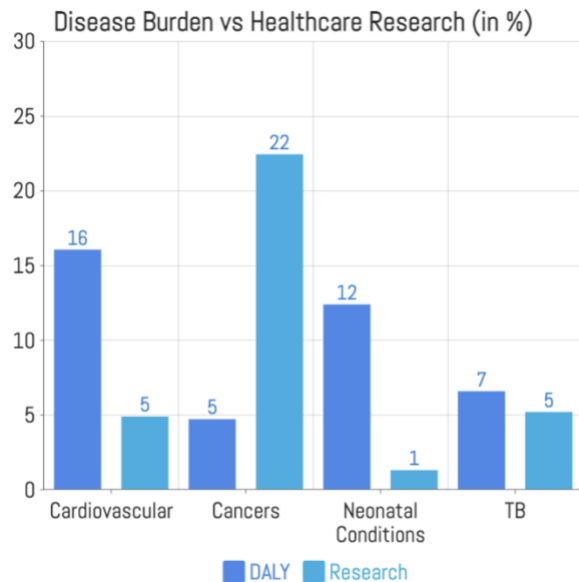
Diseases like malaria (0.5% DALYs) and HIV/AIDS (1% DALYs) command 2.5% of India's research because of their global significance.

• External Influences Skew Local Research:

The research direction in India is influenced by the health priorities of high-income countries driven by the market demand. **Major scientific journals also play a role in this misalignment by emphasizing global north issues.**

• Experts point out that mismatch is also due to poor healthcare infrastructure in India.

Disease burden of certain conditions (e.g., childbirth related complications) is high due to ineffective implementation of existing knowledge and best practices leading to higher mortality. Robust public infrastructure and healthcare delivery systems can significantly alleviate the disease burden.



Research in Neonatal conditions and cardiovascular diseases remains much below disease load.

Steps Required

- The Government must **enhance public health infrastructure**, which includes increasing research on public health, healthcare systems, and implementation of clinical medicine.
- Government's scientific policy should **prioritise research on under-studied diseases**, such as cardiovascular and respiratory diseases, and reconsider support for over-funded areas like cancer research.
- Diseases like HIV/AIDS and malaria don't pose a significant challenge for India, investing in them is crucial to **address global health challenges**. India can significantly contribute to **alleviating the disease burden in LICs** that may lack the necessary research capacity.
- India's primary research funding agencies must devise coherent, well-reasoned strategies for their mid- and long-term objectives. Clear policies, priorities, and systems for health research governance are necessary to better align research funding with the country's actual health needs.

6. Legalizing Hemp Cultivation

News: The Government of Himachal Pradesh is taking steps to legalize cultivation of hemp in the State.

About Hemp Cultivation

- Hemp is a botanical class of **Cannabis sativa** cultivars grown specifically for industrial or medicinal use.
- Its uses include **phytoremediation**, cloth manufacturing, medicinal applications and the pulp paper industry.

- **Narcotic Drugs and Psychotropic Substances Act, 1985** prohibits the sale and production of cannabis resin and flowers.
- However, **Section 10 of the Act empowers the States to make rules regarding the cultivation of any cannabis plant**, production, possession, transport, consumption, use and purchase and sale, and consumption of cannabis (except *charas*). The States are empowered to permit the cultivation of hemp only for obtaining fiber or seeds or for horticultural purposes.
- In 2017, **Uttarakhand became the first State in the country to legalize cannabis cultivation**.
- Now the Government of Himachal Pradesh is taking steps to legalize cannabis (hemp) cultivation in the State. The Government sees this move as a way to **utilize cannabis's medicinal properties, generate revenue**, and **support farmers** who have long requested the ban on cultivation be lifted.
- However, some experts and activists are concerned about the potential negative effects, including **increased drug abuse**, the nexus between illegal cannabis producers and politicians, and the need to address social, economic, and political factors.

Snippets

1. Aarogya Maitri Cube

India has built the world's **first disaster hospital that can be airlifted**, packed in 72 cubes. It has been named as 'Aarogya Maitri Cube'. It has been developed indigenously under the **Project BHISHM** (Bharat Health Initiative for Sahyog Hita and Maitri) as part of India's '**Aarogya Maitri**' initiative to provide essential medical supplies to friendly countries. These cubes contain **essential equipment and supplies**, such as an operation theatre, a mini-ICU, ventilators, blood test equipment, an X-ray machine, a cooking station, food, water, shelter, a power generator, and more. The cubes contain supplies **needed for 200 people to survive for two days**.

2. Education to Entrepreneurship Initiative

It is a collaboration between the **Ministry of Education**, the **Ministry of Skill Development & Entrepreneurship** and **Meta** (formerly Facebook). Its aim is to bring **digital skilling to the grassroots level**. This will equip India's talent pool with futuristic technologies, fostering a new generation of entrepreneurs. The partnership is for 3 years. Meta in partnership with the **National Institute for Entrepreneurship and Small Business Development** (NIESBUD) will provide digital marketing skills training to 5 lakh entrepreneurs over the next 3 years in **7 regional languages**.

3. 'Deemed-to-be-University' Status

The **National Council of Educational Research and Training (NCERT)** has been given the **status of a Deemed-to-be-University**. The Union Government on the **advice of the University Grants Commission (UGC)** can declare an Institution of Higher Education other than universities **working at a very high standard in a specific area of study as an Institution 'Deemed-to-be-university'**. Such Institutions **enjoy the academic status and privileges of a university**.

Deemed to be universities like other universities have the **autonomy of offering various courses**. These institutions can also **design their own syllabus and courses**.

4. Malviya Mission

Malaviya Mission is a **Teachers Training Programme** by the University Grants Commission. It is aimed to improve the capacity building of faculty members in higher educational institutions. It will help improve the quality of teachers' training, build leadership skills in teachers and help realize the goals of National Education Policy (NEP). The mission will help in building capacities of **15 lakh teachers of HEIs through 111 Malaviya Mission centers** (formerly known as Human Resource Development

Centers (HRDCs)). The themes include Multidisciplinary Education, Indian Knowledge Systems (IKS), Academic Leadership, Research and Development, Skill Development, Student Diversity among others.

5. Skill India Development (SID) Portal

The **Ministry of Skill Development** has launched the Skill India Digital (SID) platform. It is a Digital Public Infrastructure for skilling, education, employment and entrepreneurship ecosystem of India. It is aimed at synergizing and transforming the skills, education, employment, and entrepreneurship landscape of India. It has been built by the National Skill Development Corporation (NSDC). The platform is part of the **World Bank-assisted Skill Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP)** programme. It encompasses training programs from Central and State Governments, **creating a centralized hub for skill development initiatives**. All courses compliant with the National Skill Qualification Framework (NSQF) will also be accessible on the platform.

6. Gati Shakti Vishwavidyalaya (GSV)

It is a Central University established through an Act of Parliament in 2022. It subsumes the previously-existing **National Rail and Transportation Institute (NRTI)**. Its mandate is to create best in class manpower and talent for the **entire transportation and logistics sectors**. It is sponsored by the **Ministry of Railways**, Govt. of India. It is located in **Vadodara**, Gujarat. The Union Minister of Railways acts as the Chancellor. It is a “first of its kind” university aiming to **fulfil the mandate of the National Developmental Plans** (PM Gati Shakti National Master Plan 2021 and National Logistics Policy 2022) **across railways, shipping, ports, highways, roads, waterways and aviation** etc. GSV has entered into a collaboration with Airbus to enable co-development and co-delivery of **sector-relevant skilling courses and programs for regular students and working professionals**.

7. PM Vishwakarma Scheme

It is Central Sector scheme whose aim is to strengthen and nurture the **Guru-Shishya parampara** or family-based practice of **traditional skills by artisans and craftspeople**. The scheme is expected to improve the **quality as well as the reach of products and services of artisans** and to ensure that they are **integrated with the domestic and global value chains**. **18 traditional crafts will be covered** including carpenters, boat makers, locksmiths, goldsmiths, masons, toy makers, tailors etc. They'll be provided skill upgradation including advanced training, toolkit incentives of INR 15,000 and credit support at a concessional interest rate. The nodal **ministry is the Ministry of Micro, Small & Medium Enterprise**. The Ministry of Tribal Affairs would provide active support to implement the scheme.

8. Steps by Urban Local Bodies (ULBs) Under the NAMASTE Scheme

National Action for Mechanised Sanitation Ecosystem (NAMASTE) Scheme is related to mechanized cleaning of sewers to prevent death of sanitation workers. The scheme envisages:

- Identification of the Sewer/Septic Tank Workers (SSWs).
- Occupational Training and distribution of PPE (Personal Protective Equipment) Kits to SSWs.
- Assistance for Safety Devices to Sanitation Response Units (SRUs).
- Extending Health Insurance Scheme Benefits to identified SSWs under the PMJAY.
- Livelihood assistance.
- Information Education and Communication Campaign by the ULBs and National Safai Karamcharis Finance & Development Corporation.

Economy

1. Frictionless Credit

News: The RBI has announced to establish a 'Public Tech Platform for Frictionless Credit'.

About Frictionless Credit

- It is a borrowing approach that **seeks to streamline the lending process for consumers**. Unlike the traditional credit systems, where individuals need to go through **extensive paperwork**, credit checks and lengthy approval procedures, **frictionless credit promises a smoother and faster experience**.
- The **credit appraisal process** assesses the borrower's ability to repay the loan and stick to the loan agreement. The information needed for the process is **scattered among different entities** like Governments, Banks, Credit Agencies etc. This makes the process complex and time-consuming.
- The '**Public Tech Platform for Frictionless Credit**' is being developed by Reserve Bank Innovation Hub (a wholly-owned subsidiary of RBI). It aims to make the lending process smooth and quick. It will function as a digital hub for credit information, streamlining the loan approval process, and enable sharing of digital data among stakeholders.
- A **pilot project for digitizing Kisan Credit Card (KCC) loans** up to INR 1.6 lakh was started in 2022. It tests a fully digital lending process without paperwork.

Expected Benefits

- Long and complex process adds to operational expenses which can then be passed to borrowers. An RBI survey found that processing farm loans takes 2-4 weeks and cost about 6% of the loan amount.
- This platform will help in making **this lending process smooth and quick**. It will help in **reducing costs, speed up the loan process**, and make it **scalable**.

2. Incremental Cash Reserve Ratio

News: RBI has announced that it would discontinue the Incremental Cash Reserve Ratio (I-CRR) in a phased manner.

About Incremental Cash Reserve Ratio

- I-CRR is an **additional cash balance** which the RBI can ask banks to maintain over and above the Cash Reserve Ratio (CRR).
- I-CRR was introduced in August 2023 by RBI.
- I-CRR was announced as a temporary measure to **absorb excess liquidity from the banking system**. The level of surplus liquidity in the system surged because of the return of INR 2,000 banknotes to the banking system.
- RBI's surplus transfer to the government also led to increase in government spending and capital inflows. Last time, RBI imposed the I-CRR was in November 2016 to absorb a part of the surplus liquidity in the system following the demonetization of INR 500 and 1,000 banknotes on November 2016.

Cash Reserve Ratio

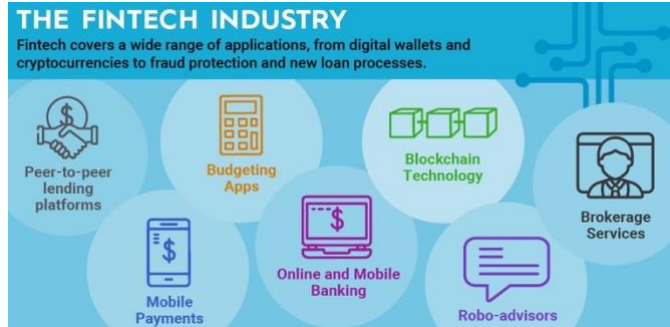
Cash Reserve Ratio (CRR) is the minimum amount of the total deposits which banks have to maintain as cash reserves with the Reserve Bank of India. It is an essential tool to maintain the health of the banking system. **Banks cannot use this amount for lending or for any investment purposes.**

3. Self-Regulation of Fintech

News: RBI has called on fintech entities to establish Self-Regulatory Organizations (SROs).

About Fintech Sector

- Fintech plays a vital role in offering **convenient access to formal financial services**, benefiting lower-income individuals.
- The fintech sector encompasses various **digital financial services** such as payments, UPI-based transfers, digital wallets, and small, short-term loans, effectively replacing traditional moneylenders.
- Fintech **assesses borrowers' credit-worthiness using transaction data** and collaborates with traditional financial institutions like NBFCs and banks.



Source: Investopedia. Fintech covers wide range of products/services like digital payments, mobile banking, brokerage services etc.

About Self-Regulation Organizations (SROs)

- SRO is a **non-governmental organization**. It **sets and enforces rules** and standards relating to the **conduct of entities in the industry** with the aim of **protecting the customer** and promoting professionalism, ethics, equality.
- SROs **collaborate with all stakeholders** in **framing rules and regulations**.
- Their self-regulatory processes are administered through **impartial mechanisms** such that members operate in a disciplined environment and accept penal actions by the SRO.
- Regulations by SRO **supplement but do not replace applicable laws or regulations**.
- Fintech sector has witnessed **many unethical practices** (exorbitant interest rates, coercive methods to recover loans) which necessitate regulation.
- Proactive approach can address related issues like **data privacy, cybersecurity and risk management**. SROs can help build trust among consumers, investors and regulators.

Functions of SRO

- **Communication:** Acting as a link between members and regulatory bodies like the RBI.
- **Standards:** Setting industry benchmarks and promoting professional behaviour.
- **Training:** Providing training and awareness programs for members.
- **Dispute Resolution:** Establishing a uniform grievance resolution framework.

Advantages of SRO

- **Expertise:** SROs are experts in their respective fields, and provide valuable knowledge and insights to their members.
- **Ethical Standards:** They enforce ethical standards among their members, fostering trust in the industry.
- **Oversight:** SROs act as watchdogs, preventing unprofessional practices.

4. RBI's Revised Framework for Investments by Banks

News: RBI has revised the norms for classification, valuation and operation of investment portfolios of commercial banks.

About the New Framework

- According to the norm, banks have to classify their entire investment portfolio under **3 categories: Held to Maturity (HTM), Available for Sale (AFS) and Fair Value through Profit and Loss (FVTPL)**.
- These norms will not be applicable to investments in bank's own subsidiaries and joint ventures.

- **Held for Trading (HFT)** shall be a separate investment subcategory within FVTPL. HFT is an investment that is bought with the **intention to sell within a short period**, which is usually less than a year. The purpose is to make a profit from the quick trade rather than the long-term investment.
- **Held to Maturity (HTM)** means a security instrument that is purchased and owned until its maturity period. Certificates of Deposit (CD) come under HTM.
- **Available-For-Sale** securities (AFS) are debt or equity securities purchased with **the intent of selling before they reach maturity**. Available-for-sale securities are reported at fair value.
- FVTPL will include all securities that do not qualify for inclusion in HTM or AFS.
- The revised directions shall **apply to all commercial banks** (except Regional Rural Banks) from April 1, 2024.
- The revised framework **updates the regulatory guidelines with global standards and best practices** and introduces a symmetric treatment of fair value gains and losses.
- The new framework is expected to enhance **quality of banks' financial reporting**, **improve disclosures**, provide fillip to **corporate bond market**, facilitate the **use of derivatives for hedging**, and strengthen the **overall risk management framework of banks**.
- Experts said the new norms will not allow banks to move their portfolio freely across categories and **may affect their profits marginally**.

Financial Derivatives

Financial Derivative is an instrument **whose value is dependent on an underlying asset** or group of assets. The asset can be share (equity) or a commodity (like gold). Derivatives include instruments like **Options, Forward and Future Contracts** etc.

Hedging

A hedge is an investment position intended to **offset potential losses** or gains that may be incurred by a companion investment. A hedge can be constructed from many types of financial instruments, including **stocks, exchange-traded funds**, insurance, forward and futures contracts, swaps, and options.

5. RBI's Guidelines Regarding Fixed and Floating Interest Rate Loans

News: RBI has issued guidelines enabling borrowers to transition from a floating interest rate-based loan to fixed interest loan.

About the RBI Guidelines

- The transition from **floating interest rates to fixed interest rates** will be based on a **policy approved** by the lending institution's board of directors. The policy must also specify **how many times such a switch can occur during the loan's term**.
- The lending institution must provide **full communication** to the borrower about all **relevant charges, service fees, administrative costs** associated with the transition, and the implications of switching.
- The borrower will now have the **flexibility to choose** between increasing the EMI, extending the loan tenure, or a combination of both.
- RBI has asked the lending institutions to provide borrowers with **quarterly statements** detailing **principal and interest amounts** collected to date, the **EMI amount**, the number of **remaining EMIs**, and the **annualised interest rate** for the entire loan term.

Fixed and Floating Interest Rate Loans

- Fixed interest rates **remain constant** throughout the tenure of the loans. Floating interest rates are **subject to market fluctuations** and **changes in the base rate**.
- Floating interest rates are **often lower** than fixed rates.

- Lenders prefer floating rate-based loans because they allow for **better adjustments** in response to **changing market conditions**.
- Floating rates can benefit borrowers by potentially increasing their savings. However, they can lead to higher costs in case the RBI raises the interest rates.
- Floating rate loans typically do not incur **prepayment penalties**, unlike fixed rate loans.
- Fixed-rate loans offer borrowers **greater certainty and security**. It facilitates **better budget planning** and **financial management**.

6. IMF, FSB Report on Regulation of Crypto-assets

News: International Monetary Fund (IMF) and Financial Stability Board (FSB) have released policy and regulatory recommendations to manage risks associated with crypto assets.

Recommendations Given by the Report

- The report noted that crypto-assets **pose risks to macroeconomic and financial stability**. They also pose risks related to financial integrity, **consumer and investor protection** and market integrity. The risks are exacerbated by **noncompliance with existing laws**.
- IMF/FSB has recommended that blanket ban on all crypto-asset activities (like trading, mining) can be costly. It will be technically demanding to enforce the ban. Blanket bans tend to **increase the incentives for circumvention** due to the inherent **borderless nature of crypto-assets**. It can result in potentially **heightened financial integrity risks** and create inefficiencies.
- Ban in one jurisdiction could also lead to activity migrating to other jurisdictions, creating **spill over risks**.
- The Report recommends following steps:
 - Comprehensive **policy and regulatory response** for crypto-assets to address the risks of crypto-assets to macroeconomic and financial stability.
 - **Targeted restrictions** such as crypto taxation to address risks.
 - **Monitor crypto's impact** on the International Monetary System.
 - To curb the misuse of crypto-assets, countries should implement the **FATF anti-money laundering and counter-terrorist financing standards** that apply to virtual assets and virtual asset service providers.
 - The report emphasized globally coordinated effort to address unique challenges due to borderless nature of crypto assets.

7. World Bank's Observations on India's Digital Public Infrastructure (DPI)

News: The World Bank has observed that India's Digital Public Infrastructure has resulted in remarkable outcomes in various areas.

Achievements of DPI Initiatives

- **Financial Inclusion:** The JAM Trinity (*JanDhan-Aadhaar-Mobile*) has **greatly improved financial inclusion**, increasing the adult inclusion rate from 25% to over 80% in just 6 years.
- **Government to Person (G2P) Payments:** India's digital G2P system (Direct Benefit Transfer), built on DPI, has facilitated the transfer of US\$ 361 billion directly to beneficiaries through various government schemes, resulting in significant savings.
- **UPI (Unified Payments Interface):** UPI transactions in May 2023 alone exceeded 9.41 billion. In FY 2022–23, the total value of UPI transactions was nearly 50% of India's nominal GDP. (Refer EPIC August 2022 (*click*) for Unified Payments Interface (UPI) and Digital Payments in India).

- **DPI Benefits for the Private Sector:** DPI has increased efficiency for private organizations by reducing complexity, costs, and processing times. This has had positive effects on sectors such as SME lending, depreciation costs and fraud detection.
- **Lower KYC Compliance Costs:** The India Stack has **digitized and simplified KYC procedures**, reducing banks' compliance costs from US\$ 0.12 to US\$ 0.06 and making it more profitable to serve lower-income clients. (Refer EPIC August 2023 (click) for India Stack: Meaning and Benefits).
- **Cross-Border Payments:** The UPI-PayNow interlinking promotes faster, cheaper, and more transparent cross-border payments. (Refer EPIC March 2023 (click) for Linkage of UPI with Singapore's PayNow).
- **Account Aggregator (AA) Framework:** AA Framework (regulated by RBI) enables individuals and enterprises to **share data securely** and with consent. There are 1.13 billion cumulative accounts enabled for data sharing.
- **Data Empowerment and Protection Architecture (DEPA):** DEPA empowers individuals to control their data and share it across providers, fostering innovation and competition without heavy investments in client relationships. (Refer EPIC April 2023 (click) for India's Digital Public Infrastructure).

Initiatives for Digital Public Infrastructure (DPI)

- **Digital India:** It was launched in 2015 and is aimed at transforming India into a digitally empowered society and economy. It includes projects like Digital Locker, e-sign framework, and National Scholarship Portal etc.
- **BharatNet:** BharatNet is a high-speed broadband network project aimed at providing affordable high-speed internet connectivity to rural areas in India through network of optic fibre cables across the country.
- **National Health Stack:** It is a proposed digital infrastructure for the healthcare sector which aims to provide a common platform for **health data exchange and interoperability**. It aims to improve access to healthcare by enabling seamless information exchange among various stakeholders in the healthcare sector.
- **National Knowledge Network:** It is a high-speed network that connects universities, research institutions, libraries, and other knowledge hubs across India. The network enables the sharing of knowledge and resources, facilitating collaborative research and innovation.
- **UMANG (Unified Mobile Application for New-age Governance):** It is a mobile app launched by the Government to provide a single platform for accessing Government services and is available in multiple languages.
- **Government e-Marketplace (GeM):** It is an online platform that enables Government departments and agencies to procure goods and services from registered vendors. It aims to promote transparency and efficiency in the Government procurement processes.
- **Modular Open Source Identity Platform (MOSIP):** It helps Governments and other user organisations implement a digital, foundational identity system in a cost-effective way. Being modular, Nations can use MOSIP freely to build their own identity systems. It has been adopted by 9 nations.

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8. Minor Irrigation Schemes

News: The Ministry of Jal Shakti has released the 6th Census Report on Minor Irrigation (MI) Schemes.

About Minor Irrigation Schemes

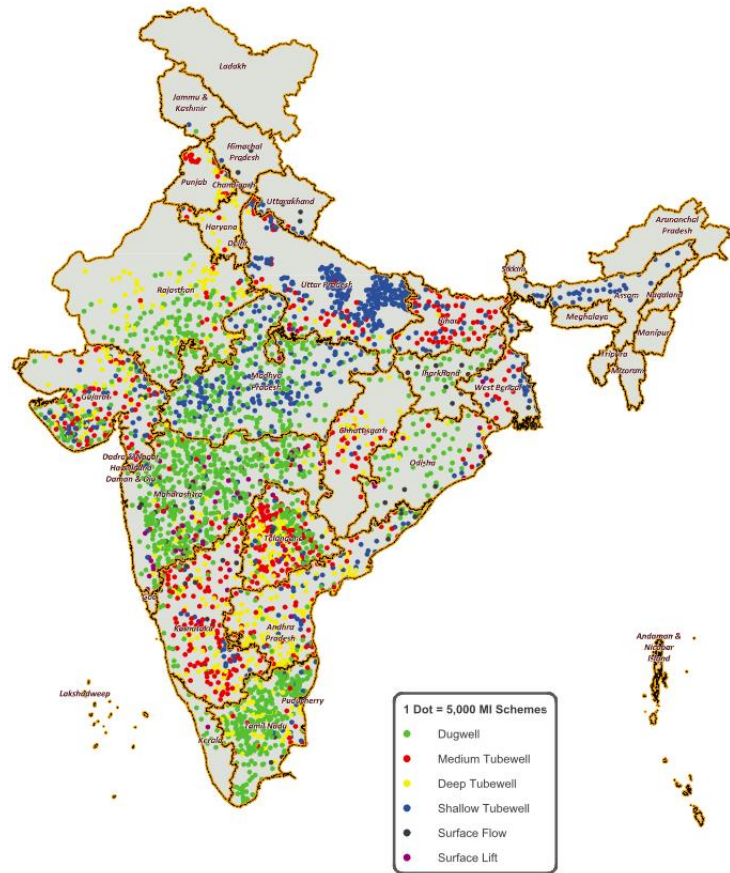
- Minor irrigation (MI) schemes (ground water or surface water) have **Culturable Command Area less than 2,000 hectares**.
- Minor irrigation schemes are categorized into 6 types:
 - **Ground Water Schemes**
 - (1) Dug wells/dug-cum-bore wells;
 - (2) Shallow Tube wells;
 - (3) Medium Tube wells;
 - (4) Deep tube wells.
 - **Surface Water Schemes**
 - (5) Surface flow schemes;
 - (6) Surface lift schemes.

Culturable Command Area

It refers to the area which can be irrigated from a scheme and is fit for cultivation.

Key Findings of the Census Report on Minor Irrigation (MI) Schemes

- **6th Census:** This is the 6th Census on MI Schemes. The earlier censuses were conducted with reference years 1986-87, 1993-94, 2000-01, 2006-07 and 2013-14. The reference year for the current census is 2017-18.
- **Minor Irrigation Schemes:** There are 23.14 million minor irrigation schemes in India spread over 695 districts. Of these, 21.93 million (94.8%) are groundwater and 1.21 million (5.2%) are surface water schemes.
 - Dug wells have the highest share in MI schemes followed by shallow tube wells, medium tube wells and deep tube wells.
- **State wise Share:** Uttar Pradesh possesses the largest number of MI schemes (17.2%) followed by Maharashtra (15.4%), Madhya Pradesh (9.9%) and Tamil Nadu (9.1%).
- **Increase in MI Schemes:** There has been an increase of about 1.42 million in MI schemes with their number standing at 23.14 million during 6th Census as compared to 21.7 million in 5th Census.
- **Ownership of minor irrigation schemes:** 96.6% of minor irrigation schemes are under private ownership (3.4% under public ownership). **18.1% of minor irrigation schemes are owned by women.**



Source: 6th MI Census. Distribution of MI Schemes. Wells have been classified based on depth of bore: Dug wells (8-15m), Shallow Tubewells (up to 35m), Medium Tubewells (35-70m) and Deep Tubewells (> 70m). Notice distribution of each type of well is related to groundwater level (e.g., only Medium and Deep Tubewells in Punjab, many Shallow Tubewells in UP).

9. State Hunger Index and Status of Hunger in India

News: The State Hunger Index is a useful metric to compare prevalence of hunger across States in India.

About Status of Hunger in India

- In the **2022 Global Hunger Index (GHI)**, India was ranked 107th out of 121 countries.
- India has been ranked behind Nigeria and Pakistan.
- According to the **State of Food Security and Nutrition in the World report (2022)**, India is home to **224.3 million individuals** experiencing **undernourishment**.

About the State Hunger Index

- The GHI is determined using 4 indicators: **Prevalence of calorie undernourishment, Stunting, Wasting, and Mortality among children under 5 years of age.**
- The State Hunger Index (SHI) employs the same indicators, except for **calorie undernourishment**. It is replaced by **Body Mass Index (BMI) undernourishment** among the working-age population.

- The data for SHI have been sourced from NFHS-5 and Wave 1 of the Longitudinal Ageing Study in India (2017-18) (for BMI Undernourishment). The methodology for SHI is same as GHI.
- Scores of SHI range from 0 to 100, with higher score indicating greater hunger levels: SHI < 10: Low Hunger; 10-20: Moderate Hunger; 20-30: Serious Hunger; 30-40: Alarming Hunger; > 50: Extremely Alarming Hunger.

Performance of States

- **Alarming:** Bihar, Jharkhand, and Chhattisgarh have a score of 35, categorizing them as 'alarming.'
- Gujarat, Uttar Pradesh, Assam, Odisha, Madhya Pradesh, Tripura, Maharashtra, and West Bengal all scored higher than the **national average of 29**. The performance of these states is comparable to African countries.
- **Moderate:** Sikkim, Puducherry, Kerala, Manipur, Mizoram, Punjab, Delhi, Arunachal Pradesh, Andaman and Nicobar Islands, and Tamil Nadu fall into the '**moderate hunger**' category.
- The remaining States, scoring below the national average but above 20, face a '**serious hunger**' issue.
- No State falls into the '**low hunger**' category. The impact of COVID-19 on the SHI has not been accounted for as **post-pandemic estimates** are not yet available.

Wasting

Low weight for height (Weight for Height Nutritional Index, or Mid-Upper Arm Circumference (MUAC)); loss of weight due to lack of food or due to a disease like diarrhoea. Wasted children are at higher risk of death.

Stunting

Low height for age (Height for Age Nutritional Index); occurs due to chronic undernutrition attributable to poor socioeconomic conditions, poor maternal health and nutrition, frequent illness, lack of adequate child care after birth. Stunting is associated with cognitive impairments like delayed motor developments, impaired brain functions and poor learning outcomes in schools.

Underweight

Low weight for age, can be due to either stunting, wasting or both.

Reasons for Worsening Hunger in India

- India's **subpar performance in the Global Hunger Index (GHI)** is primarily linked to its significant rates of **undernourishment** and **child malnutrition**. The calorie undernourishment has worsened in the last 5 years.
- India fares poorly in terms of **child wasting**, performing worse than several low-income African countries.
- According to the NFHS-5, approximately 1/3rd (33%) of children under 5 years in India experience **stunted growth** and are **underweight**, while 1 in 5 (20%) children faces the **issue of wasting**.

Snippets

1. Global Finance Central Banker Report Cards 2023

The Central Banker Report Cards has been published annually by **Global Finance** since 1994. It grades the Central Bank Governors of 101 countries, territories and districts. The grades are based on a scale from A to F for success in **inflation control**, **economic growth goals**, **currency stability**, and **interest rate management**. The RBI Governor Shaktikanta Das has been rated A+ in 2023. He was also awarded the 'Governor of the Year' at the **Central Banking Awards 2023** in London. He is the second RBI governor to receive this award after Raghuram Rajan, who was given the title in 2015.

2. Global Partnership for Financial Inclusion (GPFI)

It was officially launched in 2010 in Seoul, South Korea. It is an inclusive platform for all G20 countries, interested non-G20 countries and relevant stakeholders. Its purpose is to carry **forward work on financial inclusion**, including implementation of the **G20 Financial Inclusion Action Plan**, endorsed at the G20 Summit in Seoul. GPFI's efforts include helping countries put into practice **the G20 Principles**

for **Innovative Financial Inclusion**, strengthening data for measuring financial inclusion, and developing methodologies for countries wishing to set targets.

3. Hallmarking

Hallmarking is the accurate determination and official recording of the **proportionate content of precious metal in precious metal articles**. Hallmarks are official marks used as a **guarantee of purity or fineness** of precious metal articles. The principle objectives of the Hallmarking Scheme are to **protect the public against adulteration** and to **obligate manufacturers to maintain legal standards of fineness**. In India, at present two precious metals namely gold and silver have been brought under the purview of Hallmarking.

4. Index of Eight Core Industries

Index of Eight Core Industries measures combined and individual performance of production of **8 core industries** viz. Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity. These 8 Core Industries comprise **40.27% of the weight of items included in the Index of Industrial Production (IIP)**. The Index of Eight Core Industries (ICI) has increased by 8.0% (provisional) in July 2023 as compared to the Index of July 2022.

5. Index of Industrial Production (IIP)

Index of Industrial Production measures growth of industrial production in India.

The index classifies industries into the mining, manufacturing and electricity sector. IIP index is currently calculated using 2011-2012 as the base year. IIP data is compiled and released every month by the **Central Statistical Organization (CSO)**.

6. Advisory Board on Banking and Financial Frauds (ABBFF)

It is constituted by the Central Vigilance Commission (CVC). Its purpose is to conduct the **first level examination of bank frauds** before recommendations or references are made to investigative agencies such as the Central Bureau of Investigation (CBI). It consists of the Chairman and four other members and the tenure of the Chairman/ Members would be for two years. **It handles frauds worth INR 3 crore or more**. It also carries out frauds analysis in the financial system and provides inputs.

7. UPAg Portal

It stands for **Unified Portal for Agricultural Statistics (UPAg)**. It is a **data management platform** designed to **generate crop estimates** and **integrate with other systems generating Agriculture Statistics** such as Price, Trade, Procurement, Stock etc. It will provide **near real time information on crop production**, market trends, pricing, and other vital agricultural data. It has been developed by the Department of Agriculture and Farmers Welfare. It will aid data standardization and analysis.

8. Goa Roadmap for Tourism

UN World Tourism Organization (UNWTO) as the knowledge partner of India's G20 Presidency has developed the **Goa Roadmap for Tourism as a Vehicle for Achieving the Sustainable Development Goals**. The Roadmap is built around the **5 priority areas of the Tourism Working Group** under India's G20 Presidency: **(a)** Green Tourism; **(b)** Digitalization; **(c)** Skills; **(d)** Tourism micro-, small and medium-sized enterprises (MSMEs) and **(e)** Destination Management. In 2022, the **G20 welcomed 74% of international tourists and 73% of tourism exports worldwide**.

International Relations

1. Dispute Over Katchatheevu Island

News: The CM of Tamil Nadu has called to reclaim the islet from Sri Lanka to resolve issues of local fishermen.

About the Katchatheevu Islands Dispute

- Katchatheevu is an **uninhabited island** in the **Palk Strait**, and is administered by Sri Lanka. It is located between Neduntheevu, Sri Lanka and Rameswaram, India. The island has traditionally been used by both Sri Lankan Tamil and Tamil Nadu fishermen.
- Sri Lanka lays claim on Katchatheevu due to Portuguese rule from 1505-1658 CE, while India has argued that the island was historically under the control of the former Raja of Ramnad.
- In June 1974, India and Sri Lanka **signed an agreement to establish** the boundary between the two countries from Palk Strait to Adam's Bridge. The boundary was determined by historical evidence and international legal principles, and **placed the island within Sri Lanka's territory**.
- Another Agreement (1976) specified that **fishermen must not fish in the historic waters, territorial sea, or exclusive zones of either country without permission** from Sri Lanka or India.
- Some political groups and Tamil Nadu fishermen view **reclamation of Katchatheevu as a remedy** for illegal maritime boundary crossings by fishermen.
- However, fishermen in Sri Lanka's Northern Province believe this would worsen their problems, **given the use of bottom trawling by fishermen of Tamil Nadu**.
- Since 1976, there have been multiple instances where the issue of Katchatheevu has reignited.
- In August 2013, the Union Government had told the Supreme Court that the issue of reclaiming Katchatheevu from Sri Lanka didn't exist, **as no Indian land was given to Sri Lanka**. The Government said that the historical dispute between British India and Ceylon was settled by the 1974 and 1976 agreements.



2. ASEAN-India Summit and East Asia Summit

News: The Prime Minister of India attended the 20th ASEAN-India Summit and 18th East Asia Summit.

About ASEAN and ASEAN-India Summit

- The ASEAN-India summit was started in 2002 in Cambodia and has been held every year since then.
- The summit meetings offer opportunities for leaders of participating countries to meet and gain from dialogue and interactions.
- ASEAN includes **10 nations of Southeast Asia**. Together, these countries account for **600 million people** and **6.5% of Global GDP (PPP) in 2022**.
- In 2022-23, India-ASEAN trade stood at **US\$ 131.6 billion**.



- At the 20th Summit, the Prime Minister of India presented a **12-point proposal for strengthening India-ASEAN cooperation** covering connectivity, digital transformation, trade and economic engagement, addressing contemporary challenges, people-to-people contacts and deepening strategic engagement.

About the East Asia Summit (EAS)

- The East Asia Summit (EAS) is the Indo-Pacific's premier forum for strategic dialogue. It is the only leader-led forum at which all key Indo-Pacific partners meet to discuss **political, security and economic challenges** facing the region and has an important role to play in advancing closer regional cooperation.
- The summit comprises **18 participating countries** including **10 ASEAN Member States** (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam) and **Australia, China, India, Japan, New Zealand, the Republic of Korea, the Russian Federation and the USA**.
- The 1st East Asia Summit (EAS) was held in Kuala Lumpur, Malaysia in 2005.

3. Significance of Arctic Region and Northern Sea Route to India

News: The Arctic Region and the Northern Sea Route hold vital significance for India.

Significance of Arctic

- **Historical Engagement:** India's ties with the Arctic date back to the signing of the Svalbard Treaty in 1920. India also established a research station in the Arctic in 2008 and became **an observer-State of the Arctic Council in 2013**.
- **Climate Impact:** Changes in the Arctic climate can influence India's economic security, water security, and sustainability.
- **Resource Potential:** The Arctic might contain over 40% of global oil and gas reserves, along with reserves of coal, zinc, and silver.
- **Trade Route:** The Northern Sea Route (NSR) in the Arctic offers a shorter shipping route between Europe and Asia-Pacific, potentially saving up to 50% in distance. (Refer EPIC August 2023 (click) for Northern Sea Route).
- **Economic Benefits:** In 2023, India's cargo traffic at the Arctic's Murmansk port was 35% of 8 million tonnes.

About the Northern Sea Route (NSR)

- The Northern Sea Route (NSR) is the shortest shipping route for freight transportation between Europe and Asia-Pacific countries.
- The **NSR spans 4 seas of the Arctic Ocean**, starting at the boundary between the Barents and the Kara seas (Kara Strait) and ending in the Bering Strait (Provideniya Bay).
- The route measures **5,600 km in length**. The 2021 blockage of the Suez Canal highlighted the NSR's significance as an **alternative maritime route**.
- Arctic Ocean remains icebound for many months and requires **icebreaking assistance for safe navigation**.

Significance of NSR

- **Cargo Traffic Growth:** Cargo traffic along the NSR experienced a surge of ~73% from 2018-2022, with a volume of 34.117 million tonnes in 2022.
- **Energy Imports:** India's increasing imports of crude oil and coal from Russia are facilitated by the NSR's reliability and safety.
- **Geographical Benefits:** India's major trade depends on sea transportation. The NSR offers a more efficient route, enhancing India's trade potential.

- **Chennai-Vladivostok Corridor:** The Chennai-Vladivostok Maritime Corridor (CVMC) could link with the NSR, shortening transport time. The CVMC is 10,500 km, a significant reduction from the 16,000 km St. Petersburg-Mumbai route.
- **Strategic Considerations:** With potential collective influence from China and Russia over the NSR, India's involvement can ensure balanced regional dynamics.



About Eastern Maritime Corridor (CVMC)

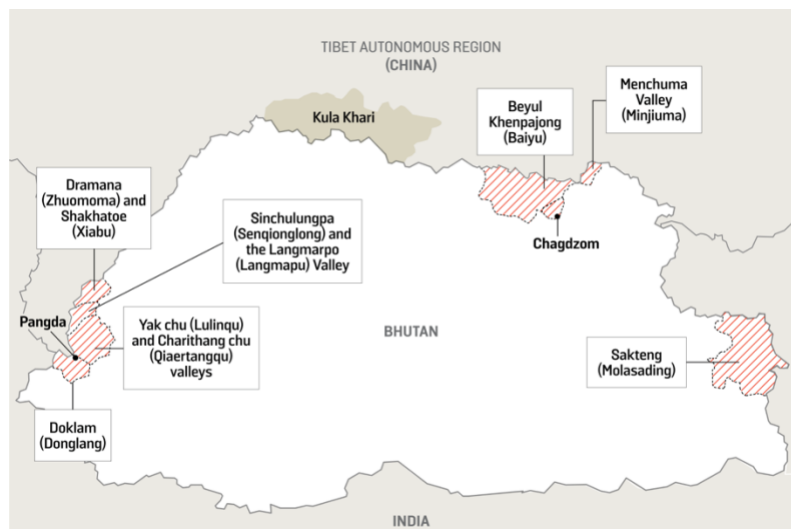
- The Eastern Maritime Corridor is a proposed sea route between the Indian port city of Chennai and the key Russian port Vladivostok.
- The route passes through the **Sea of Japan**, the **South China Sea** and the **Malacca Strait**.
- This maritime corridor is part of the vision to **address the current lack of connectivity** between India and Russia.
- This sea route is estimated to reduce the time required to transport cargo between Indian and Russian Ports of Far-East Region from current 40 days (via Europe) to 24 days (40% reduction). The new route would give India the largest **presence in the South East Asian region**.

4. Bhutan-China Border Dispute

News: Bhutan and China held the first meeting of the newly set-up joint technical team on the delimitation of their disputed boundary.

About Bhutan-China Border Dispute

- China claims certain territories from Bhutan:
 - **North:** Pasamlung and Jakarlung valleys (Beyul, Menchuma); Both of these places are culturally vital for Bhutan.
 - **West:** Doklam, Dramana, and Shakhatoe, Yak Chu and Charithang Chu, and Sinchulungpa and Langmarpo valleys. These places are pasture-rich and strategically located in the **Bhutan-India-China trijunction**, close to India's Siliguri Corridor.
 - **East:** In 2020, China made new claims on territory in Bhutan's East in the **Sakteng sanctuary**.



Source: Foreign Policy. China laid claim to the Sakteng region in the East in 2020. Dispute in Doklam region has deep implications for India. Bhutan has relinquished its claim on Kula Khari, citing erroneous claim due to cartographic error.

- The boundary talks between Bhutan and China began in 1984, and the 24th round was held in 2016.
- The talks have largely focused on disputed areas to Bhutan's north, and to its west, abutting the Doklam plateau. However, the talks have been stalled since 2016, especially after the 2017 Doklam stand-off.

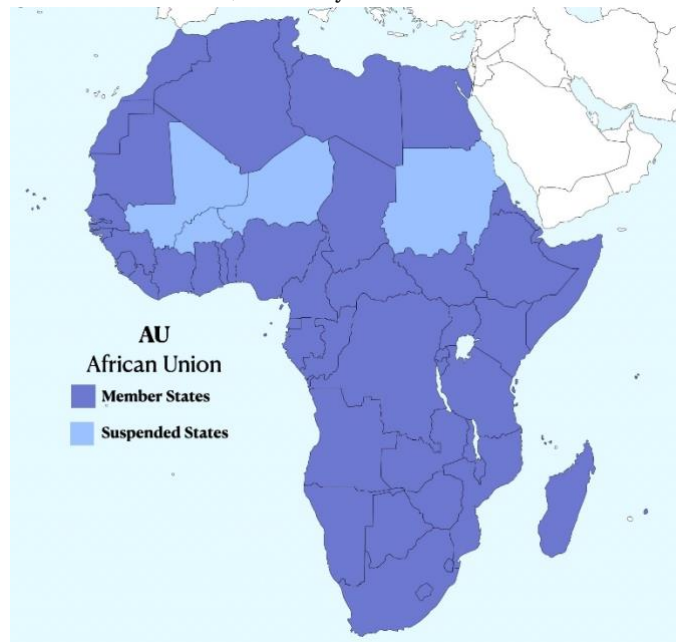
- In 2021, Bhutan and China signed an MoU on the **Three-Step Roadmap for Expediting the China-Bhutan Boundary Negotiations**.
- Bhutan and China have now agreed to expedite and take simultaneous steps to implement the Three-Step Roadmap. They have also agreed to hold the 14th Expert Group Meeting on the China-Bhutan Boundary Issues as soon as possible and maintain communication on holding the 25th Round of China-Bhutan Boundary Talk.

5. African Union

News: The African Union (AU) has been admitted as a new member of the G20.

About African Union (AU)

- African Union was launched in 2002. It is the successor of the Organisation of African Unity (OAU), which was formed in 1963.
- It is an **intergovernmental organization of the 55-member states** located on the continent of Africa.
- Its purpose is to build an Integrated, Prosperous and Peaceful Africa, driven by its own citizens.
- The AU aims to **unite African nations**, accelerate the process of the **political and socio-economic integration** of Africa and **address their social, economic and political challenges**. It also aims to promote peace, stability, security and human rights in the region.
- Its Secretariat is in Addis Ababa.
- The AU countries account for a GDP of US\$ 3 trillion with 1.4 people.



Source: Wikimedia Commons. Several nations like Sudan, Niger, Burkina Faso have been suspended from the AU after military coups.

Notable Achievements of the AU

- AU's peacekeeping missions have helped governments **tackle terrorism** across Africa, from the Sahel to northern Mozambique.
- AU's diplomatic efforts have contributed to **resolve conflicts** in Africa. In 2022, it brokered a peace deal between the Ethiopian Government and the Tigray People's Liberation Front (TPLF) in South Africa.
- The African Continental Free Trade Area (AfCFTA) came into force in 2021. With 54-member countries as signatories, AfCFTA is the world's largest new free trade area since the establishment of the World Trade Organization (WTO) in 1994.

Shortcomings of the AU

- It has been unable to thwart coups in Africa. Since the 1960s, the continent has witnessed more than 200 coups – the most recent ones took place in Gabon and Niger.
- It has also been unable to get its member countries to pay their annual dues, leaving it starved of funds. As a result, it has to **depend on external funding**, which impacts its autonomy.

6. India-US Bilateral Meeting (On the Sidelines of G20)

News: The PM of India and the US President held a bilateral meeting on the sidelines of G20.

Key Takeaways from the Meeting

- **Quad:** Both India and the US reassured the significance of the Quad in supporting a free, open, inclusive, and resilient Indo-Pacific region.
- **UN Reform and Security Council:** The US President reaffirmed his support for a reformed UN Security Council with **India as a permanent member**. India's candidature for the UNSC non-permanent seat in 2028-29 was also welcomed by the US.
- **Technology Cooperation:** Both leaders acknowledged the role of technology in their partnership and commended the India-US Initiative on Critical and Emerging Technology (iCET).
- **Space:** ISRO and NASA have started discussions for a joint effort to the International Space Station in 2024. India and the US also intend to increase coordination on **planetary defence** to protect planet Earth and space assets from the **impact of asteroids and near-Earth objects**.
- **Semiconductor Supply Chains:** The leaders recognized the importance of **resilient semiconductor supply chains** and welcomed investments from US companies in India.
- **Telecommunications and Digital Inclusion:** An MoU was signed between **Bharat 6G Alliance** and **Next G Alliance** to deepen cooperation in telecommunications. They also discussed digital inclusion.
- **Defence Collaboration:** The leaders pledged to enhance cooperation in defence, including space and AI. Negotiations for manufacturing GE F-414 jet engines in India are underway.
- **Quantum Technology:** The US reiterated its commitment to working together with India in the quantum domain both bilaterally and through the **Quantum Entanglement Exchange** (a platform to facilitate international quantum exchange opportunities).
- **India-US Global Challenges Institute:** The two leaders welcomed the signing of an MoU between Indian universities represented by the **Council of Indian Institutes of Technology** (IIT Council) and the **Association of American Universities** (AAU) to establish the **India-US Global Challenges Institute**. This institute will bring together leading research and higher-education institutions from the two nations, to advance new frontiers in science and technology.
- **Innovation Handshake:** Both welcomed the development of an ambitious '**Innovation Handshake**' agenda within the India-US Commercial Dialogue. This initiative will encompass events where start-ups, private equity and venture capital firms, corporate investment departments, and government officials from both countries will collaborate to **strengthen connections within their respective innovation ecosystems**. (Refer EPIC June 2023 (click) for Prime Minister's State Visit to the US and the Evolving India-US Relationship).

Snippets

1. Djibouti Code of Conduct (DCOC)

Djibouti Code of Conduct (DCOC) was established in 2009. It is a grouping on maritime matters aimed at **repression of piracy and armed robbery** against ships in **the Western Indian Ocean Region**, the **Gulf of Aden** and the **Red Sea**. India has joined the Djibouti Code of Conduct as Observer in 2020.

2. ASEAN-India Trade in Goods Agreement (AITIGA)

It is a trade deal signed in 2009. The agreement covers **trade in physical goods and products**. It does not apply to trade in services. ASEAN and India signed a separate **ASEAN-India Trade in Services Agreement** in 2014. Along with **ASEAN-India Investment Agreement**, the 3 agreements collectively form the **ASEAN-India Free Trade Area**. In 2022-23, India's exports to ASEAN stood at US\$ 44 billion, against imports of US\$ 87.57 billion and the **trade deficit widened to US\$ 43.57 billion**. It was just **US\$ 5 billion in 2010-11**. India has been worried about the routing of goods from third countries in India through ASEAN countries members by taking the duty advantages of the agreement. India and the ASEAN have agreed to conclude the review of AITIGA by 2025.

3. 2023 Edition of Standard Map of China

The Chinese government has released the “2023 edition of the standard map of China”. The map shows Arunachal Pradesh as part of its territory. China claims Arunachal Pradesh as part of South Tibet. The map also incorporates **China's claims over the nine-dash line** thus laying claim to a large part of the South China Sea. The map also adds a ‘**tenth dash**’ east of Taiwan to assert its claims over the island. (Refer EPIC April 2023 (click) for China Renames 11 Locations in Arunachal Pradesh and EPIC July 2023 (click) for India's Engagement with Philippines and Stance on South China Sea Dispute).

4. Nyoma Airfield

The Border Roads Organisation will start the construction of **India's highest fighter airfield in Nyoma**. The Nyoma village is located in Eastern Ladakh, close to the south Bank of Pangong Tso at an altitude of about 13,700 feet. Nyoma is ~46 kilometers from the Line of Actual Control with China. Nyoma currently operates as an **Advanced Landing Ground (ALG)**. The current runway is **made of mud** allowing only specialized transport aircraft such as the C-130J and helicopters to land. The construction of the Nyoma airfield will enable seamless operation of heavier transport aircraft and pave the way for the **deployment of fighter jets**, including the MiG-29 and Su-30 MKI. This will bring these formidable aircraft much closer to the LAC.



Science and Technology

1. Chandrayaan-3's Landing on the Moon

News: Chandrayaan-3 successfully landed on the moon's surface. India has become the 4th country in the world to soft-land a spacecraft on the moon.

About the Payloads on the Lander/Rover

- The Lander (Vikram) payloads will measure:
 - **Thermal conductivity** and temperature (Chandra's Surface Thermo Physical Experiment, ChaSTE) of lunar surface.
 - **Seismicity** around landing site (Instrument for Lunar Seismic Activity, ILSA).
 - **Plasma density** (Langmuir Probe, Radio Anatomy of Moon Bound Hypersensitive ionosphere and Atmosphere (RAMBHA)).
 - A passive experiment has been sent by NASA that will act as a **target for lasers for very accurate measurements** for future missions (LASER Retroreflector Array (LRA)).
- The Rover (Pragyan) payload has an **Alpha Particle X-ray Spectrometer (APXS)** and **Laser Induced Breakdown Spectroscopy (LIBS)** for deriving the **elemental composition** in the vicinity of the landing site. APXS will specifically determine the composition of elements such as magnesium, aluminium, silicon,

potassium, calcium, titanium, and iron in the lunar soil and rocks. (Refer EPIC July 2023 (click) for Chandrayaan-3 Mission: Salient Features and Significance).

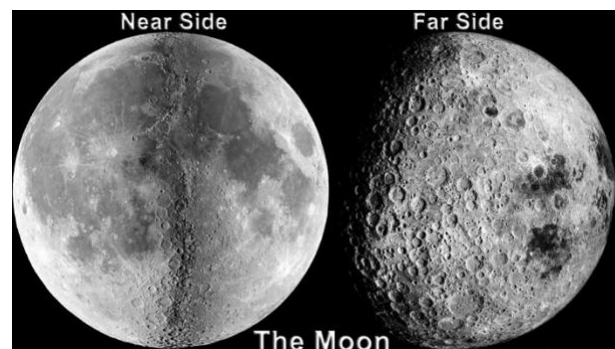
- **Pragyan had a mission life of 1 lunar day**, approximately equal to 14 Earth days. When the sun sets on the moon, the area becomes dark and very cold. This can damage the battery and other electronics components. When the sun rises again, after 14 days, the rover can 'return' to life if the components have survived. However it did not happen..

Key Discoveries of Chandrayaan-1 and Chandrayaan-2 Missions

- **Water on the Moon:** Chandrayaan-1 discovered water and hydroxyl molecules in the Moon's atmosphere and on its surface. Mini-SAR and Moon Mineralogy Mapper (M3) helped detect **water-ice in lunar craters**.
- **Lava Tubes:** The missions found an **underground lava tube**, potentially **suitable for human habitation**, providing **protection from radiation**, meteor impacts, temperature extremes, and dust storms.
- **Magma Ocean Theory:** Chandrayaan-1's M3 payload found crystals on the Moon's surface that suggest it was once molten, supporting the magma ocean hypothesis.
- **Dynamic Moon:** Contrary to the belief that the Moon was dormant, evidence of recent volcanic activity, including volcanic vents and lava channels, was discovered. The Moon's interaction with the exosphere was observed, even without meteor impacts.

About the Dark Side of the Moon

- Before landing on the Moon, the Lander Hazard Detection and Avoidance Camera (LHDAC), aboard the lander, **captured images of the 'dark side' (or far side) of the moon**. It is always hidden from the Earth.
- Over billions of years, Earth's gravitational pull has brought the **Moon's spin** (rotation on its own axis) **into sync with its orbit**. The Moon takes **28 days to complete one rotation** (around its axis), as well as complete **one revolution** (around the Earth). This leads to a phenomenon called '**tidal locking**'.
- With the Moon's rotation and orbit keeping it forever in step with the Earth, **only one part of it is visible from Earth at any time**. The unseen part is called 'far side' or 'dark side' of the Moon. The term 'dark side' can be misleading because it also experiences day and night like the near/visible side of the moon. Its only that the far side is never visible from the Earth.
- Because the far side of the Moon is shielded from radio transmissions from the Earth, it is considered a **good location for placing radio telescopes for use by astronomers**.
- **China's Chang'e 4 mission** is the only lunar mission to have **successfully landed on the far side of the moon**. Luna 3 spacecraft of the USSR photographed the far side for the first time in 1959.
- The near side is smoother and has more large volcanic plains called 'Maria' compared to the far side. On the far side, there are large craters, likely from asteroid impacts.



Source: Wikimedia Commons. The near and far side of the Moon. Notice the difference in prevalence of craters and smoothness of surface.

2. ISRO's Aditya-L1 Mission

News: ISRO has successfully launched the Aditya-L1 Mission. It is India's first mission dedicated to study the Sun.

About the Aditya-L1 Mission

- It is the 1st Indian mission **dedicated to observe the Sun**.
- It will be placed in a **halo orbit** encircling the 1st Lagrangian Point (L1) within the Sun-Earth system. The L1 point is situated **~1.5 million km from the Earth**. It will take ~4 months to reach the L1 point (from Launch).
- The planned **duration of the mission is ~5 years**.
- The Mission carries **7 payloads** to observe the photosphere, chromosphere and the corona using electromagnetic and **particle and magnetic field detectors**.
- The objectives of the Mission include:
 - Study of Solar **upper atmospheric** (chromosphere and corona) **dynamics** and the nature of **solar wind**.
 - Study of **chromospheric and coronal heating**, and physics of the partially ionized plasma.
 - Physics of **solar corona and its heating mechanism**.
 - Development, dynamics and origin of **Coronal Mass Ejection (CME)**. (Refer EPIC July 2023 (click) for Solar Flares).
 - Magnetic field topology and **magnetic field measurements** in the solar corona.

Chromosphere

The chromosphere is a **thin layer of plasma** that lies between the Sun's visible surface (the photosphere) and the corona. It extends for at least 2,000 km above the surface.

Corona

The **uppermost portion of the Sun's atmosphere** is called the corona. It extends many thousands of kms. above the visible surface of the Sun. The corona is **much hotter than the Sun's surface**, about 1 million °C compared to 5,500°C (surface).

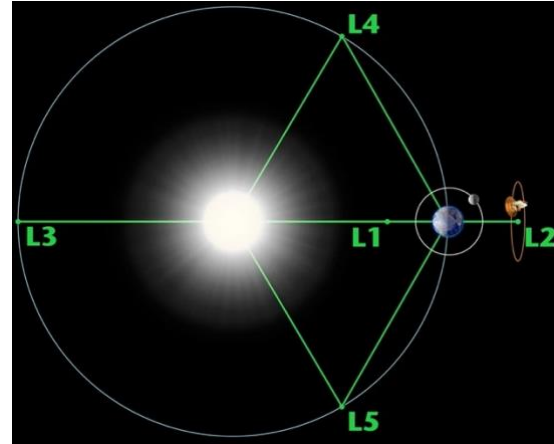
Type	Sl. No.	Payload	Capability
Remote Sensing Payloads	1	Visible Emission Line Coronagraph (VELC)	Corona/Imaging & Spectroscopy
	2	Solar Ultraviolet Imaging Telescope (SUIT)	Photosphere and Chromosphere Imaging- Narrow & Broadband
	3	Solar Low Energy X-ray Spectrometer (SoLEXS)	Soft X-ray spectrometer: Sun-as-a-star observation
	4	High Energy L1 Orbiting X-ray Spectrometer (HEL1OS)	Hard X-ray spectrometer: Sun-as-a-star observation
In-situ Payloads	5	Aditya Solar wind Particle Experiment (ASPEX)	Solar wind/Particle Analyzer Protons & Heavier Ions with directions
	6	Plasma Analyser Package For Aditya (PAPA)	Solar wind/Particle Analyzer Electrons & Heavier Ions with directions
	7	Advanced Tri-axial High Resolution Digital Magnetometers	In-situ magnetic field (Bx, By and Bz).

About Lagrange Points

- Lagrange points are locations in space where the **gravitational forces of two celestial bodies**, (like Sun and Earth), **balance the centripetal force** necessary for a small object to **move synchronously with them**.
- There are 5 such points, between any 2 celestial bodies.
- Since the forces are balanced, **satellites placed at Lagrange points do not need to expend a lot of fuel to remain in position**. Thus, these points can act as parking spots in space.
- Of the 5 Lagrange points, **3 are unstable and 2 are stable**. The unstable Lagrange points (L1, L2, and L3) lie along the line connecting the two large masses.
- Aditya L1 will be placed at L1 point. A satellite placed in the halo orbit around the L1 point has the advantage of **viewing the Sun continuously without any occultation or eclipses**.

Significance of the Mission and Solar Studies

- The mission will help understand complex phenomena inside the Sun including nuclear fusion, magnetic field dynamics, and the **generation of solar wind**.
- The **examination of the Sun's interior** using techniques like helioseismology provides valuable data for refining models of **stellar evolution**. It will help in better understanding of the broader universe.
- The fluctuations in the Sun's energy emissions can exert **long-term effects** on **Earth's climate patterns**.
- Scrutinizing these variations aids scientists in **enhancing climate models** and comprehending the complex interplay between **solar radiation and atmospheric processes**.
- Solar Flares have potential to disrupt communications on Earth. A better understanding of their origin can help devise preparedness and protective measures.



Source: NASA. The 5 Lagrangian Points. The image shows a satellite placed at the L2 Point. Aditya L1 will be placed at the L1 point.

3. Draft National Strategy for Robotics (NSR)

News: The Ministry of Electronics and Information Technology (MeitY) has invited public comments from stakeholders on the Draft National Strategy for Robotics.

About the Draft National Strategy for Robotics

- The aim of the Strategy is to **strengthen all pillars in the innovation cycle of robotic technology**. It also aims to provide a robust institutional framework for ensuring effective implementation of these interventions.
- The Objective of the Strategy is to:
 - Make India a global robotics leader by 2030.
 - Build upon the mandates of the Make in India 2.0, which identify robotics as one of the 27 sub-sectors to further enhance India's integration in the global value chain.
- The **Ministry of Electronics and Information Technology** (MeitY) will serve as the nodal agency for robotics, overseeing the NSR through the '**National Robotics Mission**' (NRM).
- The strategy has identified **manufacturing, agriculture, healthcare, and national security** as the 4 **core sectors** to prioritize robotics automation.
- The Strategy proposes **fiscal and non-fiscal interventions** by the NRM for upscaling innovation in robotics.
- These interventions will be specifically aimed at **developing funding mechanisms for robotics start-ups and promoting exports**.

Recommendations of National Strategy for Robotics

- Create a strong regulatory framework led by the Robotics Innovation Unit (RIU) under the Ministry of Electronics and Information Technology (MeitY).
- Establish **Centers of Excellence (CoEs)** in Robotics for both foundational and applied research.
- Encourage private sector involvement in priority sectors for experimental prototyping and initial commercialization.
- Provide support to startups, leverage research potential in higher education institutions, and develop dedicated robotics industrial zones.
- The Union Government should be a major buyer of Indian-made robotic systems. This can be achieved through a **Public Procurement Policy for Robotics**, which incentivizes domestic production by giving preference to suppliers with a **minimum local content requirement**.

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Challenges in India's Robotics Sector

- **Import Dependence:** India relies heavily on importing robotics components, mainly from China and Japan.
- **Expensive Hardware:** The cost of robotics hardware components is high.
- **Limited R&D:** Insufficient investments in research and development hinder progress.

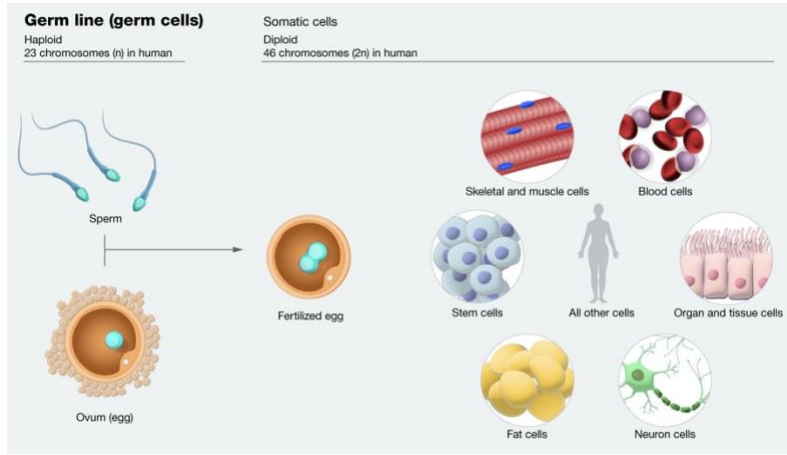
According to the **World Robotics Report 2022**, India ranks 10th globally in terms of annual industrial installations of robots.

4. Somatic Genetic Mutations/Variations

News: The global research work in Somatic Genetic Variations has improved rapidly in recent times.

About Somatic Cells

- Germ line refers to the sex cells produced by **sexually reproducing organisms** to **pass on their genomes** from one generation to the next (parents to offspring). Egg and sperm cells are called germ cells.
- Somatic cells are the cells in the body **other than germ cells**.
- In humans, somatic cells are **diploid**, meaning they **contain two sets of chromosomes**, one inherited from each parent.
- DNA mutations in somatic cells can affect an individual, but they cannot be passed on to their offspring.



Source: genome.gov. Germ Cells have 23 chromosomes (Haploid) and Somatic Cells has 46 chromosomes (Diploid), 23 from each parent (ovum sperm).

About Somatic Genetic Mutations

- Humans have **23 pairs of chromosomes**, one from each parent (mother and father), which **carry genetic information**.
- After fertilization, a single cell with 23 chromosomes begins dividing, ultimately creating nearly a trillion cells in the human body.
- During cell division, **DNA is accurately copied** aided by **error-correcting proteins** (i.e., prevent error in copying of the DNA), but there's still a very low error rate (**0.64–0.78 mutations per billion base pairs per division**).
- An error that occurs in the DNA **after birth but during development** is called a **Somatic Genetic Mutation**. The occurrence of mutation is driven by the repeated 'copy-pasting' of the genome. It means there will be **more somatic genetic mutations the older an individual is** and the **higher the turnover of the tissue**. Turnover is the replacement of old cells with new ones.
- Sometimes, a somatic genetic mutation can render a cell fitter than others, which lead to the formation of tumours. These mutations are called **driver mutations**.

Somatic Variation vs Germinal Variation		
	Somatic Variation	Germinal Variation
DEFINITION	Somatic variation is the genetic variation occurring in any of the cells except sex cells.	Germinal variation is the genetic variation occurring in the germ cells.
LOCATION	Somatic cells (any of the body cells except germ cells)	Germ cells
INHERITANCE	Non-inheritable. Variation dies with the death of the individual.	Heritable
SIGNIFICANCE	Generally not significant since they are not coming from parents.	Significant
HARMFULNESS	Harmless	Harmful
RATE OF MUTATION	Higher	Less
IMPORTANCE IN EVOLUTION	Not related to the evolution	Related to evolution

Importance of Somatic Genetic Variants

- **Cancer Signatures:** Somatic changes can cause a cancer to develop and cancers can accelerate the development of somatic changes. Certain genetic variations and patterns (mutational signatures) are characteristic of specific cancers. Hence, early detection of somatic changes can help with early detection, diagnosis, and prognosis of cancers.
- **Development of Genetic Diseases:** Many genetic conditions arise from somatic genetic variants. These conditions are not inherited from either parent but are due to new **genetic variations that have arisen during development**. So the severity and distribution of the disease depends on **how early or late during development the corresponding mutation occurred**.
- **Beneficial** (in some cases): In some instances, somatic changes can be beneficial in conditions of genetic diseases; by changing a deleterious change to a normal one, a phenomenon called **revertant mosaicism** e.g., ~10% of cases of **Wiskott-Aldrich syndrome**, a rare genetic immuno-deficiency, have been found to have revertant mosaicism, as a result **alleviating the severity of the disease in many individuals**.

5. Stem Cells and Stem Cell Therapy

News: The Delhi HC has allowed 2 children with Autism Spectrum Disorder to undergo stem cell therapy.

About Stem Cells

- Stem cells are unique cells in the human body that have the **ability to develop into many different cell types with specific functions**.
- They are characterized by two key properties:
 - **Self-renewal:** Stem cells can divide and make exact copies of themselves. This ability allows them to maintain a constant population of stem cells in the body.
 - **Differentiation:** Stem cells can differentiate into specialized cell types with distinct functions. For example, they can become blood cells, nerve cells, muscle cells, or any other type of cell found in the body.

Different Types of Stem Cells

- **Embryonic Stem Cells (ESCs):** They are derived from embryos, typically at the **blastocyst stage** (a very early stage of embryonic development). Embryonic stem cells have the potential to become any type of cell in the body and are considered **pluripotent**.
- **Adult Stem Cells:** These stem cells are found in various tissues and organs throughout the body. They play a role in **tissue maintenance, repair, and regeneration**.
- Adult stem cells are typically **multipotent**, meaning they can **differentiate into a limited range of cell types** specific to the tissue or organ where they are located.
- **Induced Pluripotent Stem Cells (iPSCs):** iPSCs are adult cells that have been reprogrammed to return to a pluripotent state similar to embryonic stem cells. This reprogramming is usually achieved through genetic manipulation.

Stem Cell Therapy

- Stem Cell Therapy is also known as **regenerative medicine**.
- Stem Cell Therapy promotes the **repair response of diseased, dysfunctional or injured tissue** using stem cells or their derivatives.
- Researchers grow stem cells in a lab. These stem cells are **manipulated to specialize into specific types of cells**, such as heart muscle cells, blood cells or nerve cells.
- The **specialized cells can then be implanted into a person** e.g., if the person has heart disease, the cells could be injected into the heart muscle. The healthy transplanted heart muscle cells could then contribute to repairing the injured heart muscle.

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Use of Stem Cells in Medicine

- **Understand how diseases occur** by studying development of stem cells into specialized cells like bone cells or nerve cells.
- Stem cells can be **guided into becoming specific cells** that can be used in people to regenerate and repair tissues that have been damaged or affected by disease (regenerative medicine).
- Before using investigational drugs in people, researchers can use some types of stem cells to test the drugs for safety and quality.

6. Nipah Virus Infections in Kerala

News: Kerala witnessed a surge in cases of Nipah virus.

About the Nipah Virus

- Nipah is a **zoonotic disease**. It is transmitted to humans **through infected animals**. It can also transmit through **contaminated food** or **directly from an infected person** through close contact.
- The first outbreaks of the Nipah virus among humans was reported from Malaysia (1998) and Singapore (1999). The virus is named after the village in Malaysia where the person in whom the virus was first isolated died of the disease.
- The animal **host reservoir** for Nipah virus is the **fruit bat**, commonly known as flying fox. Fruit bats are known to **transmit this virus to other animals** like pigs, dogs, cats, goats, horses and sheep.
- Symptoms of Nipah virus infection include fever, headache, cough, sore throat, difficulty in breathing, and vomiting. In severe cases, disorientation, drowsiness, seizures, encephalitis (swelling of the brain) can occur, progressing to coma and death.
- There is **no treatment or vaccine available** for either people or animals. The primary treatment for humans is supportive care.
- The Nipah virus is known to spread far more slowly than COVID-19. However, the WHO estimates its **global case fatality rate between 40-75%** making it very deadly. The WHO classifies it as virus of concern.
- Kerala has witnessed 4 outbreaks in the past 5 years. The most severe was in 2018, when 21 out of 23 infected people died. Each outbreak **increases possibility of mutation**, raising probability of **quicker transmission**.
- The Government of Kerala has responded by setting up dedicated control room for monitoring, **contact tracing, strict containment measures** etc. The Union Government has dispatched a team to assist the State.

Controlling Future Outbreaks

- **Address Root Causes:** The anthropogenic activities should be controlled e.g., expansion of agriculture activities into the habitats of fruit bat, which contribute to zoonotic spill-overs.
- **Adopt One Health Approach:** Comprehensive strategy should be adopted that looks at the health of humans, animals, and the environment as interconnected.
- **Public Education:** Awareness should be raised among the public about the disease, its transmission, and preventive measures.
- **Inter-State Coordination:** States should coordinate closely with each other to check wider spill-overs.
- **Monitoring:** The WHO recommends the vulnerable countries having Nipah hotspots to develop robust monitoring and prediction capabilities to manage outbreaks.

7. New Technique to Kill Cancer Cells

News: Scientists at the Indian Institute of Science (IISc) have developed a new approach to detect and kill cancer cells.

About the New Technique

- Scientists have created **hybrid nanoparticles** made of **gold and copper sulphide**. They have unique properties:
 - **Kill Cancer Cells**: They can create heat and **release toxic oxygen** when illuminated with light, effectively targeting and killing cancer cells.
 - **Diagnose Certain Cancers**: The photoacoustic property of the nanoparticles allows them to absorb light and **generate ultrasound waves**, which can be used to **detect cancer cells** with high contrast once the particles reach them. Scans created from the generated ultrasound waves can also provide better clarity and can be used to measure the oxygen saturation in the tumour, boosting their detection.
 - The hybrid nanoparticles are less than 8 nm in size. They can potentially **travel inside tissues easily** and reach tumours. It is expected that their small size **would allow them to leave the human body naturally without accumulating**. However, further studies are necessary to ensure they are safe to use inside the human body.

8. Vaccine for Dengue

News: Several efforts are ongoing in India to develop vaccine for dengue.

About Dengue

- Dengue is a **viral infection** caused by the **dengue virus**, transmitted to humans through the **bites of infected female mosquitoes**, primarily the *Aedes aegypti*.
- Most people don't show symptoms. However, visible symptoms include high fever, headache, body aches, nausea and rash. Most patients get better in 1–2 weeks. Some patients develop severe dengue and need care in a hospital. In severe cases, dengue can be fatal.
- Dengue is found in **tropical and sub-tropical climates** worldwide, mostly in urban and semi-urban areas. About half of the world's population is now at risk of dengue with an estimated **100–400 million infections occurring each year**. In 2019, the WHO identified **dengue to be one among the top 10 global health threats**.
- In India, dengue has spread from just 8 States and UTs in 2001 to all States by 2022.
- Prevention and control of dengue depend on **vector control**. There is no specific treatment for dengue. Early detection and access to proper medical care greatly lower fatality rates of severe dengue.
- In India, dengue is a **notifiable disease**, but a case is required to be notified only when the confirmatory test has been done in the lab.

Notifiable Disease

A notifiable disease is required by law to be **reported to the government authorities**. The notification is issued under the **Epidemic Diseases Act, 1897**. It allows authorities to **gather information to monitor the disease**, and **provide early warning of possible outbreaks**. The Union Government has notified diseases like cholera, diphtheria, encephalitis, meningitis, pertussis, plague, tuberculosis, AIDS, hepatitis, measles among others. The **State Governments can notify diseases as well**.

Vaccine Development for Dengue

- Dengue virus comes in **4 varieties known as serotypes**.
- One of the main challenges of developing a dengue vaccine is **antibody-dependent enhancement (ADE)**: a person with low levels of antibodies against one serotype of dengue, may end up **getting a more severe infection with another serotype of dengue**.
- There is a vaccine called **Dengvaxia** for people who have had dengue at least once and live in places where the disease is common.
- Multiple efforts are underway to develop dengue vaccine.

Snippets

- **Panacea Biotech's vaccine** is based on **live weakened versions of all 4 dengue serotypes**. It has shown promise in phase I/II trials in adults and is moving toward a larger phase III trial.
- Vaccines being developed by the **Serum Institute** and **Indian Immunologicals Limited** are also based on weakened virus technique are in Phase II and Phase I clinical trials respectively.

1. LUPEX (Lunar Polar Exploration Mission)

LUPEX is a joint mission of **Japan Aerospace Exploration Agency (JAXA)** and **ISRO**. Its aim is to explore lunar polar region suitability for **establishing a base on the Moon for sustainable activities**. It also intends to obtain knowledge regarding the **availability of lunar water-ice resources** and demonstrate **lunar and planetary surface exploration technologies** such as **vehicular transport and overnight survival**. It will be launched in 2024-25. The launch vehicle and rover will be contributed by the Japanese agency while the lander will come from ISRO.

2. Demon Particle

The Demon Particle was first theorized by David Pines in 1956. Electrons have a fixed mass and electric charge. Pines predicted that when passed through solids, electrical interactions can make electrons to combine to form a composite particle (plasmons) that is massless, neutral (no charge) and does not interact with light. This was called 'Demon Particle'. Scientists at University of Illinois have now found evidence of this particle. The demon particle could have many applications in computing, medical imaging, transportation, and energy. Demon Particle could lead to the **making of superconductors** that can operate at room temperature. (Refer EPIC August 2023 (click) for Superconductivity).

3. SeamlessM4T

Meta (Facebook) has launched an advanced **multilingual multimodal AI translation and transcription model** named SeamlessM4T. Its aim is to allow people to **communicate effortlessly through speech and text across different languages**. It is capable of performing various tasks including **speech-to-text, speech-to-speech, text-to-speech and text-to-text translations**. It has speech recognition for nearly 100 languages and speech-to-text translation for nearly 100 input and output languages. It has the ability to recognize when someone moves between two or more languages in one sentence. It can also **recognize gender bias in languages** and the model can quantify gender bias in translations.

4. Side Channel Attacks (SCAs)

SCAs are a method of **hacking a cryptographic algorithm** based on the **analysis of systems used in the encryption method**. These can be performed using a **collection of signals emitted by devices** including electromagnetic waves, power consumption, mobile sensors as well as sound from keyboards and printers to target devices. These signals are used to interpret signals that can be then used to compromise the security of a device.

5. Acoustic Side Channel Attacks (ASCAs)

ASCAs use the **sound of clicks generated by a keyboard to analyze keystrokes and interpret what is being typed to leak sensitive information**. ASCAs are particularly dangerous as the acoustic sounds from a keyboard are readily available and their misuse is underestimated by users. The use of laptops has increased the scope of ASCAs as laptop models have the same keyboard making it easier for **AI-enabled deep learning models to pick up and interpret the acoustics**.

A study has found that the use of AI model to recognise keystrokes using **audio captured through a smartphone microphone** has been able to achieve an accuracy of 95%.

6. Smishing

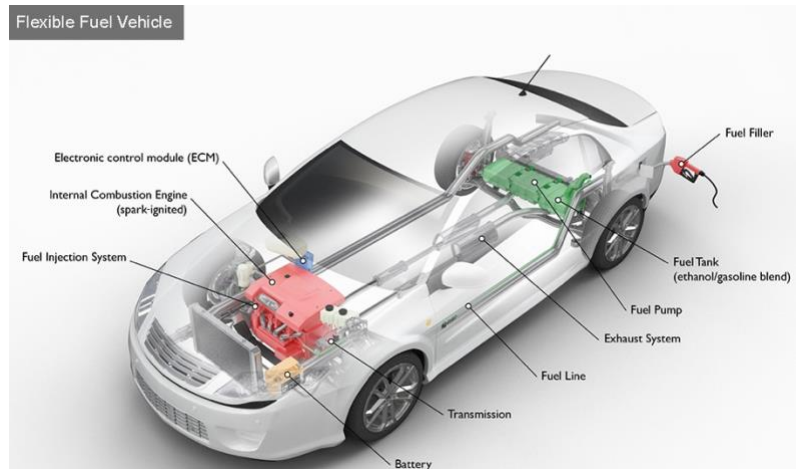
'Smishing' is a short form of 'SMS' (Short Message Service) and 'phishing'. It refers to a type of cyber-attack or scam where **fraudsters send deceptive text messages to trick individuals into revealing personal information**, such as login credentials, credit card numbers, or other sensitive data. Smishing messages often contain **links that lead to fake websites** or phone numbers that direct victims to call and provide information. Common tactics include **posing as a trusted organization**, like a bank or a government agency, and claiming that urgent action is required. The goal is to **create a sense of urgency and manipulate the recipient into responding** with their confidential information.

7. CSIR PRIMA ET11

It is an **indigenously designed and developed Electric Tractor** mainly to cater small and marginal farmers of India. It has been developed by the Central Mechanical Engineering Research Institute (CSIR-CMERI). It has been made entirely with **indigenous components and technologies**. It has been designed with **women-friendly features**. It can be **charged using a home socket**, providing ~4 hours of field operation.

8. Flex-Fuel Vehicles (FFVs)

It is an alternative fuel vehicle that has an **internal combustion engine designed to run on more than one fuel**. An **Electrified FFV** has both a **flex fuel engine** and an **electric powertrain**. This gives it the ability to provide dual benefit of higher ethanol use and much **higher fuel efficiency**. Some special **ethanol-compatible components** are required to adjust to the different chemical



properties and energy content in ethanol/methanol. The **Engine Control Module (ECM)** is also calibrated to accommodate the higher oxygen content of ethanol. The use of ethanol blending **sharply lowers harmful pollutants** such as **carbon monoxide, sulphur, and carbon and nitrogen oxides**. Blending also helps **cut oil imports**. However, the cost of ownership and operation for FFVs is very high compared with regular vehicles. (Refer EPIC June 2022 (click) for Amendments to the National Policy on Biofuels).

9. Nabhmitra

It is a device developed by ISRO-Space Applications Centre (Ahmedabad) for the **safety of fishermen**. It **uses satellite communication** to allow **two-way messaging between boats and authorities at sea**. The authorities can communicate **weather and cyclone warnings** with the boats. The fisherman can **send distress messages** to the authorities. Apart from providing information about shipping channels and maritime boundaries, the device will also help to identify fishing fields.

10. The Global Fund

It is an **international financing and partnership organization** that aims to attract and invest additional resources to **end the epidemics of HIV/AIDS, tuberculosis and malaria** to support attainment of the

Sustainable Development Goals established by the UN. It was established in 2002 and its secretariat is located in Geneva, Switzerland. The Fund has reached an agreement with **generic drug manufacturers** to significantly **reduce the price of an advanced HIV medication, TLD**.

11. TLD

TLD is a 3-in-1 pill (Tenofovir disoproxil fumarate, Lamivudine and Dolutegravir) recommended by the WHO as the **preferred first-line HIV treatment** for adults and adolescents. This drug rapidly suppresses the virus that causes AIDS.

12. G20 Pandemic Fund

The G20 Pandemic Fund was established under Indonesia's G20 Presidency. It finances critical investments to **strengthen pandemic prevention, preparedness, and response capacities** at national, regional, and global levels, **focusing on low- and middle-income countries**. The fund is hosted by the World Bank with WHO as technical lead. It secures money from donors to be distributed to low and middle-income countries for various purposes. This includes **disease surveillance, capacity building for critical health workforce, establishment of laboratories and emergency communication**.

13. Pirola

Pirola is a **newly designated highly mutating Omicron variant (BA.2.86) of COVID-19 virus**. It was first spotted in Denmark. Pirola differs from previous variants of Omicron as it has more than 30 spike protein mutations. This gives it **the capacity to be immune, evasive and highly transmissible**. It is currently in the WHO list of 'variants under monitoring'.

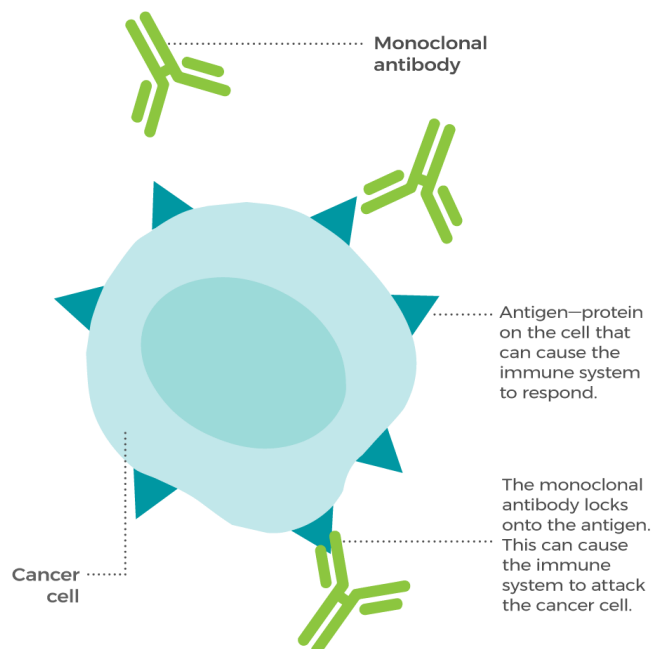
14. Mutations in the Virus

Viruses naturally mutate over time. Such changes are particularly common in viruses that have RNA as their genetic material (like in coronaviruses and influenza viruses). After a virus enters the human body, its genetic material (RNA or DNA) enters the cells and **starts making copies of itself** which can infect the other cells. **Mutations are triggered by errors in this copying process**.

Mutations can prove advantageous to the virus e.g., mutations allow the virus to copy itself and enter human cells more easily. As the virus spreads rapidly, **the frequency of copying increases, increasing chances of mutation**.

15. Monoclonal Antibodies

Monoclonal antibodies are **proteins made in laboratories** that **act like antibodies**. Antibodies are **parts of immune system**. They seek out the **antigens** (foreign materials) and stick to them in order to **destroy them**. Laboratory-made monoclonal antibodies help stimulate the immune system. The word '**monoclonal**' refers to the fact that the **antibodies created in the laboratory are clones**. They are exact copies of one antibody.



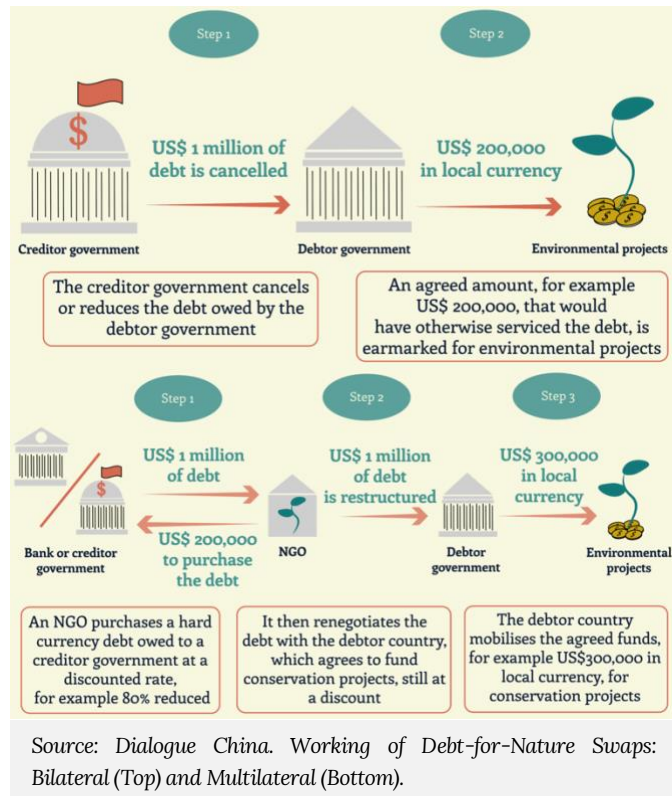
Environment

1. Debt-for-Nature Swaps

News: Gabon (in Africa) has announced a US\$ 5 million Debt-for-Nature Swap.

About the Debt-for-Nature Swap

- Debt-for-Nature swaps allow **heavily indebted developing countries** to seek help from financial institutions with paying off their debt if they agree to **spend on conservation of natural resources**.
- Usually banks in developed countries buy the debts of such countries and replace them with new loans which mature later. Such loans have lower interest rates.
- A debt-for-nature swap can be **multi-party** or **bilateral**.
- In an multilateral deal, a 3rd-party institution, usually an **international non-governmental organization** such as Conservation International, **buys part of a country's external debt** from the institution that had bought it initially **often at a discount**. The organization then agrees to let the debtor country pay the debt off by **investing a certain amount of local currency** (usually significantly less than the face value of the original debt) **in a biodiversity conservation plan**.
- In a bilateral deal, creditor country agrees to discount the debt in exchange for the debtor country **investing an agreed amount in a conservation plan**. This frees the indebted country from having to pay off some of its debt and it can instead invest its own resources to **preserve its biodiversity**.
- Gabon's debt for nature swap is the world's 2nd-largest debt-for-nature swap. In May 2023, the world's first and largest debt swap to conserve oceans was signed by Ecuador.



Utility of Swaps

- Debt-for-Nature Swaps offer a **promising approach to address the debt crisis in the Global South**.
- These swaps are seen as important because **developing countries face two interconnected challenges**.
 - They need to borrow money from international creditors to support their development plans.
 - They must adapt to the growing impacts of climate change and biodiversity loss.
- Debt-for-Nature Swaps offer a sustainable solution to both the issues.

2. State of Climate in the South-West Pacific, 2022

News: The World Meteorological Organization has released the report.

Key Findings of the Report

- Rising Sea Levels:** Sea level in the Pacific Islands region is **rising at a rate of about 4 mm per year**, which is slightly higher than the global average. This poses a significant threat to low-lying islands like Tuvalu

and the Solomon Islands, as it could lead to destructive floods, damaging agricultural lands and habitable areas.

- **Marine Heatwaves:** The report highlights the occurrence of long-lasting marine heatwaves in the area northeast of Australia and south of Papua New Guinea. These heat waves have had adverse effects on marine life and the livelihoods of local communities.
- **Disasters:** The number of disasters reported in the region in 2022 **decreased by around 39%** compared to 2021 (35 in 2022, 57 in 2021). However, the **overall economic damages were 53% more than the loss in 2021**. ~98% of the economic loss has been due to **floods**. The **economic losses associated with flooding** in 2022 were more than **4 times the average over the past 20 years** (2002-2021).

3. Continuous Support to Fossil Fuels by G20 Nations

News: The International Institute for Sustainable Development (IISD) has released a study titled 'Fanning the Flames: G20 Provides Record Financial Support for Fossil Fuels'.

Key Findings of the Study

- G20 members provided a record **US\$ 1.4 trillion** (~ INR 116 lakh crore) **in public money** to support fossil fuels in 2022. This support includes **fossil fuel subsidies** (US\$1 trillion), **investments by state-owned enterprises** (US\$ 322 billion) and **lending from public financial institutions** (US\$ 50 billion).
- While much of this was **support for consumers**, around 33% (US\$ 440 billion) was **driving investment in new fossil fuel production**.

Concerns Raised by the Study

- The financial support for fossil fuels by G20 members in 2022 is more than double the level of pre-COVID-19 period.
- The support **perpetuates the world's reliance on fossil fuels**, paving the way for yet more energy crises due to **market volatility** and **geopolitical security risks**.
- It severely **limits the possibilities of achieving climate objectives** set by the Paris Agreement by incentivizing greenhouse gas (GHG) emissions while undermining the cost-competitiveness of clean energy.

Recommendations Given by the Study

- Countries should **stop providing public funds to fossil fuels**, except for ensuring energy access for the poorest. Wealthier G20 nations, with higher historical emissions, should take the lead in cutting fossil fuels.
- Consumers and investors should be encouraged to **move away from fossil fuels** by setting **minimum carbon taxes** (between US\$ 25-US\$ 75 per tonne of CO₂) based on a country's income.
- Revenues from cutting subsidies and carbon pricing should be used to **help low-income households** and **promote clean energy**.
- Developing countries should be supported through flows of finance, knowledge, capacity and technology to **ensure smooth transition towards clean energy**.

4. One Sun, One World, One Grid (OSOWOG)

News: The Conference on Transnational Grid Interconnections for One Sun, One World, One Grid was held recently in New Delhi.

About the OSOWOG Initiative

- The idea for the One Sun One World One Grid (OSOWOG) initiative was put forth by the Prime Minister of India at the **First Assembly of the ISA in 2018**.

- It was jointly launched by the Prime Ministers of India and the UK during the UNFCCC COP26 in November 2021. The vision behind the OSOWOG initiative is the mantra that “The sun never sets”.
- It aims to aid in **developing a worldwide grid** through which **clean energy can be transmitted anywhere, anytime** (use power at night in one part of the world from solar energy generated on the other side of the world where it is day time).
- OSOWOG is divided into 3 main phases:
- 1st Phase: The Indian grid would be connected to the grids of Middle East, South Asia and South-East Asia to develop a common grid. This grid would then be used to share solar energy as per need, in addition to other renewable energy sources.
- 2nd Phase: This phase would connect the functional 1st phase to the pool of renewable resources in Africa.
- 3rd Phase: This phase will look at achieving true **global interconnection**. The idea will be to integrate as many countries as possible to create a single power grid of renewable energy. This can then be accessed by all countries.

OSOWOG Initiative and Sustainability

- All participants in the initiative will focus on attracting effective investments in renewable energy sources by utilizing technology, finance and skill. When all stakeholders coordinate, it is expected to **bring down project cost**, lead to **higher efficiencies** and **increased asset utilization** for all involved.
- The initiative will have a **spill-over effect** as the cost effective source of energy production could be used in other areas such as **poverty alleviation, provision of drinking water, sanitation facilities and food security**.

5. Global Biodiversity Framework Fund (GBEF)

News: The Fund was launched at the 7th Assembly of the Global Environmental Facility (GEF) in Canada.

About GBEF

- The Fund aims to directly support **global efforts to halt and reverse biodiversity loss by 2030**, a goal agreed to by 196 countries as part of the **Global Biodiversity Framework (GBF)** established at COP15.
- The Fund will be hosted by the **Global Environment Facility (GEF)**.
- Governments, non-profits, and the private sector can contribute their funds to GBFF.
 - 20% of the funds will be allocated to **Indigenous Peoples and local communities (IPLCs)**
 - 36% of the fund's resources are aimed to support the most vulnerable people, Small Island Developing States (SIDS).
 - 3% to LDCs (Least Developed Countries)
 - ~25% of the fund will be delivered through selected international financial institutions to increase resources through private sector involvement and ensure policies are streamlined.

Global Environment Facility (GEF)

It was established in 1991 by the **World Bank** in consultation with **UNDP** and **UNEP**, to **provide funding to protect the global environment**. World Bank serves as the GEF trustee.

GEF Funds are **available to developing countries** and countries with **economies in transition** to meet the objectives of international environmental conventions and agreements.

GEF serves as a financial mechanism to **5 Conventions**:

- Convention on Biological Diversity (CBD).
- United Nations Framework Convention on Climate Change (UNFCCC).
- Stockholm Convention on Persistent Organic Pollutants (POPs).
- UN Convention to Combat Desertification (UNCCD).
- Minamata Convention on Mercury.

- This is the first time there would be funds channelled to non-state actors like the indigenous communities. (Refer EPIC December 2022 (click) for COP15 of the Convention on Biological Diversity (CBD)).

6. State of India's Birds Report, 2023

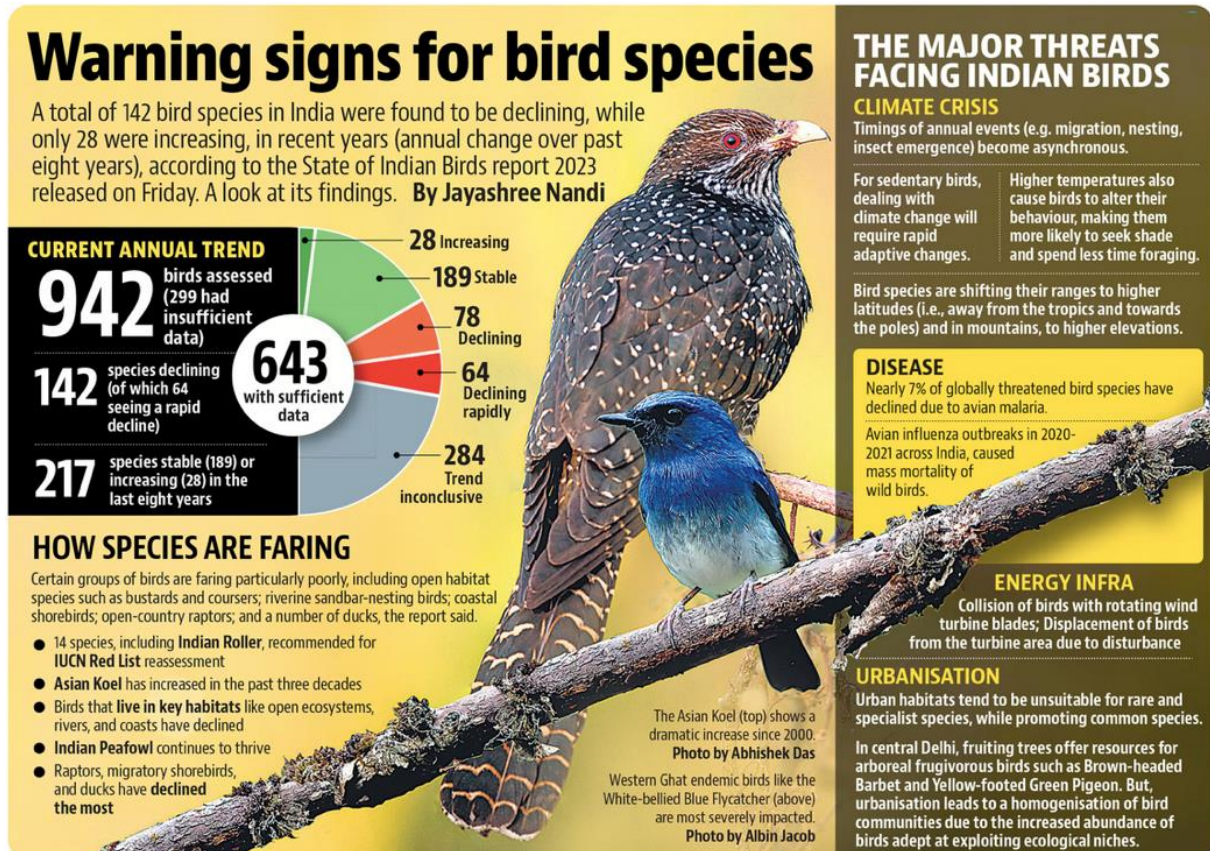
News: The State of India's Birds Report, 2023 has been released.

About the Report

- It is an assessment of the **distribution range**, **trends in abundance** and **conservation status** of 942 of India's 1,200 bird species.
- It is published by the **State of India's Birds Partnership**, a group of 13 governments (including SACON, WII, ZSI) and non-governmental organizations.

Key Findings of the 2023 Report

- **Decline in Birds:** Of 338 species (that had enough data to assess for long-term trends), 60% of the species showed long-term declines.
 - Birds that feed on vertebrates and carrion have declined the most, suggesting **harmful pollutants in their food resources** or a **decline in availability of prey**.
 - Birds that live in **open habitats** have been severely impacted. Open habitats have been severely compromised by the spread of **invasive, drought tolerant woody plants**, as well as wind turbines and power lines, impacting several bird species. The **Great Grey Shrike** has suffered a worrisome long-term decline of more than 80%.
- **Endemic Birds:** Birds endemic to the Western Ghats have rapidly declined over the past few decades. India is home to **232 endemic species**, found nowhere else in the world.



- The **3 bustard species** that breed in India; the Great Indian Bustard, Lesser Florican and Bengal Florican face **imminent extinction**.
- **Migratory Birds**: They are under greater threat than resident species. Birds face many **dangers during migration**, from extreme weather events, to predation, starvation, and hunting, illegal killing.
 - **Long-distance migrant birds have declined the most**, by over 50%.
- Several species like the Indian Peafowl, Rock Pigeon, Asian Koel, and House Crow are **thriving and increasing** in both **abundance and distribution** e.g., there has been a 150% increase in the abundance of peafowl across the country over the past decades.
- According to the Report, the **major threats** to the Birds are **Climate Change, Urbanization, Monocultures, Energy Infrastructure, ecosystem degradation and environmental pollutants**.

7. Assessment Report on Invasive Alien Species and Their Control

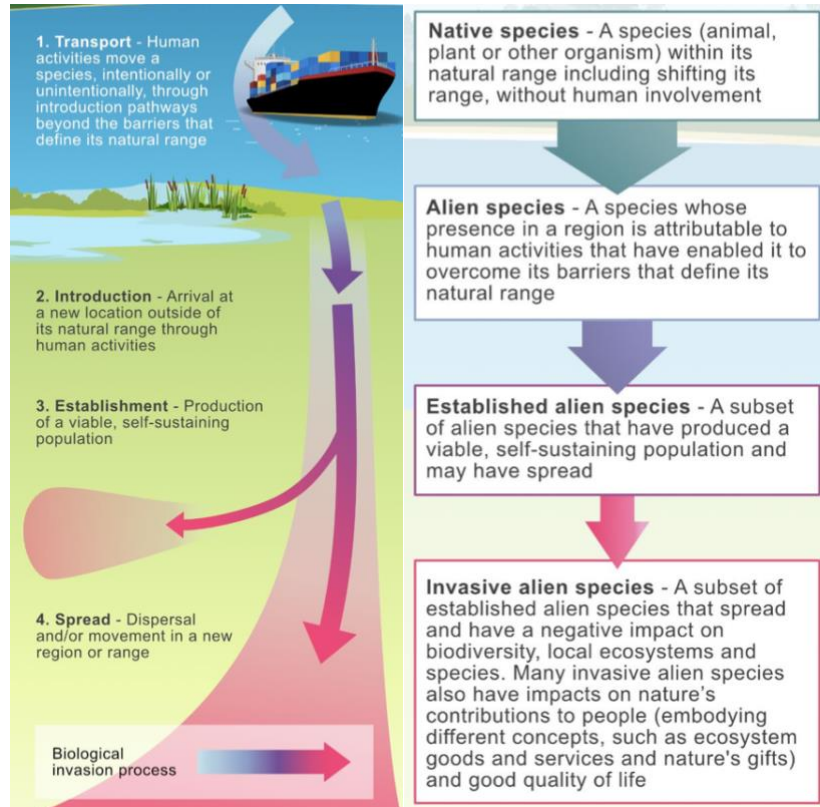
News: The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) has released a publication titled 'Assessment Report on Invasive Alien Species and their Control'.

Key Findings of IPBES Report

- There are 37,000 alien species introduced by human activities worldwide.
- ~3,500 of alien species pose significant threats to nature, economy, food security, and human health.
- The **water hyacinth** is the **world's most widespread invasive alien species on land**.
- **Lantana**, a flowering shrub and the **black rat** are the 2nd and 3rd most widespread globally. The brown rat and the house mouse are also widespread invasive alien species.
- Not all alien species establish and spread with negative impacts on biodiversity, local ecosystems and species. However, **~80% of the documented impacts of invasive species on nature's contribution to people are negative**.
- about 6% of alien plants; 22% of alien invertebrates; 14% of alien vertebrates; and 11% of alien microbes known to be invasive **pose major risks** to nature and to people.

About Invasive Alien Species and Impact

- Invasive alien species are **plants, animals, pathogens and other organisms** that are **non-native to an ecosystem**.
- Invasive species can cause **economic and environmental harm** and **adversely affect human health**.
- They **adversely impact biodiversity** (contributing to 60% of global plant and animal extinctions), **decline or eliminate native species**



Source: IPBES. Invasive Species and mechanism of their spread.

through **competition**, **predation**, or **transmission of pathogens**. They **disrupt local ecosystems** and ecosystem functions. They are one of the 5 major drivers of loss of biodiversity, along with land-use change, exploitation by humans, climate change and pollution.

- The **economic costs** since 1970 have increased with rapid rise in global trade and human travel. In 2019, the global economic cost of invasive alien species exceeded US\$ 423 billion annually.
- They **reduce food supply** e.g., the European shore crab has impacted commercial shellfish beds in New England or the Caribbean false mussel has damaged locally important fishery resources in Kerala, by wiping out native clams and oysters.
- Invasive alien species like *Aedes albopictus* and *Aedes aegyptii* **spread diseases** such as malaria, Zika and West Nile Fever.
- Invasive alien species can also **amplify the impacts of climate change** e.g., invasive alien plants, especially trees and grasses, can sometimes be highly flammable and promote more intense fires.

8. Elephant Corridors of India Report

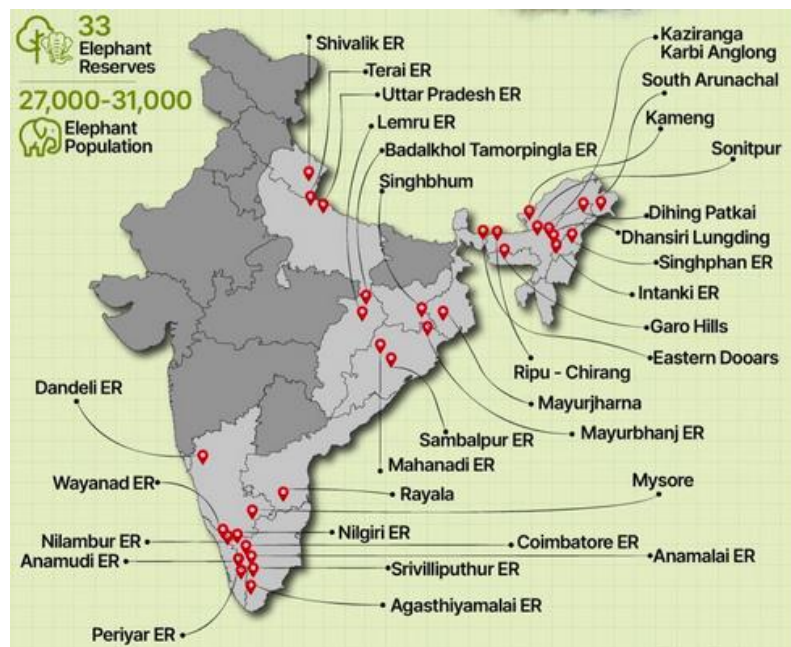
News: The Elephant Corridors of India 2023 Report has been released.

About Elephant Corridors

- The report has been prepared by Project Elephant with technical support from the Wildlife Institute of India.
- Elephant corridors are linear, narrow, natural habitat linkages that allow elephants to move between secure habitats without being disturbed by humans.

Key Findings of the Report

- **150 elephant corridors** have been identified in 15 elephant-ranging states.
- 40% of elephant corridors of India have reported an **increase in use by the elephants**.
- Around 29 corridors (19% of the total) have recorded a decline in use by the elephants over the years.
- These corridors are primarily affected by **encroachment**, **mining activities**, **development of linear infrastructure** like roads, railway tracks, other human interventions.
- ~ 10% of elephant corridors have become impaired over the years.
- **West Bengal has the highest** (26) identified elephant corridors in India.
- There are **6 transnational corridors** between **India and Nepal**.
- The report has recommended several measures to safeguard corridors: **Habitat enrichment**, **accurate demarcation**, measures to **check human interventions**, and **legal protection** under appropriate laws at the State level.



Source: Indian Express. Elephant Reserves in India.

9. Ecocide

News: Mexico is considering passing a law to make ecocide a crime.

About Ecocide

- Ecocide is derived from Greek and Latin. It translates to '**killing one's home or environment**'.
- Such 'killing' could include port expansion projects that destroy fragile marine life and local livelihoods; deforestation; illegal sand mining; polluting rivers with untreated sewage.
- There is **no accepted legal definition of ecocide**. Stop Ecocide Foundation has defined it (2021) as the 'Unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts'.
- Commonly cited examples include **deforestation during the Vietnam War, deforestation in Indonesia and the Amazon rainforest**, oil pollution in the Niger Delta and the Chernobyl disaster.
- At present, the **Rome Statute of the International Criminal Court (ICC)** deals with 4 atrocities: **genocide, crimes against humanity, war crimes** and the **crimes of aggression**. The provision on war crimes is the only statute that can hold a perpetrator responsible for environmental damage albeit if it is intentionally caused and during wartime situations.

Criminalizing Ecocide

- **Over 33% of the earth's animal and plant species could be extinct by 2050**. Deforestation of the Amazon, or deep-sea trawling could have been avoided with ecocide laws in place.
- Ecocide laws can ensure **justice for low- and middle-income countries** disproportionately affected by climate change.
- **Ecocide is a crime in 11 countries**. 27 other nations are mulling laws around **criminalizing environmental damage that is wilfully caused** and harms humans, animals and plant species.
- The European Parliament voted unanimously this year to enshrine ecocide in law.
- Some judgments by Indian courts have used the term 'ecocide' in passing, but the concept hasn't fully materialized in law.
 - In **Chandra CFS and Terminal Operators Pvt. Ltd. v. The Commissioner of Customs and Ors (2015)**, the Madras High Court noted that the prohibitory activities of ecocide had been continuing in an unbridled manner by certain sections of people by removing the valuable and precious timbers.
 - In an ongoing case, **T.N. Godavarman Thirumulpad vs Union of India & Ors**, the Supreme Court called attention to an "**anthropogenic bias**" and argued that "*environmental justice could be achieved only if we drift away from the principle of anthropocentric to eco-centric*".
- There is a need for India to **align the existing environmental legislations with the concept of ecocide**.
- Ecocide laws can help tackle problems of **liability and compensation** e.g., those related to the Bhopal gas tragedy.

Snippets

1. Definition of Green Hydrogen

The Ministry of New & Renewable Energy has defined Green Hydrogen as having a **well-to-gate emission** (i.e., including water treatment, electrolysis, gas purification, drying and compression of hydrogen) of **not more than 2 kg CO₂ equivalent/kg H₂** (i.e., production of 1 kg of hydrogen (H₂) shouldn't emit more than 2 kg of carbon dioxide (CO₂) or equivalent GHG). The **Bureau of Energy Efficiency (BEE)** under the Ministry of Power will be the **nodal authority for accreditation** of agencies for the monitoring, verification and certification for green hydrogen production projects. (Refer EPIC January 2023 (click) for National Green Hydrogen Mission).

2. World Ozone Day on September 16

World Ozone Day is celebrated on **16th September** each year to **commemorate the signing of the Montreal Protocol**. It aims to spread awareness among people about the depletion of Ozone Layer and the measures taken/ to be taken to preserve it. Ozone Layer exists in the **Stratosphere**, between 10-40 km above the Earth's surface. It **protects the Earth from the harmful ultraviolet (UV) rays from the Sun**. Exposure to UV rays can cause diseases like skin cancer and cataract in humans. UV rays can have adverse impact on agriculture, forestry and marine life.

Use of **ozone depleting substances** (like chlorofluorocarbons) had damaged the ozone layer (ozone hole). **Vienna Convention** (1985) is aimed to **protect the ozone layer**. **Montreal Protocol** under the Convention came to force in 1987. It envisaged **phasing out production and consumption of Ozone Depleting Substances**. The Protocol has been successful in repairing of the Ozone layer. (Refer EPIC January 2023 (click) for Recovery of Ozone Layer).

3. Methylovibrio buryatense, 5GB1C

It is a bacterial strain that **consumes methane**. It can grow at low methane concentrations ranging from 200-1,000 ppm. These features make this strain a promising candidate for **methane removal technology**. Methane is a significant contributor to global warming. It is responsible for **~30% of the total global warming**. Hence, the bacteria, if used on a large scale, could prevent 240 million tonnes of methane from entering the atmosphere by 2050. It can also help **reduce the global temperature rise by about 0.21-0.22°C by 2050** by removing a substantial amount of methane.

4. Fire Prevention Zones (FPZ)

Fire Prevention Zones are designated areas that have been carefully **managed and modified to reduce the risk of wildfires spreading and causing damage**. Their primary goal is to create a buffer or barrier that hinders the advance of wildfires, protecting lives, property, and natural ecosystems. FPZs were recently used in Canada to check spread of wildfires. Steps like thinning the forest; cleaning up debris on the floor; burning the debris and ground cover in a controlled way (prevent it from becoming fuel for wildfires) were taken to check spread of wildfire.

5. Recycling on Wheels, Smart ER

It has been launched by a private firm M/s Eco Recycling Limited. It is an **innovative e-waste management project** that focuses on improving e-waste management. The workflow of the project involves (1) Pre-processing e-waste on a mobile facility; (2) Scanning and serializing e-waste devices; (3) Shredding the devices; (4) Collecting shredded e-waste in secure bins and (5) Environmentally friendly disposal of the shredded e-waste. The project serves Special Economic Zones (SEZs) and R&D centers filling a crucial gap in e-waste management in India.

6. Dholpur-Karauli Tiger Reserve

The National Tiger Conservation Authority (NTCA) has approved the **Dholpur-Karauli Tiger Reserve** in Rajasthan. It will be **India's 54th tiger reserve** and **Rajasthan's 5th tiger reserve** after **Ranthambore, Sariska, Mukundra Hills and Ramgarh Vishdhari**.

7. Notification of Tiger Reserves

Tiger Reserves are **notified by the State Governments** according to the provisions of **Section 38V of the Wildlife (Protection) Act, 1972** on the **advice of the NTCA**. The denotification of a tiger reserve is governed by Section 38W(2) of the Wildlife (Protection) Act, 1972 which states that "No State

Government shall de-notify a tiger reserve, except in public interest with the approval of the Tiger Conservation Authority and the National Board for Wild Life”.

8. Status of tiger population in India

The number of tigers in India has increased from 2,967 in 2018 to 3,682 in 2022, an annual rise of 6%. Madhya Pradesh has the maximum number of tigers in the country (785), followed by Karnataka (563), Uttarakhand (560), and Maharashtra (444). The number of tigers in Rajasthan has increased from 32 in 2006 to 88 in 2022.

9. Hollongapar Gibbon Sanctuary

The Hollongapar Gibbon Sanctuary is an isolated protected area of evergreen forest located in Assam.

The sanctuary was officially constituted and renamed in 1997. The **sanctuary contains India's only gibbons**, the **Hoolock Gibbons**, and North-eastern India's only nocturnal primate; the **Bengal Slow Loris**. A 1.65 km long stretch of railway track passes through this sanctuary which has resulted in fragmentation of the natural habitat of gibbons, with two populations separated on either side of the track. Scientists at the Wildlife Institute of India have suggested constructing an



Source: MapsofIndia. Location of Hollongapar Gibbon Sanctuary.

artificial canopy bridge to enable the gibbons to move across the railway line. This would help them maintain their genetic diversity. (Refer EPIC July 2023 (click) for Hoolock Gibbon).

10. Hangul

Hangul is the **state animal of Jammu & Kashmir**. It is subspecies of **Central Asian red deer** endemic to Kashmir and surrounding areas. The last viable population of Hangul in the Indian sub-continent exists only in the protected **Dachigam National Park**. Its IUCN status is **Critically Endangered** and it falls under **Schedule I** of the Wildlife Protection Act. A population census of Hangul species is conducted every 2 years. It faces threats related to habitat fragmentation, poaching, livestock grazing, predation, ecological threats and disturbed corridors and landscapes. The population of Hangul species has increased to 289 in 2023 from 261 in 2021, a 10% increase. The increase has been attributed to restrictions on human movements inside the core area of the Dachigam.



11. Kākāpō

It is a species of parrot found only in New Zealand. Its IUCN status is Critically Endangered. It is the **world's heaviest and only flightless parrot**. It is **nocturnal** and **herbivorous**. It is also **possibly one of the world's longest-living birds**, with a reported **lifespan of up to 100 years**. They only breed every few years, triggered by the availability of certain forest foods such as the fruits of the native **rimu tree**. It is also the only parrot to have a **polygynous lek breeding system**. In this mating system, the **male provides no parental care to its offspring**. Kākāpō was historically important to **Māoris**, the **indigenous people of New Zealand**. Their population dropped to 51 during the 1990s. The conservation efforts have raised their population to 247 birds now. Kākāpō suffer from diseases such as the fungal infections and many of their eggs are infertile.



12. Honey Bees as Biomonitoring Tools

The levels of contaminants (like chemicals) in the environment are rising rapidly. **Honey bees can act as powerful biomonitoring tool** as they **constantly pick up contaminants from their environment while foraging**. Analyzing their chemical composition offers insights into contamination levels in their foraging area. Such studies have been successful in estimating level of contamination from a nickel smelter in New Caledonia and mapping of metal contamination in Sydney. They can also help **in assessing the spread of antimicrobial resistance genes**, which can be ingested from water bodies. Using honey bees as biomonitoring tools can help **track contamination in urban environments, identify pollution patterns** and contribute to more **effective responses to environmental health challenges**.

13. Sahyadriophis uttaraghati

It is a new genus and species of **colubrid snakes** discovered in the Western Ghats. The Colubrid is the largest snake family. It contains approximately 2000 species. Many colubrids are technically considered venomous but very few are considered dangerous to humans. The newly discovered species is found in the northern parts of the Western Ghats. These snakes are **mostly active during monsoons** and are often found near streams. Their diet primarily consists of frogs and their eggs. They are gentle in nature and rarely bite when handled.

14. Red Sand Boa

It is commonly known as the Indian Sand Boa. It is a **non-venomous snake** found throughout the dry parts of the Indian subcontinent. It is a primarily reddish-brown and thick-set snake that grows to an average length of 75 cm. Unlike most snakes, the tail is almost as thick as the body and gives it the appearance of being **'double-headed'**. It is the largest sand boas in the world. It is **nocturnal** and spends the majority of its time under the ground. Its IUCN status is **Near Threatened**, and is classified under **Schedule IV of the Wildlife Protection Act, 1972** and **Appendix II of CITES**. Red sand boa is now acknowledged as one of the **most traded reptile species in the illegal trade market** due to its demand in the pet trade, as well as for use in black magic.

History, Art and Culture

1. G20 Culture Corridor

News: Several objects of cultural significance were displayed at the special Culture Corridor at the G20 Leaders Summit in New Delhi.

About the G20 Culture Corridor

- The **Ministry of Culture** has conceptualized the **Culture Corridor: G20 Digital Museum** to represent and celebrate the **shared heritage of G20 member and invited countries** (to the New Delhi Summit).
- It was based on India's G20 theme '**Vasudhaiva Kutumbakam**' and Culture Working Group's (CWG) hallmark campaign '**Culture Unites All**'.
- The Culture Corridor incorporated iconic and notable **cultural objects** and **heritage** of the **G20 members and 9 invitee countries**.
- Submissions had been requested from G-20 countries and nine guest nations under 5 categories: Object of Cultural Significance; Iconic Cultural Masterpiece; Intangible Cultural Heritage; Natural Heritage; Artefact Related to Democratic Practices.

Artefacts Displayed

India

- The **Rigveda manuscript** was exhibited with a special emphasis on the shloka that encourages humanity to come together.
- Ancient text **Ashtadhyayi** authored by Sanskrit philologist and scholar **Panini**.
- In the intangible heritage category, India displayed **Yoga**, the **Kumbh Mela**, **Vedic chanting**, the **lost wax bronze casting method**, and the **double ikkat weaving Patan Patola** of Gujarat.
- In the natural heritage category, India displayed the **Himalayas**, **Ganga**, the **Indian Ocean**, the **Living Root Bridge of Meghalaya** and the **Royal Bengal Tiger**.

Other Countries

- **South Africa:** 'Mrs Ples' - a 2.5-million-year-old fossil cranium.
- **China:** 18th century Fahua lidded porcelain jar.
- **UK:** Copy of the Magna Carta issued by the King of England.
- **US:** Copy of the Charters of Freedom (Declaration of Independence, Constitution and Bill of Rights 1776-1791).
- **France:** Copy of Declaration of the Rights of Man and of the Citizen National Assembly (1789).
- **Germany:** Copy of the Gutenberg Bible.
- **South Korea:** Poster of the 1st democratic general election of Republic of Korea held in May 1948.

2. Konark Wheel

News: A replica of Konark Wheel from the Konark Sun Temple (Odisha) formed the backdrop as the PM welcomed the G20 leaders at Bharat Mandapam during G20 Summit.

About Konark Wheel

- Konark Wheel was built during the 13th century under the reign of **King Narasimhadeva-I** of the Ganga dynasty.



- The wheel with 24 spokes has been adapted into India's national flag. It **embodies ancient wisdom**, advanced civilization, and architectural excellence.
- Rotating motion of the wheel **symbolizes time** or **Kalachakra** as well as **progress** and **continuous change in the universe**.
- As a symbol of the wheel of democracy, it reflects the **resilience of democratic ideals**, and commitment to progress in society.
- Konark Wheel sculpture is **featured on the INR 10 currency notes** introduced in 2018.



About the Konark Sun Temple

- It was built in the 13th century by **King Narasimhadeva I** (AD 1238-1264) of the **Eastern Ganga Dynasty** and is located near Puri, Odisha. The temple is a classic example of the **Odisha style of Architecture** or **Kalinga Architecture**.
- The temple forms part of the **golden triangle of Odisha**, along with **Puri** and **Bhubaneswar**. It was given the **status of a World Heritage Site in 1984 by UNESCO**.
- The temple is **oriented towards the east** so that the first rays of sunrise strikes the principal entrance. Sailors once called it the **Black Pagoda** because it appeared as a black-tiered pagoda when viewed from the sea.



3. Seethakali Folk Art

News: Seethakali folk art had faded away from the public domain. It has now been revived by a group of art enthusiasts.

About the Seethakali Art

- Seethakali is a **traditional folk-dance drama** from **Desinganad, Kerala**. It is believed to have originated at Perinad in Kollam district. It is primarily performed during the **Onam festivities**.
- The performance is carried out by **Dalit artists** belonging to the **Veda** and **Pulaya communities**. The art form is based on **certain episodes from the epic Ramayana**.
- The performance portrays the **tale of Goddess Sita's journey**, from **vanayatra** (exile to the forest) to **Sita's andardhanam** (descend into the earth).
- The art form is a **blend of songs, storytelling** and **fast movements**. It is accompanied by instruments such as **ganjira, manikatta, chiratta** and **kaimani**.
- The costumes and the make-up are loud and eye-catching. The characters of **Lord Rama** and **Laxmana** **appear in green** since the color is used to represent gods and goddesses in Kathakali.
- Seethakali songs were orally transmitted from one generation to the next, which led to a pause in the tradition.



Snippets

1. World Heritage Status for Santiniketan

Santiniketan has been added to the UNESCO World Heritage Sites. It was the home of Nobel laureate Rabindranath Tagore. (Refer EPIC May 2023 (click) for Santiniketan Recommended for UNESCO Heritage Status).

2. Pulikkali

Pulikkali (Tiger Dance) is one of the **folk art forms of Kerala**. The artists wear a tiger mask, paint their bodies like tigers and dance to the rhythm of **traditional percussion instruments** such as *thakil*, *udukku* and *chenda*. It is performed on the 4th day of Onam festival. It is believed to have originated 2 centuries ago as a **street dance form** and became part of Onam celebrations later. It is said to have been introduced by the erstwhile ruler



of Cochin, **Maharaja Rama Varma Sakthan Thampuran**. The main **theme of this folk art is tiger hunting** with participants playing the role of tiger and hunter. Usually, men and children perform this art form. For the first time, 3 women among a 51-member team participated in the Pulikkali at Thrissur in 2016.

3. 'Bharat: The Mother of Democracy' Portal

The portal was launched by the Ministry of Culture on the eve of G20 Leadership Summit. The portal provides content related to India's democratic legacy spanning 7,000 years. The portal has been divided into 5 sections and 22 sub-sections starting from **Sindhu-Saraswati Civilisation** (6000- 2000 BCE), **Mahajanapada** and **Gantantra** (7-8 BCE), **Vijaynagar Empire** (14-16 century) and **Mughal emperor Akbar reign** (1556-1605) to **Constitution of India** (1947) and **Elections in Modern India** (1952 onwards). The content on the portal is available in 16 languages including German, French, Spanish, Arabic, Portuguese, Italian, Turkish, and Russian besides English and Hindi. The content for the portal has been curated by the **Indira Gandhi National Centre for the Arts (IGNCA)**. It is a center for research, academic pursuit and dissemination in the field of the arts under the **Ministry of Culture**. (Access e-book [here](#)).



Source: PIB. The sculpture of the girl from the Sindhu-Saraswati Civilization at display at the venue.

4. Adopt a Heritage 2.0

The Archaeological Survey of India (ASI) has launched the Adopt a Heritage 2.0 programme and Indian Heritage app. The programme is a revamped version of the Adopt a Heritage scheme launched in 2017. Its aim is to **safeguard India's diverse cultural heritage** by inviting **corporate stakeholders to enhance the amenities** at over **3,600 monuments** spread throughout the country. The monuments also contribute to economic growth through cultural tourism. Corporate stakeholders can utilize their **Corporate Social Responsibility (CSR) funds** to **enhance the amenities** (hygiene, accessibility, safety and knowledge portals) **at the historical sites** as defined by the **Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958**.

5. India Heritage App

Indian Heritage is a user-friendly mobile app that will **showcase the heritage monuments of India**. The app will feature State-wise details of monuments along with photographs, list of public amenities available, geo-tagged location and feedback mechanism for citizens.

6. Tribes India Pavilion

TRIFED, Ministry of Tribal Affairs showcased wide range of tribal art, artifacts, paintings etc. at the **'Tribes India'** pavilion established at the Bharat Mandapam during G20 Leadership Summit. The arts showcased at the pavilion included **Pithora Art**, **Gond paintings** from Madhya Pradesh, **Saura paintings** by artisans from Odisha, **Angora and Pashmina shawls** from Leh-Ladakh and Himachal Pradesh, colourful jewellery by the **Konyak tribes of Nagaland** and **Maheshwari silk sarees** (worn during religious and auspicious functions) from Madhya Pradesh and **Dhokra jewellery**.

7. Pithora Art

It is a **ritualistic painting** characterized by animated figures and lavish use of color. These paintings are done by the **Rathwa, Bhilala, Naik and Bhil tribes** of Gujarat and **Madhya Pradesh**. The paintings speak of the social, cultural and mythological life and beliefs of the tribals. The painting are a medium of propitiation, thanksgiving and commemoration of auspicious occasions. **Padma Shri awardee Shri Paresh Rathwa** is a renowned artist of Pithora art.



8. Dhokra Jewellery

It is carved out of molten metals, beads, colorful glass pieces, and wooden balls. Tribal artisans from **West Bengal, Odisha, Chhattisgarh** and **Madhya Pradesh** are the architects of these pieces of intrinsic art.



9. Piripkura Tribe

Recently, the last survivors of an **Amazon rainforest tribe** called Piripkura were found in Brazil. The Piripkura tribe is a small and indigenous tribe from the **Mato Grosso region of Brazil**. The tribe is known for their **extreme isolation** and efforts to maintain its traditional way of life. The tribe's population is estimated to be **only 3 individuals**. Conducting an accurate census is complicated due to their isolation and unique circumstances. The tribe people have faced significant challenges due to **encroachment on their land** by illegal logging, mining and other forms of land exploitation.

10. Indigenous tribes in the Amazon Rainforest

Yanomami Tribe: They are a group of around 35,000 people who live in the **northern part** of the **Amazon Basin** in **Brazil** and **Venezuela**. They have a rich culture and deep spiritual connection to the forest, which is central to their daily life.

Kayapo Tribe: They live in the **central part** of the **Amazon Basin** in **Brazil**. They are known for their elaborate body painting and beadwork.

Awa Tribe: It is a tribe that resides in the **northern Amazon Basin** in **Brazil**. They are known for their musical traditions and vibrant dances.

11. GI Tag for Salem Sago

Salem Starch and Sago Manufacturers Service Industrial Cooperative Society Ltd. (SAGOSERVE) from Tamil Nadu has received a GI Tag for **Salem sago**. Sago is **derived from raw tapioca**. It is in the form of small hard globules or pearls and is pearl white in colour. It is produced in **Salem district in Tamil Nadu** which is the main centre for sago production in the country. It is **manufactured from the wet starch powder** crushed from **tapioca roots**. Sago is



used in various industries, including food, paper, construction, textile, cosmetic, pharmaceutical, mining, and alcohol, among others.

12. Tapioca

Tapioca is a starchy food derived from the **cassava root**. In India, tapioca pearls are referred to as '**Sabudana**'. Any well drained soil preferably red lateritic loam with a pH range of 5.5 -7.0 is best suited for tapioca cultivation. It thrives best in **tropical, warm humid climate** with **well distributed annual rainfall of over 100 cm**. This crop can be cultivated up to an **elevation of 1000 m**. Tapioca **originated in South America**. In India, tapioca is predominantly cultivated in **Kerala, Tamil Nadu, and Andhra Pradesh**.

13. GI Tag for Chokuwa Rice

Chokuwa rice is also known as Magic rice. It is grown in Assam. It was a staple food for the **Ahom dynasty**. It is mainly cultivated along the Brahmaputra River in places like Tinsukia, Dhemaji, and Dibrugarh. It is a **semi-glutinous winter rice**, known as Sali rice. The sticky and glutinous variety is categorized as **Bora** and **Chokuwa** based on their **amylose concentration**. The low amylose Chokuwa rice variants are used to make soft rice, which is known as **Komal Chaul** or soft rice. The rice can be consumed with curd, sugar, jaggery, bananas to name a few. It is also used in making several Assamese delights like Pithe and other local dishes.

Miscellaneous

1. Heat Index

News: Iran recoded a heat index of 70°C at which survival of life is difficult.

About Heat Index

- Heat index is also known as **apparent temperature**. It is a measure of **how the temperature feels to humans**.
- **Relative humidity** is an important factor that determines heat index along with air temperature.
- The computation of the heat index involves a complex formula developed by Dr. Robert Steadman in 1979. His formula considers a typical adult human of certain height and weight and incorporates the **dew point**. Dew Point is the temperature at which **air cannot hold any more water vapour**, and droplets of water begin to form. In his calculations, Dr. Steadman used 14 °C as the dew point in his calculations.
- Some countries, like Canada, have their own indices to measure the heat index. In 2024, India is scheduled to launch its own heat index to quantify the impact of heat on its population and generate impact-based heatwave alerts for specific locations. (Refer EPIC May 2023 (click) for Heat Index for Measuring Stress Due to Heat Waves).

Impact of High Heat and Humidity

- The human body maintains a core temperature in the range of 36.1°C-37.2°C. At high temperatures, the human body **can lose excess heat through perspiration and cool itself**.
- In high humidity conditions, the sweat does not evaporate easily as the air is already saturated with moisture. This makes it difficult for the body to lose heat.
- If the body is unable to lose heat, the **heart rate increases due to a rise in core temperature**, leading to heat-related illness including fatality in worst case.

Importance of Heat Index

- **Impact on Health:** It tells when the weather conditions can cause **heat stress** and **heat-related illnesses**. It enables people to take appropriate precautions.
- **Safety:** It provides guidance on when it's **potentially dangerous to engage in physical activity outdoors**. It can **prevent heat-related fatalities**.
- **Climate Change:** As temperatures rise due to climate change, more extreme heat conditions are expected.
- Monitoring the heat index can help prepare, adapt, and implement strategies like **early warnings**, adjusted work schedules, and sustainable cooling solutions to cope with these extremes.

2. Floods in Libya

News: More than 5,000 people died and thousands more went missing after devastating floods swept through Libyan port city of Derna.

About the Floods in Derna (Darnah)

- Derna is a port city in eastern Libya. It lies on a narrow coastal plain on the Mediterranean under steep mountains running along the coast.
- The extreme floods were contributed by combination of certain factors
 - **Extreme Weather:** The flooding occurred due to exceptional rainfall. The extreme weather was caused by Cyclone Daniel, originating in Greece. As it moved across the Mediterranean Sea, it transitioned into a '**medicane**' gaining strength from abnormally warm sea surface temperatures. (*Medicane refers to tropical cyclones (Mediterranean + Hurricane) developing in the Mediterranean Sea*). **Higher temperatures**, likely a consequence of global warming, **intensified the storm**, resulting in more powerful winds and heavier rainfall.
 - **Vulnerable Geography:** Derna city's location at the end of a valley and bisected by the Wadi Derna, a seasonal river typically protected by dams, made it **susceptible to flooding**. Cyclone Daniel's impact caused the **collapse of dams outside the city**, leading to flash floods down Wadi Derna that inundated the city.
 - **Crumbling Infrastructure:** The collapse of the dams highlighted Libya's dilapidated infrastructure, worsened by a **decade-long conflict between rival factions**. The conflict has led to neglect of critical infrastructure. Lack of flood-resilient structures, roads, and **early-warning systems** further exacerbated the floods.



3. Bharat New Car Assessment Programme (NCAP)

News: The Government has launched the Bharat New Car Assessment Programme (NCAP).

About the Bharat New Car Assessment Programme

- Bharat New Car Assessment Programme (Bharat NCAP) is a **safety assessment initiative** introduced by the **Ministry of Road Transport and Highways**.
- Its aim is to provide a tool to the car customers to make a **comparative assessment of crash safety of motor vehicles** available in the market.
- The programme has been modelled on the **Global New Car Assessment Programme** (Global NCAP), a project of the Towards Zero Foundation which is a UK-registered charity that promotes the universal adoption of the United Nation's most important motor vehicle safety standards worldwide.
- The programme will be **applicable to passenger vehicles** with **not more than eight seats** in addition to the driver's seat with **gross vehicle weight not exceeding 3,500 kg**.
- The programme will be based on the soon-to-be published **Automotive Industry Standard 197**, which lays down **testing protocols**.
- A **rating from 1 star to 5 stars** will be assigned to a vehicle after an evaluation of 3 parameters: **Adult occupant protection, child occupant protection, and safety assist technologies** present in the car.
- The **programme is voluntary** except in certain cases such as a **base variant** of a popular vehicle model (minimum clocked sale of 30,000 units), or when the Ministry recommends a model for testing based on market feedback or in the interest of public safety.

Significance of Bharat NCAP Programme

- Bharat NCAP serves as a **consumer-centric platform** enabling car buyers to **make safer choices** based on the star ratings of vehicles.
- It **encourages healthy competition** among original equipment manufacturers (OEMs) in India to **produce safer vehicles**.
- Road accidents caused deaths of 1.55 lakh people in India in 2021 (11% of global deaths due to road accidents, even though India possesses only 1% of global vehicles). Better safety measures in cars are expected to reduce the number of fatalities in road accidents.
- According to the latest data, car occupant fatalities declined from 18% (2016) to 13.6% (2020), while fatalities among vulnerable road users such as **pedestrians and cyclists** rose from 47% (2016) to 64% (2020). Deaths of 2-wheeler riders is also on the rise. Hence, there is a need for wider safety measures. (Refer EPIC September 2022 (click) for The Issue of Road Safety in India).

4. Traditional Medicine Global Summit

News: The 1st WHO Traditional Medicine Global Summit was held in Gandhinagar, Gujarat.

About Traditional Medicine Summit

- The Summit has been organized by the WHO and co-hosted by the Ministry of AYUSH.
- Its aim is to **bring together various stakeholders** like traditional medicine practitioners, policymakers, academics, and others on a common platform to **share best practices**, evidence and innovation related to contribution of traditional medicine to **health and sustainable development**.
- The WHO released the **outcome document** of the summit in form of '**Gujarat Declaration**'.

Significance of Traditional Medicine

- Traditional and complementary medicine has been vital for health in communities for centuries and has influenced modern medical knowledge.

- **~40% of today's medicines have natural origins**, including well-known drugs like aspirin and artemisinin.
- Currently, 170 countries have informed WHO about their use of traditional medicine, seeking evidence and data to guide safe, cost-effective, and fair policies and regulations.

Key Points of Gujarat Declaration

- Gujarat declaration **reaffirmed global commitments towards indigenous knowledges**, biodiversity and traditional, complementary and integrative medicine.
- **Health and Well-being**: Scale up evidence-based Traditional, Complementary, and Integrative Medicine (TCIM) for universal health coverage and Sustainable Development Goals. Use science and technology to validate TCIM's contribution to health and well-being.
- **Global Health Leadership**: Expand multi-regional collaborations through the WHO Global Traditional Medicine Centre and Respect Indigenous Peoples' knowledge on health.
- **Research and Evidence**: Mobilize research funding for TCIM and strengthen research capabilities.
- **Universal Health Coverage and Health Systems**: Integrate TCIM into national health systems and adapt laws and policies for TCIM safety and accessibility.
- **Digital Health and AI**: Develop digital health resources, including AI, for TCIM.
- **Biodiversity and Sustainability**: Support UN biodiversity agreements and Indigenous Peoples' involvement.
- **Human Rights, Equity, and Ethics**: Recognize and protect Indigenous Peoples' rights and knowledge. Incorporate ethical practices in TCIM.

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