

MONTHLY

EPIC!

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

AN EXCLUSIVE CURRENT AFFAIRS MAGAZINE FOR
PRELIMS + MAINS
PREPARATION

February 2024

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Congratulations

Celebrating our CSE 2022 Topper's Remarkable Achievement!

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Mayur Hazarika

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
SMRITI MISHRA
AIR 4, CSE 2022



SMRITI MISHRA
AIR 4, CSE 2022

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

TABLE OF CONTENTS

TABLE OF CONTENTS	3
Focus Article	6
Interim Union Budget	6
General Studies Paper I	12
1. Women in STEMM Fields	12
2. Migration, Impact on Women and the Need for better Data	13
3. Evolution of Women's Rights in India	14
4. Demographic Changes in India and Impact	15
General Studies Paper II	17
1. The Importance of 'We, the People' in the Preamble	17
2. Supreme Court's Judgment on Electoral Bond Scheme	18
3. The Need for Decentralized Governance	19
4. The Debate on Uniform Civil Code	20
5. The Issue of Frequent Internet Shutdowns in India	22
6. Addressing Gender Gap in Education through Early Childhood Education (ECE)	24
7. Need for Gender Diversity in Policymaking in Healthcare	24
8. Improving Access to Sanitation in India	25
9. Jal Jeevan Mission	27
10. India-France Relationship	29
11. Circumstances in Myanmar and Impact on India	31
12. Expansion of India's Diplomatic Footprint: 'Fora' and 'Intelligence' Diplomacy	33
General Studies Paper III	34
1. Fiscal Relationship between the Union and State Governments	34
2. Distribution of Tax Revenue Among States	36
3. Issues with India's Public Finance	37
4. Issues with India's Design-Linked Incentive Scheme for Semiconductor Design	38
5. Rise in Exports of Toy Industry	39
6. The Issue of Minimum Support Price (MSP)	40
7. Deep-Tech Start-up Ecosystem	42
8. Brain-Computer Interface (BCI)	44
9. Challenges in Scaling-up India's Renewable Energy	47
Factly	49
Polity	49
1. Default Bail	49
2. RBI Report on Panchayati Raj Institutions	49
3. Public Examinations (Prevention of Unfair Means) Act, 2024	50
4. Initiative to Promote Electoral Literacy in Schools and Educational Institutions	51
5. Technological Initiatives for Courts	52
6. National Judicial Academy	52

Policy	53
1. National Credit Framework	53
2. Status of TB in India	53
3. RMNCAH+N Strategy	54
4. Role of ASHA Workers in Healthcare	55
5. Revised Guidelines for Community Radio	55
6. e-Jagriti Portal	56
Economy	57
1. Debate on K-Shaped Recovery in India	57
2. PayTM Crisis	58
3. Market Access Initiative Scheme	59
4. Disclosure Norms for FPIs	60
5. Features of Payment Aggregators	60
6. Prabhaav Report on Impact of Fund of Funds for Start-ups (FFS)	61
7. SMART Food Grain Storage Technology	62
8. India's Public Stockholding Programme and the Cairns Group	62
9. Annual Survey of Industries	63
International Relations	64
1. India-UAE Bilateral Investment Treaty	64
2. Release of Indian Prisoners by Qatar	64
3. UN Relief Work Agency (UNRWA) for Palestine Refugees	64
4. Labour Rules for Workers Abroad	65
5. India's Aid to Maldives	66
6. Kaladan Multi-modal Project	66
7. Weimar Triangle	67
8. Mission Aspides	68
Science and Technology	69
1. NISAR Satellite	69
2. HAPS Vehicle	70
3. Nuclear Battery	71
4. Solid-State Batteries	71
5. MXene	72
6. Mpemba Effect	72
7. Dynamic Wireless Charging Technology	73
8. Brainware	73
9. Coal Gasification	74
10. International Pandemic Treaty	75
11. Contributions of Satyendra Nath Bose	76
12. Brumation	76
Environment	77
1. Convention on the Conservation of Migratory Species of Wild Animals	77
2. State of the World's Migratory Species Report	78
3. States/UTs must adhere to definition of Forests from Godavarman Case: Supreme Court	78
4. New Ramsar Sites	79

5.	Dalma Wildlife Sanctuary.....	79
6.	Common Turtles Found in India.....	80
7.	UN World Restoration Flagships.....	81
8.	Pradhan Mantri Suryodaya Yojana	81
9.	Human-Wildlife Conflict in Kerala.....	82
History, Art and Culture		83
1.	BAPS Temple in Abu Dhabi, UAE.....	83
2.	Maa Kamakhya Temple	84
3.	Srirangam Temple	84
4.	Kotravai Sculpture.....	85
5.	Madhika Language.....	86
6.	Subika Painting.....	87
7.	Dhokra Shilpkala	87
8.	Maratha Military Landscapes.....	88
9.	Bharat Ratna Awards.....	89
10.	Sports Awards.....	90
Miscellaneous.....		90
1.	Impact of La-Nina on Air Quality in India.....	90
2.	Char Areas	91
3.	Messinian Event	92
4.	Parbati-Kalisindh-Chambal Eastern Rajasthan Canal Project (PKC-ERCP).....	92
5.	Corruption Perceptions Index.....	93
Pointly.....		94

Focus Article

Interim Union Budget

News: The Union Minister for Finance presented the interim Budget in the Parliament. Being an election year, the full Budget will be presented by the new Government in July 2024 post the General Elections.

How is the Interim Budget different from normal annual Union Budget?

Annual Union Budget	Interim Budget
<ul style="list-style-type: none"> The annual budget, presented on the first day of February each year, outlines the Government's financial roadmap for the entire fiscal year (April 1 to March 31). The annual budget covers all aspects of Government finances, including revenue generation, allocation of expenditure, and policy announcements. Major Policy decisions (like the changes in tax structure) are announced in the annual Budget. The annual budget faces rigorous Parliamentary debates and analysis. 	<ul style="list-style-type: none"> An interim budget, also known as a 'Vote on Account', is presented in an election year. It is not as detailed as the annual Union Budget. It primarily focuses on maintaining essential spending on ongoing schemes and critical public services until the new Government takes charge. It avoids major policy shifts or significant changes to tax structures due to its transitory nature. Interim budget receives less scrutiny due to its limited scope and temporary nature.

What are the key highlights of the Interim Budget?

Macroeconomy

- **Fiscal Deficit:** The estimated fiscal deficit in 2024-25 is set to be 5.1% of GDP. The revised fiscal deficit is at 5.8% of the GDP for 2023-24 (FY24). These fiscal deficit trends adhere to the path of reduction of fiscal deficit below 4.5% by 2025-26.
- **Lower Borrowings:** The gross and net market borrowings through dated securities during 2024-25 are estimated at INR 14.13 and INR 11.75 lakh crore respectively. The borrowings by the Union Government are set to reduce in 2024-25 as compared to 2023-24. The lower borrowings will facilitate larger availability of credit for the private sector.
- **Continuation of the 50-year interest free loan for Capital Expenditure to States:** The scheme of 50-year interest free loan for capital expenditure to States will be continued this year with total outlay of INR 1.3 lakh crore.
- No changes have been introduced in the income tax slabs.
- Tax exemptions given to start-ups extended till March 31, 2025.



Key Numbers

In ₹ crore

	2022-23 (Actuals)	2023-24 (Budget Estimates)	2023-24 (Revised Estimates)	2024-25 (Budget Estimates)
Revenue Receipts	23,83,206	26,32,281	26,99,713	30,01,275
Capital Receipts	18,09,951	18,70,816	17,90,773	17,64,494
Total Receipts	41,93,157	45,03,097	44,90,486	47,65,768
Total Expenditure	41,93,157	45,03,097	44,90,486	47,65,768
Effective Capital Expenditure	10,46,289	13,70,949	12,71,436	14,96,693
Revenue Deficit	10,69,926	8,69,855	8,40,527	6,53,383
Effective Revenue Deficit	7,63,662	4,99,867	5,19,337	2,67,801
Fiscal Deficit	17,37,755	17,86,816	17,34,773	16,85,494
Primary Deficit	8,09,238	7,06,845	6,79,346	4,95,054

Revenue and Capital Receipts and Expenditure with Deficit. The total expenditure includes Revenue Expenditure of INR 36.5 lakh crores and Capital Expenditure of INR 11.11 lakh crores.

- **Withdrawal of Direct Income Tax Demands:** Government has decided to withdraw outstanding direct tax demands up to INR 25,000 for the period up to financial year 2009-10 and up to INR 10,000 for financial years 2010-11 to 2014-15.
 - The number of tax filers have increased by 2.4 times. The direct tax collection has trebled since 2014.

Infrastructure

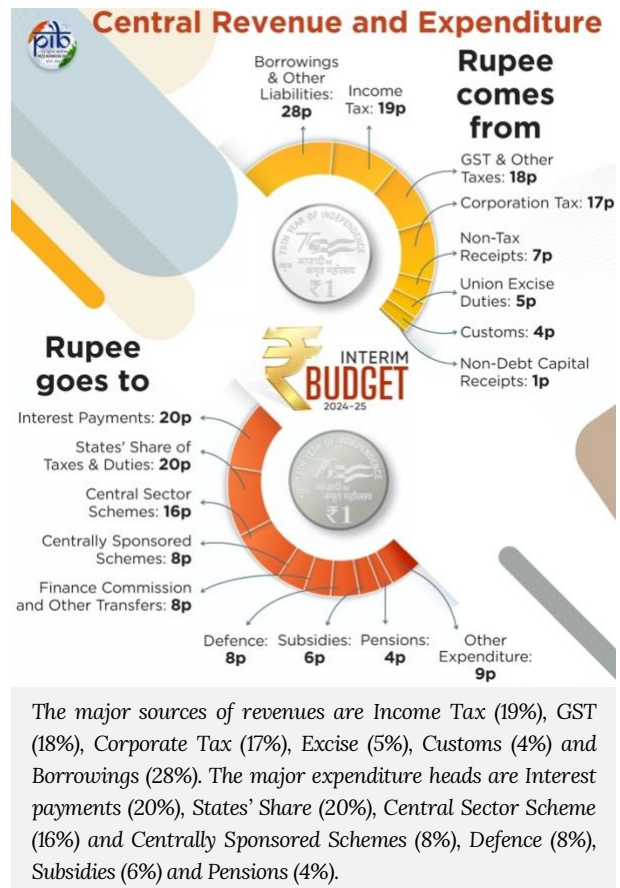
- **Capital Expenditure for Infrastructure:** The Capital Expenditure outlay for Infrastructure for 2024-25 has been increased by 11.1% to INR 11,11,111 crore. This would be 3.4% of the GDP.
- **Railway Corridor Programmes:** Energy, mineral, cement and port connectivity corridors have been announced which will result in **decongestion of the high-traffic corridors**. These will help in improving operations of passenger trains.
- **Expansion of Pradhan Mantri Awas Yojana-Gramin:** 2 crore more houses will be built under the scheme.
- **Rooftop Solarization:** Through rooftop solarization, 1 crore households will be enabled to obtain up to 300 units free electricity every month.

Green Energy

- **Viability Gap Funding for Offshore Wind:** Viability gap funding will be provided for harnessing offshore wind energy potential for initial capacity of one giga-watt (1 GW).
- **Coal Gasification and Liquefaction:** Coal gasification and liquefaction capacity of 100 MT will be set up by 2030. This will also help in reducing imports of natural gas, methanol, and ammonia.
- **Phased mandatory blending of CBG in CNG and PNG:** Phased mandatory blending of compressed biogas (CBG) in compressed natural gas (CNG) for transport and piped natural gas (PNG) for domestic purposes will be mandated.
- **New Schemes for Bio-Manufacturing and Bio-Foundry:** A new scheme of bio-manufacturing and bio-foundry will be launched. This will provide environment friendly alternatives such as biodegradable polymers, bio-plastics, bio-pharmaceuticals and bio-agri-inputs.

Agriculture

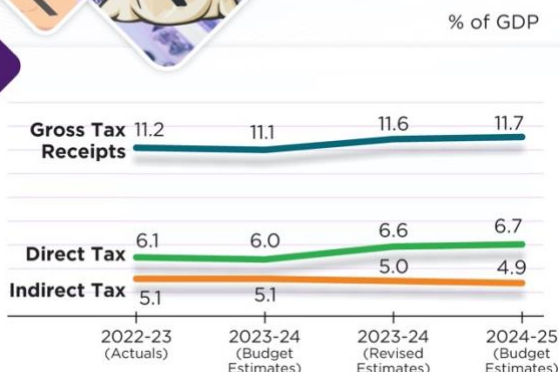
- **Agriculture and Food Processing:** Promotion of private and public investment in **post-harvest activities** including aggregation, modern storage, efficient supply chains, primary and secondary processing and marketing and branding will be undertaken.
- **Nano DAP:** Application of Nano DAP on various crops will be expanded in all agro-climatic zones.
- **Atmanirbhar Oil Seeds Abhiyan:** A strategy to achieve 'atmanirbharta' for oil seeds such as mustard, groundnut, sesame, soybean, and sunflower will be formulated.
- **Dairy Development:** A comprehensive programme for supporting dairy farmers will be formulated. The programme will be built on the success of existing schemes such **Rashtriya Gokul Mission, National Livestock Mission**, and Infrastructure Development Funds for dairy processing and animal husbandry.



- **Matsya Sampada:** Implementation of **Pradhan Mantri Matsya Sampada Yojana** (PMMSY) will be stepped up to enhance aquaculture productivity from existing 3 to 5 tons per hectare, double exports to INR 1 lakh crore and generate 55 lakh employment opportunities in near future. 5 integrated aquaparks will be setup.



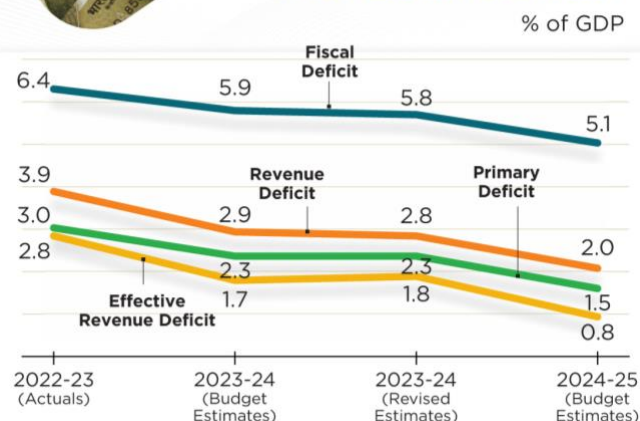
Trends in Tax Receipts



The Tax-to-GDP ratio has shown a rising trend. The share of direct taxes is also rising.



Trends in Deficit



The fiscal deficit as well as Revenue and Primary deficit has shown a declining trend.

Research and Development

- **Corpus of INR 1 lakh crore:** A corpus of INR 1 lakh crore has been earmarked to encourage the private sector to scale up research and innovation significantly in sunrise domains.
- **New Scheme for Deep tech Technology:** A new scheme to be launched for strengthening deep-tech technologies for defence purposes and expediting 'atmanirbharta'.

Momentum to Nari Shakti

- **30 crore Mudra Yojana loans** disbursed to women entrepreneurs
- Female enrolment in higher education increased by **28 per cent** in 10 years
- Female constitute **43 per cent** of enrolment in STEM courses, one of the highest in the world
- **1 crore women** assisted by **83 lakh SHGs** to become **Lakhpati Didis**

Garib Kalyan, Desh ka Kalyan

- DBT of **₹34 lakh crore** using PM-Jan Dhan accounts; **₹2.7 lakh crore** saved due to avoidance of leakages
- Credit assistance to **78 lakh street vendors** under **PM-SVANidhi**, out of which **2.3 lakh** received credit for the **third time**

Empowering Amrit Peedhi, the Yuva

- **1.4 crore youth** trained under Skill India Mission
- **43 crore loans** sanctioned under **PM Mudra Yojana**
- Number of **AIIMS** increased from **7 in 2014** to **22 in 2022**
- **IITs** increased from **16 in 2014** to **23 in 2023**

Welfare of Farmers-Annadatas

- Direct financial assistance to **11.8 crore farmers** under **PM-KISAN**
- Crop Insurance to **4 crore farmers** under **PM Fasal Bima Yojana**
- Integration **1,361 mandis** under **e-NAM**, supporting trading volume of **₹3 lakh crore**
- Increased procurement of **Wheat and Rice** in the year **2023-24**

Four Pillars of Viksit Bharat: Women, Youth, Poor and the Farmers.

Nari-Shakti

- **New Target of Lakhpati Didi:** The target of *Lakhpati Didi* has been enhanced from 2 crore to 3 crore.
- **Vaccination Programme to prevent Cervical Cancer:** Vaccination programme to prevent Cervical Cancer for girls in the age group of 9 to 14 years has been proposed.
- **Amalgamation of Maternal and Child Care Schemes:** Creation of one comprehensive programme for maternal and Child Care. Upgrading of Anganwadi Centres under 'Saksham Anganwadi and Poshan 2.0' will be expedited.

Health Sector

- **Medical Colleges:** A committee will be formed to examine the issue of setting up more medical colleges.
- **Extension of Coverage under the Ayushman Bharat Scheme:** ASHA and Anganwadi workers and helpers will be covered under the Ayushman Bharat Scheme.

Infrastructure and Investment

- Increase in Capital Expenditure by 11.1% to 1,11,111 cr
- FDI Inflow doubled from 298 USD Billion during 2005-14 to 596 USD Billion during 2014-23
- Length of National highways increased from 97,991 kms in FY15 to 1,44,634 kms in FY22
- Electrified rail route more than doubled, from 22,224 kms in FY15 to 50,394 kms in FY22

Inclusive Development across sectors

- Enrolments under PMJJBY in Aspirational Districts increased from 1737 per lakh population in 2018 to 13195 per lakh population in October 2023
- Health cover under Ayushman Bharat scheme to be extended to all ASHA, Angawadi workers & helpers
- PM Awas Yojana (Grameen) close to achieving target of 3 crore houses; additional 2 crore targeted for next 5 years

Boost to Agriculture and Food Processing

- Application of Nano-DAP to be expanded in all agro-climatic zones
- Atmanirbhar Oilseeds Abhiyaan to be formulated to achieve atmanirbharta for oilseeds
- Allocation for PM-Formalisation of Micro Food Processing Enterprises scheme increased from ₹639 crore in 2023-24 to ₹880 crore in 2024-25

Sustainable Development

- New scheme of biomanufacturing and bio-foundry to be launched to support environment friendly alternatives
- Adoption of e-buses for public transport
- Increase in non-fossil fuel installed electricity capacity from 32.3% in 2014 to 43.9% in 2023

Strategy for Amrit Kaal: Infrastructure, Agriculture and Food Processing, Inclusive and Sustainable Development.

Resilient Performance of the Indian Economy

- › Unemployment Rate declined from 6.1% in 2017-18 to 3.2% in 2022-23
- › GNPA as % of Gross Advances declined from 11.2% in FY18 to 3.2% in Sept 23
- › More than six fold increase in Digital Transactions from FY18 to FY24
- › Rise in average monthly gross GST collections from 0.9 lakh cr in FY18 to 1.7 lakh cr in FY24
- › Headline Inflation moderated to 5.5% in FY24 *



The Budget has presented a **positive outlook** about the economy. The economy has been on the **path of recovery** post the shock caused by the COVID-19 pandemic.

Several economic experts have praised the budget for **avoiding populist measures** in an election year and sticking to the path of the **fiscal consolidation**.

General Elections are expected to be held in April-May 2024 and the full Budget is expected to be presented by the new elected Government in July 2024.

What are the positives of the Budget?

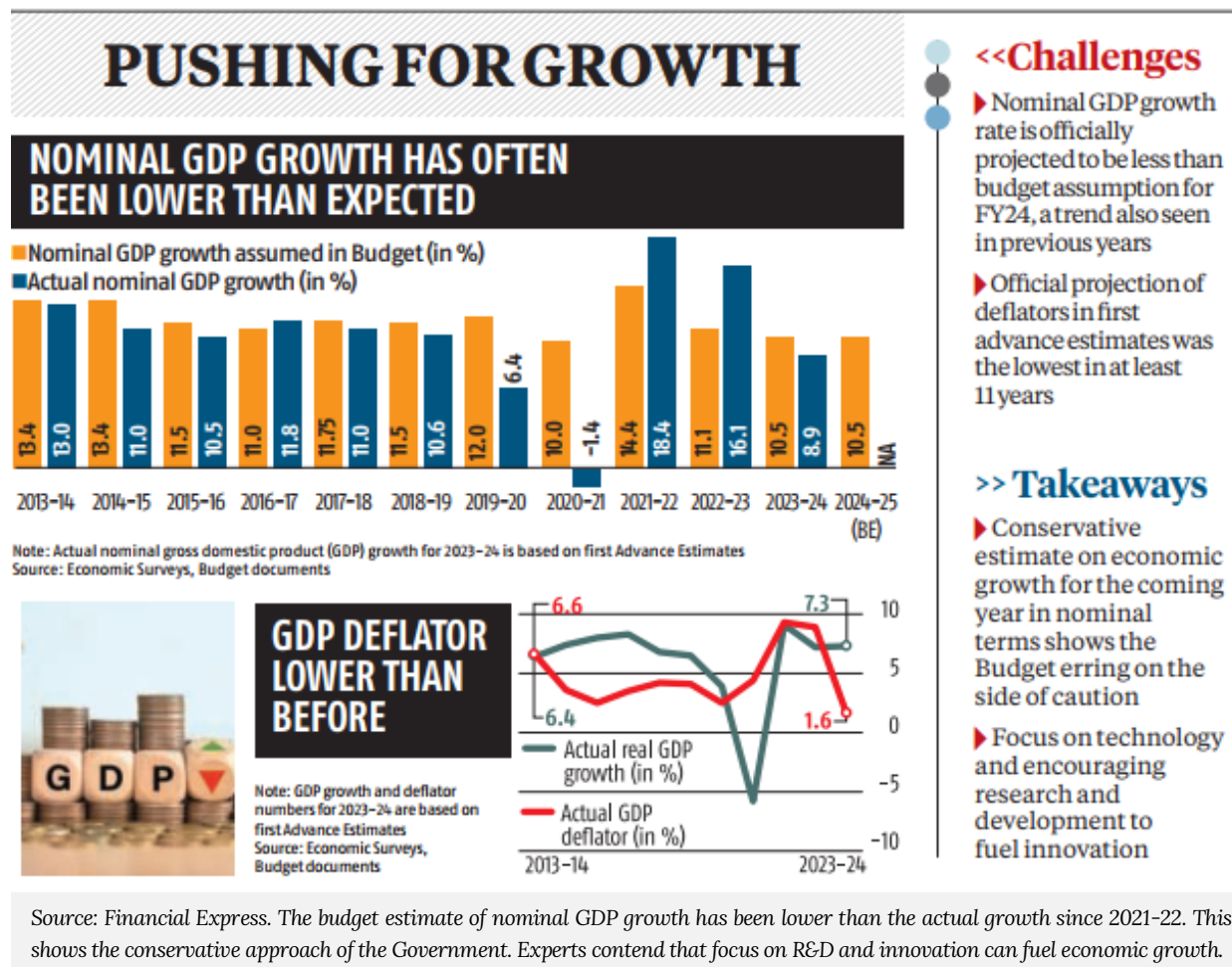
- **Reduction in Fiscal Deficit:** The revised estimate of fiscal deficit for FY 2023-24 is 5.8% (budgeted estimate of 5.9%). The budgeted estimate for FY 2024-25 has been kept at 5.1% of the GDP. This shows that the Government is on the path of **fiscal consolidation** set by the **FRBM Act 2003**. Reduced fiscal deficit will spur the growth of private sector borrowings from the market.
- **Increase in Capital Expenditure:** The increase in capital expenditure in FY 2024-25 by 11.1% to INR 11,11,111 crore, will have a **multiplier effect on the GDP growth**. Every INR 100 spent on capex leads to a INR 250 increase in GDP.
- **Rising Share of Income Tax in Revenue:** Income tax revenues will account for 19% of all Government resources in FY2024-25. The rise in share of income tax is a result of the tax reforms undertaken by the Government.
- **Adoption of Nano-DAP:** The adoption of domestically-produced Nano DAP produced in Kalol, Gujarat is set to significantly **reduce the import burden** of fertiliser industry.
- **Focus on Blue Economy:** The Interim Budget 2024 provides a roadmap for **Blue Economy 2.0** and enhanced budgetary allocation to the fisheries sector. This will help in **augmenting India's agri-exports** and will provide support to the coastal community livelihood.
- **Focus on Innovation and Green Energy Sector:** Corpus fund of INR 1 lakh crore for **spurring innovation** and the enhanced focus on green energy through rooftop solar schemes, mandatory blending of CBG in CNG and PNG will help India in achieving its **Panchamrit** goals.
- **Withdrawal of Old Tax Demands:** This step will benefit one crore taxpayers and will be another milestone in the Government's effort towards **Vivad se Vishwas** in matters of taxation.

What are the concerns associated with the Interim Budget 2024?

- **Muted outlook on GDP Growth:** The nominal GDP growth for FY 2024-25 is projected at just ~10.5%. Taking into account the inflation rates for the coming financial year, the real GDP growth rate will be subdued. This raises concerns with respect to the target of becoming the top 3 global economies of the world by 2027.
- **Missed Capex Target in FY 2023-24:** The Capex expenditure target INR 10 lakh crore set for FY2023-24 set in the Budget 2023-24 has not been met. The revised estimates show that the Capex for FY2023-24 stands at INR 9.5 lakh crore.
- **Budget Cuts in Health, Education:** Budgeted cut backs in the key sectors continued in FY 2023-24. Out of the budgeted education expenditure of INR 1,16,417 crore, the actual expenditure was INR 1,08,878 crore (93%). Similarly, in healthcare, out of the budgeted expenditure of INR 88,956 crore, only INR 79,221 crore was spent in FY 2023-24 (89%).
- **Cuts in core schemes:** 'Core of Core Schemes' meant for the most disadvantaged sections of society, such as SCs, STs and minorities, have witnessed cuts. Revised Estimates (RE) for the Umbrella Scheme for Development of Schedule Castes are INR 6,780 crore against the Budget Estimates (BE) of INR 9,409 crore (72%).
- **Neglect of the Farm Sector:** There has been no increase in the allocation for agricultural sector.
 - In real terms, the allocation of Department of Agriculture and Farmers Welfare has gone down in the interim budget.
 - No step has been taken in the budget towards rationalisation of food and fertiliser subsidy.

What should be the way forward?

- **Fiscal Consolidation:** The approach to reduce fiscal deficit must focus on **raising revenues rather than reducing expenditure**, as expenditure multipliers tend to be higher in an economy than revenue multipliers.
- **Strategic Asset Sales Programme:** Asset monetisation will help in raising Government revenues as the market condition remains buoyant. This will help in **bringing down fiscal deficit** without the need of reducing government expenditure.
- **Expenditure on Health and Education:** The social sector expenditures by the Government must be increased for achieving the goal of inclusive development.
- **Rationalisation of Subsidies:** The full-fledged budget to be presented in July must take bold reformative measures of rationalisation of food and fertiliser subsidies.
- **Role of the Private Sector:** With its initial push by increasing the Capex, the Government must pass on the baton of infrastructural development to the private sector by **reducing the crowding out effect** in the economy.
 - Crowding out effect can be reduced when the Government reduces its fiscal deficit and achieves its FRBM 2003 target of fiscal deficit of 3% of the GDP.



General Studies Paper I

1. Women in STEMM Fields

News: The Government has undertaken several initiatives to improve representation of women in the fields of Science, Technology, Engineering, Mathematics and Medicine. SWATI portal has been launched to create a single online portal representing Indian Women and Girls in STEMM. It will help plug the gender gap.

What is the SWATI Portal?

Aspect	Details
About SWATI	<ul style="list-style-type: none"> SWATI stands for Science for Women: A Technology & Innovation portal. Its objective is to create a comprehensive database representing Indian women the fields of STEMM. It has been developed, hosted and maintained by the National Institute of Plant Genome Research (NIPGR), New Delhi.
Features	<ul style="list-style-type: none"> It contains a comprehensive database profiling Indian women across STEMM fields. It has a separate section highlighting women scientists working in academia (universities/research institutes), industry, as entrepreneurs, and other careers. It includes profiles of iconic women scientists who are recipient of prestigious honours like the Padma awards, Shanti Swarup Bhatnagar awards, or Stree Shakti Science Samman.
Significance	<ul style="list-style-type: none"> It will address gender gap challenges in STEMM community. It will motivate and encourage more young women and girls to pursue education and careers in scientific fields. It will enable valuable research on gender equality, diversity and inclusion over the long term.

What are the reasons for gender gap in the STEMM Fields?

- Economic Factors:** Even for families with ample resources, economic considerations affect the pursuit of science degree, which is generally more expensive than the field of humanities.
- Dual Burden:** Working women have to face dual burden of professional and personal responsibilities. Often they have to sacrifice their careers to fulfil their domestic responsibilities.
- Work Environment:** There are patriarchal attitudes in hiring practices or awarding fellowships and grants etc. A male-dominated work environment and **gender insensitivity** are additional burdens for women scientists.
- Mindset:** A misconception that girls/women are weak in mathematics and engineering act as a deterring factor for many girls to opt for mathematics and engineering as career choice.
- Fewer Role Models:** Due to historical imbalance, female students have fewer women role models to follow or be inspired from. The textbooks rarely talk about women who have been trailblazers in such fields.

What measures are needed to improve participation of women in STEMM?

- Attitude Change:** Society has to understand that women are a vital human resource and can play a central role in economic growth. More awareness must be generated among parents that girls can excel in all fields including STEMM if provided with conducive environment.

Government Initiatives for Women in STEMM

- **Women Scientist Scheme:** It aims to provide opportunities to women scientists who desire to return to mainstream science after a break in career due to social responsibilities.
 - **Knowledge Involvement in Research Advancement through Nurturing (KIRAN):** The mandate of the KIRAN programme is to bring gender parity in S&T through gender mainstreaming.
 - **S&T for Women:** Its mandate to promote gender equality and empower women at grass root level with inputs of S&T through development, adaptation, adoption, transfer, demonstration of appropriate and successful technologies.
 - **CURIE:** Consolidation of university research for innovation and excellence in women universities' (CURIE) involves in taking proactive measures to develop **state-of-the-art infrastructure in women universities** to attract, train and retain promising girl students in S&T domains.
 - **Women Technology Parks:** WTPs act as a single window hub for convergence of diversified technologies, leading to socio-economic development of women through capacity building and adoption of location-specific technologies.
 - **Training and Capacity Building:** Training programmes for capacity building of women scientists are conducted in partnership with premier institutions.
 - **2004 INSA Report:** The Indian National Science Academy's report discussed the gender gap in STEM fields. It highlighted discrimination based on gender and caste in the workplace.
 - **Lilavati's Daughters:** The Indian Academy of Sciences (IASc) released this compendium to showcase the achievements of women scientists.
 - **2010 IASc Report:** This report focused on reasons behind women scientists leaving academia. The major reason was lack of opportunities and organizational barriers.
 - **GATI:** The Gender Advancement for Transforming Institutions (GATI) charter and the draft Science, Technology and Innovation Policy (STIP) 2020 have adopted more inclusive and progressive language. These policies consider factors like caste, transgender identity, and gender-neutral parental leave, showing an evolution in approach.
- Created by I ForumIAS®
- **Private Participation:** Companies must invest in building female talent by providing more internship opportunities for women, giving STEM scholarships to meritorious and economically backward girls, and focusing on retaining women employees in the workforce to maintain better gender ratios.
 - **Mentoring:** Teachers can mentor and encourage girls in STEMM subjects. Mentorship programmes for girls at secondary and senior secondary levels are the need of the hour.
 - **Gender Sensitivity:** There is a need to **promote positive stereotypes** of roles of women in textbooks. Education for boys at school level should be in the direction of making them gender sensitive. Girls must dream to carve a path for themselves.

The participation of women in STEMM fields is gradually rising. Several programmes of ISRO are being led by women scientists which is an encouraging sign. However, there is a need to further invest on supporting infrastructure, incentivising institutions to promote gender equity, transparency in decision making etc. to bridge the remaining gender imbalance in STEMM sectors. (Refer EPIC September 2022 (click) for Breaking the 'Glass Ceiling': Rising Number of Women in STEM).

2. Migration, Impact on Women and the Need for better Data

News: Women contribute to a large share in migration. However, the reasons for their migration and involvement in work are less recognized and poorly understood due to issues in data collection and societal views.

What is the current status of female migration in India?

- **Predominant Reason for Migration:** 81% of women in India migrate due to marriage, overshadowing other reasons like employment (2.42%) and education (0.48%).

- **Unemployment and Informal Employment:** The Periodic Labour Force Survey (PLFS) data indicate that about three quarters (~75%) of migrant women are unemployed, and only a small fraction are in self or wage employment (14%) or casual labour (12%). Many women likely engage in informal work, which is under-reported.
- **Educational Disparities:** A large percentage (85%) of migrant women have less than 10 years of education, potentially limiting their employment opportunities.
- **Post-COVID Impact:** After the pandemic, 55% of women didn't return to work, and those who did earned only 56% of their pre-pandemic income.

Data on Migrants (Census 2011)

Migrants (Millions)	Male	Female	Total
Intra-State	71.76	114.94	186.70 (88%)
Inter-State	12.36	13.71	26.07 (12%)
Total	84.12	128.65	212.77

What are the issues related to female migrants in employment?

- **Definitional Issues in Employment:** National surveys' definition of employment, focusing on formal contracts, leads to many women's works being classified as unpaid or not part of the labour force.
- **Underreported Employment:** Despite PLFS data indicating high unemployment among migrant women, many engage in casual or informal jobs like agriculture or domestic help, which are often not recognized as employment.
- **Lack of Social Networks:** After migrating, women often face the challenge of having limited social networks. The lack of connections, especially in new environments, can significantly hinder their chances of finding employment. Their reduced social capital compared to non-migrant women exacerbates the issue of unemployment.
- **Policy Gaps:** Current policies do not adequately address the unique needs and challenges of female migrants. For instance, initiatives like One Nation One Ration Card, e-Shram, and affordable rental housing complexes are mainly targeted towards male migrants, overlooking the specific requirements of female migrants.

What should be done about these challenges?

- **Comprehensive Data:** National Surveys like PLFS can be enhanced to include more information on **socio-economic conditions** of female migrants post-migration and their time-use data. This will help understand their actual employment status and challenges.
- **Change the Employment Definition:** The definition of employment in surveys can be altered to include informal and unpaid family work, which is common among migrant women but currently not recognized as employment.
- **Tailored Policies:** Policies that address specific needs of female migrants must be developed, moving beyond the male-centric focus of current policies like One Nation One Ration Card or e-Shram. Targeted support should be created for women employment, social security, and other challenges faced by female migrants.
- **Political Recognition:** Increasing political attention towards female migrants, recognizing them as a significant group with unique needs (rather than treating them same as male migrants) can improve their status. (Refer EPIC December 2023 (click) for Migrant Workers in India).

3. Evolution of Women's Rights in India

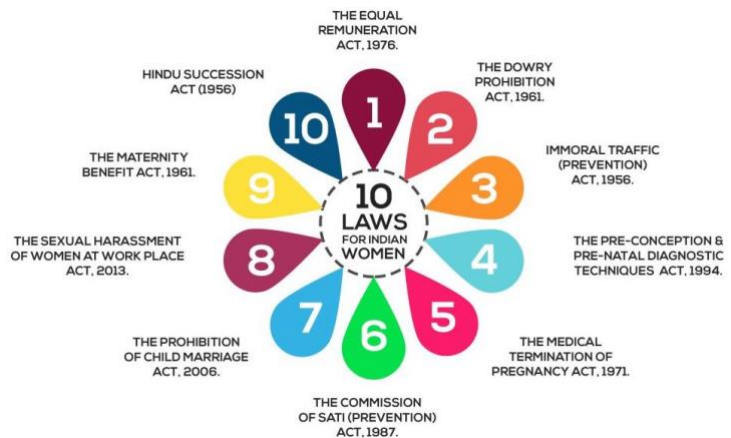
News: The struggle by Women's Organization played a vital role in ensuring voting rights, participation in government, social reforms and economic empowerment.

How did Women Rights evolved in India before Independence?

- **Voting Rights:** Women's struggle for voting rights began with the Government of India Act, 1919.
 - Madras was the first province to give this right in 1921, followed by Bombay and United Provinces.
 - Bengal initially rejected women's voting rights (Enfranchisement Bill), but after campaigns by **Bangiya Nari Samaj**, it was granted in 1925.
 - However, these rights were initially limited to women meeting certain property or income criteria.
- **Legislative Participation:** The **Nehru Report of 1929** proposed equal civic rights for all.
 - Despite Britain's reluctance, Indian leaders like **Rajkumari Amrit Kaur** and **Shareefa Hamid Ali** advocated for these rights internationally.
 - The Government of India Act, 1935 expanded women's voting rights and allowed them to hold public office, leading to participation of women in the 1936-37 elections.
- **Social Reforms:** The **All-India Women's Conference (AIWC)** (formed in 1927), initially focused on education but later campaigned against child marriage, for raising the age of consent, and against polygamy.
 - It sought to reform religious laws to empower women, including economic aspects and inheritance rights.
- **Indian Woman's Charter of Rights and Duties:** Adopted in 1945-46, this charter demanded equality in all areas, especially highlighting economic empowerment and recognition of domestic work.
 - It influenced laws like the Hindu Code Bill, which came into effect a decade later.

How did Women influence Post-Independence Policies?

- **Opposition to Religious Reservations:** Influential leaders like Rajkumari Amrit Kaur, a Christian, and Begum Qudsia Aizaz Rasul, a Muslim, argued in the Constituent Assembly against reserving seats based on religion.
- **Advocating for Unified Electorates:** The All-India Women's Conference (AIWC) strongly opposed separate electorates. They believed such systems deepened communal divisions.
- **Against Women's Reservation:** AIWC also argued against reservations specifically for women in politics, emphasizing the need for a more integrated approach.
- **Influencing Constitutional Debates:**



Source: Legodesk. 10 women-specific legislation enacted since Independence. The 106th Constitutional Amendment Act (Nari Shakti Vandan Adhiniyam) has provided for 33% reservation for women in the Lok Sabha and State Legislative Assemblies.

Their arguments and activism were pivotal in shaping post-partition policies, particularly in the framing of the Constitution where reservation was eventually limited to Scheduled Castes and Tribes.

While the status of women has improved a lot since Independence, the progressive work undertaken by early feminists and women leaders must be continued to push for more inclusive policies and legal reforms. This includes expanding women's economic rights, advocating for equal property and inheritance laws, and addressing the societal challenges that still hinder women's full participation in all areas of life.

4. Demographic Changes in India and Impact

News: In her Budget speech, the Union Finance Minister has announced to form a committee to study India's population growth. The findings of the committee are expected to help meet the **Viksit Bharat** goal by 2047.

What is the status of demographic changes in India?

- **Population Growth:** The fertility rate in India has fallen below the replacement level (NFHS-5) indicating a significant decline in population growth rate.
- **Changes in Workforce:** At present, 33% of India's population is aged 20-29 years while 23% population falls between 40-59 years. However, by 2047, the proportion of both would be ~28% of the population. This points to significant change in younger workforce.
- **State-wise Variations:** In 2021, 151 working-age adults supported 100 dependents in Bihar, while 189 working-age adults supported 100 dependents in Tamil Nadu. In 2051, this will change to 201 working-age adults for 100 dependents in Bihar but only 132 in Tamil Nadu. States in southern India are expected to age much earlier than States in the north.
- **Care Work:** Studies have shown that in 1993, an average woman spent about 14 years caring for children under age 5, while that number dropped to 8 years in 2021. However, time freed up from childcare has not been utilised in increased participation in the workforce.

What are the challenges associated with demographics changes in India?

- **State-Specific Demographic Shifts:** The disparity in demographic shifts across States will lead to different dependence ratios. This will necessitate inter-State migration (from younger to ageing States) which will have several implications.
 - The burden on State exchequers will also vary (social security for older, differing disease burden etc.).
- **Demographic Dividend:** With shift in demography and rise in dependency ratio, the window of opportunity to realize the demographic dividend will start to shrink. The Government must reorient the development policies to utilize this dividend to make India a developed country by 2047.
- **Resource Allocation by the Finance Commission:** The Commission will need to address the varied demographic changes and dependencies across different states, impacting inter-state resource distribution.

What should be the approach?

- **Multidisciplinary Approach:** Demographers, economists, sociologists, and public policy experts must be engaged to address the diverse and complex challenges of demographic changes.
- **Workforce Skills:** To prepare for a future with more middle-aged workers, the Government must focus on skill development and training, including for those already in the workforce.
 - **Employment creation, education, skills generation and healthy lifespan** are the most important aspects in translating demographic dividend to economic dividend. A **skilled and healthy workforce** is critical for **better productivity**. It reduces **excessive public spending** and helps in **greater capital creation**.
- **Women's Participation:** To convert the demographic dividend into a **gender dividend**, there should be an increase in participation of women in productive economic activities. It can be done, possibly by improving childcare facilities through programs like Anganwadi and MGNREGA.
- **Prepare for Aging Population:** Policies should be developed to make the elderly more self-sustaining, such as raising retirement ages and **enhancing old age pension schemes**.
- **Decline in Natural Fertility:** India should avoid strict population control like China's one-child policy. Instead, it should let the fertility rate decrease naturally and adapt to demographic changes.
 - Drastic population control measure can result in India '**getting old before getting rich**' and must be avoided.
- **Good governance** is vital. India has the potential to become worldwide market for both production and consumption, with lower manufacturing costs due to a relatively economical workforce. Governance and economic reforms to **ensure structural transformation of economy** away from low-productivity agriculture is necessary for more livelihood creation.

General Studies Paper II

1. The Importance of 'We, the People' in the Preamble

News: There has been a controversy around the addition of 'Socialist' and 'Secular' in the Preamble. In this context, the real importance of Preamble lies in the symbolic importance provided to 'We the People'.

What is the significance of 'We, the People' in the Preamble?

- The Preamble begins with the words 'We, the People' setting the tone for its content, intention and philosophy.
- The phrase 'We, the People' represents the idea that the **power and sovereignty reside with the people** and not the Government or any of its organs.
- It anchors the Constitution's goals of securing **justice** (social, economic and political), **liberty** (of thought, expression, belief, faith and worship), and **equality** (of status and of opportunity) to all Indian citizens.
- Popular movements like for women's rights, movements against caste-based violence show how the marginalized groups use the spirit of 'We the People' to assert their rights and participate in democracy.
- Although, the public discourse is often dominated by elite groups, 'We the People' signifies the need for **inclusive participation** from all social segments.

What were the views of Ambedkar and Gandhi regarding the Constitution?

Ambedkar's Views

- **Integration of Principles:** Dr. Ambedkar had framed the Preamble in terms of heralding a "*way of life, which recognizes liberty, equality, and fraternity as the principles of life and which cannot be divorced from each other*" i.e., he had **considered the three** (liberty, equality, fraternity) **to be inextricably linked** and one can't exist without the other two.
- **Critique of Legal Reliance:** Dr. Ambedkar cautioned against relying solely on laws for liberty or equality, highlighting the importance of societal morality.
 - He concurred with Lord Buddha's view that the law can't be a guarantee for breaches of liberty or equality. Law is intended to keep the minority within the range of social discipline. The **majority is constrained not by law but by morality**. Hence, Dr. Ambedkar held that "*religion, in the sense of morality, must remain the governing principle in every society*".

Gandhi's Views

- **Swaraj – Self-Realization:** Gandhi's concept of 'Swaraj' was not just about political independence and mechanistic self-rule, but a deeper self-realization leading to **substantive freedom** and **equality**.
- **Satyagraha as a Path:** Gandhi saw 'satyagraha', or non-violent resistance, as means to achieve Swaraj, focusing on truth and love.
- **Personal Sovereignty:** Gandhi viewed sovereignty as not just a State's power but as an everyday practice by individuals, emphasizing personal responsibility and ethical conduct.

In the context of 'Socialist'/'Secular' debate, what role do the elite play in public discussions?

- In India, the elite, often well-educated and from higher social classes, dominate public discussions, (including the ongoing debate on Socialism/Secularism). The elite narrative **overshadows marginalized voices**.
- Their control in media, academia, and activism leads to a skewed representation.
- Emulating Western discourse, the elite sometimes dismiss grassroots movements as irrational, lacking diverse perspectives and broader societal context.

What should be the approach?

- The way forward involves **embracing a pluralistic civil society** where every community, particularly non-elite groups, actively participates.
- It requires **fostering dialogue** and understanding across various social strata, recognizing grassroots movements as vital expressions of democracy.
- This approach aligns with Ambedkar's vision of Constitutional morality and Gandhi's concept of Swaraj, promoting a more equitable and representative democratic society.

2. Supreme Court's Judgment on Electoral Bond Scheme

News: The Supreme Court has held the Electoral Bond Scheme as 'unconstitutional'. The SC also struck down the amendments to several Acts (like RoPA, 1951; IT Act, 1961; Companies Act, 2013) that were undertaken to facilitate the Electoral Bond Scheme.

What is the SC Judgment on the Electoral Bond Scheme?

Issue 1: Does the Electoral Bond Scheme violate the Right to Information?

- **SC Verdict:** The Scheme violates the Right to Information under Article 19(1)(a) which guarantees the freedom of speech and expression.
- **Rationale:** There is deep association between money and politics. Money enhances access to legislators and raises the legitimate possibility of **quid pro quo** or mutually beneficial arrangements such as favourable policy changes for the corporate donors. This can give rise to economic inequality. **Economic inequality contributes to political inequality.** Hence, Information on the funding of political parties is essential for making informed choice and voting decision.

Issue 2: Is curbing circulation of black money in electoral financing a legitimate reason to restrict the Right to Information (RTI)?

- **SC Verdict:** RTI can only be restricted based on **Article 19(2)**, which mentions the **reasonable restrictions** to freedom of speech and expression. The reasonable restrictions do not include curbing black money as a restriction under Art 19(2).
- **Rationale:** The restrictions on the Right to Information in the Scheme fails the Supreme Court's **Test of Proportionality** (laid down in the **Justice K.S. Puttaswamy (Retd.) vs. Union of India (2017)**). An infringement of the right to information is not proportionally justified to curb black money in electoral financing.

Issue 3: Whether the Right to Privacy of donor is a valid ground for the infringement of RTI?

- **SC Verdict:** The SC held that the Right to Privacy of political affiliation does not extend to those corporate contributions, which may be made to **influence policies**. It only extends to contributions made as a genuine form of political support.
- **Rationale:** Huge contributions made by corporations should not be allowed to conceal the reason for financial contributions.

Issue 4: Whether unlimited political contributions by companies are unconstitutional?

- **SC Verdict:** The SC held the amended **Section 182(3) of the Companies Act, 2013** as unconstitutional, because it is violative of Article 14. This amended section permitted **unlimited political contributions** by companies.
- **Rationale:** Contributions made by companies are purely business transactions made with the intent of securing benefits in return (favourable policy measures). The ability of companies to influence the political process through contributions is much higher compared to individuals.

What are the implications of SC Verdict?

- **State's Responsibility for Least Restrictive Measures:** The electoral bonds scheme was invalidated by the SC as it held that the State should have employed the 'least restrictive' (to fundamental rights) method. The

SC has established a new red line for the State to be 'least restrictive' on fundamental rights, while exercising its legislative functions.

- **Reaffirmation of the Principle of 'Definite' and 'Structured' Proportionality Test:** The SC in its verdict on the electoral bonds scheme has reaffirmed to the principle of 'definite' and 'structured' proportionality test laid down in the *Justice K.S. Puttaswamy (Retd.) vs. Union of India (2017)* on the Right to Privacy. This principle will **guard against arbitrary action** that could completely wipe out a right in the garb of pursuing a 'legitimate State interest'.
- **Defining 'legitimate State interest' not the exclusive purview of the State:** According to the ruling, definition of 'legitimate State interest' will not be the exclusive purview of the State. The **Supreme Court can examine the State's definition of 'legitimate state interest'**, behind any legislative action.
- **Re-affirmation of the Right to Information as a Cardinal Virtue of Democracy:** The verdict re-affirms that the Right to Information provided under Article 19(1)(a) of the Constitution, remains a cardinal principle of Indian democratic setup.
- **Institution of 'Hierarchy of Rights':** The Supreme Court has used the proportionality test to calibrate a hierarchy of rights. **Greater weightage has been assigned to an individual voter's right to information** on political funding than a **corporate donor's demand for a right to privacy**.
- **Paramountcy of Citizen's Interests:** The verdict emphasises the State to keep citizen's interest paramount while drafting any legislation or policy. *(For more details on the Electoral Bonds Refer EPIC November 2023 (click) for Issues Associated with Electoral Bonds and State Funding of Elections).*

3. The Need for Decentralized Governance

News: Decentralization can aid better governance. Decentralized strategies based on local resource base can help achieve faster economic growth.

What is the importance of decentralization?

- It is important because it allows local governments to create development plans that suit their specific needs.
- This approach can lead to **more effective economic development** compared to centralized planning, especially in socially and economically diverse countries like India.

What are the challenges associated with decentralization in India?

- **Political Discrimination:** There are allegations of bias against some States when the Union and State Governments belong to different political parties e.g., concerns have been raised against disbursement of funds to the MLAs along party lines by the Brihanmumbai Municipal Corporation (Mumbai).
- **Risk of Inter-State Rivalry:** As India moves towards a national market economy, decentralization can result in trade barriers between States.
- **Fiscal Constraints:** States accounted for about 55% of Government expenditure but only 38% of tax revenue in 2022-23. Central tax collection practices limit States' share, affecting their financial autonomy.
- **Centralized Development Schemes:** Centrally-sponsored schemes often dictate development strategies of States, reducing States' autonomy. In the Budget FY2022-23, these grants were about half as large as tax devolution to States.
- **Inadequate Resources of Local Governments:** Municipalities and panchayats lack sufficient access to fiscal resources, hindering their ability to effectively manage local development.

How can States benefit from decentralization?

- **Tailored Development Strategies:** States can develop strategies based on their unique resources, climate, and demographics. It can lead to more effective economic growth.

- 'One District-One Product' scheme is one such initiative.
- **Reduced Economic Disparities:** By focusing on local strengths, like specific crops or industries, States can bridge the economic gap. Decentralization allows for diverse approaches, potentially reducing disparities.
- **Greater Financial Autonomy:** With more control over financial resources, States can better fund their development projects.
- **Local Political Harmony:** Decentralization can reduce political conflicts by allowing States more freedom from the influence of the Union Government, leading to more harmonious Union-State relations.
- **Empowerment of Local Bodies:** Municipalities and panchayats can have more control over local development, addressing specific community needs and attracting employment opportunities.

What can India learn from China's growth?

- **Regional Competition as a Growth Catalyst:** Post-1992, Chinese provinces, municipalities, and towns independently pursued development, fostering a market economy through **regional competition**.
- **Balancing National Market with Local Autonomy:** China's success also involved reform measures to create a **common national market**. This approach demonstrates how regional competition can benefit national development.
- **Importance of Localized Economic Experiments:** China's varied economic experiments at regional levels were instrumental in its transformation. India can benefit by allowing States to innovate and experiment with development models.

Despite China being a totalitarian state, India can adopt its **economic decentralization model** while continuing with its own democratic and diverse political framework.

4. The Debate on Uniform Civil Code

News: The Uttarakhand State Assembly has passed Uniform Civil Code for the State.

What is Uniform Civil Code (UCC)?

- The Uniform Civil Code is related to personal matters like **marriage, divorce, inheritance, adoption, and maintenance**.
- UCC proposes to **replace the personal laws** of different religious communities (based on the scriptures and customs), with a **common set of laws** governing every citizen, irrespective of the religion.
- The concept of UCC is enshrined in **Article 44 of the Constitution**. The implementation of UCC falls under the Directive Principles of State Policy.
- After long deliberations in the Constituent Assembly, it was decided to place UCC under the DPSP. Since the adoption of Constitution, Government has made certain efforts towards implementation of UCC.
 - **The Special Marriage Act, 1954** was enacted to provide secular alternative in marriages. The inheritance rights of the off-springs of couples married under the act were to be governed by the religion-neutral chapter on inheritance in the **Indian Succession Act, 1925**.
 - **Goa Civil Code/Goa Family Law:** The Portuguese Civil Code, 1867 has continued in Goa.
 - In Puducherry, a sizable section of citizens called **Renoncants** (Indians whose ancestors had during the French rule abandoned personal law) are still governed by the 218-year old **French Civil Code, 1804**.
- Most aspects related to marriage and divorces of persons belonging to different religions are continued to be governed by personal laws e.g., the **Hindu Marriage Act (1955)**, a **Muslim Personal Law (Shariat) Application Act (1937)**, **Christian Marriage Act (1872)** and a **Parsee Marriage and Divorce Act (1937)**.

What are the arguments in support of implementing UCC?

- **Fulfilment of Constitutional Mandate:** UCC is prescribed by Article 44 of the DPSP.

- It would ensure equality before the law among all its citizens, irrespective of their religion, class, caste, gender.
- **Promotion of Gender Justice and Equality:** UCC can help eradicate discriminatory practices related to marriage, divorce, and inheritance in various religious personal laws e.g., even though Hindu Succession Act, 1956 was amended in 2005 to give daughters equal inheritance rights at par with sons, but similar reforms have not been adopted universally across all personal laws.
- **National Integration:** UCC will affirm the notion of 'one nation, one law'. This will reinforce the idea of a unified Indian identity amidst its diverse population.
- **Societal Reforms:** UCC will remove the patriarchal notions of the society in all religions.
- **Simplification of legal matters:** UCC will simplify the cumbersome legal matters governed by different personal laws. It will also help in speedy disposal of cases and reduce burden on the judiciary especially on cases related to divorce, inheritance etc. It will also eliminate conflict between personal laws and Prohibition of Child Marriage Act, POSCO Act etc.
- **Progressive Jurisprudence:** UCC is an embodiment of the progressive jurisprudence exercised by the SC in matters related to **gender** and **inter-religious equality** e.g., In *Shah Bano* case (1985) SC allowed the grant of maintenance to divorcee woman, in the *Shayara Bano* case (2017) SC banned the discriminatory practice of triple talaq.

Key Features of Uttarakhand UCC

- ★ **Minimum Age of Marriage:** Uttarakhand UCC brings the minimum age of marriage to 18 and 21 for women and men respectively for all religions. This makes it at par with the minimum age of marriage provided in the **Hindu Marriage Act, 1955** and the **Special Marriage Act, 1954**.
- ★ **Succession:** The two types of succession; Testamentary succession (through a will) and Intestate succession (in the absence of a will) have been brought at par with the provisions of the **Indian Succession Act, 1925**.
- ★ Both parents (mother and father) have been classified as **Class I heirs** in case of intestate succession. Earlier, only mother was included in Class I heir.
- ★ **Ban on Polygamy:** The UCC outlaws and criminalises the practice of polygamy, *Nikah Halala* which were practiced under the Muslim personal laws.
- ★ **Abolition of distinction between Ancestral and Self-acquired Property:** A father is free to dispose both his self acquired property as well his ancestral property. Earlier, a father could only dispose his self acquired property and not his ancestral property because of coparcenary rights. Coparcenary rights in the ancestral property provided by the **Hindu Succession Act** have been abolished as part of the UCC.
- ★ **Registration of Live-In Relationships:** All live-in relationships will have to be registered with the registering authority notified under the law. If any of the partners is less than 21 years old, the registrar will inform the parents of the couple. Children born out of live-in relationships will have all **legal rights**. If one of the partners is married, live-in relationship will not be allowed.
- ★ **Registration of Marriage:** Every marriage has to be registered within **60 days**. Three months jail term and fine of ₹25,000 will be awarded for wrong information during marriage registration and ₹10,000 fine for not registering the marriage.
- ★ **Divorce only through Courts:** No marriage can be dissolved without a court order. In case of violation, there would be punishment of up to 3 years in jail.

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What are arguments against the UCC?

- **Conflict with Fundamental Right of Religious Freedom:** Critics argue that the UCC infringes upon the right to religious freedom provided by **Article 25** of the Constitution. Also, UCC infringes upon the right of communities to **preserve their distinct culture** granted by **Article 29** of the Constitution.

• **Diverse Customary Practices:**

Enforcing uniformity will interfere with the diverse personal laws and customary practices followed in India by different communities e.g., **Special Marriage Act, 1954** (A Secular Law) **prohibits marriage between first cousins**, which is a common practice in some communities in India. Marriage between second cousins is a popular practice among the Hindu communities in South India.

Supreme Court's Views on Uniform Civil Code



- **Mohd. Ahmed Khan v. Shah Bano Begum (1985):** The SC directed the Government to enact UCC. The SC observed that UCC will help the cause of **national integration**.
- **Sarla Mudgal v. Union of India (1995):** The SC directed the Government to reflect the steps taken and efforts made towards securing a UCC for the citizens of India.
- **Pannalal Bansilal Patil v. State of Andhra Pradesh (1996):** The SC observed that while a **uniform law is desirable**, its enactment in one go might be **counter-productive** to the unity and integrity of the nation. **Gradual and progressive change** should be brought about.
- **John Vallamattom and Ors. v. Union of India (2003):** The SC held that there is no necessary connection between religious and personal law in a civilized society. Matters of secular character like marriage cannot be brought within the guarantee enshrined under Art. 25 and 26.

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- **Threat to India's cultural diversity:** UCC could lead to homogenization of laws. This will be a threat to India's multicultural ethos especially different cultural practices followed by Scheduled Tribes in India.
- **Existence of secular laws:** Critics point to the existence of secular laws applicable to all citizens, irrespective of religion e.g., Section 125 of the Criminal Procedure Code, which is a secular law provides for maintenance, and existence of laws relating to domestic violence like the Domestic Violence Act.
- **Personal laws in Concurrent List:** Some Constitutional law experts argue that framers of the Constitution did not intend total uniformity in personal laws. That is why personal laws were placed under the **Concurrent List** (Entry 5) instead of the Union List.

What should be the way forward?

- **Awareness and Reform in Personal Laws:** This should be initiated and undertaken by the communities themselves. Legal intervention should be undertaken only if a practice violates fundamental rights of citizens (especially women).
- **Gradual Transformation:** The Law Commission in a consultation paper (2018) had recommended that a UCC is **neither necessary nor desirable** at this stage. Government must take an **incremental approach** in removing the gender disparities in matters of marriage, divorce, inheritance of personal laws.
- **Wider Consultation:** An in-depth study and wider consultation involving all stakeholders including the academia, constitutional experts, religious and political leadership must be undertaken before enacting the UCC. This will ensure better formulation and greater acceptability of UCC when implemented.
- **Focus on Gender Parity:** The Law Commission had recommended to first focus on ensuring gender parity and equity rather than focussing on the equality between communities.
- **Basic Reforms:** The Government must prioritise basic reforms like having 18 years as the marriageable age for girls for all across communities and genders; introducing a '**no-fault**' divorce procedure and allowing the dissolution of marriage on the ground of irretrievable breakdown, and having common norms for post-divorce division of assets.

5. The Issue of Frequent Internet Shutdowns in India

News: India has consistently topped the list of countries with most frequent internet shutdowns across the world. This has negative impact on the economy and public trust.

What was Anuradha Bhasin vs Union of India Judgment?

- **Recognition of Internet as a Fundamental Right:** The 2020 Judgment by the Supreme Court declared the access to the Internet as a fundamental right under the Constitution.

- **Conditions for Internet Restrictions:** The Court ruled that any Government restriction on internet access must be **temporary, lawful, necessary, and proportionate**.
- **Review of Restrictions:** The ruling emphasized that Government orders to restrict internet access are subject to **judicial review**.
- **Expectation of Limited Suspensions:** The judgment was expected to limit internet suspensions to extreme cases involving public emergencies or safety threats.

What actions have been taken by the Parliament in relation to internet suspensions in India?

- **Amendment to Telecom Suspension Rules in 2020:** The Parliament amended the **Telecom Suspension Rules, 2017** following the Supreme Court's judgment. This amendment limited Internet suspension orders to a **maximum of 15 days**. The Amendment did not mandate the publication of suspension orders, nor did it include the Supreme Court's direction for periodic review of these orders.
- **Non-Statutory Recognition of Court Rulings:** The Government has not given statutory recognition to the Supreme Court's directives in the *Anuradha Bhasin* judgment, leading to a **lack of awareness and compliance** among officials.

What are the issues with frequent internet suspensions in India?

- **Violation of Supreme Court Ruling:** Despite the *Anuradha Bhasin* judgment declaring internet access a fundamental right, Governments frequently impose internet shutdowns.
- **Lack of Transparency in Suspension Orders:** The Government often fails to publish the reasons for internet shutdowns, undermining legal processes and public trust.
- **Challenges in Legal Redressal:** Without publicly available suspension orders, it's difficult for citizens to challenge shutdowns in court.
- **Non-Compliance Across India:** Compliance with the SC judgment is low nationwide, not just in Jammu and Kashmir.

What are the impacts of internet suspensions?

- **Economic Losses:** In 2020, India suffered a US\$ 2.8 billion economic loss due to 129 internet suspensions.
- **Effect on Individuals:** Around 10.3 million people were affected by these shutdowns.
- **Disruption in Daily Life:** Internet suspensions hinder access to information, healthcare, education, and livelihood opportunities.
- **Psychological and Social Impact:** They cause psychological stress and hinder social activities.
- **Exacerbate Inequality:** The majority of users rely on mobile data (97.02%, according to a 2019 TRAI report), so suspensions disproportionately affect those **without broadband access**.
- **Undermines Democracy:** Internet shutdowns are often used to suppress democratic exercises like protests, limiting freedom of expression and access to information.

What should be the approach?

- There is a need for a more **faithful compliance** with the Supreme Court's guidelines by the Government.
- This adherence is essential for **maintaining transparency** in issuing and publishing suspension orders. This is crucial for upholding fundamental rights.
- Such steps will also contribute to **reducing economic losses** and shedding India's tag as the "**internet shutdown capital**" of the world, thereby fulfilling the potential of **Digital India**.

6. Addressing Gender Gap in Education through Early Childhood Education (ECE)

News: Despite Governments' efforts, the gender gap in education continues to persist especially at higher education levels in the STEM courses.

What is the current status of gender equity in education in India?

- The 2023 **Annual Status of Education Report** has shown that more boys take up STEM (Science, Technology, Engineering, and Mathematics) courses than girls even though both girls and boys from rural India equally aspire to become doctors or engineers.
- **Gender Equity in Learning Outcomes:** National Achievement Survey (2017) shows parity in learning levels between boys and girls in elementary and secondary classes across the country.
- **Gender Gap in Mean Years of Schooling:** Over the past two decades, the mean years of schooling for girls has almost tripled from just 1.7 years in 1990 to 4.7 in 2018, while for males from 4.1 to 8.2 years. However, the gender gap has increased from 2.4 years to 3.5 years.
- **Widening Gender Gap with Level of Education:** Girls have **higher dropout rates** compared to boys as the level of education increases. This is due to **greater barriers to schooling for girls** due to **social norms** and **gender stereotypes** correlated with female adolescence.
- **Gender Gap in Enrolment in Private Schools:** More boys than girls tend to be enrolled in private institutions. Girls' enrolment in free government schools highlights **societal gender biases** in exercising school choice.

What should be the approach?

- **Focus on Early Childhood Education (ECE):** Focus should be shifted to early childhood education (ECE) where the roots of the gender gap in education lie. This is because gender norms, biases and stereotypes are ingrained in early childhood.
- **Addressing Structural Challenges:** The lack of a regulatory framework, inadequate funding, poor quality and no legislation for universal access to early childhood education must be addressed urgently.
- **Eliminating Gender Stereotypes:** Early childhood education should also focus on imparting education that eliminates gender stereotypes and helps erase the gender gap.
- **Government Schemes:** Schemes such as *Beti Bachao, Beti Padhao* and the new National Education Policy place importance on ECE and hence, should be implemented in mission mode.

There are **positive social externalities** and **intergenerational benefits** associated with girls' education. It leads to a virtuous cycle of reduced poverty, infant mortality, crime and improved economic development. Hence, it must be given attention.

7. Need for Gender Diversity in Policymaking in Healthcare

News: There is lack of proper gender representation in healthcare policymaking in India. It can have an impact on quality of healthcare policies and decisions.

What is the distribution of gender roles in the healthcare sector?

India

- Women make up nearly half of all health workers (50%) in India. However, only 18% of them reach leadership positions in health panels, committees, and hospitals.
- In a study that analysed 23 National Health Committees constituted by the Government, women representation was just 11%. 36% of these committees did not have any women members at all.
- Women constitute 29% of doctors and 80% of the nursing staff.
- ~100% of Accredited Social Health Activists (ASHAs) in India are women.
- Women's roles are often in **frontline, lower-paid positions**.

Global

- Women account for 70% of the global health workforce.
- They occupy only 25% of senior positions in healthcare worldwide.
- Only 5% of the leadership roles are being performed by women in the global healthcare sector.

What are the issues with healthcare policy formulation in India?

- **Underrepresentation of Women:** Women are grossly under-represented. Most committees, that play a significant role in healthcare policymaking; predominantly consist of men, particularly doctors and bureaucrats, mainly from urban and privileged backgrounds. This **limits diverse perspectives** in policy-making.
- **Dominance of Medical Professionals:** There's an overdependence on doctors in policymaking which may lead to a narrow clinical view in health policy, overlooking preventive and community health aspects.
- **Limited Inclusivity in Policy Making:** The lack of varied backgrounds among committee members affects the inclusivity and relevance of health policies for diverse populations.

Why is diversity important in health policy making?

- **Reflects Varied Needs:** Diversity of representation in policy formulation can better address the different health needs of various populations. For example, policies might fail to consider affordability and household dynamics without diverse perspectives.
- **Enhanced Understanding of Women's Health Needs:** Including women in health policy making brings essential insights into **maternal care, reproductive health, and gender-specific diseases**. This diversity in perspectives ensures that the health policies developed are more comprehensive and sensitive to the needs of women.
- **Regional Representation:** Over-concentration of individuals from metropolitan areas and large hospitals overlooks regional health issues. Diverse regional representation is essential for policies that cater to the unique health challenges of different areas e.g., higher anaemia in Jharkhand.
- **Professional Diversity:** The dominance of doctors in committees can lead to a narrow clinical focus. Including **non-medical professionals** and **NGOs** can broaden the scope to include preventive care and social health aspects.

To improve health policy making, there is a need for more inclusive health committees with reserved seats for women and marginalized groups. This approach can ensure diverse perspectives in decision-making, leading to more equitable and effective health policies that address the needs of all population segments. (Refer EPIC June 2023 (click) for Gender Discrimination in the Field of Medicine and Medical Research).

8. Improving Access to Sanitation in India

News: While the coverage of access to sanitation facilities has improved to 100%, gaps remain with respect to usage and rigid social norms.

What is the current status of sanitation coverage in India?

- Access to water and sanitation is **Goal 6 of the 17 Sustainable Development Goals (SDGs)**.
- According to the Government of India data, sanitation coverage has significantly improved from 39% in 2014 to 100% in 2019.
- The **Swachh Bharat Mission-Grameen (SBM-G)**, launched in 2014, aimed to make India **Open Defecation Free (ODF)** by October 2019. Between 2014 and 2019, ~10 crore toilets were constructed under the SBM-G.
- The Government's current goal is to transition from ODF to **ODF Plus** by 2024-25, with about 85% of villages already achieving ODF Plus status.

- The **National Annual Rural Sanitation Survey** (NARSS) Round-3 (2019-20) reports that 95% of India's rural population had access to toilets. Of these, 79% owned their toilets, 14% shared facilities, and 1% used public toilets.
- Although 96% of these toilets were functional and had water access, only 85% of the rural population used **safe and hygienic toilets**.
- There were slight variations in access according to caste, with 97% for upper castes and 95% for SCs. The upper castes showed a higher percentage of toilet non-use compared to backward castes.

ODF Plus Aspiring उद्यमान (Udyaman)	ODF Plus Rising उज्जवल (Ujjwal)	ODF Plus Model उत्कृष्ट (Utkrisht)
<ul style="list-style-type: none"> • All households in the village have access to a functional toilet facility. • All Schools, Anganwadi Centres, Panchayat Ghar in the village have access to separate functional toilets for men and women. • The village has arrangement for Solid or Liquid Waste Management. 	<ul style="list-style-type: none"> • All households in the village have access to a functional toilet facility. • All Schools, Anganwadi Centres, Panchayat Ghar in the village have access to separate functional toilets for men and women. • The village has arrangement for Solid Waste Management. • The village has arrangement for Liquid Waste Management. 	<ul style="list-style-type: none"> • All households in the village have access to a functional toilet facility. • All Schools, Anganwadi Centres, Panchayat Ghar in the village have access to separate functional toilets for men and women. • All places in the village are observed to have minimal litter, stagnant wastewater or no plastic waste dump in public places. • The village has arrangement for Solid Waste Management. • The village has arrangement for Liquid Waste Management. • The village should prominently display ODF Plus IEC messages through wall paintings or billboards etc.

(IEC: Information, Education, Communication)

What are the issues with sanitation coverage in India?

- **Incomplete Usage Despite Access:** While sanitation coverage improved to 100% by 2019, only 85% of rural Indians use safe and hygienic toilets, indicating a gap in actual usage.
- **Quality and Infrastructure Issues:** Problems like **malfunctioning facilities, unhygienic conditions**, and structural issues like full pits or collapsing superstructures hinder usage of toilets.
- **Water Scarcity:** Lack of access to water, especially in rural areas like Gujarat's Dahod district, leads to higher non-use of toilets.
- **Behavioural and Social Norms:** Cultural norms and behaviours affect toilet usage, with some households using them for purposes other than defecation.

Evolution of Initiatives for Improving Sanitation Coverage

- ★ **Central Rural Sanitation Programme (CRSP):** Launched in 1986, it was India's initial step towards improving rural sanitation with substantial subsidies.
- ★ **Total Sanitation Campaign:** Started in 1999, this marked a shift to a lower subsidy, demand-driven approach.
- ★ **Swachh Bharat Mission-Grameen (SBM-G):** Launched in 2014, this mission aimed to make India **Open Defecation Free (ODF)** by October 2019. The government aims to transform India from ODF to **ODF Plus** by 2024-25.
- ★ **Phase II of SBM-G:** Focuses on sustainability, promoting solid and liquid waste management, and covering households left out earlier.
- ★ **National Annual Rural Sanitation Survey (NARSS):** Conducted to assess rural sanitation coverage, showing 95% of rural India having toilet access. Created by I ForumIAS®

- **Caste-Based Variances:** Access to toilets and usage vary across castes, with upper castes surprisingly showing higher rates of non-use.
- **Challenges in Larger Households:** Larger households often struggle with toilet usage due to overcrowding and limited facilities.

What should be done?

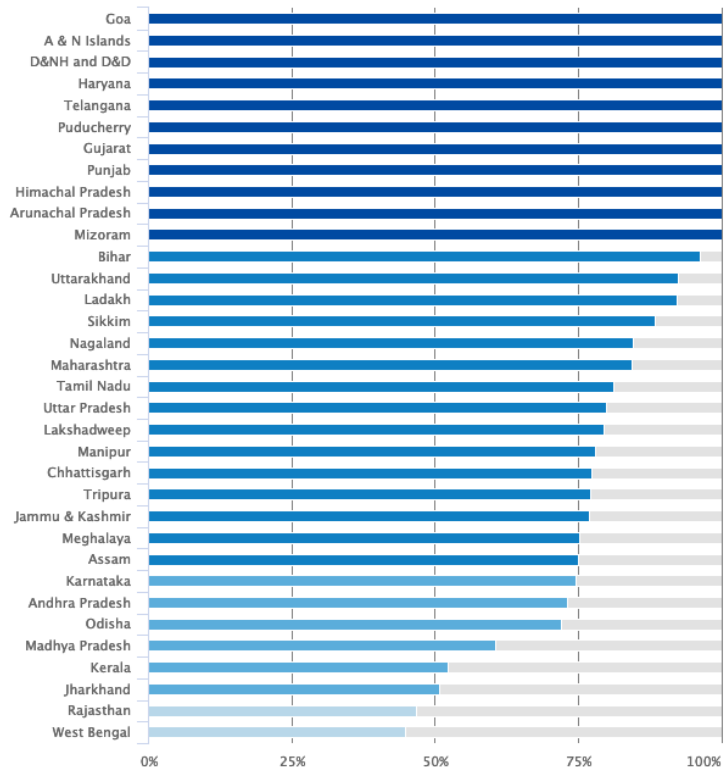
- Focus should be on **changing cultural and social norms** to increase actual toilet usage.
- It must be ensured that the **toilets are functional and hygienic**, addressing issues like collapsing structures and full pits.
- Efforts should be made to **include uncovered households** left in the initial phases, particularly in rural areas.
- Strategies should be tailored to be sensitive to the variations in toilet usage across different social and caste groups.
- Sanitation initiatives should be **aligned with other related programs** like the Jal Jeevan Mission for better outcomes.

9. Jal Jeevan Mission

News: The Jal Jeevan Mission has played an important role in ensuring access to clean drinking water in the rural and remote areas.

What have been the achievements of Jal Jeevan Mission?

- The Jal Jeevan Mission was launched in 2019 with the aim to provide **pipled water** in adequate quantities and of **prescribed quality** on a **regular** and **long-term** basis to **every rural household** in India.
- It has already provided tap water to **73% of rural households**. More than 14 crore rural households have tap connections compared to only 3.23 crore in 2019.
- 5.29 lakh **village water and sanitation committees/Pani Samitis** have been constituted and 5.17 lakh **village action plans** have been developed.
- About 22.98 lakh women have been trained for **testing water samples** using field testing kits.



Source: JJM Dashboard. 11 States/UTs have achieved 100% coverage. 8 States have coverage below 75%. West Bengal (45%) and Rajasthan (47%) have coverage below 50%.

What are the challenges in achieving 100% coverage?

Certain States have low coverage which indicate unique challenges faced by them:

- **Geographic Challenges:** Rajasthan's arid terrain is not very conducive to piped water supply. The State faces the issue of low availability of water.

- **Sustainable Source:** Unless the source of water is sustainable (such as through replenishment by groundwater recharge), the supply of water in the long-term would become challenging.
- **Lack of Urgency:** States like West Bengal have plenty of water, which may have taken away the urgency required to implement the scheme. It has also led to the problem of **contamination**, which requires a greater focus on treatment and supply.
- **Reaching the Last Mile:** Providing clean drinking water for PVTGs is part of the recently launched **PM JANMAN scheme**. The launch of this initiative makes it necessary to **reach far-flung areas**, which will be a challenge. (Refer Article for more on Jal Jeevan Mission).

How has the Jal Jeevan Mission dealt with the various challenges?

- **Different Regional Needs:** Every region has different needs, and different approaches were adopted for each region. Insulated pipes were used in hilly and cold regions. In villages with water quality issues, multi-village schemes through bulk water transfer were planned.
- **Transparency and Efficiency:** A dashboard that gives real-time updates, progress reports etc., ensures transparency and efficiency in water resource management. It also ensures **continuous monitoring** and surveillance of water quality parameters through advanced technologies.
- **Water Quality:** A proactive **Water Quality Management Information System** helps detect contamination or deterioration in water quality, thereby enabling **prompt corrective action** and grievance redress.

What are the expected positive impacts of the Jal Jeevan Mission?

- **Preventing Infant Mortality:** Providing safe water can reduce infant deaths by almost 30%, with the potential to prevent 25% of under-five deaths in India (1,36,000 child deaths annually).
- **Preventing Deaths due to Diarrhoea:** A WHO study states that 4 lakh diarrhoeal deaths can be averted if tap water is provided in every household.
- **Economic Savings:** The Jal Jeevan Mission can lead to economic savings of up to US\$ 101 billion due to savings on health-related expenditure.
- **Community-Building:** It can strengthen the socio-economic fabric of rural communities by bringing in a sense of community effort.
- **Skill Building:** The empowerment of the youth through skill development, and the creation of local water enterprises can enhance skills of the rural population. For instance, **Nal Jal Mitra initiative** equips villagers with skills to carry out **minor repairs and maintenance** of the piped water supply.
- **Employment Generation:** The Mission's employment generation potential during the construction phase, including both indirect and direct employment, is huge. Additionally, employment will be generated in the operation and maintenance stage.
- Through the Mission, India is moving towards achieving **UN Sustainable Development Goal 6** (Clean water and sanitation for all).

What should be done?

- **Planning Sustainability of Water Source:** This must be done by panchayats. Communities must be empowered in **aquifer and groundwater management**. In this respect, States have put in place an implementation support agency to handhold the communities and train them in operation and maintenance of water connections for the next 3-4 years.
- **Correct Identification of Area:** Appropriate area must be selected after field survey to house all 3 water supply units: The water treatment plant, storage unit, and distribution channel (meaning taps).
- **Maintenance of Infrastructure:** The Union Government has asked States to come up with a plan and decide on the mix of user charges and government subsidy for the upkeep of the drinking water infrastructure.

All efforts should be made to achieve 100% coverage under the scheme. Once the target is achieved, focus should continue on ensuring sustainability, continuity and improved quality. (Refer EPIC September 2023 (click) for Challenges Associated with the Jal Jeevan Mission and EPIC March 2023 (click) for Status of Jal Jeevan Mission).

10. India-France Relationship

News: The French President visited India as the Chief Guest of India's Republic Day celebrations. India-France relationship has remained strong, with some experts saying France can be new Russia for India.

What has been the evolution of India-France Relationship?

- The relationship between India and France has been positive since 1947. France had proved to be **one of the most reliable partner** in the West in the cold-war era.
- Since the 1960s, **French aircraft and helicopters** have been part of the Indian air fleet (Ouragan, Mystere, Alize, Alouette, Jaguar etc.).
- In 1984, France stepped in to supply nuclear fuel to Tarapur power plant after the US backed out citing domestic constraints.
- France has supported **India's space programme** since its inception. France helped in **setting up the Sriharikota launch site** and shared the Centaure and Viking rocket technologies in the 1970s.
- In 1998, the two countries entered into **Strategic Partnership**. Since then the domains of cooperation have expanded. France was one of the first countries that **accommodated India's position after the 1998 Nuclear Tests**.

Agreements Signed between India-France

- ★ **Defence Industrial Roadmap:** To enable the joint development and production of vital military hardware and platforms.
- ★ **Helicopters:** Tata and Airbus will partner to produce H125 helicopters in India.
- ★ **Fighter Jets:** French engine Maker Safran to transfer 100% technology to build fighter jet engines in the country.
- ★ **Satellites:** India's space PSU New Space India Limited and French Company Ariospace cooperation in satellite launches.
- ★ **Schengen Visa for Indian Students:** Agreement on the activation of 5-year validity of Schengen visas for Indian Students pursuing their master's degree in France

Created by | ForumIAS®

Agreements signed between India-France during the visit of the French President.

What are the areas of co-operation between India and France?

Geo-Political

- France was the first P-5 country to support Indian membership in the UNSC and reforms in the UN.
- France's support was vital in India's accession to the **Missile Technology Control Regime (MTCR)**, **Wassenaar Arrangement (WA)** and **Australia Group (AG)**.
- France has got the unique honour of being the country that has been invited the highest number of times as Chief Guest for the Republic Day.

Geo-Strategic

- Indian Air Force planes have been deployed to **Reunion Island**, which is an **overseas region of France**.
- France has given equities in organisations such as the **Indian Ocean Commission** to India. France is also part of **India-France-Australia Trilateral Dialogue** that supports free, open and inclusive Indo-Pacific.
- France has **supported India on J&K dispute** and has stood with India to counter Pakistan-sponsored terrorism, and has bolstered India's capabilities against China.

Defence and Security

- France has emerged as a key defence partner for India. It has become the **second-largest defence supplier** in 2017-2021. Major Military equipment imported from France include **Rafale** and **Mirage 2000** Fighter Aircraft and **Scorpene Submarines**.
- India-France regularly conduct **joint exercises:** *Varuna* (Naval), *Garuda* (Air Force) and *Shakti* (Army).
- India and France have been undertaking '**joint patrolling**' in the **Indian Ocean Region** and are striving towards maritime domain awareness in the Indian Ocean region.

Economic Cooperation

- Bilateral trade between India and France has reached a **new peak at US\$ 13.4 billion in 2022-23**. The exports from India have crossed US\$ 7 billion.
- France is the 11th-largest foreign investor in India. The cumulative investment of France in India is US\$ 10.49 billion from April 2000 to December 2022.
- More than **1,000 French establishments are present in India**. Their total turnover is around US\$ 20 billion and they employ around 300,000 persons.

Energy and Climate

- French support played an important role in India getting an exemption from the **Nuclear Suppliers Group (NSG)** in 2008 to resume international cooperation in civil nuclear energy.
- India and France played a pivotal role in the establishment of **International Solar Alliance**.

Science and Technology

- **France's CNES and India's ISRO partnership** has been strengthened with the **Joint Vision for Space Cooperation** in 2018.
- India and France are collaborating on **Joint Earth Observation Mission: TRISHNA, Joint Mars Mission** and removal of space debris.
- India and France are jointly constructing the **world's largest nuclear park** in Jaitapur, Maharashtra.
- France is the first European country to accept the **UPI payments system**.

Diaspora

- Around 109,000 of Indians, largely originating from French enclaves of Puducherry, Karaikal, Yanam, Mahe and Chandernagore live in France.
- A sizable number of Indian-origin population lives in the French Overseas Territories of Reunion Island (280,000), Guadeloupe (60,000), Martinique (6,000) and Saint Martin (300).

What is the significance of India-France Relations?

- **Securing the Indo-Pacific:** India requires French support for maintaining the **stability and security of the Indo-Pacific region** and to counter the growing Chinese aggression. **India-France Joint Strategic Vision** for cooperation in the Indian Ocean Region in 2018 is a positive initiative in this regard.
- **Strategic Autonomy:** The India-France relation is strategically autonomous in its truest sense, as it is not constrained either by the Anglo-Saxon views (in France) nor the anti-western thoughts (In India).
- **Global Stability:** India-France relationship is crucial for checking Russia's assertiveness in Europe and China's aggression in Asia. This will ensure, global stability and power parity in the emerging world order.
- **Horizon 2047 Agreement:** Horizon 2047 agreement between India and France lays down the future roadmap of India-France collaboration for the next 25 years. The collaboration between India and France in emerging domains such as supercomputing, cloud computing, artificial intelligence, and quantum technologies holds significant importance for India's future.

What are the challenges in India-France Relationship?

- **Absence of Free Trade Agreement:** The absence of Free Trade Agreement has impacted the deepening of economic relations (Bilateral trade between India-France is less than half of India-Germany). Stalled progress on the India-EU Trade and Investment agreement (BTIA) has prevented further deepening.
- **Trade Imbalances and IPR Issues:** India has been criticized by France for inadequate protection of IPRs of French businesses in India.
- **Stalled Projects:** The non-operationalisation of the negotiated projects like the Jaitapur nuclear project negatively impacts the relationship.

- **Differences in geopolitical approaches:** While France has openly criticized the Russian Invasion in Ukraine, India has taken a nuanced approach. France's stand on China's BRI contrasts with that of India.
- **Emerging Geopolitical Scenario:** The disturbance in the Middle East and the Hamas-Israel War, Chinese aggression in Indian Ocean region and the chances of return of Donald Trump in the USA are the emerging geopolitical tensions that can impact India-France relations.

What should be the way forward?

- **Early Conclusion of FTA:** India must leverage its good relations with France and convert the idea of India-EU BTIA into reality at the earliest.
- **Implementation of Agreement on Migration and Mobility:** India and France must work jointly to increase the mobility of students, graduates, professionals and skilled workers while strengthening efforts to combat illegal migration.
- **Increased Trade and Investment:** The two countries must work towards increasing bilateral trade and investment with measures like setting up joint ventures, expanding trade agreements and promoting cross-border investment.
- **Expedition on stalled projects:** A joint working group must be created to expedite the completion of the stalled projects like Jaitapur Nuclear Power Plant.

11. Circumstances in Myanmar and Impact on India

News: Managing the relationship with Myanmar has remained a challenge ever since the military coup in February 2021. Ending the Free Movement Regime will add a new dimension to this challenge.

What has been the consequences of the Myanmar military coup?

- **Widespread Civil Disobedience:** Following the coup, a significant civil disobedience movement emerged in Myanmar, indicating widespread public opposition to the military takeover.
- **Formation of Resistance Forces:** The ousted parliament members established the **People's Defence Forces** (PDFs), demonstrating organized political resistance against the military.
- **Escalating Armed Conflict:** Ethnic armed organizations, like the Arakan Army, Myanmar National Democratic Alliance Army, and Ta'ang National Liberation Army, inflicted significant losses on the military.
- **Loss of Territorial Control:** The military's loss of Paletwa town, a critical node in India's Kaladan project, exemplifies the significant territorial setbacks they faced.
- **Internal Displacement and Refugees:** Military actions against civilians caused substantial internal displacement and a refugee crisis in neighboring countries including India.
- **Military Recruitment and Desertions:** There's growing difficulty in military recruitment and increased desertions, including over 150 soldiers seeking refuge in India.
- **Diminished Military Cohesion:** The punishment of army officers for failing to prevent desertions points to internal issues and weakening cohesion within the military.

What is the position of Myanmar's neighboring countries on the military coup?

China

- **Defends Myanmar Military:** China has supported the Myanmar military on international platforms.
- **Engagement with Ethnic Armed Groups:** China has maintained relations with ethnic armed organizations on Myanmar's northern border, indicating a strategic balance.
- **Ceasefire Facilitation:** China's involvement in negotiating a ceasefire between rebels and the Myanmar army suggests its significant influence in the region.

ASEAN

- **Exclusion of Myanmar Military:** ASEAN has denied the Myanmar military participation in its summits.
- **Limited Mediation Success:** Despite efforts, the ASEAN special envoy faced challenges in engaging with all relevant stakeholders in Myanmar.

What has been India's Stance on Myanmar?

- **Engagement with Military Regime:** Unlike Western countries focused on democracy, India has chosen to engage with Myanmar's military regime.
- **Look East Policy:** Myanmar is an integral part of India's **Act East Policy**. India's engagement with Myanmar highlights economic and strategic interests over political ideology.
- **Limited Condemnation:** Despite occasional admonitions, India has largely **refrained from strong opposition** against Myanmar's actions that affect India's interests.
- **Balancing Security and Diplomacy:** India's approach reflects a balance between security concerns and maintaining diplomatic relations with Myanmar's military government.

What is The Free Movement Regime (FMR)?

- It was started in 2018. It allows people living along the Indo-Myanmar border travel 16 km into the other country without a visa. (Refer EPIC January 2024 (click) for Free Movement Regime on India-Myanmar Border).
- It has been suspended since September 2022. Now the Government has announced to formally end the FMR.

What are the major concerns related to the India-Myanmar Border?

- **Security Concerns:** The decision to fence the border stems from concerns over security, particularly due to the trafficking of arms and drugs.
- **Refugee Influx:** Since the military takeover in Myanmar in 2021, the Chin province has become a battleground, leading to an influx of refugees into India's Northeast.
- **Local Opposition to Fencing:** Tribal groups like the Kukis in Mizoram and Manipur, who have kinship ties with Myanmar's Chin community, oppose the fencing.
- **Varied State Responses:** Mizoram has provided sanctuary to refugees, while Manipur's government has framed the crisis differently, highlighting the diverse political responses.
- **Disrupt local lives:** The FMR allowed border residents to travel 16 km into either country without a visa. Its suspension could disrupt local lives.



What should be the approach going ahead?

- **Enhance Humanitarian Aid:** India can increase its humanitarian assistance to help displaced people in Myanmar, which might also reduce the number of refugees entering India.
- **Acknowledge Ongoing Resistance:** India should be aware of the continuous **resistance against the military coup**, showing no signs of abating despite the lack of a charismatic leader and international support.
- **Adapt to Myanmar's Political Fragmentation:** It's important for India to consider the fragmented control in Myanmar, with different areas being controlled by the military, ethnic armed groups, and PDFs.
- **Reassess Policy with Stakeholder Input:** India could benefit from revising its Myanmar policy after engaging in discussions with all relevant parties, responding to the complex regional dynamics.

12. Expansion of India's Diplomatic Footprint: 'Fora' and 'Intelligence' Diplomacy

News: With the rising economic stature of India, the diplomatic footprint of India has gradually expanded.

What reflects the expanding diplomatic footprint of India?

- **'Discourse Diplomacy' of the Raisina Dialogue:** The annual Raisina Dialogue, hosted by the Observer Research Foundation and the Ministry of External Affairs, brings together ministers, officials, scholars, and policy researchers from across the world to promote an **India-centred global agenda**.
- **Naval Diplomacy of the Milan exercises:** The biennial Multilateral Naval Exercise (Milan) in the Bay of Bengal attracts naval leaders from far and wide for professional exchanges on maritime issues. **50 countries** are expected to participate this year.
- **'Intelligence Diplomacy':** A gathering of top intelligence officials from like-minded countries on the margins of the Raisina Dialogue.

Why is the importance of these fora rising?

- **Rise in Interest in Geopolitical Affairs:** There has been a growth in interest in international commercial, political, technological and military affairs. This has led to the growth of think tanks and media outlets discussing foreign and security outlets e.g., the **Aspen Security Forum**, the **Munich Security Conference** and the **Shangri-La Dialogue** focusing on American, European, and Asian security issues.
- **Conflict-ridden World:** The deepening military crises worldwide, the issues of the global economic order and the return of great power rivalry have created new risks to global peace and prosperity. These fora facilitate valuable exchange of ideas.

What has India done in this regard?

- The **External Publicity (XP) Division** of the **Ministry of External Affairs** and the embassies have pursued outreach activities.
- **Business chambers** — CII and FICCI — have been at the forefront of creating networks.
- Launched in 2016, **Raisina Dialogue** has become an important event for the global strategic community interested in India.
- **Annual Global Technology Summit** organised by Carnegie India is a major international forum to discuss issues at the intersection of technology, policy, and geopolitics.
- Pune International Centre's annual Asia Economic Dialogue and the India Foundation's Indian Ocean Dialogue.

What is Intelligence Diplomacy?

- Intelligence Diplomacy is about **sharing information** with **allied Governments** and their security agencies, e.g., the **Five Eyes Group** of Anglo-Saxon allies: US, Australia, Canada, New Zealand, and the UK.
- For India, too, 'intelligence diplomacy' has become critical due to its security challenges. The regular exchanges between the Indian agencies and their counterparts from like-minded countries on the margins of the Raisina Dialogue underline India's efforts.

Why is the role of intelligence rising?

- The rise of **international terrorism**, the growth of **cross-border criminal networks**, renewed **economic competition**, the increasing need to protect intellectual property, the return of **great power rivalry**, and the impact of **new technologies** that are reshaping the domestic and global dynamics of an interconnected international society has led to an increase in the importance of intelligence.

General Studies Paper III

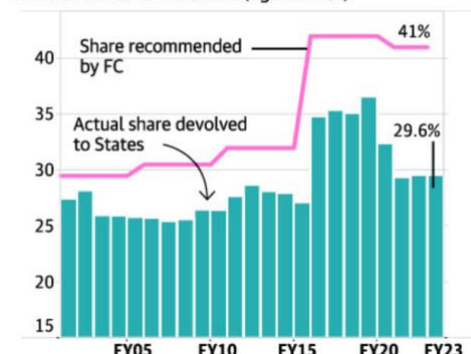
1. Fiscal Relationship between the Union and State Governments

News: Many State Governments have raised concerns regarding reduced fiscal transfers from the Union Government to the States. Some States have protested against restrictions on borrowing powers of States.

What are the issues with the fiscal transfers to States?

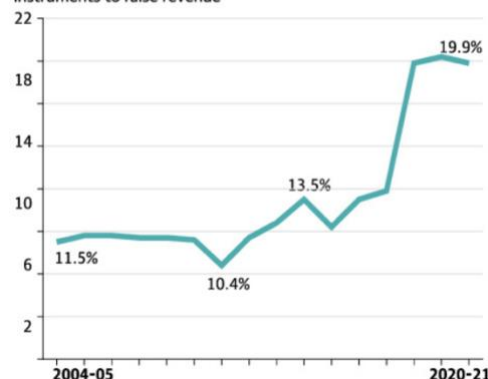
- **Reduced Financial Transfers:** Despite recommendations of Finance Commissions for States to receive 41-42% of the **net tax revenue** (revenue after deductions for collection costs, sharing with Union Territories, and cess and surcharges), they have actually received a smaller share of the **gross tax revenue** (total collected revenue before any deductions): just 35% in 2015-16 and 30% in 2023-24.
 - **Grants-in-aid** to States is another statutory grant recommended by the Finance Commission. The grants-in-aid to States declined in absolute amount from INR 1.95 lakh crore in 2015-16 to INR 1.65 lakh crore in 2023-24. Thus, the combined share of the statutory financial transfers in the gross tax revenue of the Union government has **declined from 48.2% (2015-16) to 35.32% (2023-24)**.
- **Growth in Union Government's Revenue:** The Union Government's tax revenue has more than doubled from INR 14.6 lakh crore in 2015-16 to INR 33.6 lakh crore in 2023-24 (2.3 times). However, the States' share doubled from INR 5.1 lakh crore to INR 10.2 lakh crore (2.0 times), indicating a **disproportionate increase of Union's revenue**.
- **Increase in Cess and Surcharge:** The collection from cess and surcharge, which is not shared with States, rose from 5.9% of the Union Government's tax revenue in 2015-16 to 10.8% in 2023-24.
- **Centralisation of Expenditure:** The Union Government has increased spending on **Centrally Sponsored Schemes (CSS)** from INR 2.04 lakh crore to INR 4.76 lakh crore. For **Central Sector Schemes (CSecS)**, the rise has been from INR 5.21 lakh crore to INR 14.68 lakh crore, respectively. This has reduced States' financial autonomy on expenditure.

The chart shows the States' share in the divisible pool of taxes mandated by the Finance Commission and the actual share devolved to the States (figures in %)



Source: The Hindu. The gap between the FC Recommendation and Actual devolution is rising.

The chart shows the share of cesses and surcharges in gross tax revenue. From 10.4% in FY12, their share climbed up to 20% by FY21, suggesting an excessive reliance by the Centre on these instruments to raise revenue



Source: The Hindu. The share of cess/surcharges has risen to ~20% (from 10% in 2011-12).

What is the impact on State Finances?

- **Strain on State Budgets:** Due to reduced transfers and grants, States face challenges in financing their programs and initiatives, impacting their ability to deliver public services effectively.
- **Impact on Poor States:** Poorer States struggle more due to these financial constraints, exacerbating the inequality between States in terms of financial resources and development capabilities.
- **Limited Fiscal Autonomy for States:** With the Union Government's increased control over financial resources, States have less freedom and flexibility in their spending, impacting their ability to address local needs and priorities.

- **Impact on Fiscal Federalism:** The fiscal centralization of revenues and expenditure goes against the principles of cooperative federalism.
- **Potential Bias in Resource Allocation:** The possibility of the Union Government favouring certain States or regions through Central Sector Schemes, (like allocating larger amount of funds), raises concerns of unequal treatment among States. *(Read more on Fiscal Centralization).*

What is the Net Borrowing Ceiling (NBC)?

- The Net Borrowing Ceiling (NBC) **restricts State borrowings** from various sources, such as the open market. To determine this ceiling, the Union Government subtracts State liabilities, including those from public accounts.
 - Additionally, borrowings by State-owned enterprises, where the principal, interest are serviced out of the Budget, or through assignment of taxes or cess or any other State revenue, are deducted from the NBC.

What are the arguments of the Union Government and Kerala on NBC?

Union Government

- Relies on **Article 293(3)** of the Constitution, which requires the **State Government to seek consent of the Union Government** to raise a new loan, if:
 - There is already an outstanding loan by the Union Government to the State.
 - There is an outstanding loan on State which has been guaranteed by the Union Government.
- Justifies NBC to ensure **fiscal discipline** and transparency, as recommended by the 15th Finance Commission.
- Inclusion of debt of State enterprise in NBC prevents **off-budget transactions** and **hidden liabilities**.

Government of Kerala

- Contends that inclusion of debts of State enterprise in NBC is Constitutionally suspect.
- Notes that the 15th Finance Commission Report does not specifically recommend including State enterprise debts in NBC.
- Highlights **Article 266(2)** to argue that public account transactions are under State jurisdiction, questioning their inclusion in NBC calculations.
- Emphasizes the Kerala Fiscal Responsibility Act, 2003, arguing that it already ensures fiscal discipline, questioning the need for central intervention.
- References **Article 202** of the Constitution and **Entry 43** of the State List (Public Debt of the State), asserting State control over its public debt and financial affairs, challenging the central imposition of NBC.

The Government of Kerala contends that **NBC constrains their borrowing capacity**, which impacts the ability to fund infrastructure projects, welfare and other essential services. It also impacts fiscal autonomy of the States.

What should be the approach?

- **More Autonomy to States:** The Union government should revisit the borrowing constraints placed on State investment funds. A balanced approach is essential, where **fiscal discipline** and **autonomy of the State** are both respected.
- **Cess and Surcharge:** The Union Government should reduce the degree to which it uses cesses and duties to expand its share of tax collections.
- **Transfer to States:** The discretionary aspect in transfer to States should be minimized. Some of these transfers can be made automatic. For other transfers, clear and non-discriminatory methods should be followed.
- **Political Solution:** Many economic experts say that the larger problem of the issues with fiscal federalism can be addressed only **through political give and take**. Given India's developmental needs, it is important that relations between the Centre and States are cordial.

To promote balanced fiscal federalism, the Union government should adhere to the Finance Commission's recommendations on revenue sharing. **Increasing statutory transfers to States** and **ensuring equitable allocation of funds across all regions** are vital. This approach will enhance financial autonomy of States and support equitable development. (Refer EPIC September 2022 (click) for Fiscal Centralization in India).

2. Distribution of Tax Revenue Among States

News: Some States have been demanding greater share in distribution of Tax revenues based on their contribution.

How has the distribution criteria evolved over time?

- Until the 10th Finance Commission (up to 2000), shares of States in Union tax revenue were limited to **personal income tax** and **Union excise duties**.
- Population was a major factor for distribution, with 80%-90% weight in the distribution formula for income tax in the first seven Finance Commissions.
- In the first eight Finance Commissions, tax contribution had a little weight as a determinant in the distribution formula. Since the 10th Finance Commission, tax contribution was dropped from the distribution formula.
- Post-2000, **all central tax revenues were combined for distribution**, with a unified formula for both income tax and Union excise duties, focusing more on equity.
- In the 15th Finance Commission, the distribution formula included **tax effort** (2.5% weight) and **demographic performance** (12.5% weight), along with equity indicators like **per capita income** and **population** as per the 2011 Census.

Equity and Efficiency in Distribution

For distribution of revenues among States, the distribution formula of the Finance Commission is based on the principles of **equity** and **efficiency**.

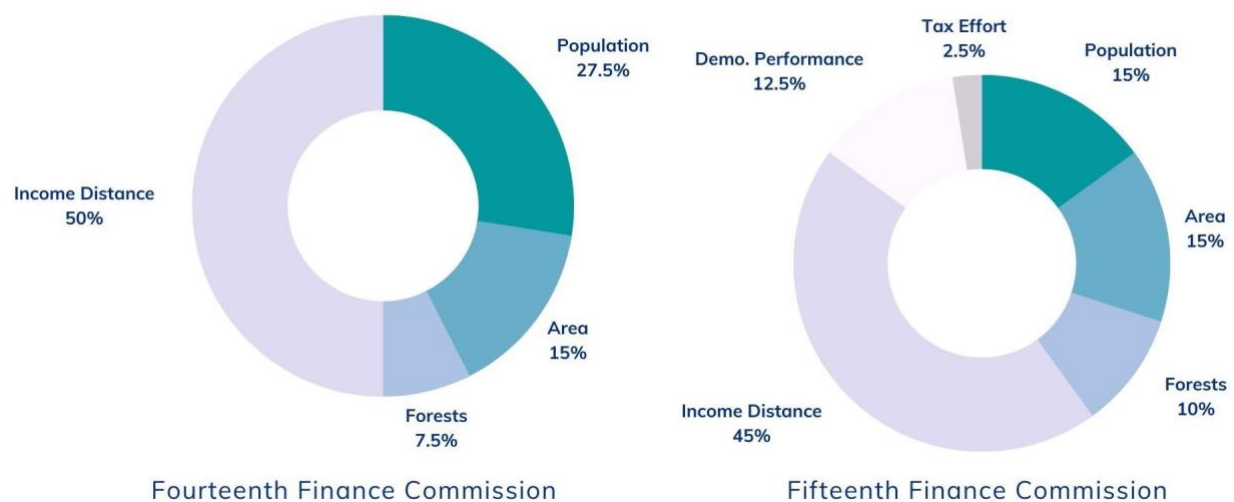
Equity stipulates that the **revenue-scarce States** and States with **higher expenditures** get **larger shares of Union tax revenue** than others.

Efficiency is to reward the States that are **efficient** in **collecting revenue** and **rationalising spending**.

Tax contribution is an **efficiency indicator** because State's level of development and economic structure decides its tax contribution.

Criteria for Horizontal Distribution

Fifteenth Finance Commission added some new parameters in the devolution formula



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What are the issues regarding Tax Contributions?

- **Share of States:** The primary issue is whether States with higher tax contributions should receive a larger share of Union tax revenue. States with substantial tax contributions argue for greater recognition in the distribution formula.
 - Historically, State income tax revenue collection/assessment were given limited weight (10%-20%) in the revenue distribution formula.
- **Complexity in Attribution:** It is difficult to accurately attribute income tax revenue to specific States, complicating the assessment of contributions.
- **Balance:** The debate involves finding a balance between rewarding States for **economic efficiency** and maintaining **equitable distribution** among all States.

What should be the approach?

- The contribution of State in GST collections can be included in the distribution formula as a measure of efficiency. This is because GST, being a **consumption-based tax**, accurately reflects a State's tax base and is equally divided between the State and Union governments.
- **Petroleum Consumption as Indicator:** Levies on Petroleum are outside the scope of GST. Sale of Petroleum products also reflect the State's contribution to Union excise duties and customs duties.
- **Greater weightage** can be assigned to the **efficiency indicators** (GST revenue and petroleum consumption) in the distribution formula. This is supported by the fact that GST revenue and petroleum consumption are stable and fair measures of a State's contribution to the national exchequer.
- **Balance** should be maintained between **efficiency and equity indicators** in the distribution formula. Equity factors like population, area, and income levels must be considered alongside efficiency to ensure a fair and equitable allocation of Union tax revenues among States.

3. Issues with India's Public Finance

News: Economists have expressed concerns regarding high primary deficit and rising debt level in the Government Budget.

What concerns have been raised about India's Public Finance?

- **Interest Payments:** About 40% of revenue receipts now go to interest payments. Interest payments form 20% of Union Government's total expenditure.
- **Highly Leverage:** High interest payments indicate **high debt levels** (leverage). **Over leverage** (demands high debt servicing i.e., interest payments) and **operational leverage** (commitments to pay wages and pensions) limit the fiscal space for government spending on **productive infrastructure** (Capital Expenditure). Pensions form 4% of Government's total expenditure.
- **Sources of Borrowing:** The bulk of the borrowing of the Indian Government comes from public financial firms (insurance companies and banks) which are forced to buy Government bonds. This is called '**financial repression**' as it reduces the funds available to the private sector for investments (**crowding out**).

What should be done?

- **Diversify Borrowing:** The Government should diversify its sources of borrowing. This will free up capital of public sector banks to lend to private sector for productive investments in creation of infrastructure.
- **Reduce Deficit:** The Government should **curtail unproductive expenditure** and focus on reducing primary deficit. Over time, this will reduce the need for borrowing. Consequently, the interest payments will go down, freeing up Government resources for capital expenditure.

4. Issues with India's Design-Linked Incentive Scheme for Semiconductor Design

News: Certain issues with the Design-Linked Incentive Scheme has limited their effectiveness.

What are the goals of India's semiconductor strategy?

- **Reduce dependence on semiconductor imports**, particularly from China, and especially in strategic and emerging sectors.
- **Build supply chain resilience** by integrating into the semiconductor **global value chain** (GVC).
- Utilize **India's comparative advantage** such as the presence of the design houses of every major global semiconductor industry player and Indian chip design engineers.

What are the salient features of the Design-Linked Incentive Scheme?

- The aim of the scheme is to create a **vibrant ecosystem** for **Semiconductor Chip Design** in India.
- Its target is to **nurture** at least **20 domestic companies** involved in **semiconductor design** and facilitate them to achieve a turnover of more than INR 1500 Crore in the next 5 years.
- The nodal agency for the scheme is **Centre for Development of Advanced Computing** (C-DAC).
- Under the scheme **financial incentives** and **design infrastructure support** will be extended to domestic companies, startups and MSMEs engaged in **semiconductor design** for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems & IP Cores and semiconductor linked design for over a period of 5 years.
- The scheme has 3 components:
 - **Chip Design Infrastructure Support:** C-DAC will set up the **India Chip Centre** to host the state-of-the-art design infrastructure and **facilitate its access** to supported companies.
 - **Product Design Linked Incentive:** Under this, reimbursement of up to 50% of the eligible expenditure subject to a ceiling of INR 15 Crore per application will be provided as a fiscal support.
 - **Deployment Linked Incentive:** An incentive of 6% to 4% of net sales turnover over 5 years subject to a ceiling of INR 30 Crore per application will be provided to approved applicants whose semiconductor design are deployed in electronic products.

What are the issues with the DLI scheme?

- **Barriers on FDI:** It mandates that beneficiary start-ups **maintain their domestic status** for at least 3 years after receiving incentives, and for this they cannot raise more than 50% of their funds via FDI.
- **Lack of Domestic Funding:** Costs for semiconductor design startups are significant. The funding landscape for chip start-ups in India continues to be challenging due to an absence of a **mature start-up funding ecosystem**.
- **Incentives Not Enough:** Incentives under the DLI scheme are not very high (capping at INR 15 Crore for Product DLI), making it unattractive for start-ups.
- **Issues with the Nodal Agency:** As the nodal agency C-DAC is also a market player in the Indian chip design sector, there are concerns of **conflict of interest**.
- The Scheme has approved only 7 start-ups till now.

What should be the way forward?

- **Focusing on the Broader Objective:** The scheme should focus on **facilitating design capabilities** within India, as long as the entity engaging in the design development process is registered in India.
- **Focusing on the Design Stage:** Stimulating the design ecosystem is less capital-intensive than the foundry and assembly stages of the semiconductor GVC. The financial outlay of the scheme must be enhanced.
- **Regarding Nodal Agency Reform:** The Government of Karnataka's Semiconductor Fabless Accelerator Lab (SFAL), with its specific partnerships with the Indian Electronics and Semiconductor Association, vendors,

and testing companies, could be an appropriate example for an implementing agency for DLI. A recalibrated policy focused on chip design implemented by a capable institution can help establish India's foothold in this high-tech sector.

5. Rise in Exports of Toy Industry

News: The toy industry has become a net exporter over the last decade supported by Government initiatives.

What is the current status of India's toy industry?

- **Net Exporter Status:** The trade balance was negative ~INR 1,500 crore in 2014-15, which turned positive from 2020-21 after a gap of 23 years.
- **Significant Export Growth:** There has been a 239% increase in toy exports between 2014-15 and 2022-23.
- **Decline in Imports:** Imports of toys have decreased by 52% in the same period.
- **Rise in Import Duty:** Customs duty on toys was raised from 20% to 60% in 2020 and then to 70% in 2023.

Toy sector trade and production statistics

Summary of trade and production statistics from 2014-15

Year	Net exports (₹ crore)		Toy industry - factory sector (At constant 1998-99 prices)		
	Toys (HS-9503)	Total toys (HS codes 9503+9504+9505)	Gross value of output (₹ crore)	Labour productivity (₹ lakh)	Fixed capi- tal/worker (₹ lakh)
1	2	3	4	5	6
2014-15	-1,438	-1,450	324.9	7.5	2.4
2015-16	-1,555	-1,549	453.9	6.5	2
2016-17	-1,323	-1,245	301.7	5	2
2017-18	-1,317	-1,372	220.8	3.9	1.5
2018-19	-1,360	-1,176	348.6	4.8	1.7
2019-20	-1,055	-743	423.5	4.9	2.4
2020-21	83	451	-	-	-
2021-22	1,051	1,614	-	-	-
2022-23	729	1,319	-	-	-

What are the factors responsible for the improvement of India's toy industry?

- **Protectionist Policies:** The shift in the toy industry's performance is attributed to the Government's **protectionist measures**, such as **increased tariffs** and **import restrictions**.
- **Implementation of Non-Tariff Barriers:** The introduction of quality control orders and mandatory testing for each import consignment made it tougher for foreign toys to enter the Indian market.
- **Global Supply Chain Disruption:** The COVID-19 pandemic disrupted global supply chains, affecting toy imports and indirectly benefiting domestic producers.
- **Government Initiatives:** The 'Make in India' campaign, initiated in 2014, aimed to boost domestic manufacturing, which included the toy industry.

What are the major concerns related to India's toy industry?

- **Over-Reliance on Protectionism:** The industry's growth is attributed to **high import duties** and **trade barriers**, which may **not be viable long-term strategies**. Prolonged reliance on protectionist measures might hinder the industry's global competitiveness.
- **Limited Improvement in Domestic Production:** There's been no significant enhancement in domestic toy manufacturing, with labour productivity declining from INR 7.5 lakh per worker in 2014-15 to INR 5 lakh in 2019-20.
- **Potential for Rent-Seeking Behaviour:** There's a concern that continuous protective measures could lead to **inefficiencies** and focus on maintaining government support **instead of improving productivity** or **innovation**.

What should be done?

- **Complementing Protectionism with Investment:** Pair protectionist policies with investment in the toy industry to enhance productivity and innovation.

- **Focus on Domestic Capability Expansion:** Invest in developing local manufacturing capabilities, considering the lack of significant improvement in domestic toy production.
- **Providing Industry-Specific Infrastructure:** Develop public infrastructure tailored to the needs of the toy industry to support its growth.
- **Preventing Policy Entrenchment:** Avoid the long-term entrenchment of protectionist policies, which could lead to inefficiency and rent-seeking behaviour.
- **Transparent Policy Review and Dialogue:** Make research studies public for better policy understanding and effective decision-making.

6. The Issue of Minimum Support Price (MSP)

News: Several farmer outfits have been protesting, demanding a legal guarantee to MSP on certain farm commodities. They are also demanding calculation of MSP based on Dr. Swaminathan Commission Report.

What is the Minimum Support Price (MSP) and how is it calculated?

- The MSP for an agricultural commodity refers to the price at which the Government is **obligated to purchase the produce from the farmers** in the event that **market price falls below this threshold**.

Process of Calculating MSP

- It is based on the **recommendations of the Commission for Agricultural Costs and Prices (CACP)**. The CACP submits its recommendations to the Government in the form of **Price Policy Reports** every year.
- It considers various factors such as **cost of production; demand and supply; market price trends** (domestic and international); **inter-crop price parity; effect on industrial cost structure, cost of living** and on **general price levels** among others.
- The **Cabinet Committee on Economic Affairs (CCEA)** chaired by the Prime Minister of India gives the final approval on the level of MSPs, after considering the Price Policy Report, views of the State Governments and overall demand-supply situation in the country.
- **Food Corporation of India (FCI)** is the **nodal agency for procurement**, along with the State agencies.
- The Government fixes MSP for **22 mandated agricultural crops** and **Fair and Remunerative Price (FRP)** for sugarcane.

CROPS COVERED UNDER MSP		
KHARIF CROPS (14)	RABI CROPS (7)	CALENDAR YEAR CROPS (4)
1. Paddy	1. Wheat	1. Copra
2. Jawar	2. Barley	2. De-husked Coconut
3. Bajara	3. Gram	3. Jute
4. Ragi	4. Masur	4. Sugar Cane (FRP)
5. Maize	5. Rapeseed & Mustard	
6. Arhar	6. Safflower	
7. Moong	7. Torai	
8. Urad		
9. Cotton	CACP recommends MSP for 22 crops before the sowing period each year MSP derived for Toria based on MSP for Rapeseeds and Mustard and for De-husked Coconut on the Basis of MSP of Copra.	
10. Ground Nuts		
11. Sunflower		
12. Soyabean		
13. Sesamum	Fair and Remunerative prices for Sugar is also declared	
14. Nigerseed		

Types of Costs

Cost	Components
A2	<ul style="list-style-type: none"> • All paid-out costs directly incurred by the farmer, either in cash and kind, on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation.
A2 + FL	<ul style="list-style-type: none"> • Imputed value of unpaid family labour is added to the A2 cost.
C2	<ul style="list-style-type: none"> • Estimated land rent and the cost of interest on the money taken for farming is added to A2+FL cost. • It is a more comprehensive production cost.

- CACP refers to A2+FL cost for return.
- At present, the MSP is fixed at 50% over the A2+FL cost.
- C2 costs are used by CACP primarily as **benchmark reference costs** (opportunity costs) to see if the MSPs recommended by them at least cover these costs in some of the major producing States.

What are the arguments in favour of providing legal guarantee to MSP?

- **Financial Security:** Legally guaranteed MSP would financially secure the farmers against the vagaries of price instability in the market.
- **Risk Cover:** Legal guarantee to MSP would provide security to farmers from the risk of crop failure due to climate change, pests attacks/crop diseases.
- **Crop Diversification:** MSP law would promote diversification

★ Government Support to Farmers

- ★ The Government has also adopted the '**income support**' approach. This includes the **PM-Kisan Samman Nidhi** by the Union Government and **Rythu Bandhu** by the Government of Telangana. This approach is distinct from '**price support**' measure like the MSP.
- ★ Government has also been providing support to farmers through other schemes which are not violative of the WTO principles.
 - Supplementary income transfers under **PM-KISAN**.
 - Crop insurance under **Pradhan Mantri Fasal Bima Yojana** (PMFBY).
 - Better access to irrigation under **Pradhan Mantri Krishi Sinchai Yojana** (PMKSY).
 - Creation of agriculture infrastructure through **Agri Infrastructure Fund** (AIF) with a size of INR 100,000 crore.
 - Production loan to dairy & fishery farmers besides agricultural crops through **Kisan Credit Cards** (KCC).

- of crop as farmers would be incentivised to **grow less water-intensive crops** like pulses and millets rather than water guzzling crops like rice and sugarcane.
- **Check Price Volatility:** MSP sends a price-signal to the market that if merchants don't offer higher than MSP prices, the farmer may not sell them his produce. Thus, it ensures that the market prices will not be drastically lower than MSP.
- **Address Rural Distress:** MSP can help in **injecting financial resources** into the rural sector. This will help in solving the problem of rural economic distress, which has been exacerbated by COVID-19 pandemic e.g., increase in MSP would increase the **disposable income of farmers** and agricultural labourers which in turn would boost the economy.
- **Right to Farmers:** According to Shanta Kumar Report, only 6% of the farm households are able to sell wheat and rice to the Government at the MSP. MSP law will help expand the reach to uncovered farmers.

What are the arguments against the MSP Guarantee Law?

- **Fiscal Burden:** Legal guarantee to MSP would put huge fiscal burden on the Government exchequer. This would increase the fiscal deficit of the Government and will have deleterious effects on the economy. According to an estimate, INR 5 trillion would be required for implementation of MSP Law.
- **Risk of Undervaluation of Crops with low Yields:** It would change the production pattern of crops in the country as farmers would try to **grow crops with higher yields** even if they are not suitable to their region e.g., farmers growing cotton instead of millets in the drought prone region of Marathawada.
- **Increase in Food Inflation:** Higher procurement cost due to MSP will result in increased prices of foodgrains, which would eventually affect the lower middle class and the poor sections of the society.
- **Market Distortionary and Economically Unsustainable:** Legal guarantee to MSP will push away private traders whenever production is more than demand. This, in turn, will lead to Government becoming the de-facto primary buyer of most MSP-farm produce, which will be economically unsustainable.
- **Adverse Impact on Farm Exports:** Higher MSP level than the prevailing price in the international market will lower the export of farm commodities.
- **Violation of WTO Principles:** MSP law would lead to violation of the WTO subsidies principles and India would face opposition in the WTO dispute settlement bodies by the developed nations.

- **MSP Demands from agri-allied Sectors:** Farmers engaged in agri-allied sectors like dairy, horticulture, pisciculture may also demand MSP.
- **Storage:** MSP guarantee will create storage and disposal problems for crops such as Niger seed, Sesamum or safflower which will have few takers through the PDS system.

What should be the way forward?

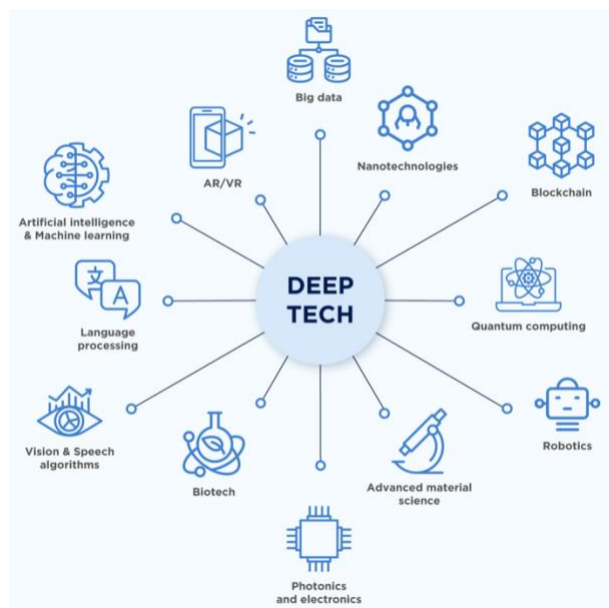
- **Price Deficiency Payment Schemes:** NITI Aayog has recommended **Price Deficiency Payment schemes**, in which the Government pays the farmers the difference between **modal rate** (the average prices in major mandis) and the MSPs. Some State Governments have already adopted this approach like Madhya Pradesh (*Bhavantar Bhugtan Yojana*) and Haryana (*Bhavantar Bharapai Yojana*).
- **Market Intervention Scheme:** Market Intervention Schemes can be launched, under which the State Governments can procure perishable commodities like vegetables to ensure minimum assured price to the farmers.
- **Creation of Agriculture Infrastructure:** Instead of bypassing the market by using MSPs, the Government should make efforts to enable farmer participation in the market by creating modern world-class agriculture infrastructure like Cold Storage facilities.
- **Support to the FPOs:** Adequate financial support to the Farmer's Producers Organisations (FPOs), would result in better price realisation for farmers. FPOs can be used to replicate the AMUL Model (dairy) for all agricultural commodities.
- **Gradual Expansion MSP Coverage:** The Government can gradually expand the list of crops eligible for MSP support, to encourage crop diversification and reduce the dominance of rice and wheat. This will provide farmers with more choices and promote the cultivation of crops in line with market demand.

7. Deep-Tech Start-up Ecosystem

News: The Government announced a corpus of INR 1 lakh crore in the Interim Union Budget to promote Innovation and Start-Ups coupled with a new scheme for Deep Tech Start-Ups in Defence Sector.

What is the Deep Technology?

- It refers to innovations founded on **advanced scientific** and **technological breakthroughs**.
- Deep Tech is distinguished from 'Shallow Tech' by its **disruptive impact**.
 - Shallow tech is a **relatively simple technological advancement** that is easy to replicate e.g., moving a business from a non-digital to a digital business model. Online aggregators based on digital technologies are Shallow Tech.
- Deep Tech involves much **advanced technologies** like Artificial Intelligence, Machine Learning, Virtual Reality (VR), Blockchain, Quantum Computing etc. e.g., using **AI to predict natural disasters** or molecular imaging technologies that can identify a disease or predisposition to a disease much earlier than conventional medical testing.
- These technologies can help **address complex global challenges like** climate change, hunger, epidemics, energy access, mobility, physical and digital infrastructure, and cyber security etc.



- They can also **enhance productivity, drive economic growth** and **create jobs**.
- Deep Tech is also being used to refer to start-ups working in the Deep Technology sector.

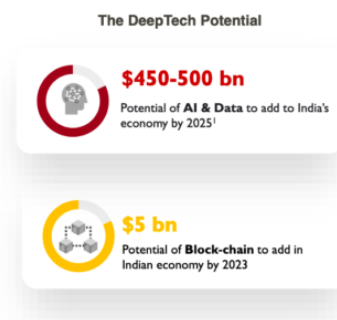
What is the need to have Deep-tech Start-ups in India?

- Deep-Tech is going to revolutionize the technology sector and **radically alter the economic and business landscapes**. It will help in multi-fold rise in economic productivity. To reap these benefits, it is necessary to have a robust domestic Deep-tech Start-up Ecosystem.
- The absence of deep-tech start-ups harms India considerably by weakening her capability to meaningfully **address complex socio-economic challenges** that afflict the society in multiple sectors. This includes agriculture, healthcare, transportation, education, energy, etc. India's development challenges are so unique that **innovators from developed countries**, not familiar with local context or cost structures, **will not be able to provide solutions**.
- The solutions that address the **UN's Sustainable Development Goals** would necessarily have to be radically new and disrupt existing industries and business processes. This requires deep-tech start-ups.
- In India's population of 140 crores, only the top ~25% (affluent and middle-class) benefit from the fruits of technological progress. In contrast, the remaining **100 crore people do not get enough or are substantially bypassed**. This is because most of the hi-tech goods and services are designed in the developed world for rich people and can't be bought by the poor.

What are the challenges faced by Deep-Tech Start-ups?

- They need a **longer gestation** for development than other start-ups. The latter might need from 1-3 years to reach a stable stage, while deep-tech start-ups need 5-8 years or longer.
- They require **more capital, specialized talent, and expert knowledge** in more than one domain to develop and validate a science-based innovation.
- The **risk of failure is high at every stage** for a deep-tech start-up, usually higher than in the case of other types of startups. It is because the start-up has to work backwards and find a real-life problem that is worth solving using its technology. After this, it has to validate the adequacy and nature of the market demand for the innovation.

DeepTech: Why Is It Important?



- The **risk of failure is high at every stage** for a deep-tech start-up, usually higher than in the case of other types of startups. It is because the start-up has to work backwards and find a real-life problem that is worth solving using its technology. After this, it has to validate the adequacy and nature of the market demand for the innovation.
- There are several **venture funds** in India, but most pursue relatively '**lower risk**' **investment opportunities**. They are mainly interested in start-ups that exploit India's **growing consumption economy** or those making cloned products.
- Academic researchers in India lag in their potential to **convert research into deep-tech start-ups**:
 - They aspire to convert their inventions into enterprises but **do not have the mental make-up (the entrepreneur's mindset)**. They lack the knowledge to organize what they have and collaborate with others to get what they do not have/know.
 - With their **limited budgets**, incubators face a tough challenge to nurture start-ups to scale their revenues and attract investments.
 - There is **inadequate appreciation** amongst policymakers and university administrators for the need to build capacity on what entrepreneurship entails and what commercialisation of research means.

What steps have been taken by the Government to support start-ups?

- **Start-up India Platform:** It started in 2016 and has been instrumental in encouraging startups and **integrating them** with the **corporate and investment community**.
- **State-Specific Policies:** Over 26 States in India have a startup policy. Recently, Delhi Cabinet has passed an ambitious Delhi Startup Policy which it hopes would turn the capital into an international startup hub.

What more can be done going ahead?

- India should introduce **Customer Discovery** and **Customer Development Programmes** to develop deep-tech start-ups from academic/research institutions in India.
- In 2013, the US Government through the National Science Foundation introduced the **I-Corps programme** to **commercialize academic research in US universities**. The I-Corps program uses **experiential education** to help researchers gain valuable insight into entrepreneurship, starting a business or industry requirements and challenges.
 - The **Gopalakrishnan-Deshpande Centre for Innovation & Entrepreneurship** at IIT Madras has successfully run its **I-NCUBATE programme** which is inspired from the I-Corps program.
- The Government should inculcate a **culture of entrepreneurship in students** by adding the subject in the school curriculum of schools.
- The Government should also provide **monetary and non-monetary incentives** to start-ups.

8. Brain-Computer Interface (BCI)

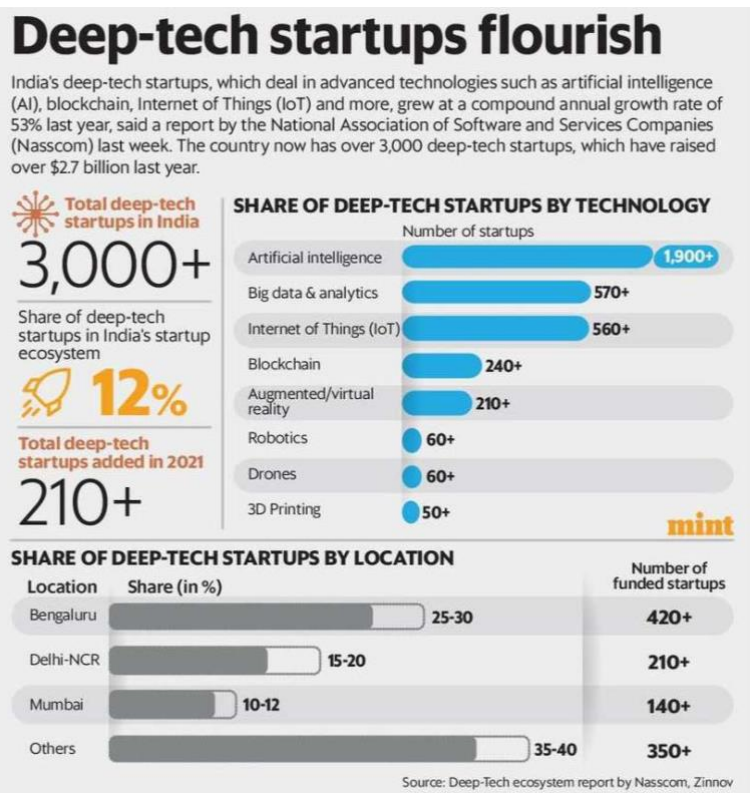
News: Neuralink has implanted a chip in the brain of the first human patient. The technology has a huge potential to cure a lot of diseases. However it has also raised profound ethical concerns.

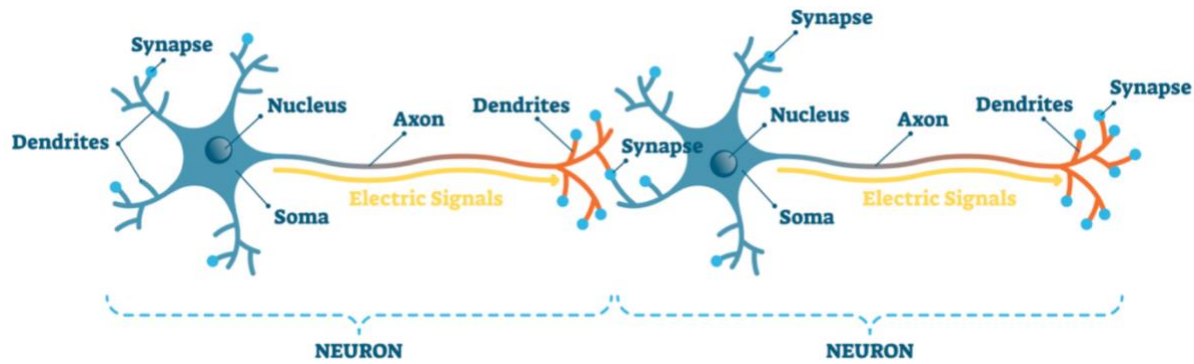
What is Brain-Computer Interface (BCI)?

- Brain-computer interface (BCI) is a device that creates a **direct communication pathway** between **brain's electrical activity** and an **external output** like a **computer** or a **robotic limb**.
- The devices are able to **monitor** and **modulate** the **neural activity of the brain** and the nervous system.

How do BCIs function?

- BCIs are all modelled on the electrophysiology of a brain's neural network.
- Brain contains millions of cells called **neurons**. Neurons work together in large networks (neural network) and communicate using **electrochemical signals**.





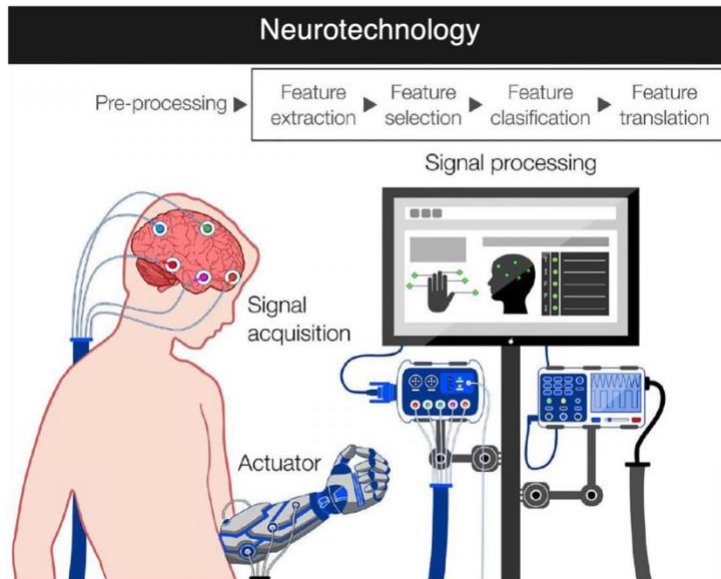
Source: Wikimedia Commons. Connection between two neurons in the nervous system.

- The **electrical signals are used to transfer information** to other neurons in the network.
- The neurons **coordinate** and **control processes** in body like sight, hearing, smell, taste, feeling, movements, metabolism etc.
- The BCI involves two major processes: Picking up the **synaptic response** and **Neural decoding** of the signal.

Process	Function
Picking up Synapses	<ul style="list-style-type: none"> • Synapses refer to the points of contact between neurons where the information is passed from one neuron to the next. • In order to capture these synapses, Brain-Computer Interfaces (BCIs) place electrodes/sensors in proximity to these synaptic regions. • BCIs work like a microphone, which picks up the electrical chatter of the brain's neurons communicating with each other.
Neural Decoding and Action	<ul style="list-style-type: none"> • The picked up synaptic information is fed to local computer software where a variety of machine learning algorithms and AI agents are employed. • These convert the complex synaptic data into a programmable understanding of the brain's intentions. • This is known as neural decoding. This essentially lets a person turn their thoughts into actions.

- BCIs can be of two types: **Invasive** and **Non-invasive**.

Type	Features
Invasive BCIs	<ul style="list-style-type: none"> • Directly connected to a patient's brain tissue and are implemented through surgical procedures. • Since there are major risks that come with surgery, Invasive BCIs are more appropriate for patients looking to recover from severe conditions like paralysis, injuries and neuro-muscular disorders.
Non-invasive BCIs	<ul style="list-style-type: none"> • Not Directly connected to person's brain but involves a wearing device with electrical sensors that serve as two-way communication channels between a patient's brain and a machine. • They produce weaker signals as they are not directly connected to the brain, hence these are better suited for purposes like virtual gaming, augmented reality etc.



Source: Wikimedia Commons.

- The BCI picks up the signal and passes it onto the **external connected computer**.
- The software analyzes the signals and identify **patterns in brain activity** in response to certain external stimuli.
- These patterns (**neuro-physiological phenomena**) have been well documented and studied by neuroscientists.
- Based on the analysis, the software is able to identify the **intended activity of the brain** (like to move the hand).
- After interpreting the intended action, they send the signal to actuators to move the artificial limb.

What are the benefits of BCIs?

- **Restoration of Mobility and Motor Functions:** BCIs can enable persons with disabilities to perform basic functions like controlling the movements of artificial limbs with their thoughts using mobile devices.
- **Treatment of Neurological Disorders:** BCIs have the potential to significantly improve the quality of life for individuals suffering from **neurological disorders** such as Parkinson's or Alzheimer's disease, epilepsy ALS, cerebral palsy, brainstem stroke etc.
- **Curing Blindness:** BCIs hold significant importance in curing blindness cases where the visual cortex of the brain is intact.
- **Monitoring/Treatment of Mental Health Disorders:** BCIs can help in treatment of **psychiatric conditions**, like bipolar disorder, obsessive-compulsive disorder, depression and anxiety. They can also be helpful in preventing pedestrian conditions like burnout and fatigue by delivering **targeted electrical stimulation** to specific areas of the brain using neurofeedback techniques.
- **'Mind-writing' for Non-Verbal Individuals:** BCIs can be used by individuals who suffer **speech paralysis** to communicate their thoughts.
- **Ease of Living:** BCIs can be integrated into our daily lives like the smartphones or laptops today to carry out searches for information and perform complex calculations. BCIs have been used as a smartphone and **smart-home device interface** for tasks like dimming lights, e-mail administration, virtual assistants etc.
- **Economic Growth:** Brain-Computer Device Industry is a US\$ 1.74 billion market that is expected to grow to US\$ 6.2 billion by 2030. This also opens up avenues for startup revolution using BCIs.

What are the associated concerns?

- **Risk to Patient's life:** Invasive BCIs require surgical implantation in the brain. They carry risks to human lives like seizures, infection, bleeding, haemorrhage and damage to brain tissue.
- **Risks of breakdown of neural transmission:** There are risks of breakdown of the well-coordinated neural transmission network on account of malfunctioning of the BCI technology.
- **Ethical Concerns:** The BCI technology suffers from ethical challenges like privacy of data related to mental health, threat to human identity by the blurring lines between humans and machines and **creation of superhumans** with enhanced cognitive capacities.

- **Accessibility and Affordability:** The technology carries the risk of becoming a privilege of those who are up in the socio-economic ladder, like in the case of use of cardiac pacemakers or artificial knees.
- **Concerns with the Trials:** There are legitimate concerns with the safety of humans and animals on whom the implant trial is being performed.
- **Regulatory Challenges:** The BCI technology brings together a range of fields like implantable medical materials, safety of critical software, the Internet of Things and wearable medical devices. Hence, this would create regulatory challenges with the involvement of multiple regulatory agencies ranging from health to IT regulators.
- **Monopolisation of Technology:** There are concerns of the technology being monopolised by firms like Neuralink. This will make the technology inaccessible to many patients who cannot afford the high costs.

What should be the way forward?

- **Standard Regulatory Guidelines:** Common and standard regulatory guidelines must be drafted through the collaborative work of different regulators like the healthcare and IT regulators.
- **Funding Support for Medical Interfaces:** Philanthropic funding support must be extended to the BCI Startups working to ease the lives of people suffering from ALS, Parkinson's and paralysis.
- **Addressing Ethical Challenges:** There must be collaboration between the scientists, ethicists, policy-makers and the public to use this technology for **common good** and **remove the ethical challenges** like altering personality traits, creation of superhumans, human identity threats etc.
- **Address the concerns with the Trials:** All the safety concerns associated with the trials like the safe health of primates and patients must be addressed transparently by the firms working in this field.

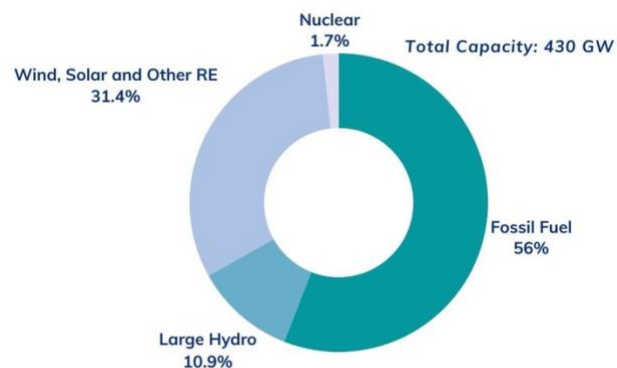
9. Challenges in Scaling-up India's Renewable Energy

News: India has set a target to achieve 500 GW of Renewable Energy capacity by 2030. As of January 2024, the established capacity is ~182 GW. New capacity must rise by 15.7% every year to achieve the target.

What is the current status of India's Renewable Energy Capacity?

- India aims to achieve 500 GW of renewable energy by 2030.
- As of January 2024, 189 GW of Non-fossil fuel-based energy capacity has been installed. Of this, **Renewable Energy Sources (RES)** contribute 182 GW (42.3%), including large-hydro projects.
- Within the RES, Solar and Wind energy have installed capacity of 74 GW and 45 GW.

India's Electricity Generation Capacity



Data as on January 31, 2024

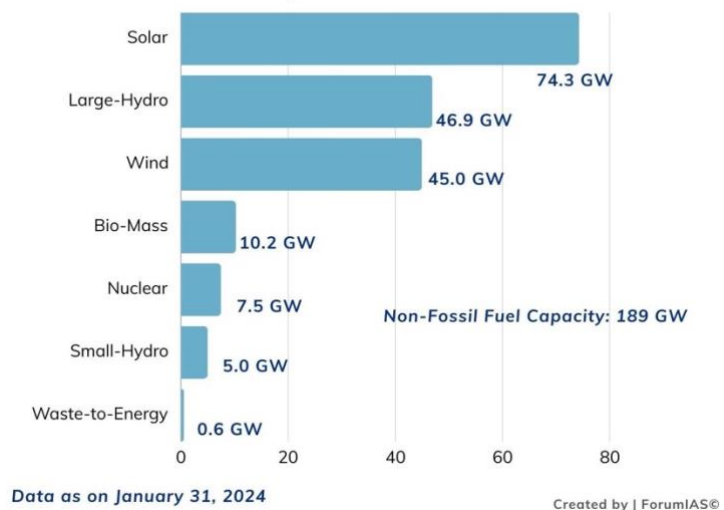
Created by | ForumIAS®

What are the challenges in scaling-up renewable energy capacity?

- **Energy Demand Fluctuations:** There are large fluctuations in demand of electricity on a daily basis (day vs night) and across seasons. This requires a **dynamic energy supply system**, which can **ramp-up** or **reduce generation**. Renewable energy systems (solar, wind etc.) lack this feature. Hence, they can't be utilized for ensuring **grid stability**.
- **Storage Capacity Constraints:** Adequate storage solutions like batteries and pumped hydro are crucial but currently insufficient, impacting the ability to balance supply with varying demand.

- **Infrastructure Needs:** Building sufficient infrastructure, including transmission systems, is essential to support the expanding renewable capacity.
- **Reliance on Long-Term PPAs:** Most State DISCOMs have signed long-term Power Purchase Agreement (PPAs) with the electricity generators. These long-term agreements are crucial for financial stability in renewable projects but may **limit flexibility** in responding to changing market conditions.
- **Reluctance of DISCOMs:** DISCOMs have shown reluctance to fully embrace 'must run' renewable energy. This hesitation can impact the **seamless integration** and **consistent utilization** of renewable energy sources into the national grid.

India's Electricity Mix: Non-Fossil Fuel



What initiatives have been taken by the Government to scale-up Renewable Energy?

- **Implementing 'Must Run' Status:** Renewable energy projects, particularly solar and wind, have been accorded a 'must run' status, ensuring their continuous operation **except in case of safety issues**.
- **Supportive Government Policies:** The Government has introduced favorable policies such as late payment surcharge waivers, inter-state transmission system charge waivers, and renewable purchase obligations to boost renewable energy growth.
- **Increased Competition and Foreign Investment:** The renewable sector has seen a rise in competition among **Independent Power Producers** and an **influx of foreign investments**. The influx of competition and capital boosts innovation, leading to more efficient, cost-effective renewable energy solutions.
- **Development of Power Exchange Markets:** India is developing power exchange markets to efficiently manage excess renewable energy. These markets enable the **sale of surplus power**, balancing supply and demand. This not only ensures **grid stability** but also enhances the financial viability of renewable energy projects.
- **Innovative Bidding Processes:** Recent bids require renewable energy generators to **match hourly demand**, enhancing the reliability and comparability of renewable energy to traditional power sources. For instance, in the recent Firm and Dispatchable RE (FDRE) bids invited by SECI, generators are required to match round the clock (RTC) demand of DISCOMs on a 15-minute basis.

What should be done?

- **Enhance Storage Capacities:** The Government must increase investment in storage solutions like **batteries** and **pumped hydro** to **manage the intermittency** of solar and wind energy.
- **Strengthen Grid Infrastructure:** A robust grid infrastructure must be developed to support the increased load from renewable sources and ensure efficient energy distribution.
- **Promote Diverse Renewable Sources:** Combining different renewable sources, like solar and wind, with storage can provide a more consistent energy supply.
- **Support to DISCOMs:** DISCOMs can be assisted in integrating renewable energy into their systems, ensuring smoother adoption and operation.

Factly

Polity

1. Default Bail

News: The Supreme Court has held that an accused cannot seek default bail on the grounds that the probe is pending against another co-accused. In cases involving multiple accused, the default bail can only be sought by an individual if the investigation/probe is pending against that particular individual.

About Default Bail

- Default bail is also known as **statutory bail**. The bail is given to an accused detained in custody, when the police fails to complete the investigation and file the charge sheet **within the time frame mentioned under the law**. It is given under **Section 167(2) of the IPC (Section 187 of BNSS)**.
- The time frame for completing the investigation of offences under the IPC, and for filing of the charge sheet, varies depending on the **gravity of the offence**.
 - An offence punishable with **imprisonment up to 10 years**, the investigation must be completed **within 60 days of arrest**.
 - For offences where **imprisonment is more than 10 years**, the investigation must be completed **within 90 days of arrest**.
 - The exception to this rule exists under special laws like the Narcotic Drugs and Psychotropic Substances Act where the time period for investigation may be different, such as **180 days**.
- The Code of Criminal Procedure (CrPC) provides for three kinds of bail: **Anticipatory bail, Regular bail and Default/Statutory bail**.

Different types of Bail

- **Regular Bail:** This is granted to accused individuals who are already in **legal custody or jail**. It allows the individual to be released from custody by giving a bond, either with or without sureties, under Section 437 and Section 439 of the CrPC (**Section 483 of BNSS**).
- **Interim Bail:** This bail is provided for a short period of time. It is provided to the accused person before the actual bail hearing or anticipatory bail.
- **Anticipatory Bail:** This is defined under **Section 438 of CrPC (Section 482 of BNSS)**. It is to be granted to those individuals who are apprehending arrest.
- **Medical Bail:** It is granted to individuals based on medical grounds, such as life-threatening disease.

Important Judgements Regarding Bail

- **Ritu Chhabaria Judgment:** The Supreme court held that “the right of default bail under Section 167(2) of the Criminal Procedure Code (CrPC) is not merely a statutory right, but a **fundamental right that flows from Article 21 of the Constitution**”. (Refer EPIC May 2023 (click) for Supreme Court on Right to Statutory Bail).
- **Jasbir Singh vs National Investigating Agency (2023):** The SC held that an accused has no right to ask for default bail by claiming that the charge sheet is incomplete (although it is filed on time) for lack of sanction under Section 167(2) of the Code of Criminal Procedure.

2. RBI Report on Panchayati Raj Institutions

News: According to a report by the Reserve Bank of India (RBI) on the finances of Panchayati Raj Institutions for 2022-23, local taxes and fees contributed only 1.1% to Panchayats' total revenue.

Key Findings of the Report

Average Revenue of Panchayat

- According to the report, the average revenue per Panchayat (including taxes, non-taxes, and grants) stood at INR 21.2 lakh in 2020-21, rising to INR 23.2 lakh in 2021-22, and then slightly declined to INR 21.23 lakh in 2022-23.

Panchayats' Own Revenue Sources

- During the study period, the **Panchayats' own revenues** (Local taxes and fees) accounted for **~1.1% of their total revenue**.
- Non-tax revenue, primarily from Panchayati Raj programmes and interest earnings, constituted 3.3% of the total revenue receipts.

Reliance on Grants

- Panchayats rely heavily on property taxes, fees, fines, and grants, with **~95% of their revenue coming from grants** provided by higher levels of Government.
- ~ 80% of the revenue was from grants from the Union Government; and 15% from the State Government.

Low Expenditure

- The average expenditure by a Panchayat dropped from INR 17.3 lakh in 2020-21 to INR 12.5 lakh in 2022-23, mainly due to **higher spending during the pandemic**.
- Goa, Karnataka, Odisha, Sikkim, Kerala, and Tamil Nadu recorded the highest average expenditures.
- The revenue expenditure of panchayats accounts for less than 0.6% of the gross state domestic product across all states.

Linkage With Human Development Indicators

- The report noted that Panchayats having **more functional** and **financial autonomy** along with **higher devolution of power perform well on human development indicators** (health, nutrition and sanitation).
- RBI used devolution index prepared by Ministry of Panchayat Raj to analyse the performance of States.
- The devolution index rates a State based on 3 parameters:
 - The **transfer of subjects** such as drinking water, rural housing, family welfare, and women and child development under the control of panchayats.
 - The **transfer of functionaries**, that is, how many positions were filled by panchayats on their own.
 - The **transfer of finances**, that is, power of panchayats to raise its own funds and autonomy in decision-making.

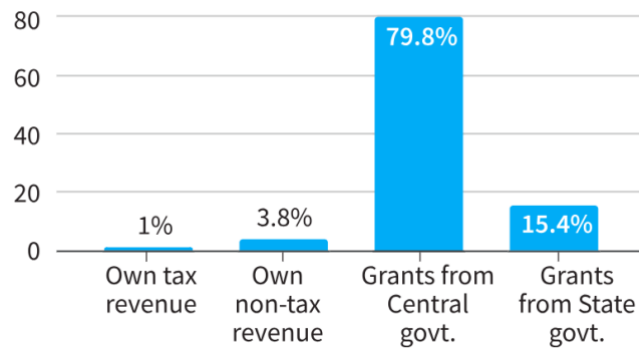
Source of Finance for PRIs

- Grants from the Central Finance Commission (tax devolution) and other grants provided by the Central Government.
- Revenue collected by the State government on behalf of local bodies (State Finance Commissions Transfer), including tolls, taxes, duties, and fees, as well as grants-in-aid.
- As per Article 243-H, PRIs are empowered to levy, collect, and distribute taxes, duties, tolls, and fees.

3. Public Examinations (Prevention of Unfair Means) Act, 2024

News: The Parliament has passed the Public Examinations Act, 2024.

| The chart shows the revenue per panchayat in percentage terms in 2022-23.



Source: The Hindu. Grants from the Union (79.8%) and State Government (15.4%) contribute 95.2% to Panchayat's revenues.

About the Act

- Many States have not been able to declare results of their public examinations on time. Often, this happens due to negative impact of **unfair practices**.
- The objective of the Act is to **bring greater transparency, fairness and credibility** to the **public examination systems**.
- The Act is applicable to central recruitment and entrance exams conducted by Union Public Service Commission (UPSC), Staff Selection Commission (SSC), Railway Recruitment Boards (RRBs), National Testing Agency (NTA), Institute of Banking Personnel Selection (IBPS) and the Departments of the Union Government and their attached offices for recruitment.
- For **cheating**, a minimum of 3 to 5 years of imprisonment has been prescribed.
- For **organised crimes of cheating**, punishment will be 5 to 10 years of imprisonment and a minimum fine of INR 1 crore. An organised crime has been defined as an unlawful act committed by a person or a group of persons to **further a shared interest for wrongful gain** in relation to public examinations.
- All offences under the Bill will be **cognisable, non-bailable, and non-compoundable**. No action will count as an offence if it is proved that the accused had **exercised due diligence**.
- The Act seeks to set up a high level committee to **establish protocol for developing fool-proof IT security system** for **online and technology based exams**.

4. Initiative to Promote Electoral Literacy in Schools and Educational Institutions

News: The Ministry of Education and the Election Commission of India have signed a Memorandum of Understanding to incorporate electoral literacy formally into the school and college education system.

About the MoU for Electoral Literacy

Objectives of the MoU

- To incorporate **voter education** and **electoral literacy** formally into the school and college education system.
- To extend ECI's flagship **Systematic Voters' Education and Electoral Participation (SVEEP)** in schools and colleges.

Activities to be undertaken

- **School Curriculum:** Electoral literacy will be added to **NCERT textbooks** as part of the **National Curriculum Framework (NCF)** for classes 6-12.
- **College/University:** Voter education will be integrated into existing courses.
- **Teacher Training:** Training to teachers will be provided by way of inclusion of the subject matter in teacher education course materials.
- **Beyond the Classroom:** Awareness will be spread among students through **Electoral Literacy Clubs** in schools and colleges and **Democracy Rooms** in every senior secondary school, administering a **pledge to vote** by students, organising **mock polls, EVM-VVPAT demonstrations**, etc.

About the Systematic Voters Education and Electoral Participation (SVEEP)

- SVEEP is the flagship program of the Election Commission of India (ECI).
- It is aimed at **voter education**, spreading **voter awareness** and **promoting voter literacy** in India.
- **SVEEP Strategy document (2022-25):** It aims to **increase voter turnout to 75% in Lok Sabha General Elections 2024**.
- It also intends to **enhance the quality of electoral participation** in terms of **informed and ethical voting** through continuous electoral and democracy education.

5. Technological Initiatives for Courts

News: Several technology initiatives were launched on the occasion of Diamond Jubilee Celebrations of the Supreme Court.

About the New Initiatives Launched

Initiative	Details
Digital Supreme Court Reports (Digi SCR)	<ul style="list-style-type: none"> It will provide Supreme Court judgments to the citizens free of cost and in electronic format. Digital SCR will include access to all 519 volumes of Supreme Court reports since 1950 in a user-friendly, open access digital format.
Digital Courts 2.0 Application	<ul style="list-style-type: none"> It is an initiative under the e-Courts project which aims to provide district court judges with electronic access to court records. It also uses Artificial Intelligence (AI) to transcribe speech into text instantly.
New website of the Supreme Court	<ul style="list-style-type: none"> The new website offers bilingual English and Hindi formats, along with a user-friendly interface redesign.

Other Initiatives for Courts

- **National Judicial Data Grid (NJDG):** It is a database of orders, judgments and case details of 18,735 **District & Subordinate Courts and High Courts**. It was created as an online platform under the **eCourts Project**.
- **AI-powered Portals**
 - **SUPACE** (Supreme Court Portal for Assistance in Court's Efficiency): AI based portal for **making the research work easier** for judges.
 - **SUVAS** (Supreme Court *Vidhik Anuvaad* Software): It is an AI tool developed for the Supreme Court. It helps in **translating judgments into various regional languages**.

6. National Judicial Academy

News: The Supreme Court recently emphasized the lawyers to undergo compulsory training at the National Judicial Academy like the judges.

About the National Judicial Academy (NJA)

- It is an **independent society**, operates under the guidance of the **Supreme Court of India**. It is located in Bhopal, with a registered office in Delhi.
- It was established in 1993 under the **Societies Registration Act, 1860**. It is fully funded by the Government of India.
- Its mandate is to **enhance the administration of justice** through judicial education, research, and policy development. It arranges **training sessions to assist judges in their adjudicative responsibilities** and in managing court administrative tasks.
- The **Chief Justice of India (CJI)** **serves as the Chairperson** of the General Body, Governing Council, Executive Committee, and Academic Council of NJA.
- The Director of NJA is its main executive officer and is appointed by the Chairperson.
- NJA academic staff positions include the Director, one Additional Director (Research), three Professors, six Assistant Professors, six Research Fellows, and six Law Associates.

Policy

1. National Credit Framework

News: The National Credit Framework aligns education and skills training. It enables students to acquire skills while pursuing education and vice versa, facilitating greater access.

About the National Credit Framework (NCrF)

- It is a unified meta-framework that **accumulates credits earned** from **school education, higher education, and vocational and skill education**. Under this system, credits will be assigned to academic learning.
- It consists of 3 verticals:
 - National School Education Qualification Framework (NSEQF).
 - National Higher Education Qualification Framework (NHEQF).
 - National Skills Qualification Framework (NSQF).
- It has been jointly developed by University Grants Commission (UGC), All India Council for Technical Education (AICTE), National Council for Vocational Education and Training (NCVET), National Institute of Open Schooling (NIOS), CBSE, NCERT, Directorate General of Training (DGT), Ministry of Education, and Ministry of Skill Development.

Various Provisions of the NCrF

Blending Academic and Vocational Education

- The **National Education Policy (NEP) 2020** emphasizes the fusion of academic and vocational education, which is facilitated by the NCrF.
- This mechanism guarantees parity within and across the two educational pathways.

Credit System

- The yearly '**Notional Learning hours**' for credit allocation will be set at 1200 hours. Students can earn a minimum of 40 credits through 1200 hours of learning each year, with 20 credits available per 6-month semester.
- Notional hours represent the time needed for students to attend classes, study for exams, and complete assignments and homework.
- Students will earn **160 credits** throughout their **schooling**.
- A 3-year **bachelor's degree** results in **120 credits**.
- Upon completing a **Ph.D.**, students acquire **320 credits**.
- Students also gain credits for participating in Olympiads, science quizzes, internships, and jobs during college.

Credit Levels

- The NCrF proposes levels from 1 to 8.
- The credit level achievable after finishing school education: grade 5 completion is level 1, grade 8 is level 2, grade 10 is level 3 and grade 12 is level 4
- Higher education ranges from levels 4.5 to 8.
- Vocational education and training ranges from levels 1 to 8.

Aadhaar-Enabled Student Registration

- Students have to register with Aadhaar, and an **Academic Bank of Credit (ABC)** account will be created.
- The accounts will receive deposits of degrees and credits. A **knowledge locker** similar to DigiLocker will also be available.

2. Status of TB in India

News: 25.3 lakh TB cases were notified in India in 2023.

About the Status of TB in India

- 25,37,235 TB cases were notified in 2023. Of these, the public sector notified 16,99,119 cases while the private sector notified 8,38,116 cases.
- The TB notification by the public sector reached 93% of the target, it was 89% in the case of the private sector.
- In 2022, the number of notified cases stood at 24,22,121. TB case notification in 2022 was 13% more than what was achieved in 2021. Due to the pandemic, **TB notifications had fallen sharply in 2020 and 2021.**
- Over the years, there has been a steady rise in the private sector's contribution to TB notifications; from 21% in 2017 to 31% in 2020.
- Despite the gradual rise in notifications by the private sector, the private sector's TB case notifications have consistently fallen short of the targets outlined in the **National Strategic Plan (NSP) 2022-2025.**
- According to the **National Strategic Plan (NSP)**, ~0.54 million TB patients are not captured by surveillance and services, potentially in the private sector or the community.

About Tuberculosis (TB)

- **Tuberculosis (TB)** is an **infectious disease** that most often **affects the lungs** and is caused by **bacteria Mycobacterium tuberculosis**. It spreads through the air when infected people cough, sneeze or spit.
- Tuberculosis is **preventable** and **curable**.
- **~25% of the global population** is estimated to have been infected with TB bacteria. Those who are infected with TB bacteria (TB Infection) but not (yet) ill with the disease (TB Disease) **cannot transmit it.**

About the National Strategic Plan (NSP) for Tuberculosis (2017-2025)

- **National Strategic Plan (NSP) for Tuberculosis (2017-2025)** was launched by **Ministry for Health and Family Welfare.**
- It has been launched with the goal of **achieving the SDG targets related to TB by 2025**, 5 years ahead of the global target.
- The UN Sustainable Development Goals (SDGs) include ending the TB epidemic by 2030 under Goal 3.
- National Strategic Plan (NSP) for Tuberculosis adopts strategies under four pillar: **Detect, treat, prevent, build.** (Refer EPIC September 2022 (click) for TB-Mukt Bharat: Making India TB-Free by 2025).

3. RMNCAH+N Strategy

News: The RMNCAH+N strategy promotes links between various interventions across thematic areas to enhance coverage of health care services.

About RMNCAH+N Strategy

- The Government of India implements the **Reproductive Maternal Newborn Child Adolescent Health Plus Nutrition (RMNCAH+N)** strategy under the **National Health Mission.**
- Its objective is to address the problem of **anaemia** and **malnutrition** among **women** and **children.**

Various Interventions under RMNCAH+N Strategy

- **Mothers' Absolute Affection (MAA):** It is implemented to **improve breastfeeding coverage** which includes early initiation of breastfeeding and exclusive breastfeeding for first 6 months.
- **Nutrition Rehabilitation Centres (NRCs):** They are set up at **public health facilities** to provide in-patient **medical and nutritional care** to children under 5 years of age suffering from **Severe Acute Malnutrition (SAM)** with medical complications.

- **Anaemia Mukht Bharat (AMB):** This programme is implemented to **reduce anaemia** among 6 beneficiaries age group: Children below 5 years (6-59 months), Children below 9 years (5-9 years), Adolescents (10-19 years), Pregnant and Lactating Women and in Women of Reproductive age group (15-49 years) in **life cycle approach** through implementation of six interventions via robust institutional mechanism.
- **National Deworming Day (NDD):** Under this programme, **albendazole tablets** are administered in a single fixed day approach via schools and *Anganwadi* centres in two rounds (February and August) to reduce the soil transmitted helminth (STH) infestation among all children and adolescents (1-19 years).
- **Monthly Village Health, Sanitation and Nutrition Day (VHSND):** It is an outreach activity at *Anganwadi* centers for provision of maternal and child care including nutrition in convergence with the ICDS.
- **MCP Card and Safe Motherhood Booklet:** These are distributed to the pregnant women for educating them on diet, rest, danger signs of pregnancy, benefit schemes and institutional deliveries.

4. Role of ASHA Workers in Healthcare

News: The Union Government has extended the benefits of its flagship health insurance scheme, Ayushman Bharat, to Accredited Social Health Activist (ASHA) workers and Anganwadi workers.

About Accredited Social Health Activists (ASHA)

- The concept of ASHA workers was introduced in 2005-06 as part of the **National Rural Health Mission**, initially in rural areas. It was later extended to urban areas with the introduction of the **National Urban Health Mission** in 2013.

Selection

- ASHA worker must be a **woman resident of the village** married/ widowed/ divorced, preferably in the age group of 25 to 45 years.
- ASHA must be chosen through a **systematic process** by involving various community groups, self-help groups, the Block Nodal officer, District Nodal officer, the village Health Committee and the Gram Sabha.

Role of ASHA

- ASHA will provide information to the community about **nutrition, basic sanitation and hygienic practices**.
- ASHA will counsel women on **birth preparedness**, importance of **safe delivery, breast-feeding and complementary feeding** and **immunization**.
- ASHA will **mobilise the community** and help them in **accessing health and health related services** available at the Anganwadi/sub-centre/primary health centres.

5. Revised Guidelines for Community Radio

News: The Government has released the revised policy guidelines for setting up community radio stations.

About the Revised Guidelines

- **Increase in the number of stations for an entity:** The updated guidelines now permit one institution to establish up to 6 stations across various operational districts. Previously it was restricted to 1 station.
- **Increase in Advertising Rates and Time:** The advertising time for community radio stations has been raised from 7 minutes per hour to 12 minutes per hour. Also, the advertisement rate has been increased from INR 52 to INR 74 per 10 seconds.
- **Fixing the validity of Letter of Intent (LOI):** The policy now sets the validity of the letter of intent issued to an organization to 1 year, with an additional three-month buffer for unforeseen circumstances.

- **Establishment of Advisory and Content Committee:** The guidelines require the licensee to establish an **Advisory and Content Committee** with members from the local community. It must also be ensured that **50% of the committee consists of women**.

About Community Radio Stations and their Significance

- Community Radio Stations (CRSs) are **low-power radio stations** with a coverage area of approximately **10-15 km radius**, depending on the area's geography. They are intended to be established and **managed by local communities**.
- India's first community radio station (CRS) opened at **Anna University's campus in 2004**. Presently, there are **481 CRSs across India**, with over 133 becoming operational in the last two years.
- Community radio stations provide a platform for **disseminating content in localized dialects and regional languages**. They address local, context-specific issues and **facilitate discussions** using local dialect and idioms.

6. e-Jagriti Portal

News: e-Jagriti Portal has been integrated with Artificial Intelligence, which can help reduce the number of pending cases in consumer courts.

About e-Jagriti

- It is a portal for Consumer Commissions.
- Its objective is to provide a simple, fast, and cost-effective **consumer dispute redressal software solution** at all levels.
- It serves as a **unified platform** catering to a diverse range of stakeholders involved in consumer complaint, its resolution and case management processes. The stakeholders include the consumers, lawyers, judges, officials from State Commissions, industry representatives, mediation partners, and service providers etc.
- It is an initiative of the **Ministry of Consumer Affairs, Food, and Public Distribution**.
- It will **integrate consumer grievance platforms** such as Online Case Monitoring System (OCMS), E-Daakhil, the National Consumer Dispute Redressal Commission (NCDRC) etc on a single platform.
- **Features**
 - It has case filing, online fee payment, case monitoring modules for disposal of cases by all the Commissions.
 - It has **smart-search facility** on archived consumer complaints/cases/judgements **using AI technology**.
 - It will integrate a Virtual court facility for a convenient and accessible resolution of consumer complaints.
 - It will **reduce the time of disposal**, multiple hearings, and physical court appearances. This would ensure effective and fast decisions & disposals in all Consumer Commissions.

About the National Consumer Dispute Redressal Commission (NCDRC)

- It is a **quasi-judicial commission** in India which was set up in 1988 under the **Consumer Protection Act, 1986**.
- The Commission is headed by a **sitting or retired Judge of the Supreme Court of India** or a **sitting or retired Chief Justice of the High Court**.
- It is headquartered in New Delhi.
- It has jurisdiction to entertain a complaint valued at more than two crore.
- It also has **appellate and revisional jurisdiction** from the orders of District of State Commissions.
- Any person, aggrieved by an order of NCDRC, may prefer an appeal against such an order to the Supreme Court of India within a period of 30 days.

Economy

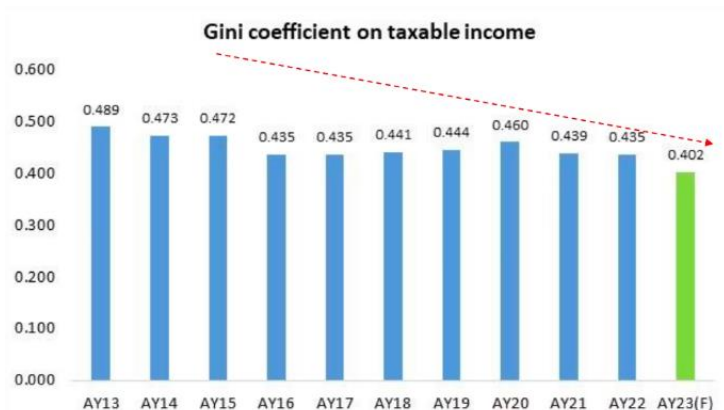
1. Debate on K-Shaped Recovery in India

News: A Report by the Economic Research Department of the SBI has questioned the assertions of K-Shaped recovery of the Indian Economy.

About the Observations in the Report

- The Report highlighted the patterns seen in **income, savings, consumption, and expenditure**.
- It questioned the reliability of **using outdated indicators** like low two-wheeler sales or fragmented land holdings to paint a negative picture of India's performance.
- The Report indicated that **income-tax data, rising female labour force participation** and the rising popularity of food-ordering platforms paint a **healthy picture of India's growth**.
- The Report relied on trend of 5-economic indicators:

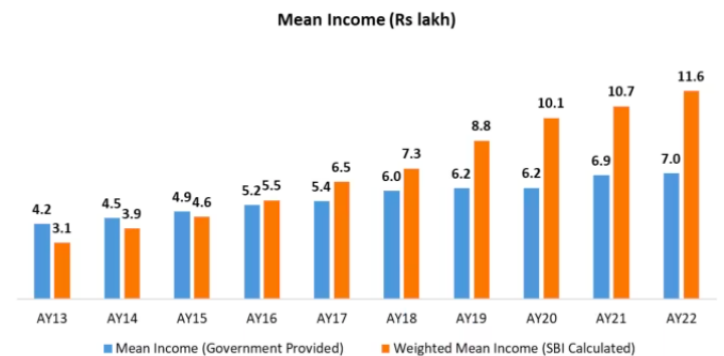
- **Income Inequality:** The gap between different income levels, measured by the Gini coefficient of taxable income, decreased notably from 0.472 to 0.402 from FY14 to FY22 respectively



- **Growth in MSMEs:** There have been visible changes in the **income pattern of MSMEs** (Micro, Small and Medium Enterprises) as the **formalisation** drive brings more entities into the net. ~19.5% of majorly micro-sized firms have been able to shift their income upwards.

MSMEs are getting bigger and getting integrated into larger value chains with initiatives like PLI.

- **Rise in Individual's Weighted Income:** The Study shows that individual's weighted mean income has risen from INR 3.1 lakhs to INR 11.6 lakhs during FY14-FY21. Mean income will rise if income is increasing along any bucket (upper, middle, or lower) but weighted mean income would increase more **when the contribution of each income group is increasing towards total income growth**.



- **Rising Female Labour Force:** SBI quoted PLFS (Periodic Labour Force Survey) data which shows female labour force participation has risen from **23.3 in 2017-18** to **37 in 2022-23**, marking an increase of 13.7. Females have shifted more towards agriculture. The share of agriculture as an occupation among females has risen from 57% in 2017-18 to 64.3% in 2022-23.
- **Consumption Trend:** The Report pointed out that the **bottom of the pyramid consumption** share has increased. The consumption of people who spent below US\$ 3.65 per day (INR 303) has increased by nearly INR 8.2 lakh crore. The Report says that based on the current trends, another INR 16 lakh crore will shift to the bottom segment by 2030. This will mean that perhaps for the first time, **50% of consumption will be accounted for by these 90% persons**.

Arguments Against SBI Report

- **High Welfare Spending:** The Government has been forced to extend the scheme of subsidized food grains to 800 million Indians.
- **Tax Data does not reflect Broader Economy:** Only a very small minority of people pay direct income tax. Hence, it is not reasonable to draw conclusions from tax data about broader inequality. Income Tax data are nominal and are affected by overall inflation, thus unviable for drawing conclusions.
- **Use of Tractor Sales Data:** Tractor sales (in place of two-wheeler sales) may be a better representative of the farm economy but not the overall rural economy.
- **Travel Data:** Some experts have cited contrasting trend of **booming air travel** but **slower recovery** (post-pandemic) **in railway travel** as indicative of varying economic realities across different segments of the Indian population.

2. PayTM Crisis

News: The Reserve Bank of India has placed certain restrictions on Paytm Payments Bank Ltd (PPBL) due to non-compliances of its directives.

About the Action Taken by the RBI

- The Reserve Bank of India (RBI) has imposed restrictions on **Paytm Payments Bank Ltd.** (PPBL):
 - PPBL has been barred from **accepting new deposits** or top-ups in customer accounts, wallets, or FASTags.
 - PPBL has been stopped from **offering certain services** like fund transfers and **UPI facilities**.
 - The RBI has directed the **termination of nodal accounts** linked to One97 Communications and Paytm Payments Services Ltd. One97 Communications is the parent company of Paytm.

Reasons behind RBI Action

- The RBI took these actions against Paytm Payments Bank due to ongoing **non-compliance** and **supervisory concerns**. Audit reports revealed persistent issues, necessitating strict supervisory action.
- These concerns raised doubts about the **operational integrity of the bank**.

About Payment Banks

- There are two kinds of banking licences that are granted by RBI: Universal bank licence and Differentiated bank licence.
- Payment Banks comes under a **differentiated bank licence** since they cannot offer all the services that a commercial bank offers:
 - Payment banks **cannot lend**.
 - They can take deposit up to **INR 2 lakh per account**. They **cannot accept time deposits** or **NRI deposits**.
 - They **cannot set up subsidiaries** to undertake **non-banking financial activities**.
 - They can issue debit cards but **not credit cards**.
 - Payment banks can work as a business correspondents (BC) of another bank.
 - They can offer **remittance services**, **mobile payments**/transfers/purchases, and other banking services like **ATM/debit cards**, **net banking**, and third-party fund transfers.
 - Payment banks can also **distribute simple financial products** like **mutual fund units** and **insurance**.
 - RBI has mandated the minimum paid-up equity capital for payment bank at INR 100 crore.
 - Apart from maintaining **Cash Reserve Ratio** (CRR), these entities have to invest a minimum 75% of demand deposit balance in **Statutory Liquidity Ratio** (SLR).

Objectives of a Payment Bank

- The main objective is to further **financial inclusion** by providing **small savings account** and **payments and remittance services** to migrant labour workforce, low income households, small businesses and other unorganized sector entities.

3. Market Access Initiative Scheme

News: Exporters have called for greater fund allocation for the Market Access Initiative (MAI) Scheme.

Aspect	Details
Objective	Market Access Initiative (MAI) Scheme is an Export Promotion Scheme envisaged to act as a catalyst to promote India's exports on a sustained basis.
Strategy	The scheme is formulated on product-focus country approach to evolve specific market and specific product through market studies and surveys.
Eligible Activities	<ul style="list-style-type: none"> Marketing Projects Abroad. Capacity Building. Support for Statutory Compliances. Project Development. Developing Foreign Trade Facilitation web Portal. To support Cottage and handicrafts units.
Eligible Agencies	<ul style="list-style-type: none"> Departments of Central Government and Organisation of Central/ State Governments. Indian Missions abroad. Export Promotion Councils. Registered trade promotion Organisations. Commodity Boards. Apex Trade Bodies recognized under Foreign Trade Policy of the Government of India. Recognized Industrial & Artisan Clusters. Individual Exporters (only for statutory compliance etc.). National Level Institutions (e.g. IITs, IIMs, National Institute of design (NIDs), NIFT etc.)/Research Institutions/Universities/Recognized laboratories, etc.
Funding	The funding for each project will be on a cost-sharing basis , with the sharing pattern ranging from 65% to 50%.
Administrating Body	It is administered by the Ministry of Commerce and Industry , through the Directorate General of Foreign Trade (DGFT).

Concerns

- India aims to take goods and services export from US\$ 776 billion recorded in 2022-23 to **US\$ 2 trillion by 2030**. However, the marketing support given under the MAI scheme, with a total allocation of less than INR 2 billion for the current year, is highly inadequate.
- There is an uneven contribution by States in India's export basket. Over 70% of India's exports are from only 5 states, and Gujarat alone accounts for over 30%.

4. Disclosure Norms for FPIs

News: SEBI has extended the timeframe for Foreign Portfolio Investors (FPIs) to reveal details about all entities with ownership, economic interest, or control in the FPI.

Difference Between FPIs and FDI

Aspect	FPIs	FDI
Definition	FPIs are investors like mutual funds, hedge funds, pension funds, and other institutions that invest in foreign financial assets such as stocks, bonds, and securities .	FDI involves a foreign entity investing long-term in a business abroad, gaining significant control or ownership in the company .
Investment timeframe	Short to medium-term.	Long term.
Investment concentration	Financial assets, such as stocks and bonds.	Business or physical assets of a company.
Risk involved	Volatile.	Stable.

SEBI's Additional Disclosures

- SEBI's initiative intends to **deter potential round-tripping** and **misuse of the FPI channel**.
- SEBI has requested supplementary (extra) details from FPIs that have over 50% of their Indian equity Assets under Management (AUM) **concentrated within a single corporate group** or **exceeding INR 25,000 crore in Indian equity markets**.
- Sovereign wealth funds, companies listed on specific global exchanges, public retail funds, and other regulated pooled investment vehicles are excluded from the heightened disclosure requirements.

About Round Tripping

- Round tripping refers to money that leaves the country through various channels and makes its way back into the country often as foreign investment.
- There are various reasons that promote round tripping. Mainly, Tax concessions allowed in the foreign country encourages individuals to park money there and then reroute it.

5. Features of Payment Aggregators

News: Two fintech startups Decentro and Juspay have received final authorisation from the RBI for payment aggregator (PA) licences.

About Payment Aggregators

- Payment Aggregators facilitate online payments by acting as **intermediaries** between the **customer** and the **merchant**. Razorpay, Cashfree, Zoho, Zomato etc. have already got the payment aggregator license.
- They typically provide a **range of payment options to customers**, including credit and debit cards, bank transfers, and e-wallets.
- Payment aggregators **collect and process payment information**, ensuring that transactions are **secure** and **reliable**.
- Businesses can avoid the need to set up and manage their **own payment processing systems**, which can be complex and expensive.
- Payment Aggregators can be either Bank Payment Aggregators or Third-Party Payment Aggregators. Non-bank payment aggregators need to have a net worth of INR 15 crore by 15th March 2021 and a net worth of INR 25 crore by 31st March 2023. It must also be compliant with global payment security standards.

Features

- **Multiple Payment Options:**

Payment aggregators offer a range of payment options to customers, making it easier for them to pay for goods and services.

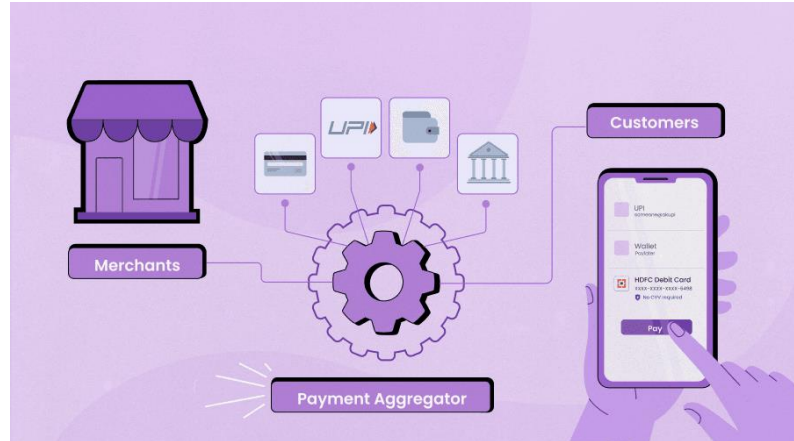
- **Secure Payment Processing:**

Payment aggregators use advanced security measures to ensure that the transactions are safe and secure.

- **Fraud Detection and Prevention:**

Payment aggregators use algorithms and machine learning to detect and prevent fraud, reducing the risk of chargebacks and other payment disputes.

- **Payment Tracking and Reporting:** Payment aggregators provide detailed reports on payment transactions, making it easier for businesses to manage their finances and reconcile their accounts.



6. Prabhaav Report on Impact of Fund of Funds for Start-ups (FFS)

News: The Small Industries Development Bank of India (SIDBI) has recently released the CRISIL study report named 'Prabhaav'. It assesses the impact of the Fund of Funds for Start-ups (FFS).

About the Findings of the Report

- The Report has been released by CRISIL to assess the **impact of the Fund of Funds for Start-ups (FFS)**. Fund of Funds for Start-ups (FFS) is a key initiative under the **Start-up India Action Plan**.
- The dimensions included for assessment include **Flow of capital, Inclusiveness and diversity in coverage of Start-ups, Innovative solutions** and the **Deepening of Start-ups funding ecosystem**.
- The report reveals that **129 startups beyond Tier-1 cities** have received investment worth INR 1,590 crore.
- The FFS scheme has enabled investments to the tune of around 4x (300%) of the amount drawn with INR 17,534 crore invested in 938 start-ups.
- There was **increase in support to women led start-ups** as well as **women-led fund managers**.
- 18 start-ups have become **unicorn**.
- The scheme has also **supported start-ups in emerging sectors** such as **deep tech**, agri-tech, health tech, and financial services.

About the Fund of Funds Scheme

- The Fund of Funds for Startups (FFS) Scheme was approved and established in 2016 with a corpus of INR 10,000 crore.
- The Scheme **does not directly invest in start-ups**. It provides capital to SEBI-registered **Alternate Investment Funds (AIFs)** known as **daughter funds**. These AIFs invest money in growing Indian start-ups through equity and equity-linked instruments.
- FFS is operated by **Small Industries Development Bank of India (SIDBI)** through selection of suitable daughter funds and overseeing the disbursement of committed capital.
- AIFs supported under FFS are required to invest at least 2 times of the amount committed under FFS in start-ups.

7. SMART Food Grain Storage Technology

News: The Government has transferred the SMART food grain storage system technology to the Industry to pave the way for innovation in digital India.

About SMART Food Grain Storage System (SAFEETY) Technology

- It has been developed by the Society for Applied Microwave Electronics Engineering and Research (SAMEER) under MeitY's guidance.
- It boasts of cutting-edge features such as conveyORIZED loading and unloading of grain bags.
- Grain bags are **tagged with RFID** for ensuring its traceability.
- It can **measure weight and moisture of food grains** online. By employing radio waves, it can remove moisture from grain.

Significance of Technology

- **Sustainability:** From energy-efficient systems to reduced waste through precise monitoring, these facilities contribute to a more sustainable and eco-friendly approach to food grain storage.
- **Increased Productivity:** Automation and predictive analytics significantly boost productivity. With streamlined processes and reduced downtime, smart storage solutions enable facilities to handle larger quantities of grains with greater efficiency.
- **Enhanced Food Security:** By **minimizing losses due to spoilage** and ensuring the traceability of grains, smart storage facilities play a pivotal role in enhancing food security. This is especially critical in a world where global supply chains are intricately connected.
- **Cost Efficiency:** While the initial investment in smart storage infrastructure may be higher, the long-term cost benefits are substantial. **Improved efficiency, reduced waste, and minimized manual labour** contribute to a more cost-effective approach to grain storage.
- This state-of-the-art system has a remarkable capacity, efficiently handling almost one truckload (~28 tons) of grains in just 40 minutes.
- The transfer of SAFEETY technology to industry signifies a step towards realizing the Innovation, Science, and Technology theme of Viksit Bharat @2047.

8. India's Public Stockholding Programme and the Cairns Group

News: The Cairns Group has claimed that India's public stockholding (PSH) program is heavily subsidized and violates the provisions of the WTO.

About the Cairn Group

- It is a coalition of **agricultural exporting countries** that advocate for **liberalization of agricultural trade**.
- It was established in 1986 and is named after the city Cairns in Australia, where the first meeting took place.
- The group consists of 19 member countries, primarily from the Asia-Pacific region and Latin America, including Australia, Canada, Brazil, and Thailand, among others.
- The Cairns Group aims to promote **fair and open agricultural trade** by advocating for the **reduction of trade barriers, subsidies, and protectionist measures** that distort global agricultural markets.
- The Group argues that India's farm support **distorts global food prices** and **undermines food security** in other countries. This increases pressure on India to comply with **World Trade Organisation** regulations regarding farm subsidies.

About WTO Regulations

- The regulations on farm subsidies aims to ensure fair competition and prevent distortion of global trade.

- These regulations impose limits on the types and levels of subsidies that member countries can provide to their agricultural sectors.

Level of Subsidies

Green Box	Amber Box	Blue Box
<ul style="list-style-type: none"> • It includes subsidies that do not significantly distort trade. • They are not specific to particular products and are generally allowed by the WTO. • Such subsidies include funding for research, environmental protection, and direct income support for farmers facing difficulties like crop loss or other disasters. 	<ul style="list-style-type: none"> • These subsidies distort trade by promoting excessive production. • Such subsidies include, input subsidies such as subsidies on seeds, fertilisers, Minimum Support Price (MSP) etc. • WTO limits this subsidy by capping it at 5% of the production value for developed countries and 10% for developing countries. 	<ul style="list-style-type: none"> • These subsidies are similar to amber box subsidies, but they aim to restrict production. • At present, only a few countries like Norway and Iceland utilize these subsidies. • The WTO does not impose any limits on these subsidies.

9. Annual Survey of Industries

News: MoSPI has released the results of Annual Survey of Industries (ASI) for the reference periods April 2020 to March 2021.

About Annual Survey of Industries (ASI)

- It is the primary source of **industrial statistics** in India.
- From ASI 2010-11 onwards, the survey is being conducted annually under the statutory provisions of the **Collection of Statistics (COS) Act, 2008**.
- It is conducted by **Central Statistics Office (CSO)**, Industrial Statistics (IS) wing under the **Ministry of Statistics and Programme Implementation**.
- The ASI extends to the entire country. It covers all factories registered under Sections 2(m)(i) and 2(m)(ii) of the **Factories Act, 1948**.
- All **electricity undertakings** engaged in generation, transmission and distribution of electricity, not registered with the Central Electricity Authority (CEA) are also covered under ASI.
- Units with 100 or more employees registered in the **Business Register of Establishments (BRE)** prepared and maintained by the State Governments are also covered.
- It **does not cover unorganised or unregistered or informal sector enterprises**.

ANNUAL SURVEY OF INDUSTRIES 2020-21 & 2021-22

	2019-20	2020-21	2021-22	CAGR For 2021-22
Number Of Factories	2,46,504	2,50,454	2,49,987	0.7
Number Of Workers	1,30,58,156	1,25,94,563	1,36,09,931	2.1
Number Of Employees	1,65,68,526	1,60,25,118	1,71,51,172	1.7
FINANCIALS				
Wages To Workers	2,28,90,520	2,22,61,548	2,64,55,930	7.5
Total Emoluments	4,91,72,897	4,83,89,031	5,60,82,801	6.8
Net Fixed Capital Formation	1,43,61,795	32,25,819	30,42,540	-54.0
Gross Fixed Capital Formation	4,16,71,537	3,13,61,805	3,30,07,225	-11.0
Profits	4,69,47,269	6,14,05,752	9,50,71,368	42.3

Value figures in Rs lakh

Source: MoSPI

Key Finding of the Survey

- **Gross Value Added** grew by **8.8%** in current prices in the year 2020-21 and by 26.6% in the year 2021-22 over the respective previous years.
- **Industrial output** grew by **more than 35%** in 2021-22 over the previous year.
- Total estimated employment in the sector showed a robust growth of 7.0% in 2021-22 over 2020-21.
- Tamil Nadu, Karnataka, and Uttar Pradesh were among the top 5 States contributing significantly to manufacturing GVA and employment in both years.

International Relations

1. India-UAE Bilateral Investment Treaty

News: India and the UAE have signed a bilateral investment treaty during Indian PM's 2-day visit to the UAE. Several other key agreements were also signed.

Significance of BIT

- The goal of the BIT is to **enhance investor trust**, especially among large and significant investors. It can result in **higher levels of foreign investments** and more opportunities for **overseas direct investment** (ODI). It is expected to have a **positive effect on job creation** as well.
- In addition to boosting investments in India, the BIT with the UAE is expected to support the goal of *Atmanirbhar Bharat* by **promoting domestic manufacturing**, **reducing reliance on imports**, and **boosting exports**. (Refer EPIC February 2023 (click) for Bilateral Investment Treaties: India's Approach and Concerns).

Other Key Agreements Signed

- **Digital Infrastructure Projects:** It aims to establish a framework for broad cooperation, including investment collaboration, in the digital infrastructure sector. It will also facilitate the exchange of technical knowledge, skills, and expertise.
- **Linkage of Payment Platforms:** India and UAE agreed to **connect India's UPI** with the **UAE's AANI** instant payments platform. Similarly, India's **RuPay cards** will also be linked with the UAE's **JAYWAN card**, built on RuPay's technology stack.
- **India-Middle East Economic Corridor (IMEC) Framework Agreement:** Both sides also inked an Inter-governmental Framework Agreement on the **India-Middle East Economic Corridor** (IMEC). The IMEC initiative proposes a **sea-land connectivity project** connecting India with West Asia and Europe.

2. Release of Indian Prisoners by Qatar

News: 8 Indian Navy veterans, who had been in Qatari custody since August 2022, have been released.

Significance of Release

- The 8 Navy veterans had been given the death penalty by a lower court in Qatar in October 2023.
- Subsequently, a court of appeals in Doha **struck down the death penalty in December 2023**. Now the prisoners have been released and they have returned to India.
- Foreign policy experts have hailed it as a **big achievement of India's foreign policy**.
- It also shows the depth of India's bilateral ties with Qatar.

India and Qatar

- **Improving Relations with Gulf Countries:** India has moved on from its earlier stance of viewing the Middle East only through the prism of Pakistan or Israel-Palestine conflict. This has resulted in strengthening of India's bilateral relations in the Gulf.
- **Energy Cooperation:** Qatar is a major supplier of energy to India. The two countries have signed a **US\$ 78 billion LNG deal** that extended an existing agreement on supply of liquified natural gas till 2048.
- **Indian Diaspora and Remittances:** ~8 lakh Indian workers are employed in Qatar and continue to be a major source of foreign remittances to the Indian economy. (Refer EPIC November 2023 (click) for India-Qatar Relationship).

3. UN Relief Work Agency (UNRWA) for Palestine Refugees

News: The US and 8 other nations have stopped funding to the UNRWA following accusations that some agency personnel were involved in the October 07 attack on Israel by Hamas.

Aspect	Details
About the Agency	It is a specialized agency established by the UN General Assembly in 1949.
Mandate	To provide assistance and protection to Palestinian refugees who were displaced following the 1948 Arab-Israeli conflict , as well as their descendants.
Operational Domain	It operates in Gaza, the West Bank, Lebanon, Syria, and Jordan.
Funding	<ul style="list-style-type: none"> • UNRWA receives generous support from UN Member States such as US, regional governments, and the European Union. • These sources represent close to 89.2% of financial contributions to the Agency. • It also gets a limited subsidy from the UN, which is used only for administrative costs. • Top donors of 2022: USA, Germany, EU, Sweden, Norway, Japan, France, Saudi Arabia, Switzerland and Turkey.
Key Programmes	It runs education, health, relief and social services, microfinance and emergency assistance programmes inside and outside refugee camps.

4. Labour Rules for Workers Abroad

News: Some State Governments have collaborated with National Skill Development Centre to recruit 10,000 workers to go to Israel for work. Israel has faced shortage of workers since the Israel-Hamas war began.

About the Rules for Labour Workers Abroad

- Workers going to **conflict zones** are required to register with the Ministry of External Affairs' '**e-Migrate**' portal.
- Passport under the **Emigration Check Required (ECR) scheme** covers workers travelling to 18 countries, like Afghanistan, Bahrain, Indonesia, Iraq, Jordan, the Kingdom of Saudi Arabia, Kuwait, Lebanon etc. Israel is not included in this list.
- The e-Migrate project is designed to **facilitate emigration of ECR category emigrants** going to notified countries for employment purposes.
- e-Migrate is integrated with **Passport Seva Project (PSP)** of Ministry of External Affairs for online validation of passport details of the ECR category workers being registered.
- The whole process is controlled by the Ministry of External Affairs.

About the International Conventions Related to Migrant Workers

Migration for Employment Convention (Revised), 1949

- The Convention was established in 1949 and entered into force on January 22, 1952.
- The Convention provides several measures that member States should take to **safeguard the rights of migrant workers and their families**.
 - It includes adequate provision of medical services.
 - Migrant workers should not be treated less favourably than nationals specifically in remuneration, collective bargaining, accommodation and access to social security.

Migrant Workers (Supplementary Provisions) Convention, 1975

- It is an international legal framework that addresses migrant workers in **irregular situations and their rights**.

- It deals with **migrations in abusive conditions** and the **promotion of equality of opportunity and treatment of migrant workers**.
- Both Conventions are administered by the International Labour Organization.
- India has not ratified both the Conventions. Israel had ratified the 1949 convention in 1953.

About ECR

- ECR is **Emigration Check Required**.
- ECR is required for Indian passport holders that have **not passed the 10th standard of education**.
- It means they **need special safe guards** like proper and valid work permit/work visa/job agreement, etc., between their employer in foreign country where they want to go and them, which is to be ensured by **Protectorate of Emigrants** of the Passport office/Visa Consulate.
- ECNR is **Emigration Check Not Required**.
- If an Indian passport holder possesses education higher than the 10th standard, (s)he is free to go to certain Gulf, African or other poorer countries elsewhere to work and earn livelihood there on their own risk, means they do not require emigration check.

5. India's Aid to Maldives

News: In the Interim Budget of 2024, Maldives received a significant portion of the annual allocation for the Ministry of External Affairs. The annual allocation is done under the foreign aid program.

About India's Foreign Aid Programme

- India's foreign aid program began in the 1950s through the **Colombo Plan**. Under this, aid is provided by the Indian Government to other Governments.
- India has established the '**Indian Agency for Partnership in Development**' under the Ministry of External Affairs to distribute aid to recipient nations.
- The Government has decreased its total allocation of foreign aid for the upcoming fiscal by 10%. India has earmarked INR 4883.56 crore for foreign assistance in 2024-25, down from INR 5426.78 crore allocated in 2023-24. (Refer October 2022 (click) for India's Overseas Development Cooperation).

Countries/Region	Revised 2023-24 (INR Crore)	2024-25 (INR Crore)	Remarks
Bhutan	2398.97	2068	
Nepal	650	700	
Maldives	770.9	600	The allocation for Maldives in 2023-24 was INR 400 crore. It increased to INR 770.9 crore in the revised estimate.
Afghanistan	200	200	
Chabahar (Iran)	100	100	

6. Kaladan Multi-modal Project

News: The Kaladan Multi-modal Project has been getting delayed due to ongoing political crisis in Myanmar.

About the Kaladan Multi-modal Project

- The Kaladan Multi-Modal Transit Transport Project was jointly identified by India and Myanmar to create a **multi-modal mode of transport** for the shipment of cargo from the eastern ports of India to Myanmar.
- It connects Kolkata with **Sittwe** seaport in Rakhine State, Myanmar by sea. In Myanmar, Sittwe is linked to Paletwa in Chin State via the Kaladan river boat route. It goes further to link Paletwa by road to Mizoram in Northeast India.
- The project involves sea, river, and road transportation:
 - **Sea Route:** From Kolkata to Sittwe (539 km).
 - **River Route:** Sittwe to Paletwa via the Kaladan River (158 km).
 - **Road Route:** Paletwa to Indo-Myanmar border (110 km), and further into Mizoram.



Significance of the Project

Economic Significance

- The project will reduce the distance from Kolkata to Mizoram by approximately 1,328 km. It will reduce the need to transport goods through the narrow **Siliguri corridor**.
- The project will connect Sittwe Port in Myanmar to the India-Myanmar border. It will contribute to the economic development of the North-Eastern States of India, by opening up the sea route for the products.

Strategic Significance

- It would enhance **India's strategic footprints** in East Asia and in the immediate neighbourhood.
- It will strengthen India's **Act East Policy**.
- It provides an alternative to the **Chicken's Neck**. This will lead to enhanced control over the North-eastern frontier and **reduced logistical vulnerabilities**.

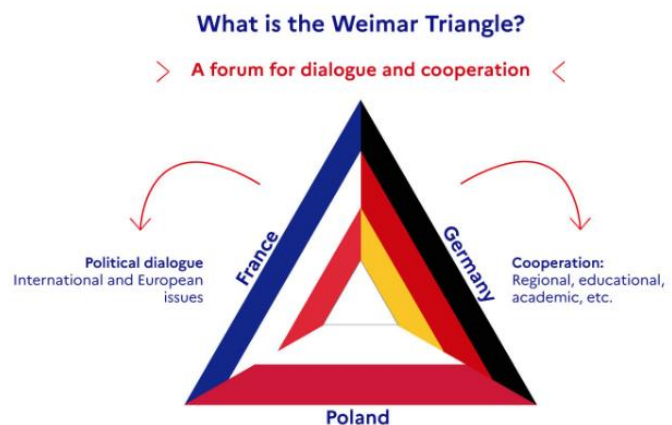
Stretch	Mode	Distance
Kolkata to Sittwe port in Myanmar	Shipping	539 km
Sittwe to Paletwa (River Kaladan)	Inland Water Transport (IWT)	158 km
Paletwa to Indo-Myanmar Border (in Myanmar)	Road	110 km
Border to NH.54 (Lawngtlai) (in India)	Road	100 km

7. Weimar Triangle

News: The Foreign Ministers of Poland, France, and Germany met to discuss reviving the Weimar Triangle.

About Weimar Triangle

- The Weimar Triangle was created in 1991 between **France, Germany and Poland**.
- Weimar city is located in Germany where the initial meeting took place.
- Its objective is to **strengthen bonds** and **encourage cooperation** among the three countries, especially in **politics, economy, and culture**. It also aims to tackle common challenges faced by them.
- The forum offers a platform to **discuss regional and global issues** and has had a big impact on European relations and policies.



Key Areas of Cooperation under Weimar Triangle

- **Political Dialogue:** It serves as a platform for regular discussions aimed at aligning positions on European and global issues.
- **Economic Collaboration:** This group works on initiatives to increase trade, investment, and economic growth among the involved nations.
- **Cultural Exchanges:** The group aims to enhance mutual understanding among nations through programs like town twinning agreements and youth exchanges.
- **Security and Defense Cooperation:** They conduct joint military exercises, share intelligence, etc., to tackle common challenges and enhance stability in Europe, under NATO's framework.
- **Contemporary Issues:** Issues like energy security, climate change, and technological innovation are also addressed by the Weimar Triangle.

8. Mission Aspides

News: The EU has launched Mission Aspides to protect shipping in the Red Sea region from Yemen's Houthi rebels.

Need for the Mission

- Iran-backed **Houthis** exert control over much of war-torn Yemen. They have been **disrupting the vital shipping lanes** in the Red Sea region since November 2023. They have attacked several cargo ships passing through the region.
- They claim their actions are in solidarity with Palestinians in Gaza during the Israel-Hamas conflict.
- The EU states that the mission is aimed at **safeguarding civilian shipping** in the Red Sea. It has assured that no attacks will be conducted on Yemeni soil.

About Red Sea

- The Red Sea is a seawater inlet of the Indian Ocean lying between **Africa** and **Asia**.
- It is connected to the Indian Ocean in the south through the **Bab-el-Mandeb strait** and the **Gulf of Aden**.
- To the north of the Red Sea lies **the Sinai Peninsula**, the **Gulf of Aqaba** and the **Gulf of Suez**.
- Countries touching the Red Sea include Egypt, Saudi Arabia, Yemen, Sudan, Eritrea and Djibouti.

About Houthis

- The Houthis are a **rebel group in Yemen**. They have been fighting a civil war with the Yemen government for almost a decade. They are named after the **Houthi tribe** who follow Zaydi Shia beliefs.
- They are in power in northern Yemen, including the official capital Sanaa. The official government now operates from Aden.
- They are **supported by Iran**. On the other hand, the Yemen government is backed by **Saudi Arabia** and the **Western countries**.



Science and Technology

1. NISAR Satellite

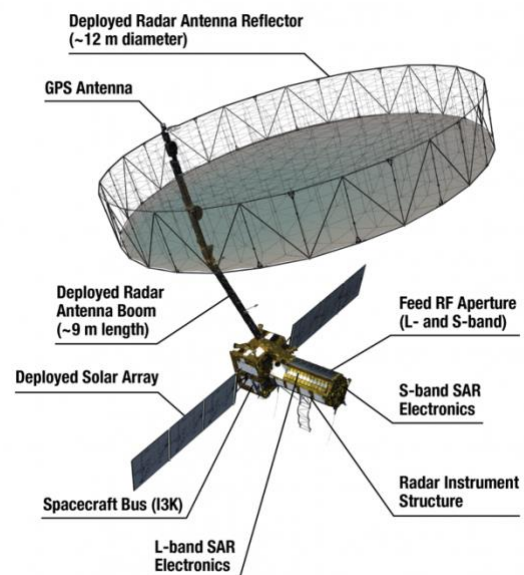
News: The NISAR satellite aims to monitor natural processes and changes in Earth's ecosystems. It is set to be launched in March 2024. It is a joint effort between ISRO and NASA.

About NISAR Satellite

Aspect	Details
About the Satellite	<ul style="list-style-type: none"> It stands for NASA-ISRO Synthetic Aperture Radar (NISAR). It is a Low Earth Orbit (LEO) observation satellite. It is an SUV-size satellite weighing around 2,800 kilograms. It will possibly be launched in 2024 from Satish Dhawan Space Centre in Andhra Pradesh.
Objective	<ul style="list-style-type: none"> Tracking subtle changes in the Earth's surface. Spotting warning signs of imminent volcanic eruptions. Helping to monitor groundwater supplies. Tracking the rate of melting of ice-sheets.
Mission Life	The life of the mission is expected to be 3 years.
Functions	<ul style="list-style-type: none"> It will capture images of Earth's land, ice sheets, and sea ice every 12 days. It will be able to detect the earth's surface movement as small as 0.4 inches over an area.
Features	<ul style="list-style-type: none"> It is a dual frequency satellite (L-band and S-band). NASA has contributed the L-band radar, GPS, solid-state recorder, and payload data subsystem, while ISRO has supplied the S-band radar, GSLV launch system and spacecraft. It has a large 39-foot fixed antenna reflector. It will be used to focus the signals sent out by the radar towards the earth and focusing back the signals received from the earth towards the radar.

Significance of the Mission

- Earth Observation:** It will offer detailed observations of Earth's surface, tracking changes in ice sheets, land deformation, and ecosystems. The data will improve understanding of Earth's processes and **aid in tackling environmental challenges**.
- Disaster Management:** The mission offers vital data for managing natural disasters like earthquakes, tsunamis, and volcanic eruptions. This will **enhance response time** and **risk assessments**.
- Agriculture:** NISAR data will enhance agriculture management and food security by offering insights into crop growth, soil moisture, and land-use changes.
- Climate Change:** It will aid in monitoring and understanding climate change's impacts on Earth's land surface, including glacier melting, sea-level rise, and carbon storage changes.



2. HAPS Vehicle

News: The National Aerospace Laboratories (NAL) Bengaluru has successfully completed the first test of a solar-powered High-Altitude Pseudo Satellite vehicle (HAPS).

About the High-Altitude Pseudo Satellite (HAPS) Vehicle

- It is an **unmanned aerial vehicle (UAV)**. It is designed for extended periods of operation at high altitudes, typically in or near the stratosphere.
- HAPS can **reach altitudes of 18-20 km**, nearly double that of commercial airplanes. At this height, wind speed is very low and is **ideal for light-weight aircraft to remain stable**.
- It is **solar-powered** and **can remain in the air for months**, even years, offering advantages similar to those of a satellite.
- Operating cost of HAPS is significantly lower than that of a satellite.



Significance

- It is still an **evolving technology**; India's recent successful test flight places it among a select group of countries like China, South Korea, and the UK which are developing this technology.
- It can significantly increase **India's surveillance and monitoring capabilities** in the border areas.
- HAPS can also be used in **disaster management**. If calamities damage normal networks, it can **deploy mobile communication networks in remote areas**.

Comparison of HAPS and Other Technologies

- **Drones:** Normal UAVs (drones) are mostly battery-powered and cannot remain in the air beyond a few hours. They fly at relatively low levels, because of which their **vision is restricted** to small areas.
- **Satellites:** Satellites in low-earth orbits are continuously moving with respect to Earth. They **cannot keep an eye on the target area constantly**. Geostationary satellites (36,000 km above earth) can keep a constant gaze over one area but are expensive, and once deployed, **cannot be repurposed or reoriented**. However, **HAPS can be easily redeployed** over another location, or can be re-equipped with a different payload.

Engineering Challenges in HAPS

- **Solar Power:** It is necessary to generate enough solar power to keep the aircraft flying, the payloads operating, and the batteries charging.
- **High Battery Density:** Due to limitations of space and weight, solar cells and batteries need to have very **high efficiency** (in terms of **energy density**: the amount of energy stored in a battery in proportion to its weight).
- **Design-related Challenges:** The aircraft needs to be **extremely lightweight** to **minimize the power requirement**, but it also **has to be stable** at the same time.
- **Low Temperatures:** Temperatures in the stratosphere can drop to -50° Celsius or lower. Electronics need to be kept warmer, and this forms an **additional burden on power resources**.
- **Low Air Density:** Air density in the stratosphere is just about 7% of what it is at sea level. That creates complications in **producing lift and thrust**.

About the National Aerospace Laboratories (NAL)

- It is a premier aerospace research and development organization located in Bengaluru, India.

- It operates under the **Council of Scientific and Industrial Research (CSIR)**.
- It is involved in the design, development, and testing of various aerospace technologies, including aircraft, unmanned aerial vehicles (UAVs), and related systems.

3. Nuclear Battery

News: A Chinese start-up, Betavolt, has developed a ‘Nuclear battery’ that can generate power for 50 years without the need for charging or maintenance.

About the Nuclear Battery

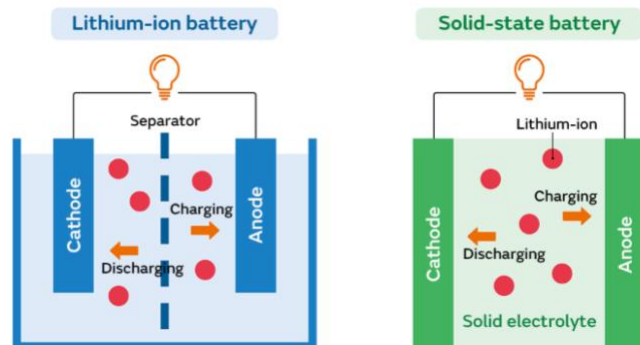
- It is smaller than a coin and contains 63 **nuclear isotopes**.
- The battery converts **radio-isotope energy** into **electrical energy**. These batteries harness energy from the **decay of a radioactive isotope** (Like nickel-63) to **produce electricity**.
- It can provide 100 microwatts of power at 3V.
- The battery is **fire-resistant, jerk-proof**, and operational in temperatures from **-60°C to 120°C**.
- Betavolt asserts that its battery is the world’s first to **miniaturize atomic energy production**, which challenges the conventional notions about the non-miniaturization of nuclear technology.
- The battery has a competitive edge compared to other batteries because of its **elevated energy density**.
- The battery can have potential applications in **aerospace, AI equipment, medical devices, microprocessors, sensors, drones, and micro-robots**.
- The company aims to manufacture batteries generating 1 watt of power by 2025.

4. Solid-State Batteries

News: Japan’s Toyota Motor Corp aims to roll out next-generation solid-state batteries over the next 3 years.

About Solid-state Batteries

- Solid-state batteries have a similar **mechanism** as the lithium-ion batteries for generating electricity.
- However, these batteries use **solid electrodes** and a **solid electrolyte**, instead of the liquid or polymer gel electrolytes used in lithium-ion batteries. Thus, in these batteries there is **no need of separator** unlike lithium-ion batteries.
- **Metal** is used as the **material for the electrodes**, and electrical flow is generated by ions moving through the electrolyte between the cathode and anode.
- Solid-state batteries are potentially useful in **pacemakers, RFIDs, wearable devices, and electric vehicles**.



Advantages of Solid-state Batteries over Lithium-ion Batteries

- A solid-state battery has **higher energy density** than a Lithium-ion.
- It **doesn't have a risk of explosion** or fire. There is no need for safety components, and thus it saves space.
- Solid-state batteries can **last longer** than traditional lithium-ion batteries due to their improved stability.

Limitations of Solid-state Batteries

- Manufacturing solid-state batteries is currently **more expensive** than traditional lithium-ion batteries. This has made them **less accessible** to everyday consumers.

- Solid-state batteries currently have some performance challenges such as **limited cycle life**, **poor cold weather performance**, and a **high internal resistance** that **reduces their power output**.
- Solid-state batteries are still under development, and more research is required to address their shortcomings and make them a commercially viable option for electric cars.

5. MXene

News: Researchers have reported on the potential of using MXene coatings that can lighten satellite payload.

About MXene

- MXenes are an emerging class of 2-dimensional **ceramic nanomaterials** that were first discovered in 2011.
- MXenes possess **metallic conductivity**, **hydrophilic surfaces**, and excellent mechanical properties.
- They are made from a bulk crystal called MAX.
- Among its various types, **titanium carbide** ($\text{Ti}_3\text{C}_2\text{Tx}$) is the most widely used.

Salient Properties of MXene

- High electrical conductivity (6,000 – 8,000 S/cm).
- **Hydrophilic** (showing affinity/interaction with water) to form and clay-like surface terminating layers.
- Very high volumetric capacitance ($> 900 \text{ F cm}^{-3}$).
- Broad optical absorption from UV (Ultra-violet) to NIR (Near-Infra Red).
- Excellent mechanical properties.
- This unique combination is not found in other 2D materials e.g., Graphene lacks surface functionalization, while other ceramic 2D materials have poor electrical conductivity.

Application of MXene

- **Energy Storage:** They are used in storing energy like batteries (Li-ion, Li-S, Al-ion), supercapacitors and Hydrogen storage.
- **Electromagnetic Shielding:** Radar absorption and 5G communication.
- **Water Purification:** Desalination membranes and selective separation.
- **Composites:** Polymer reinforcement and Ceramic matrix composites.

6. Mpemba Effect

News: Scientists have been unable to explain the Mpemba Effect.

About Mpemba Effect

- It is a phenomenon in which **hot water freezes faster than cold water under certain conditions**.
- It is named after Tanzanian student Erasto Mpemba, who observed it in the 1960s.

Proposed Explanations

- **Presence of Microbubbles:** Some microbubbles remain suspended in water after boiling. These microbubbles **promote convection** and **facilitate faster heat transfer**. So, the warm water cools down quickly.
- **Evaporation:** Another cause is attributed to evaporation. As warmer water evaporates more, it takes away the heat more quickly. Thus, warm water cools down more quickly as compared to cold water.
- **Presence of Frost in Cold Water:** The presence of frost in cold water acts as an insulator which impedes or slows down the process of heat loss. This raises the freezing point of cold water.
- **Presence of Calcium Carbonate and Other Impurities:** Compounds like calcium carbonate precipitate in warm/hot water, and it lowers down the freezing point of warm water. On the other hand, in cold water,

calcium carbonate and other impurities remain dissolved in the cold water, which increases the freezing point of cold water.

7. Dynamic Wireless Charging Technology

News: The Government is considering the electrification of the Golden Quadrilateral to enable dynamic charging the Electric Vehicles.

About the Dynamic Wireless Charging Technology

- It is a system that **enables electric vehicles (EVs) to charge while moving** by using base pads embedded under the surface of the road.
- Dynamic wireless charging allows EVs to receive power continuously and they **need not stop to recharge**.
- This technology relies on **inductive transfer of energy**. The base pads installed under the road's surface generate a magnetic field, and a corresponding pad on the vehicle receives this energy, ensuring **charging without physical connections**.

Advantages	Challenges
Continuous EV battery charging can minimize range anxiety because vehicles can charge as they move. It can enhance market share of EVs.	More research is needed to boost the power levels and efficiency of the existing technology.
It can reduce the need for plug-in charging stations, saving space .	Finding the space for the charging pad and equipment on the underside of an existing vehicle can be challenging.
Ongoing charging allows for a smaller EV battery size with reduced weight , helping to decrease the cost of EVs and conserving materials.	Overcoming technological challenges related to vehicle body interference with power transfer efficiency .
It would help in decarbonising the transportation sector .	Retrofitting infrastructure with this charging technology for widespread implementation would be costly.

Initiatives to Promote e-Mobility

- Faster Adoption and Manufacturing of Electric Vehicles (FAME) Scheme II.
- National Electric Mobility Mission Plan (NEMMP).
- National Mission on Transformative Mobility and Battery Storage.
- Production Linked Incentive (PLI) scheme.
- Vehicle Scrappage Policy.
- Go Electric campaign.

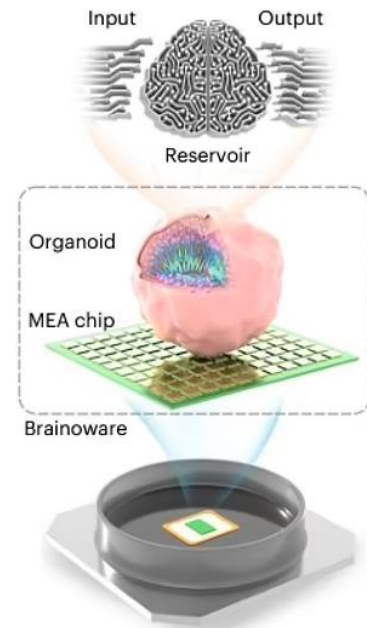
8. Brainware

News: Researchers have combined brain-like tissue with electronics to create an 'organoid neural network' known as Brainware. It is capable of recognizing voices and solving complex maths problems.

Working of Brainware

- Researchers utilized **lab-grown real human brain tissue** to create mini-brains known as organoids.
- Brain organoids are 3D clusters of brain cells. These organoids are not actual brains, they are tissue structures without thoughts or feelings.

- They help in studying how the brain works without using a real human brain.
- Brainware connects these organoids to **microelectrodes** through a method of **artificial neural network** known as **reservoir computing**. This is called an **Organoid Neural Network (ONN)**.
- It comprises **3 layers**: input, reservoir, and output.
 - The brain organoid connected to microelectrodes acts as the reservoir. It receives inputs via electrical stimulation from the input layer (live brain cells).
 - The reservoir converts signals into mathematical entities that the computer can efficiently process.
 - The output layer comprises of modified conventional computer hardware that can **interpret neural activity** to provide a result that can be easily understood.
- Brainware is still in its early stages. Continued study of the 'organoid neural network' can provide foundational insights into learning mechanisms, neural development, and the cognitive implications of **neurodegenerative diseases**.
- Brainware has potential for significant advancement in multiple areas of science and engineering, such as **tissue engineering**, **electrophysiology**, and **neural computation**.



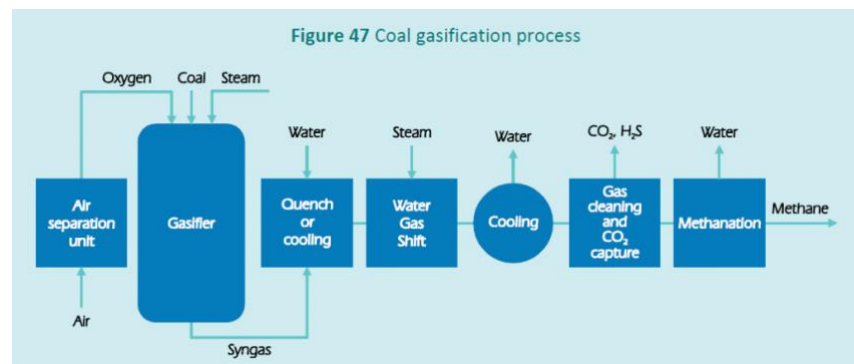
Source: Popular Science. 3-Layered Brainware.

9. Coal Gasification

News: The Ministry of Coal has been promoting coal gasification projects across India.

About Coal Gasification

- Coal gasification is a process in which **coal is partially oxidised with air, oxygen, steam or carbon dioxide** to form **fuel gas**. This gas is used for **deriving energy**.
- **In-situ Gasification of Coal or Underground Coal Gasification (UCG):** It is the technique of converting coal into gas **while it is still in the seam** and then **extracting it through wells**.
- Gasification avoids direct burning of coal.



Advantages of Coal Gasification

- **Chemical Energy Production:** Coal gas may be transformed into chemical energy, which is then utilised to produce iron from iron ore, as well as methanol and urea.
- **Green Energy Production:** The hydrogen produced by coal gasification may be utilised for a variety of applications, including the production of ammonia and the powering of a **Hydrogen Economy**.
- **Cost Effectiveness:** The industries can utilise syngas from coal gasification facilities instead of imported coking coal. This will enhance the cost and export effectiveness of Indian Industries.

Disadvantages of Coal Gasification

- **Environmental Issues:** The process can produce a number of harmful emissions, including carbon dioxide, sulfur dioxide, nitrogen oxides etc.
- **Overuse of Water:** It is one of the more water-intensive modes of energy generation.

10. International Pandemic Treaty

News: The World Health Organization (WHO) is urging its member nations to sign a pandemic treaty to strengthen global preparedness for future health crises.

About the Pandemic Treaty

- The initiative for a new treaty on **pandemic preparedness and response** was first announced in March 2021. The WHO is leading the effort to negotiate and draft the treaty through the Intergovernmental Negotiation Body.
- Its objective is to foster an **All Government and All Society approach**, strengthening **national, regional and global capacities** and **resilience to future pandemics**.
- It also intends to enhance **international co-operation** in data-sharing, research and local, regional and global production and distribution of medical and public health counter-measures such as **vaccines, medicines, diagnostics** and **personal protective equipment**.
- The deadline for this agreement is set for the **77th World Health Assembly** in May 2024.

Principal Components

- Increased global cooperation.
- Strengthening of health systems.
- Investment in research and development.
- Transparency in information sharing.
- Establishment of a **Pathogen Access and Benefit-Sharing System (PABS)** under the WHO.
- Address gender disparities in the healthcare workforce.

About disease X

- It is a **hypothetical pathogen** or threat that may cause a major pandemic in future. It is an illness which is **currently unknown** but could pose a serious microbial threat to humans in the future.
- It could be a new agent, a **virus**, a **bacterium**, or a **fungus without any known treatment**.
- The disease could be any of the 25 families of viruses that have the capability to cause illness in people.
- Disease X was included in the **WHO's updated Blueprint list of diseases back in 2018**.
- Disease X could be **20 times more deadly than SARS-Covid virus** that caused the COVID-19 pandemic.

WHO's Initiatives to Prepare for Future Pandemic

- **World Bank's Pandemic Fund:** This get funds from multinational development banks, G20 countries, WHO, and civil society to strengthen health systems in low- and middle-income countries.
- **Financial Intermediary Fund for Pandemic Preparedness and Response:** It was established in 2022 to cover **early warning surveillance systems** for zoonotic diseases, laboratories, and emergency communication.
- **mRNA Technology Transfer Hub:** It was created in June 2021 to increase mRNA vaccine production locally in developing countries.
- **WHO Hub for Pandemic and Epidemic Intelligence:** The hub is developing a research and development agenda that bridges the gap between universities and public health institutions.
- **WHO BioHub System:** This enables the sharing of viruses and pathogens globally.

Zoonotic Disease: These are infections that spread between **people and animals**. These infections are caused by germs, such as **viruses, bacteria, parasites, and fungi**.

11. Contributions of Satyendra Nath Bose

News: Distinguished scientists came together to celebrate 100 years of Satyendra Nath Bose's publications contributing to quantum mechanics.

About Satyendra Nath Bose

- He was an Indian physicist who established modern theoretical physics in India.
- He is best known for providing the foundation of **Bose-Einstein Statistics** and developing the theory of **Bose-Einstein Condensates (BEC)**.
- He was born in Calcutta on January 1, 1894. He was an outstanding student who got inspired from brilliant teachers like **Jagadish Chandra Bose** and **Prafulla Chandra Roy**.
- He started his career in 1916 as a lecturer in physics at Calcutta University and then joined Dhaka University.
- At Dhaka University, Bose carried out research and studied the **theory of relativity**.



Contributions of Satyendra Nath Bose

- By treating radiation as a gas of photons (Photon gas) and using new statistical techniques for counting photon states, Bose provided a **new derivation of Planck's law**.
- The pioneering ideas of Bose, developed further by Einstein, were confirmed by the observation of a **new state of matter** in a diluted gas of ultra-cold alkali atoms, the **Bose-Einstein condensate**. This exotic material exists only when atoms of **certain elements are cooled to temperatures near absolute zero**.
- At that point, clusters of atoms begin functioning as a **single quantum object** with **both wave and particle properties**.
- According to scientists, BECs hold crucial information about curious phenomena like **dark energy**, the unidentified energy thought to be responsible for the **universe's accelerating expansion**.

12. Brumation

News: Brumation in reptiles aids in their survival during harsh winter conditions.

About Brumation

- It is a **state of dormancy** observed in reptiles, similar to **hibernation in mammals**. It typically occurs during colder months when temperatures drop and food becomes scarce.
- This condition enables reptiles to **conserve energy** by substantially **reducing their metabolism**, thus allowing them to **endure extended periods without food**.
- In the brumation phase, **reptiles seek refuge in locations such as underground burrows or rock crevices**, where temperatures remain relatively stable.
- Researchers have observed this behaviour across various reptilian species, including box and painted turtles, snakes, and lizards.
- Duration of Brumation varies among reptile species and can last for weeks or months, depending on factors like temperature and location.

Differences between Hibernation, Estivation, and Brumation

Aspect	Hibernation	Estivation	Brumation
Definition	It is a winter dormancy state in warm-blooded mammals characterized by reduced metabolism and lowered body temperature in response to cold and scarce food .	It is summer dormancy prompted by high temperatures and dry conditions .	It is winter dormancy state observed in cold-blooded reptiles and amphibians , particularly in temperate regions, in response to cold temperatures .
Examples	Bears, bats, and certain rodents.	Animals like amphibians, reptiles, and invertebrates, including snails and earthworms.	Snakes, turtles, and lizards.

Environment

1. Convention on the Conservation of Migratory Species of Wild Animals

News: The 14th Conference of the Parties (COP) to the Convention on the Conservation of Migratory Species of Wild Animals was held in Uzbekistan.

About the Convention

Aspect	Details
About the Convention	<ul style="list-style-type: none"> It was signed in Bonn, Germany in June 1979. It is also known as the Bonn Convention. It is an environmental treaty under the aegis of the UNEP.
Objective	To provide a global platform for the conservation and sustainable use of migratory animals and their habitats.
Legal Type	Activities of CMS Parties range from Legally-binding Treaties (Agreements) to less formal instruments, like Memoranda of Understanding .
Appendices	<ul style="list-style-type: none"> Appendix I lists endangered migratory species and includes prohibitions regarding the take (hunting or harm) of these species. Appendix II lists species that have an 'unfavourable conservation status' and encourages range States to draft range-wide agreements for conservation and management of these species.
Significance	<ul style="list-style-type: none"> It is the only global and UN-based intergovernmental organisation established exclusively for the conservation and management of terrestrial, aquatic and avian migratory species throughout their range. It acknowledges the importance of conserving migratory species.

About the International Single Species Action Plan

- The COP14 adopted the **Single Species Action Plan** for conservation of the **Hawksbill Turtle**.
- It is the key instrument developed under the Agreement on the **Conservation of African-Eurasian Migratory Waterbirds** (AEWA).
- Its objective is to **implement coordinated measures** to restore migratory waterbird species to a **favourable conservation status**.

2. State of the World's Migratory Species Report

News: The first-ever State of the World's Migratory Species Report was released at COP14 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

Key Findings of the Report

- ~44 % of the migratory species listed under CMS are experiencing a decline in population.
- Over one-fifth (~20%) of CMS-listed species are at risk of extinction, and 97% of listed fish are facing this risk.
- 51% of Key Biodiversity Areas important for migratory animals listed under CMS **lack protection**. Also, 58% of monitored sites for these species experience **unsustainable human pressure**.
- The most significant threats to migratory species are **overexploitation** and **habitat loss** caused by **human activity**.
 - **Climate change, pollution, and invasive species** also greatly affect migratory species.
- Despite being listed by CMS, many migratory species remain at risk, with **399 threatened species not yet included under CMS**.

Key Recommendations of the Report

- Addressing illegal and unsustainable practices.
- Safeguarding critical sites for migratory species.
- Focusing on species most threatened with extinction.
- Intensifying actions against climate change and pollution.
- Broadening CMS listings to encompass more endangered species.

3. States/UTs must adhere to definition of Forests from Godavarman Case: Supreme Court

News: The Supreme Court has issued an interim order directing States/UTs to adhere to the definition of 'forest' from the T.N. Godavarman Thirumalpad vs. Union of India case (1996).

About the Background to the SC Order

- A bench led by Chief Justice of India issued the interim order during the hearing of several **writ petitions** that **contested the 2023 amendments to the Forest Conservation Act (1980)**.
- The petitioners argued that the **broad definition of 'forest'** established in the Godavarman judgment has been **restricted by Section 1A introduced by the 2023 Amendment**.
- The petitioners argued that the narrowed definition would **exclude ~1.99 lakh square kms. of forest land from being considered as 'forest'**.

About the SC Order

- The SC instructed States/UTs to temporarily apply the dictionary definition of 'forest' when evaluating land activities. Under Rule 16, the principles outlined in the TN Godavarman judgment must continue to be followed.
- The Order applies to identification of land recorded as forests in Government records under the 2023 amendments to the Forest Conservation Act (1980).
- The SC also **prohibited the establishment of zoos or safaris** in these areas without prior approval of the Court.

About T N Godavarman Thirumalpad v Union of India (1996)

- The Forest Conservation Act 1980 aims to safeguard forests from exploitation and promote conservation.

- It grants the Union Government authority to **regulate the extraction of forest resources**, including timber, bamboo, coal, and minerals, by industries and forest-dwelling communities.
- However, this protection applies only to areas officially designated as ‘forest’ in Union or State Government records.
- The Supreme Court’s ruling in the *T N Godavarman Thirumulpad v Union of India* (1996) case broadened the protection of forests.
- According to the ruling, areas that meet the ‘**dictionary**’ **definition of forests are protected, even if they have not been officially notified by the Government or recorded in historical documents.**
- At present, there is no universally accepted definition of ‘forest’ in India. Each State decides its own definition.

4. New Ramsar Sites

News: Declaration of 5 new Ramsar sites has taken the total tally of Ramsar sites in India to 80.

About the New Ramsar Sites

- **Karaivetti Bird Sanctuary:** It is situated in **Tamil Nadu**. It is centred around a large **freshwater lake**.
 - This lake is the focal point of the sanctuary and serves as a crucial habitat for a variety of bird species, both resident and migratory.
 - It supports 1% population of Black-headed ibis and oriental Darter.
- **Magadi Kere Conservation Reserve:** It is located in **Karnataka**. The bar-headed goose is one of the birds which migrate to Magadi wetlands.
- **Longwood Shola Reserve Forest:** It is located in **Tamil Nadu**.
 - It derives its name from the Tamil word, ‘**Solai**’, which means a ‘tropical rain forest’.
 - It maintains the hydrological regime of the region, by capturing rainwater through marshes and then releasing it via streams. It is home to the threatened **Nilgiri marten** and other rare fauna and flora.
- **Ankasamudra Bird Conservation Reserve:** It is the only place in Karnataka where Great Indian Bustard can be seen.
- **Aghanashini Estuary:** It is located in Karnataka. It is formed at the confluence of Aghanashini River with the Arabian sea.
 - The brackish water of the estuary provides diverse ecosystem services including flood and erosion risk mitigation, biodiversity conservation and livelihood support. (Refer August 2022 (click) for New Ramsar Sites in India).

5. Dalma Wildlife Sanctuary

News: Dalma wildlife sanctuary is setting up canopy walk facility to encourage eco-tourism.

About Dalma Wildlife Sanctuary

- The sanctuary lies in the **Chota Nagpur Plateau of Jharkhand**, contiguous with the steel city **Jamshedpur**. It is situated around the **Dalma hills**.
- The sanctuary gets its name from the “*Dalma mai*”, a **local goddess** who is revered and worshiped by the local people.
- Its vegetation is classified as dry peninsular and dry mixed deciduous forest.
- It has **very rich floral diversity**. Medicinal plants like *Ananatmula*, *Satawari*, *Sarpgandha* etc. are abundant in the sanctuary.
- The sanctuary is known for its **elephants**. Beside elephants the sanctuary has considerable population of other wildlife like **barking deer**, **wild boar**, **giant squirrel sloth bear** etc.
- **Canopy-walk facility** will aid nature lovers, particularly, the bird watchers who can spend long hours and can record behavioural pattern of birds. It will also provide employment to the local population.

- **Conflict between the humans and elephants** happens often. The sanctuary is famous for holding many elephants and other animals, which come downhill during the monsoons and winter and enter nearby villages and towns of Jharkhand and West Bengal.

About Wildlife Sanctuaries

- **State Government** may designate some areas as **wildlife sanctuaries** under the **Wild Life (Protection) Act, 1972** if they possess **significant ecological, natural and geomorphological** value.
- There are **567 wildlife sanctuaries** in India. They cover **122,564.86 km²** or **3.73% of India's total land area**.
- They are **IUCN Category IV protected areas**.

Category	Description
Ia Strict nature reserve	Managed strictly for biodiversity conservation. Serves as reference sites for research and monitoring. Human visitations and impacts highly regulated.
Ib Wilderness area	Generally large and relatively unmodified natural areas without significant human habitations. Managed to preserve the area's natural character and ecological integrity.
II National Park	Large natural areas set aside for protection of biodiversity and ecosystem processes. Also managed to support human activities (spiritual, education, scientific, recreation) compatible with biodiversity protection.
III National monument of feature	Managed to protect a natural feature (e.g. seamount, geological feature, ancient grove) with outstanding cultural and/or natural significance. Can cover a small area, and often have high visitor value.
IV Habitat/species management area	Protected area dedicated to the protection of a specific species of habitat. May at times required regular and active intervention to ensure primary management goals are met
V Protected landscape/seascape	An area with a significant natural or cultural value, created by the interaction between people and nature. Managed to safeguard the interactions that sustains the area's value. Often act as model for sustainability
VI Managed-resource protected area	Managed primarily for the low-level, non-industrial, sustainable use of natural resources. Generally large, with most of its ecosystems intact.

Source: Openedition.org. Categories of IUCN's Protected Areas.

6. Common Turtles Found in India

News: The Government of Andhra Pradesh has imposed a month-long ban on fishing to prevent death of Olive Ridley turtles off the Kakinada coast.

About Olive Ridley Turtles

- The Olive ridley turtles are the **smallest** and **most abundant** of all sea turtles found in the world.
- They are best known for their unique mass nesting called **Arribada**, where thousands of females come together on the same beach to lay eggs.
- They are found in warm waters of Pacific, Atlantic and Indian oceans.
- Their **IUCN status** is **vulnerable** and are classified under **Schedule I** of the **Wildlife (Protection) Act, 1972**.



Other Sea Turtles in India

Leatherback Turtle

- They are the largest of the seven sea turtle species.
- They are found in all oceans except the Arctic and the Antarctic.
- Their **IUCN status** is **vulnerable** and are classified under **Schedule I** of the **Wildlife (Protection) Act, 1972**.



Loggerhead Turtle

- They are found in the Atlantic, Pacific, and Indian Oceans, as well as the Mediterranean Sea.
- Their **IUCN status** is **vulnerable** and classified under **Schedule I** of the **Wildlife (Protection) Act, 1972**.



Hawksbill Turtle

- They have a wide range, found predominantly in tropical reefs of the Indian, Pacific, and Atlantic Oceans.
- They are primarily found in tropical coral reefs.
- Their **IUCN status** is **Critically Endangered** and classified under **Schedule I** of the **Wildlife (Protection) Act, 1972**.



Green Turtle

- They are the only herbivore among the different species of sea turtles.
- They are found mainly in tropical and subtropical waters.
- Their **IUCN status** is **Endangered** and classified under **Schedule I** of the **Wildlife (Protection) Act, 1972**.



7. UN World Restoration Flagships

News: The United Nations recently designated 7 initiatives in Africa, Mediterranean, Latin America and Southeast Asia as the UN World Restoration Flagships.

About the UN World Restoration Flagships

- The Flagship awards are a component of the UN Decade on Ecosystem Restoration, led by the **UN Environment Program (UNEP)** and the **Food and Agriculture Organization (FAO)**.
- The UN General Assembly declared the **UN Decade on Ecosystem Restoration (2021-2030)** to **scale up restoration efforts** of **degraded ecosystems** in order to **combat climate change**, improving **food security**, **water supply**, and **biodiversity**.
- The goal is to **stop, prevent, and reverse the decline of ecosystems** across all continents and oceans.
- The awards recognize **noteworthy initiatives** that contribute to global commitments aimed at restoring one billion hectares of land.
- The recognition makes the initiatives **qualified for technical and financial assistance** from the organization.
- The initiatives are included in the UN Secretary-General's Report to the General Assembly.

Seven Initiatives Designated under the UN World Restoration Flagships

- The Restoring Mediterranean Forests Initiative: Lebanon, Morocco, Tunisia, and Turkey.
- The Living Indus Initiative: Pakistan.
- The Acción Andina Social Movement: Peru.
- The Mangrove Regeneration Initiative: Sri Lanka.
- The Terai Arc Landscape Initiative: Nepal.
- Regreening Agriculture in Africa: Mali, Senegal, Tanzania, Uganda, Kenya.
- The Growing Forests in Africa's Drylands Initiative: Ethiopia, Ghana, Kenya, Mali, Niger, Rwanda, Senegal.

8. Pradhan Mantri Suryodaya Yojana

News: In the Interim Budget 2024, the Finance Minister announced that one crore households will receive rooftop solarization through Pradhan Mantri Suryodaya Yojana.

About the Pradhan Mantri Suryodaya Yojana

- The scheme aims to **install rooftop solar panels** on one crore households.

- **Rural Electrification Corporation (REC)** is the nodal agency for the scheme.
- The scheme is an attempt to achieve the goal of **40 GW rooftop solar capacity by March 2026**.
- The scheme will help households to save between INR 15,000-18,000 annually. It will also enable them to **sell any surplus electricity to distribution companies (DISCOMs)** as part of the **Net Metering Policy**.
- The Net Metering Policy permits rooftop solar power users to **feed their excess power back into the grid**, thereby reducing their electricity expenses.
- The mechanism of Net Metering was started in India in 2009. The **Ministry of New and Renewable Energy (MNRE)** oversees its implementation.

Other Initiatives in the Interim Budget for Green Energy

- A '**viability gap funding**' (VGF) will be provided for harnessing offshore wind energy potential for an initial capacity of 1 GW. These are wind farms located in the sea.
- The Government aims to install 500 GW of renewable energy by 2030. As part of this initiative, the Government aims to achieve a 10 GW offshore wind capacity by 2030. Presently, India's onshore wind energy capacity amounts to 44 GW.

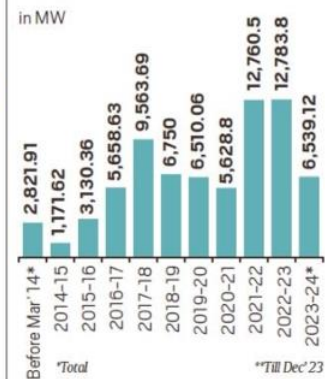
About India's Current Solar Capacity

- According to the **Ministry of New and Renewable Energy**, solar power installed capacity in India has reached around 73.31 GW as of December 2023.
- A recent report from the think tank **Council on Energy, Environment and Water (CEEW)** reveals that **rooftop solar installations** make up **only 20% of the total**, with the majority occurring in the commercial and industrial sectors.
- India aims to achieve **50% of its electric power capacity from non-fossil fuel sources by 2030**, as outlined in its updated **Nationally Determined Contribution (NDC)** to the UNFCCC.

TOP 10 STATES WITH HIGHEST ROOFTOP SOLAR CAPACITY

States	Rooftop solar
Gujarat	2,898.16
Maharashtra	1,716.3
Karnataka	1,562.11
Rajasthan	1,002.44
Kerala	512.67
Haryana	486.23
Tamil Nadu	449.22
Telangana	343.78
Punjab	298.92
MP	296.02

YEAR WISE INSTALLED SOLAR POWER CAPACITY



Source: Ministry of New and Renewable Energy

9. Human-Wildlife Conflict in Kerala

News: The incidents of Human-Wildlife conflict have shown a rising trend in Kerala.

About Current Status of Human-Animal Conflict in Kerala

- **Over 48,000 incidents of human-animal conflict** were reported between 2013-14 and 2018-19.
- **Over 600 people have lost their lives** in Kerala since 2015 in conflict with animals.
- **Human-elephants events** are most common, with over 14,611 incidents.
- Wild boars, bonnet macaques, and snakes are also notable for causing conflicts.
- Key areas of conflict include Nilambur north, Wayanad south, and Wayanad north forest ranges.
- Crop damage and attacks have led to the death or injury of 814 livestock.

Reasons for Human-animal Conflict

- **Settlements near Protected Forest:** The densely populated human settlements near protected forest regions in Kerala, where forests cover nearly 30% of the geographical area, pose a significant challenge.
- **Increased Cultivation Near Wildlife Habitats:** Expansion of agricultural areas close to wildlife habitats leads to more encounters between humans and animals.

- **Changing Cropping Patterns:** New crop types attract certain wildlife species, increasing conflict incidents.
- **Population Growth of Protected Animals:** Conservation efforts have boosted populations of elephants and tigers, leading to more human-wildlife interactions.
- **Human and Livestock Movement in Wildlife Areas:** Humans and livestock venturing into wildlife habitats, especially at odd hours, increase the chances of encounters.
- **Habitat Depletion and Fragmentation:** Human activities have reduced and fragmented natural habitats, forcing animals like elephants to venture into human settlements.
- **Invasive Species and Monoculture:** The spread of non-native plants and monoculture farming reduces food and water availability for wildlife, pushing them towards inhabited areas.
- **Prolific Breeders:** The rise in numbers of species like wild boars and peacocks contributes to more frequent conflicts.

Way Forward

- **Implement Effective Fencing:** Use of elephant-proof trenches and solar-powered fences, ensuring they are well-maintained and cover more regions. The State Forest Department has proposed INR 620-crore plan including hanging power fences unreachable by elephants, which should be implemented.
- **Eco-restoration Policy:** Indigenous food plants like wild mango, gooseberry, and jackfruit can be planted in forests to reduce animal intrusion into agricultural lands.
- **Early Warning Systems:** Install systems using drones and watchers to track and alert about the movement of dangerous wildlife.
- **Address Wild Boar Issue:** The Government of Kerala has requested to declare wild boars as vermin and allow for their culling, neutering, or relocation. This option should be deliberated.

History, Art and Culture

1. BAPS Temple in Abu Dhabi, UAE

News: The BAPS Temple was inaugurated in Abu Dhabi, UAE.

About the BAPS Temple

- The temple is located in Abu Mureikhah, which is near Al Rahba.
- The temple has been built in the traditional **Nagar style of Architecture**.
- The temple is 108 feet tall. It is crowned with 7 **Shikhars** (spires) each representing one of the 7 emirates of the UAE.
- The temple has **402 pillars** carved from 25,000 stone pieces.
- Pink Rajasthan sandstone, white Italian marble and 18 lakh bricks have been used to construct the temple.
- The entrance of the temple is marked by **8 murtis** (idols). These idols symbolise the **8 values** foundational to the Sanatana Dharma.
- The temple is surrounded by 'Dome of Harmony' and 'Dome of Peace'.
- The temple houses **7 shrines**, each dedicated to different deities hailing from the North, East, West and South parts of India.
 - These deities include Lord Ram and his wife Sita; Lord Hanuman; Lord Shiva and his wife Parvati and children Ganesh and Karthik etc.



- Each shrine is adorned with exquisite carvings. It reflects the life and teachings of their respective deities.
- Stories from ancient civilisations such as **Maya, Aztec, Egyptian, Arabic, European, Chinese and African** are all captured in stone. This is a testament to the interconnected essence of **global spirituality**.
- The temple has been built by using **fly ash instead of cement** to reduce its carbon footprint.
- **Nano tiles** have been installed with designs to keep visitors comfortable even in extreme heat.
- It has **not used any ferrous material**.

About Bochasanwasi Akshar Purushottam Swaminarayan Sanstha (BAPS)

- BAPS is a **socio-spiritual** Hindu faith with its roots in the **Vedas**. Its global network of mandirs and centres hosts many moral, social, cultural, and spiritual activities.
- It is based on the **Vedic teachings** propagated by Bhagwan Swaminarayan (1781-1830 CE).
- It was established in 1907 CE by Brahmaswarup Shastriji Maharaj.
- It follows No Alcohol, No Addictions, No Adultery, No Meat, No Impurity of body and mind way of life.
- It is also engaged in a variety of **humanitarian activities** that include **services in times of natural calamities, primary schools, students' hostels, hospitals, diagnostic camps, anti-addiction drives** etc.

2. Maa Kamakhya Temple

News: The PM has laid the foundation stone for Maa Kamakhya Divya Lok Pariyojana to enhance access and amenities for pilgrims visiting the Kamakhya temple.

About Maa Kamakhya Temple

- The temple is located in **Nilachal Hills**, Guwahati.
- It is one of the **51 Shaktipeethas**.
- Maa Kamakhya is considered **the goddess of fertility**.
- The temple's architectural shape is a **combination of the traditional Nagara and Saracenic styles**.
- This hybrid architecture is sometimes called the **Nilachal type**, named after the hill where it is located.
- The temple has a distinctive **beehive-like shikhara** (dome). The dome is adorned with sculptured panels and images of various Hindu deities.
- Kamakhya Temple hosts the **Ambubachi Mela**. This is an annual festival celebrating the **menstruation of the goddess**.



3. Srirangam Temple

News: The PM recently visited the Srirangam temple also called the Sri Ranganathaswamy Temple.

About the Srirangam Temple

- Sri Ranganathaswamy Temple is a Hindu temple dedicated to **Ranganatha** (a form of Vishnu), located in **Srirangam, Tiruchirapalli, Tamil Nadu**.
- The temple has the unique distinction of being the foremost among the **108 Divya Desams** dedicated to the Lord Vishnu.
- The Srirangam temple is the **largest temple compound in India** and one of the largest religious complexes in the world.
- In 2017 the temple won the **UNESCO Asia Pacific Award of Merit 2017** for **conservation of cultural heritage**, making it the first temple in Tamil Nadu to receive the award from the UNESCO.

- The Temple is built in the **Dravidian style**. The temple is glorified by Alvars in their **Naalayira Divya Prabhandam**.
- The temple occupies an area of **63 hectares** (155 acres) with 81 shrines, 21 towers, 39 pavilions. The temple complex includes over 50 shrines dedicated to Vishnu, Lakshmi, as well as various Vaishnava scholars and poets.
- The Ranganathaswamy Temple has many *mandapams* like **thousand pillar mandapa**, **Garuda mandapa**.
- There are **21 gopurams** (tower gateways), among which the towering **Rajagopuram** (shrine of the main gateway) is the **tallest temple tower in Asia**.
- The historic inscriptions at the Ranganathaswamy Temple are in 6 major Indian languages: Tamil, Sanskrit, Kannada, Telugu, Marathi and Odia. The inscriptions have provided information about **South Indian history, culture, economy and social role**.



Significance of the Temple

- The main deity of the temple is mentioned in various Sanskrit literature and epics such as the **Ramayana, Mahabharata, Padma Purana, Brahmanda Purana** and **Garuda Puranam**.
- Medieval scholars like **Nathamuni, Ramanuja, Pillai Lokacharya, Vedanta Desika** and **Manavala Mamunigal** are associated with the temple.
- Ranganathaswamy temple is the only 1 out of the 108 temples that was sung in praise by all the Alvar (follower of Vaishnavism).

4. Kotravai Sculpture

News: Archaeologists have unearthed an 8th-century Kotravai sculpture, an artifact dating back to the Pallava period, near Ulundurpet, Tamil Nadu.

About the Sculpture

- It is crafted from slab stone during the 8th-century Pallava period.
- The sculpture portrays items like chakkara, sword, bell, and abhaya mudra in its right hands, while the left hands display a conch, bow, shield, and Uru Mudhra, along with bangles in all hands.



About the Pallava Dynasty

Timeline and Geographical Extent

- The Pallava Dynasty was a prominent force in South India that lasted between the 3rd-9th centuries.
- They governed northern Tamil Nadu, sections of Karnataka, Andhra Pradesh, and Telangana. **Kanchipuram was their capital**.
- They were earlier feudatories of Andhra **Satavahanas**. Following the decline of the Andhra Satavahanas in Amaravati, the Pallavas gained autonomy and grew independent.
- They gradually moved southward and established their capital in Kanchipuram during the 4th-century CE.
- Chinese traveller **Hien Tsang**, who visited Kanchipuram during the Pallava era, praised their kind rule.
- He portrayed **Bodhidharma**, the founder of the **Chan (Zen) school of Buddhism** in China, as a prince of the Pallava empire.
- During the reigns of **Mahendravarman I** (571 – 630 CE) and **Narasimhavarman I** (630 – 668 CE), the Pallava realm experienced increased wealth and strength.

Art and Architecture

- The Pallava Dynasty was renowned for their contributions to **Dravidian architecture**, particularly in temple construction.
- They played a pivotal role in **shifting from rock-cut architecture to stone temples**.
- **Mahabalipuram**, a significant hub of art, architecture, and literature during Pallava rule, showcases their remarkable achievements.
- **Narasimhavarman II** commissioned the construction of the **Kailasanatha Temple** in **Kanchipuram** and the **Shore Temple**.

Religion

- They embraced Shaivism and identified as Dravidians.

Political Relationships

- The Pallava Dynasty engaged in **persistent battles with the Chalukya Dynasty** to the north and the Tamil kingdoms of **Chola and Pandyas** to the south.
- Their conflicts with the Chalukyas of Badami persisted until they were eventually subdued by the Chola kings in the 8th-century CE.
- The rise of the **Rashtrakutas** led to the decline of the Pallava Dynasty.
- In 897 AD, **Vijayalaya**, the Chola King, defeated **Aparajitavarman**, the last Pallava King.

5. Madhika Language

News: Kerala's Chakaliya community is facing the threat of extinction of its unique language Madhika. There are only 2 remaining speakers of the language.

About the Madhika Language

- The language is spoken by **Chakaliya** community.
- It is a blend of **Telugu, Tulu, Kannada**, and **Malayalam**.
- It may **sound like Kannada** but it has its own uniqueness due to diverse influences.
- It is largely influenced by **Havyaka Kannada**, an old form of Kannada.
- The language **does not have its own script** thus it faces the threat of extinction.

About the Chakaliya Community

- They have a **nomadic origin**. They worship gods like **Thiruvengktramana** and **Mariamman**.
- They are predominantly found in the **Kannur district of Kerala**.
- They have migrated to northern Malabar from the hilly regions of Karnataka centuries ago.
- Initially they were given the ST status, but later they were **brought under the SC category**. They were considered untouchables in the past.

Government's Steps to Preserve Endangered Languages

- The Government of India has initiated a Scheme known as '**Scheme for Protection and Preservation of Endangered Languages of India**' (SPPEL). Under this scheme, the **Central Institute of Indian Languages (CIIL)**, **Mysore** works on protection, preservation and documentation of all the mother tongues/languages.
- According to UNESCO, any language spoken by less than 10,000 persons is considered 'potentially endangered'.

Constitutional Provisions

- **Article 29:** Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same.

- **Article 350B:** It provides for a **Special Officer for Linguistic Minorities** to investigate all the matters relating to the Safeguards provided for the linguistic minorities.

6. Subika Painting

News: Invaluable art forms of Manipur are on the brink of extinction due to neglect.

About Subika Paintings

- It is a **visual art form of Manipur**.
- It is a style of painting linked to the cultural history of **Meitei community**.
- It is surviving through its 6 manuscripts: **Subika, Subika Achouba, Subika Laishaba, Subika Choudit, Subika Cheithil** and **Thengrakhel Subika**.
- The royal chronicle, **Cheitharol Kumbaba**, doesn't mention a specific founder. However, experts estimate the use of Subika paintings since the 18th or 19th century.
- It is a **composition of cultural motifs** made by pre-existing features and other influences encouraged by cultural world-views of the community.
- The illustrations of Subika Laishaba have visual language from the elements such as lines, shapes, forms, colours, and patterns. These visual images become Meitei's cultural motif, and structure to create visual effects as well as express cultural significance.
- The visual images are **painted on handmade paper**.
- The materials of manuscripts are prepared indigenously, either handmade paper or barks of trees.



7. Dhokra Shilpkala

News: Chhattisgarh's Ocher Studio is helping the artisans to preserve India's 4,000-year-old craft Dhokra Shilpkala.

About Dhokra Shilpkala

- The word "Dhokra" is believed to be derived from the **Dhokra Damar tribes**, the **traditional metal smiths of Central India**.
- The origins can be traced back to the tribal communities residing in the regions of Jharkhand, Chhattisgarh, West Bengal, and Odisha.
- It uses the **lost-wax technique**, or **cire perdue**, for metal casting.
- The beauty of Dhokra Shilpkala lies in its rustic charm and the **organic nature** of its designs.
- Artisans draw **inspiration from nature, mythology**, and **everyday life**. They incorporate motifs such as animals, birds, deities, and tribal symbols into their creations.
- Each piece display a sense of timeless elegance and cultural richness.



- **Challenges**

- Rapid growth in urbanization.
- Rise of mechanized production techniques.

About Lost Wax Technique

- The process begins with the creation of a **clay core**, which serves as the base for the final metal sculpture.
- Artisans then coat this clay core with a layer of **beeswax**. They sculpt the intricate designs and patterns by hand.
- Once the wax model is complete, it is covered with **layers of clay**.
- The entire structure is then heated, **allowing the wax to melt and drain out**. It leaves behind a **cavity in the shape of the original sculpture**.
- Molten metal, which is a combination of brass and bronze, is poured into this cavity, filling the space left by the melted wax.
- After cooling and solidifying, the clay mould is broken away, revealing the final metal casting.



8. Maratha Military Landscapes

News: The Maratha Military Landscapes will be India's nomination for recognition in the UNESCO World Heritage List for the year 2024-25.

About Maratha Military Landscapes

- It refers to the historical regions, **fortifications**, **military architecture**, and **associated cultural elements** related to the Maratha Empire's military history.
- These were developed between the 17th and 19th centuries.
- There are more than 390 forts in Maharashtra out of which **12 have been chosen for the Maratha Military Landscapes** of India.
- Shivneri Fort, Lohagad, Raigad, Suvarnadurg, Panhala Fort, Vijaydurg, Sindhudurg, and Gingee Fort are protected by the **Archaeological Survey of India**.
- Salher Fort, Rajgad, Khanderi Fort, and Pratapggarh are protected by the **Directorate of Archaeology and Museums, Government of Maharashtra**.
- In the Maratha Military Landscapes of India these forts are categorized as:
 - **Hill Forts:** Salher, Shivneri, Lohgad, Raigad, Rajgad and Gingee fort.
 - **Hill-Forest Fort:** Pratapggarh.
 - **Hill-Plateau Fort:** Panhala.
 - **Coastal Fort:** Vijaydurg.
 - **Island Forts:** Khanderi, Suvarnadurg and Sindhudurg.

Categories of Nomination for UNESCO World Heritage List

- There are **2 categories** of nomination: **Cultural** and **Natural** criteria.
- There are **6 criteria** (i to vi) for **cultural sites** and **4 criteria** (vii to x) for **natural sites** for inclusion in the World Heritage List.
- The Maratha Military Landscapes of India is nominated under:
 - **Criterion (iii):** Unique or **exceptional testimony to a cultural tradition** or civilization, either living or extinct.

- **Criterion (iv):** To exemplify a significant stage in human history through **outstanding architecture**, technology, or landscape.
- **Criterion (vi):** To be **closely linked with significant events**, traditions, beliefs, and works of universal significance.

World Heritage Sites in Maharashtra

- At present in India there are **42 World Heritage sites**, out of which **34 are cultural sites**, **7 are natural sites** and **1 is mixed site**.
- In Maharashtra there are 6 World Heritage Sites, 5 cultural and 1 natural.
- **Cultural Sites:** Ajanta Caves (1983), Ellora Caves (1983), Elephanta Caves (1987), Chhatrapati Shivaji Maharaj Terminus (formerly Victoria Terminus) (2004), Victorian Gothic and Art Deco Ensembles of Mumbai (2018).
- **Natural Site:** Western Ghats of Maharashtra, Karnataka, Tamil Nadu and Kerala is serial property in natural category (2012).
- The Maratha Military Landscapes of India, listed in the 2021 Tentative List of World Heritage sites, is Maharashtra's 6th cultural property nominated for the World Heritage List.

9. Bharat Ratna Awards

News: The Government has awarded Bharat Ratna to 5 persons this year.

About Bharat Ratna Awards




- Bharat Ratna is the **highest civilian award in India**.
- The award, initially focused on arts, literature, science, and public services. It was broadened to encompass '**any field of human endeavor**' in December 2011.
- The Bharat Ratna was introduced in 1954.
- Any person without distinction of race, occupation, position or sex is eligible for these awards. The **award has also been given to 2 non-Indians:** Khan Abdul Ghaffar Khan and Nelson Mandela.
- The recommendations for Bharat Ratna are made by the Prime Minister to the President. No formal recommendations for this are necessary.
- On conferment of the award, the recipient receives a **Sanad** (certificate) signed by the President and a **medallion**. The Award **does not carry any monetary grant**.
- The first recipients of the award were Chandrasekhara Venkata Raman, C. Rajagopalachari and Sarvapalli Radhakrishnan.
- The number of Bharat Ratna Awards was restricted to a **maximum of 3** in a particular year. But this year it has been awarded to **5 persons: Karpoori Thakur, PV Narasimha Rao, Prof. Swaminathan, Charan Singh and L K Advani**.



About Karpoori Thakur

- He was an Indian politician who served two terms as the Chief Minister of Bihar.
- He was born on January 24, 1924, in Samastipur District, Bihar.
- He was popularly known as **Jan Nayak**. He was also known as the champion of the poor.
- He drew inspiration from Mahatma Gandhi and Satyanarayan Sinha.
- He began his political journey with the **Praja Socialist Party** and later aligned himself with the **Janata Party**.

- He was elected as a member of the Bihar Vidhan Sabha in 1952 from the Tajpur constituency as a candidate of the Socialist Party.
- He served as a minister and Deputy Chief Minister of Bihar, before becoming the first non-Congress socialist Chief Minister of Bihar in 1970.
- He also enforced **total prohibition of alcohol in Bihar**.

		
Dr. M.S. SWAMINATHAN (7 August 1925 - 28 September 2023)	P.V. NARASIMHA RAO (28 June 1921 - 23 December 2004)	CHAUDHARY CHARAN SINGH (23 December 1902 - 29 May 1987)
■ Agricultural scientist & agronomist	■ Former Prime Minister of India (1991-96)	■ Former Prime Minister of India (1979-80)
■ Born in Kumbakonam, Tamil Nadu	■ Born in Warangal, Telangana	■ Born in Noorpur, Uttar Pradesh
■ Played an instrumental role in Green Revolution and towards food self-sufficiency in India	■ Credited with steering the liberalisation of Indian Economy	■ Leader of the Lok Dal, credited as a leader of farmers in north India

10. Sports Awards

News: The Government has instituted several awards for the promotion of sports in India.

Awards	Details
Major Dhyan Chand Khel Ratna Award	<ul style="list-style-type: none"> • Highest sporting honour of India. • The award recipients are honoured for their exceptional performance in international sports events in the preceding 4 years.
Arjuna Award	<ul style="list-style-type: none"> • India's second-highest sporting honour. • Recipients recognized for their outstanding performance in international and national sports events along with display of leadership, sportsmanship, and discipline.
Dronacharya Award	Awarded for excellence in sports coaching.
Major Dhyan Chand Award	It is a lifetime achievement award given to honour sportspersons for their contributions, both during their active sporting career and after retirement.
The Maulana Abul Kalam Azad Trophy (MAKA Trophy)	It is a rolling trophy awarded to the ' overall top performing University in sports ' over the preceding year.
Rashtriya Khel Protsahan Puruskar	Given to corporate entities, NGOs, sports bodies, etc for their contribution to the promotion and development of sports .

Miscellaneous

1. Impact of La-Nina on Air Quality in India

News: A new study by Indian researchers has suggested that air quality over India could be influenced by the La-Nina/El-Nino events.

About the Study and Abnormal Conditions in 2022

- The study has argued that the unusual air quality in some Indian cities in the winter of 2022 could be attributed to the **record-breaking spell of La Nina** prevailing at that time.
- This also links the air quality in Indian cities indirectly to **climate change**, which is making **El Nino** and **La Nina more severe**.
- Various **meteorological factors** play a role in **trapping pollutants in the lower atmosphere levels**. These include:

- ### Explanation by the Study

-
- CHANGES IN WIND PATTERNS IN THE WINTER OF 2022-23**
- Stubble Burning
- Punjab
- Haryana
- Jaipur
- Delhi
- Agra
- 850 hpa
- Zone-1
- Faster winds (Surface)
- Central Indian Tectonic Zone
- Zone-2
- Slower winds (Surface)
- Vapi
- Mumbai
- Pune
- Hyderabad
- Visakhapatnam
- Bengaluru
- Chennai
- Coimbatore
- Thiruvananthapuram
- La Nina
- Pollution
- Zone-1
- Zone-2
- Source: 'Triple Dip La Nina, Unorthodox Circulation and Unusual Spin in Air Quality of India'

News: Government of Assam has announced that it would undertake a mission to reclaim the chars from encroachers to safeguard the ecological integrity of the Brahmaputra Valley.

- The **riverine areas** (island) of the river Brahmaputra are locally known as Char.
- Chars are **island-like silt depositions** in the **lower parts of river basins**. They are made of **sand** and **silt**. They are **created naturally** due to the **accumulation of sediment transported** in water from **melting glaciers** and **eroding riverbanks**.
- They are **subjected to erosion** on their **upstream areas** and **deposition** in the **downstream regions**. This affects the geometry and location of the chars during floods almost every year.

- **Lack of Basic Infrastructure:** These areas **lack all-weather communication** with the **main banks** and reliable means of intra and inter-char mobility.

- They have **inadequate access to transport and basic infrastructure** like surface roads, health and drinking water etc.
- **Regular Flooding:** There is constant threat from flood and erosion during the rainy season.
- **Geographical Barriers:** The land mass is segregated and cut off from each other. This makes it very difficult for taking any major scheme for road communication, irrigation, Power supply or setting of educational institutions.
- **Demographic Issues:** There are concerns that chars have been occupied by illegal immigrants.

3. Messinian Event

News: The Geological Institute of Israel has uncovered an underwater canyon near Cyprus dating back to the Messinian Event.

About Messinian Event

- It is also known as the **Messinian Salinity Crisis (MSC)**.
- It was a **geological event** during which the **Mediterranean Sea** went into a cycle of **nearly complete desiccation** (drying up).
- It was one of the **most severe ecological crises** in the Earth's history.
- The MSC began approximately **6 million years ago (MYA)** and lasted until around 5.3 MYA.



Countries bordering the Mediterranean Sea

- There are 22 countries and one territory (Gibraltar: a British Overseas Territory) whose coasts are on the Mediterranean Sea
- **Europe:** Spain, France, Italy, Malta, Monaco, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, and Greece.
- **West Asia :** Turkey, Syria, Lebanon, Israel, the Palestine Gaza Strip and the divided island of Cyprus.
- **North Africa:** Morocco, Algeria, Tunisia, Libya and Egypt.

4. Parbati-Kalisindh-Chambal Eastern Rajasthan Canal Project (PKC-ERCP)

News: Rajasthan and Madhya Pradesh have signed an MoU with the Ministry of Jal Shakti for implementation of the 'Modified PKC-ERCP'; the 2nd-largest project under the national perspective plan of interlinking of rivers.

About the Eastern Rajasthan Canal Project

- Its aim is to **divert surplus water** available during rainy season in rivers in Southern Rajasthan (Chambal and its tributaries, including Kunnu, Parvati, Kalisindh) to districts with scarce water.
- It also aims to **provide drinking water** to 13 districts of Rajasthan and **provide irrigation water** for 2.8 lakh hectares of land through 26 different large and medium projects. The 13 districts include Jhalawar, Baran, Kota, Bundi, Sawai Madhopur, Ajmer, Tonk, Jaipur, Karauli, Alwar, Bharatpur, Dausa and Dholpur.
- It will also help meet **drinking and industrial water needs** of the southern and south eastern Rajasthan, for humans and livestock.

Need for the Project

- According to the State Water Resources Department, Rajasthan has only 1.16% of India's surface water and 1.72% of groundwater.
- Among the State's water bodies, **only the Chambal river basin has surplus water**. Thus, the **ERCP aims to create a network of water channels** which will cover 23.67 % area of Rajasthan along with 41.13 % population of the State.

Significance of the Project

- A significant area of land will get **irrigation facilities**.
- It will **improve the groundwater table** in the rural areas of the State.
- This will positively influence the socio-economic conditions of the people.

About Chambal River

- The perennial Chambal originates at Janapav, south of **Mhow town in Madhya Pradesh**.
- It rises in the old **Vindhya Range** and flows in north-eastern direction.
- It **flows through 3 States**: Madhya Pradesh, Rajasthan and Uttar Pradesh.
- It ends in confluence of 5 rivers (*Pachnada*), including the Chambal, Kwari, Yamuna, Sind, Pahuj, at **Pachnada** near Bhareh in Uttar Pradesh.
- Its left-hand tributaries are the Banas and Mej and the right hand tributaries are the Parbati, Kali Sindh and Shipra rivers.
- The important dams on the river include **Gandhi Sagar, Rana Pratap Sagar and Jawahar Sagar** dams.

About Kalisindh and Parbati Rivers

- Kalisindh rises in the **Vindhya Range** near Bagli in Dewas district of Madhya Pradesh and joins the Chambal River at Nonera village in Kota district.
- The Parbati rises from the **Vindhya Range** in Sehore district Madhya Pradesh and falls into Chambal River in Sawai Madhopur District.

5. Corruption Perceptions Index

News: According to the latest report by Transparency International, India secured the 93rd position out of 180 countries on the Corruption Perceptions Index (CPI) for 2023.

About the Corruption Perceptions Index (CPI)

- Its purpose is to rank countries by their perceived levels of public sector corruption according to experts and business people.
- It is released by **Transparency International** annually since 1995.

Key Findings

- India's rank **worsened to 93 in 2023** from **85 in 2022**. India's score fell from 40 (2022) to 39 (2023).
- **Singapore topped the Asian region** with a score of 83, ranking 5th overall in the Index.
- Sri Lanka has been ranked 115 while Pakistan has been ranked 133 and Afghanistan 162.
- **Denmark has topped the rankings**, followed by Finland, New Zealand and Norway.
- Somalia has been ranked 180 with the lowest score of 11.

Pointly

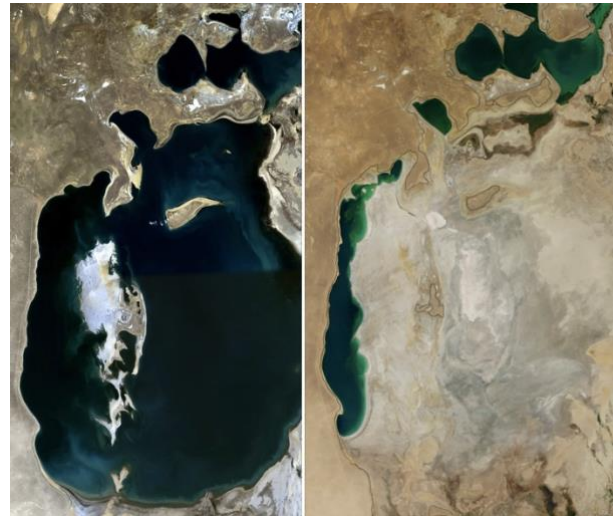
1. Aral Sea

Aral Sea is located in **Central Asia** between **Kazakhstan** and Uzbekistan. It encompasses drainage from Uzbekistan and parts of Kazakhstan, Tajikistan, Afghanistan, Turkmenistan, Iran, and Kyrgyzstan. It is known for its **harsh climate** with hot summers, cold winters, and temperature changes throughout the day. It was once a vast **saltwater lake** and was ranked the world's **4th-largest inland water body** with an area of ~68,000 sq. km. It has been shrinking since 1960s. By mid-2000s it had broken down into 3-4 smaller water bodies (lakes) with ~17,000 sq. km.



2. Drying-up of Aral Sea

NASA's **Earth Observatory** has shared an in-depth analysis of the factors contributing to the disappearance of the Aral Sea. According to the Agency, in 1960, the USSR initiated a significant **water diversion project** by redirecting the **Syr Darya** and **Amu Darya** rivers for irrigation purposes. Both Syr and Amu Darya contributed water to the lake. The project caused the **desert region surrounding the sea to flourish**. The waterbody began to dry up gradually and is now close to completely disappearing.



3. Gulf of Aden

It is an extension of the Indian Ocean, tucked between the Arabian Peninsula and the African continent. It is bordered by **Yemen** in the north, **Somalia** and **Socotra Island** in the south, **Arabian Sea** in the east and **Djibouti** in the west. It is connected to the Red Sea on the west by the **Strait of Bab-el Mandeb**. It is a critical part of the **Suez Canal shipping route**, which connects the Red Sea and the Mediterranean Sea.

The Indian Navy recently deployed **INS Sumitra** to rescue fishermen hijacked by pirates along the east coast of Somalia and the Gulf of Aden.



4. South China Sea

It is one of the world's most important, strategic, and contentious bodies of water. It is an **arm of western Pacific Ocean** in **Southeast Asia**. It is bordered by (clockwise from north): the People's Republic of China, the Republic of China (Taiwan), the Philippines, Malaysia, Brunei, Indonesia, Singapore and Vietnam. It is connected by **Taiwan Strait** with the **East China Sea** and by **Luzon Strait** with the **Philippine Sea**. It contains numerous shoals, reefs, atolls and islands. For example-The **Paracel Islands**, the **Spratly Islands** and the **Scarborough Shoal**. **Philippines** and **Vietnam** have recently **signed agreements** to **avoid incidents** in the South China Sea and **enhance cooperation** between their coast guards.

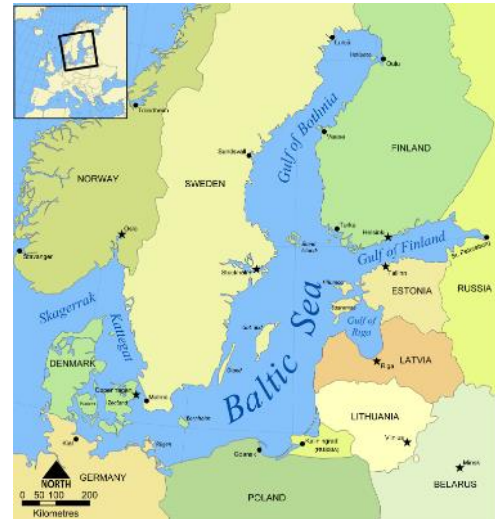


5. Wall Beneath the Baltic Sea

Scientists have discovered a **Stone Age wall beneath the Baltic Sea in Germany**. It is believed to be the **oldest megastructure** constructed by humans in **Europe**. The wall is 971 m wide and 1 m tall. It was believed to have been built over 10,000 years ago by hunter-gatherers. It could have served as a reindeer hunting lane.

6. Baltic Sea

It is a **semi-enclosed sea** located in Northern Europe. It is a branch of the **North Atlantic Ocean**, stretching northward from southern Denmark towards the Arctic Circle. It divides the **Scandinavian Peninsula** from the rest of mainland Europe. It has about 8,000 kms. of coastline, shared by as Sweden, Poland, Lithuania, Latvia, Finland, Estonia, Germany, Denmark, and Russia. It occupies an area of about 377,000 sq. kms. The sea stretches approximately 1,600 kms in length and is about 193 kms wide. The Baltic Sea has **3 main gulfs**: the **Gulf of Bothnia** to the north, the **Gulf of Finland** to the east, and the **Gulf of Riga** slightly to the south of that. Over **250 rivers and streams flow into the Baltic Sea**. It is commonly referred to as the **largest brackish inland water body** in the world. The Baltic Sea's water is less salty compared to the world's oceans because of the **inflow of freshwater from surrounding land** and the sea's shallow depth.



7. Baltic Nations

Estonia, Latvia, and Lithuania, collectively known as the **Baltic Nations**. They are bordered by the **Baltic Sea** to the west and north, by **Russia** to the east, by **Belarus** to the southeast, and by **Poland** and a **Russian exclave Kaliningrad** to the southwest.

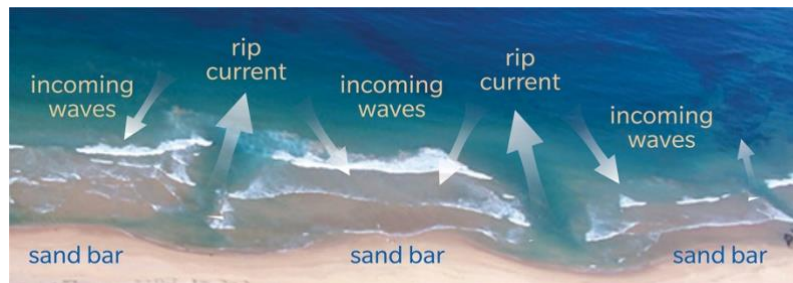
8. Wadge Bank

It is a 10,000 sq. km. area, located ~50 kms. south of Kanyakumari. It features shallow waters, a nearly flat bottom topography, and a continental shelf. This area is **rich in biodiversity** and is considered India's most **valuable fishery resource**. The low intensity of currents, waves, and tides makes it an ideal location for the accumulation of nutrients and fish food. The Government of India is considering to offer 3 oil and gas blocks for exploration and development in the Bank. This may have a negative impact on the local ecology.



9. Rip Currents

The **Indian National Centre for Ocean Information Services (INCOIS)** and **ISRO** have initiated a joint project aimed at the **surveillance and issuance of operational forecast alerts regarding rip currents**. Rip currents are strong currents that flow from the shore back to the open sea or lake. They present a widely recognized coastal hazard on beaches worldwide. Rip currents are formed due to **beach shapes** and can happen in **rocky or sandy beach areas**. Beach topography encompasses land features such as dunes and water features like **sandbars, piers, and reefs**, where rip currents often form. They may form in spaces between sandbars, piers, or sections of a reef. Rip currents can be hazardous for swimmers and beachgoers as they can swiftly carry people out to sea.



10. Soda Lakes

Soda Lakes are typically characterized by a **pH level ranging between 9 and 11**. The **alkalinity of the water** is primarily due to the **high concentration of carbonate**, particularly **sodium carbonate**. The lakes may also have lots of **sodium chloride** and other salts, making them a **salty or hypersaline**. These ecosystems are **notably productive** (most productive aquatic environments) **compared to freshwater lakes** due to the abundance of dissolved carbon dioxide. They naturally occur in both **arid and semi-arid regions**. Biodiversity in soda lakes is primarily led by **prokaryotes like bacteria** and archaea, particularly in lakes with elevated alkalinity levels. **Multicellular organisms like brine shrimp and fish** are abundant in many soda lakes. **Africa and Asia** host the **largest number of soda lakes** due to their **extensive desert conditions**, which favour the formation of such lakes. Many soda lakes are found in Kenya, Tanzania, and Ethiopia. They are also found in China and India (like Pangong).

11. World Governments Summit

It is an **annual event** where leaders, policymakers, experts, and thinkers from around the world meet to discuss and tackle important global issues. It started in 2013 under the leadership of the Vice

President and Prime Minister of **the UAE**. It takes place every year in Dubai, UAE. The Summit explores **how governments can use innovation and technology to solve global challenges** for humanity in the future. The Prime Minister of India attended the World Government Summit 2024 as a **guest of honour**. He was a guest of honour at the summit in 2018 as well.

12. Alliance for Global Good: Gender Equity and Equality

India launched the '**Alliance for Global Good: Gender Equity and Equality**' at the 2024 World Economic Forum (WEF) in Davos. The alliance strives to **promote global development led by women**. The initiative is supported by The Bill and Melinda Gates Foundation. The alliance will be anchored by the CII Centre for Women Leadership. The alliance emphasizes **adopting global best practices, sharing knowledge, and making investments in women's health, education, and enterprises**. The concept for this alliance originated from the G20 Leaders' Declaration, emphasizing India's commitment to women-led development.

13. MQ-9B UAV

The US Congress has been officially informed of the potential sale of 31 **MQ-9B High-Altitude Long-Endurance (HALE) Armed Unmanned Aerial Vehicles (UAVs)** to India, valued at approximately US\$ 4 billion. It has been developed by US-based **General Atomics Aeronautical Systems**. It has 2 variants:



Sky Guardian and Sea Guardian. The Indian Navy has been operating the MQ-9B Sea Guardian since 2020. It can operate at **over 40,000 feet**. It also has a **maximum endurance of 40 hours**, making it useful for surveillance. It can support land, maritime surveillance, anti-submarine warfare, anti-surface warfare, strike, electronic warfare and expeditionary roles. It is equipped with advanced features such as **automatic take-off and landing, detect and avoid system, anti-spoofing GPS, and encrypted communication links**. The UAVs offer benefits like low operational costs and enhanced surveillance capabilities.

14. Transiting Exoplanet Survey Satellite (TESS)

It is a **NASA mission** dedicated to **locating planets that orbit the brightest stars** visible from Earth. It is a successor to NASA's **Kepler Space Telescope** (launched 2009), which discovered thousands of exoplanets over a decade. TESS was launched in April 2018, using a **SpaceX Falcon 9 rocket** from Cape Canaveral. The main mission concluded in July 2020, and TESS is currently in an extended mission phase. TESS follows a distinctive **high Earth orbit**, completing its cycle every 12 to 15 days. The orbit is **strategically inclined to minimize obstructions from Earth and the Moon**, allowing the telescope an unimpeded view of the sky. During its 2-year primary mission, TESS's 4 cameras **scanned more than 200,000 nearby and bright stars**, covering 75% of the sky. Astronomers have utilized the data from TESS to uncover and analyze a potentially habitable zone planet known as **TOI-715b**.

15. Detection of Exoplanets

TESS employs the **transit technique to identify planets**. It searches for **regular dips in the brightness of stars as planets pass in front of them** from Earth's view. The bigger the planet, the greater the drop

in brightness during the transit. The **duration of the transit of the planet in front of the star helps determine the shape of its orbit**. This method unveils the **planet's diameter** and the **size of its orbit**.

16. Zodiacal Light Skyglow

It is **sunlight scattered by interplanetary dust**. It is visible from the earth as a **faint, diffuse glow** on completely dark nights.

Interplanetary dust consists of **cosmic dust** (small particles floating in outer space) that **pervades the space between planets** in solar system. It is present across the entire path of the ecliptic. This is the path along which the Sun moves in the sky over the

course of a year. Scientists at Physics Research Laboratory (PRL), Ahmedabad have published a paper attributing **dust from Mar's two moon as the possible source of Zodiacal light**.

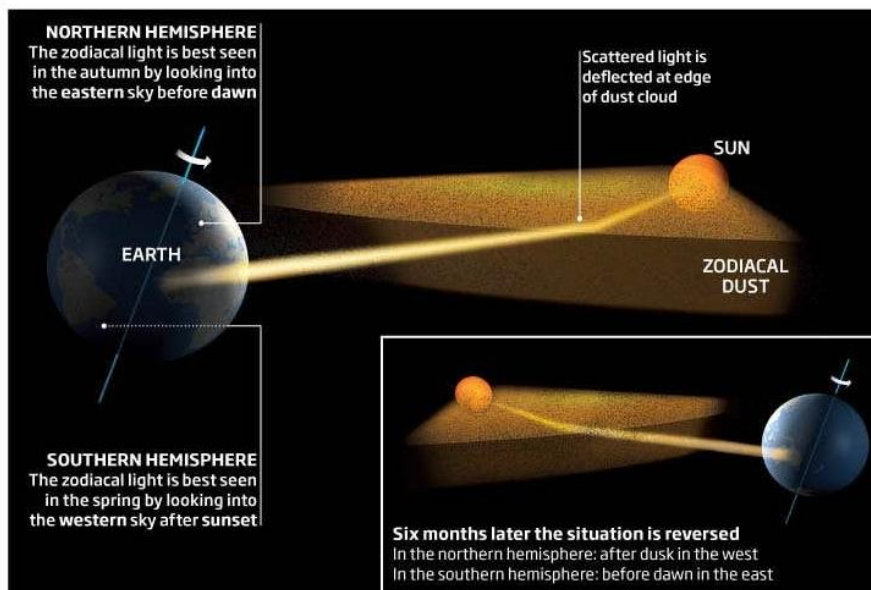
'AU' stands for 'astronomical unit', which is the distance between the earth and the Sun.

Mars's has two moons called **Deimos** and **Phobos**.

How to see the zodiacal light

©NewScientist

Sunlight scattered by dust in the plane between Earth and the sun produces the faint night-time glow over the horizon. Here is the best way to see it



17. PACE Satellite

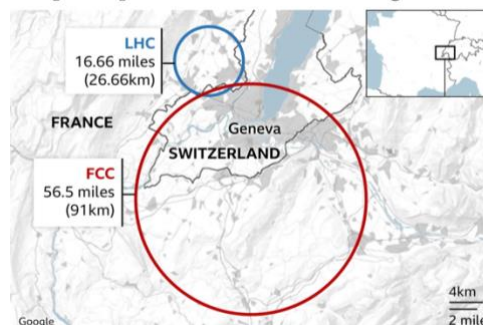
NASA's PACE (Plankton, Aerosol, Cloud, ocean Ecosystem) satellite has been launched on a SpaceX Falcon 9 rocket from the Cape Canaveral Station. It has been placed in a **sun-synchronous orbit**. Sun-synchronous orbit means that **it will always be synced to the same position relative to the Sun**.

It will study the **interplay of light, aerosols, and clouds**. Its primary instrument is **Ocean Colour Instrument (OCI)** which is designed to measure the **ocean's colour across a spectrum** from ultraviolet to short wave infrared. It will help scientists better understand about the **impact of climate change on ocean phytoplankton**. It will help understand the **influence of particles** in the air, like dust and smoke, **on cloud formation, warming and cooling of the planet**. It may make significant breakthroughs in aerosol-cloud-ocean research.

18. Future Circular Collider (FCC)

CERN scientists are advancing plans for a multibillion-euro project to construct the more powerful Future Circular

Proposed particle collider will be largest ever



Collider. The collider plans to **start operating by 2040** with an estimated cost of around US\$ 17 billion. FCC is a **particle accelerator currently under design**, intended to accommodate the next generation of particle colliders. The FCC aims to design a **hadron collider** with a **center-of-mass energy** of about **100 TeV** (trillion electron volts), which is **eight times more powerful than the Large Hadron Collider's (LHC) 13 TeV**.

The FCC is planned to be in a newly constructed **80–100 km tunnel**. The circular tunnel will be at a **depth of 100–400 meters** on the **France–Switzerland border**. The FCC will help in enhancing understanding of fundamental physics. It will foster advancements in fields such as cryogenics, superconductivity, vacuum tech, and detector instruments.

19. Large Hadron Collider

Large Hadron Collider is the **world's largest and highest-energy particle collider**. It was built by the European Organization for Nuclear Research (CERN) between 1998 and 2008 in collaboration with over 10,000 scientists. The accelerator lies in a **tunnel 100 meters underground at CERN**, on the Franco-Swiss border near **Geneva, Switzerland**. Its purpose is to **explore tiny subatomic particles**, which represent the smallest known units of matter and form the basis of everything.



In 2012, scientists at CERN announced the discovery of the **Higgs Boson** or the '**God Particle**' during the LHC's first run. This led to Peter Higgs and his collaborator François Englert being awarded the Nobel Prize for physics in 2013.

20. Sora AI

OpenAI has unveiled **Sora**, an AI model that can **produce realistic videos based on text instructions**, with a duration of up to 1 minute. It is a **Generative Artificial Intelligence (GenAI) model**. The videos have **high visual quality** and adhere to the user's instructions. Sora can generate **intricate scenes** featuring **multiple characters**, various types of motion, and **precise details** of both the **subject** and the **background**. It can understand **how objects function in reality**, **interpret prompts accurately**. It can generate engaging characters that **convey lively emotions**.

Google's Lumiere can generate **5-second videos** based on **provided prompts**, both text or image-based. Companies like Runway and Pika also have showcased their own noteworthy **text-to-video models**.

21. Lab-grown Fish Meat

The ICAR-CMFRI in Kochi has partnered with a start-up for lab-grown fish meat. It is the first initiative of its kind in the country. Cultivated fish meat is produced by isolating specific cells from fish and growing them in a laboratory setting using media that is free of animal components.

The final product is expected to **replicate the flavour, texture, and nutritional qualities of 'real' fish meat**. Lab-grown meat will address the **ever-growing demand for seafood**, and **reduce excessive pressure on marine and aquatic resources**. It would help in reducing over-fishing, and **protect marine environment**. It would ensure **food and nutritional security**. It would also reduce contamination of environment.

22. Havisure Vaccine

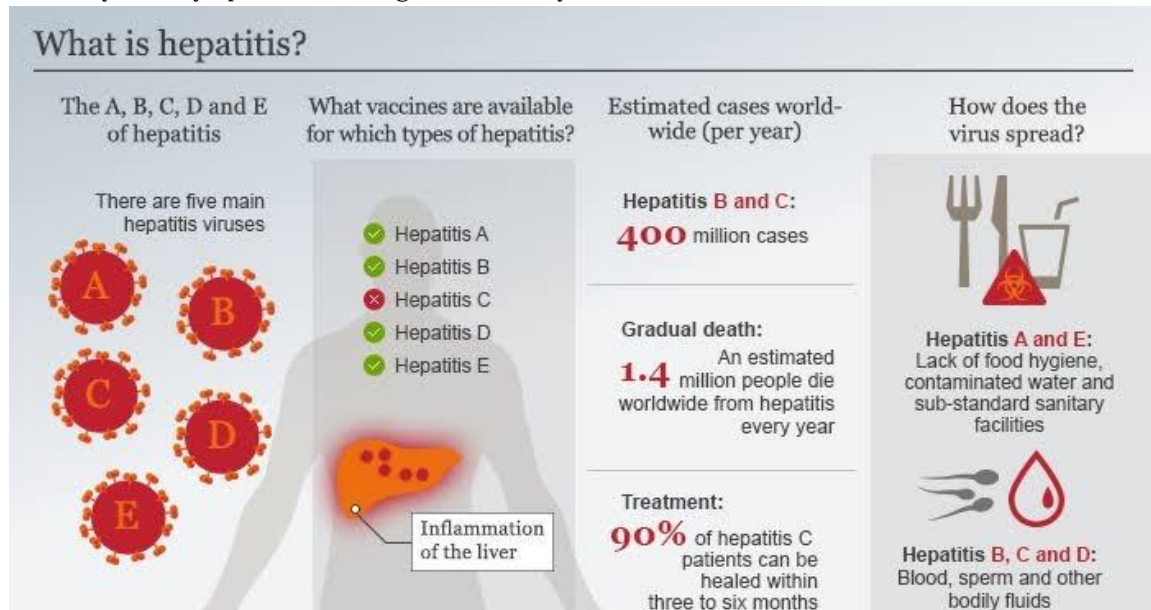
Indian Immunologicals Ltd (IIL), a wholly owned subsidiary of the **National Dairy Development Board (NDDB)**, has launched India's **first domestically developed Hepatitis A vaccine**, named 'Havisure.' It is a 2-dose vaccine. The first dose given to those above 12 months of age and the second dose is administered at least six months later. The vaccine is advised **for routine immunization in children and individuals at risk** due to **exposure or travel to regions with high hepatitis A prevalence**. Individuals with occupational infection risks and those suffering from chronic liver diseases can also receive Hepatitis A vaccination.

23. Hepatitis A

Hepatitis A is a **highly contagious liver infection**. It is a **viral infection** that primarily causes **inflammation of the liver**.

It can be **acute** (short-term) or **chronic** (long-term) **infection**.

It is **transmitted** through **consumption of contaminated food or water** or through **close contact with an infected person**. Its symptoms include fever, fatigue, nausea, abdominal pain, and jaundice (yellowing of the skin and eyes). According to the WHO, there is **no specific treatment for hepatitis A**. Recovery from symptoms following infection may be slow and can take several weeks or months.



24. Fentanyl

Fentanyl is a potent **synthetic opioid** authorized by the FDA (Food and Drug Administration). It is 50 times stronger than heroin and 100 times stronger than morphine. It is typically used to **treat severe pain**, such as that experienced by cancer patients or those undergoing surgery. However, it is also sometimes made illegally and **sold for recreational use**. It is often mixed with heroin, cocaine, and methamphetamine and formed into pills resembling prescription opioids. **Fentanyl is highly addictive** and can be deadly, especially in large doses or when combined with other drugs. The US and China have undertaken discussions to curb the influx of fentanyl into the US.

25. Himalayan Black Bear

It is a **subspecies** of the **Asian black bear**.

It is known for its role as a **primary seed disperser** which helps in **maintaining ecosystem balance**. It is **typically nocturnal** and **elusive**. In the **north-western Himalayas**, it **hibernates during winter**, while in the eastern Himalayas, it remains active throughout the year. Its IUCN status is **vulnerable**.

At **Dachigam National Park** in **Jammu and Kashmir**, a special diet has been provided to Himalayan Black Bears to support them during their natural hibernation period. Because of heavy snowfall and cold weather, the bears had trouble finding their usual food.



26. Ponmudi Hills

Ponmudi means 'Golden Hill' or 'Golden Peak'. Ponmudi Hills are located in Kerala. They are part of the Western Ghats mountain range.

The hills are a part of the **Agasthyamalai landscape**, at the southernmost tip of the Western Ghats.

These hills are rich in biodiversity and recently the third species of damselfly has been discovered from this region.



27. Damselfly

It is also called Cliffside Bambootail (*Phylloneura rupestris*). It belongs to a group called **bambootails** (because of their long abdomen that resembles bamboo stalks). There are two types of Bambootails- Cliffside Bambootail and Myristica Bambootail. It is **endemic to the Western Ghats**. It has been recorded only in the area between the **Nilgiri Hills** and **Sharavathi Valley**, north of the Palghat Gap. The discovery is significant, because for over 160 years, the genus *Phylloneura* was considered to be **monotypic**. Monotypic is a term used to describe a species that **does not have any intra-related species or sub-species within its population**.



28. Kaji Nemu as Official State Fruit of Assam

The Government of Assam has declared the GI-tagged 'Kaji Nemu' (Citrus Limon) as the official State Fruit. It is a **variety of lemon** (Citrus Limon) that is **native to Assam**. It possesses an elongated and oblong shape in contrast to other lemon varieties. It is **much juicier** than other varieties of lemons. It is renowned for its **distinct fragrance** and **antioxidant properties**. It is traditionally associated with **Assamese cuisine**. It is considered a powerhouse of nutrients, enhancing overall health. It is cultivated across nearly all **districts of the Assam** and is **available throughout the year**. It was awarded GI-tag in 2019.



29. Lantana Camara

It is a **flowering plant** species belonging to the **verbena family**. It is native to the **American tropics**. Due to its capability to **adapt to shifting climates**, lantana can withstand **high temperatures** and **moisture levels**. However it is among the **world's ten worst invasive species** and is of a great concern in India.

It was introduced in India as an **ornamental shrub** during the colonial period but it rapidly became invasive, spreading across various ecosystems. The shrub **can easily spread** across the forest floor, climb trees as a creeper, and entangle with other native plants.

The **Nilgiri Biosphere Reserve** in the Western Ghats is heavily impacted by the invasion of Lantana camara, making it one of the largest affected areas.

WHY LANTANA CAMARA IS A PROBLEM

Workers uproot lantana and put it upside down at Asola

FINAL SOLUTION

CUT ROOTSTOCK METHOD

- > Cut portion between stem and root using shovel
- > Lift and put the plant upside down
- > This creates a hormonal imbalance, so no new root is produced and lantana dries up
- > Clean the area of any germinating lantana
- > Plant native shrubs or creepers

WHY IT'S DANGEROUS

Alters the forest eco-system	Results in failure of regeneration of forests	Has invaded several million hectares of forests in India	Rate of growth is 1.5 inches per day	Produces volatile chemical that bars insects from coming near it, except its native insect
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Native to Central and South America | Spread by birds



30. Laughing Gull

The laughing gull (*Leucophaeus atricilla*) is a species of bird belonging to the family **Laridae**. The name 'laughing gull' comes from its distinctive call, which **sounds like laughter**. These birds are most commonly found along the **Atlantic and Gulf coasts of North America**, as well as the **Caribbean** and parts of **Central America**. Its IUCN status is **Least Concern**. It is a medium-sized gull with a distinctive appearance characterized by its black head, black legs, long drooping bill white body, and long wings.



They often nest in colonies on beaches, islands, and marshes. They are known for their **adaptability** and **opportunistic feeding habits**. They feed on a variety of prey, including fish, insects, and scavenged food.

The laughing gull has been observed for the first time in India at the **Chittari estuary** in **Kasaragod district of Kerala**. This discovery elevates the total count of bird species discovered in India to 1,367. The Kasaragod district alone contributes 400 species to the state's total count of 554.

31. Chittari Estuary

Estuary refers to a coastal area where a river meets the sea, forming a **brackish water environment**. The Chittari estuary is located in the Kasaragod district of Kerala, India. Chittari estuary encompasses a **wide variety species of birds** including lesser black-backed gull, slender-billed gull, brown-headed gull, great crested, lesser crested tern, Caspian tern and others.

32. Black-crowned Night Heron

They are small herons with thick proportions. They have thick necks, large, flat heads, and heavy, pointed bills. It has a black crown, a gray body, and bright, red eyes. Females and males look alike, but females are a little smaller. They inhabit a variety of **wetland habitats**, such as swamps, streams, rivers, marshes, mud flats, and the edges of lakes.

They are **found across North America, Central America** and the **Caribbean**. They spend their days perched on tree limbs or concealed among foliage and branches. They forage in the evening and at night, in water, on mudflats, and on land. It is a **migrating species**. Its diet consists mainly of fish, leeches, earthworms, aquatic and terrestrial insects.

A juvenile black-crowned night heron, **landed recently at a local pond in Imphal** but died later.



33. Black-necked Crane

The black-necked crane is a medium-sized crane. The Male is slightly bigger than female. The high altitude **wetlands of the Tibetan plateau, Sichuan (China), and eastern Ladakh (India)** are the **main breeding ground** of the species. However, the birds spend winter at lower altitudes. It is also found in valleys of Arunachal Pradesh: Sangti valley, Zemithang and Chug valley. Its **IUCN status is Near Threatened**. It has been classified in **Schedule I of Indian Wildlife (Protection) Act, 1972** and **Appendix I of CITES**. The threats include limited pastures due to increased grazing and loss of habitat. The bird is revered by **Monpas** (a major Buddhist ethnic group of Arunachal Pradesh) as an embodiment of the 6th Dalai Lama.

As per the survey conducted by the Wildlife Institute of India in 2016-2017 in Ladakh region, the population size of black necked crane is around 66-69 individuals.



34. Binturong

The binturong, is also known as **bearcat**. It is native to **South and Southeast Asia**. The binturong is long and heavy, with short, stout legs. The binturong is one of only two carnivores that has a prehensile tail. (The other is the kinkajou). **A prehensile tail is the tail of an animal that has adapted to grasp or hold objects**. It belongs to the same family as other small carnivores including Civets, Genets, Mongooses, and Fossa. The binturong is active during the day and at night. The binturong is **omnivorous** which feeds on small mammals, birds, fish, earthworms, insects and fruits. Its **IUCN status is vulnerable**. It has been classified in **Schedule I of Indian Wildlife (Protection) Act, 1972** and **Appendix III of CITES**. Its population is distributed in China, India, Thailand, Cambodia, Laos, Malaysia, Indonesia, the Philippines and on the island of Borneo.



35. Small-Clawed Otter

It is also known as **Asian Small Clawed Otter/Oriental Small Clawed Otter**. Its native range comprises parts of **India to Southeast Asia**, including the islands of Sumatra, Java, Borneo and Palawan.

In India, it is mainly found in West Bengal, Assam and Arunachal Pradesh, and in coastal regions of Odisha and Karnataka. It is also found in the Nilgiri and Palni hills in Tamil Nadu

It has short claws that do not extend beyond the pads of its webbed digits. It is the smallest otter species in the world. It is **nocturnal in nature**. It feeds mainly on crabs, mudskippers and Trichogaster fish.

Its **IUCN status is vulnerable**. It has been classified in **Schedule I of Indian Wildlife (Protection) Act, 1972** and **Appendix I of CITES**.

Both Binturong and the Small-clawed otter have been added to the list of mammals in Assam's Kaziranga National Park and Tiger Reserve.



36. Golden Tiger

A golden tiger was recently captured in the Kaziranga National Park. A golden tiger (also known as a golden tabby tiger) is a **Bengal tiger exhibiting a color variation** resulting from a **recessive gene**. The golden tiger's coloring originates from a recessive trait known as 'wideband,' which influences the production of black pigments during the hair growth cycle. **Golden tigers are not a separate subspecies** but rather a result of **genetic variation within Bengal tigers**. They are exceptionally rare in the wild and even rarer in captivity.

37. Kumki Elephant

Odisha government has deployed Kumki elephant (domesticated, trained elephants) **to reduce human-animal conflict**. Kumki comes from the Persian word "kumak," which means "aid." This name is used all over India, from Bengal to Tamil Nadu. They are **trained captive Asian Elephant**. They help in **patrolling and rescue operation**. They would **help in minimizing conflicts** and safeguard both human and wildlife interest.

According to Government estimates, there have been 994 human fatalities and 660 injuries due to elephant attacks in Odisha from 2013-14 to 2022-23. Crops covering 33,822 acres have been damaged by elephants. This has threatened the livelihood of farmers.

38. Dusted Apollo Butterfly

It is a **butterfly species** found in **high-altitude regions**, especially in **mountainous regions of Ladakh**. It belongs to the family **Papilionidae**. It was discovered in the year 1890. It is found from **Ladakh to West Nepal**, flying at altitudes between 3,500-4,800m in the inner Himalayas. It is known for its **distinctive wing patterns**



and **coloration**. It is protected under **Schedule II** of the Wildlife Protection Act, 1972. The butterfly has been photographed for the first time in Himachal Pradesh near Manimahesh Lake in Chamba.

39. Deepastambham

Archaeologists have discovered a 390-year-old **Deepastambham** (lamp post) on the banks of the River Krishna in **Nalgonda district**, Telangana. This discovery sheds new light on trade ties in the region during early medieval times. According to the inscription found on the lamp post, the pillar is **dated back to June 1635**.

The inscription comprises a **fusion of Telugu and Tamil languages** and suggests that the pillar was dedicated to **Kasi Viswanatha**. The impressive height of the pillar hints at its possible role as a **lighthouse, aiding ships** along the **riverine trade route** in the early medieval era.

During the construction of the lamp post, the region was governed by the **Qutb Shahi dynasty**. European travelers like the French diamond trader **Tavernier**, who visited the Hyderabad kingdom has also made note of these land trade routes.



40. Kokborok Language

The Tripura Board of Secondary Education (TBSE) has announced that both **Roman** and **Bengali scripts** will be allowed for Kokborok exams. Kokborok is the language spoken by the **Borok people** belonging to the State of Tripura. The term kok means 'verbal', and borok means 'people' or 'human'. It is a **Sino-Tibetan language** and can be traced back to at least the 1st-century AD when the historical record of Tripuri kings started to be written down in a book called the **Rajratnakar**. It is **one of the state languages of Tripura**, along with Bengali.

41. Moh-juj

The Assam Government has revived the **traditional buffalo fight** (Moh-Juj), which had been halted for 9 years following the **Supreme Court's ban on Tamil Nadu's Jallikattu** and bullock cart races in Maharashtra.

It was introduced to Assamese culture by 30th Ahom king **Swargadeo Rudra Singha** about 200 years ago. It is **celebrated as a sport in Ahatguri town** during Assam's

Magh Bihu, a key harvest festival in January–February. The event is part of the cultural celebration of Magh Bihu. In addition to Moh-Juj, Swargadeo Rudra Singha also introduced elephant and bird fights, fostering community unity during his era.



42. Parakram Diwas

It is a national event celebrated on **23rd January** to **mark the birth anniversary of Netaji Subhash Chandra Bose**. It has been celebrated annually since 2021. The inaugural event occurred at Victoria Memorial Hall, Kolkata. This year, the event was held in Red Fort, New Delhi.

43. Grammy Awards

The Grammy Award is a prestigious accolade presented annually by the **Recording Academy** to honour **outstanding achievements in the music industry**. The Grammy Awards were first **established in 1959** to honour artistic and technical excellence across various music genres. The name Grammy is derived from **gramophone**, reflecting the original trophy's design resembling a gramophone.

It includes a wide range of categories covering such as pop, rock, rap, country, classical, jazz, and many more. The '**General Field**' are 5 awards that are **not restricted by genre**. They are Album of the Year, Record of the Year, Song of the Year, Best New Artist, and genre-specific awards.

Grammy Awards has introduced 3 new categories to recognise **African Music**, **pop dance**, and **alternative jazz**. The award ceremony is held annually in **Los Angeles, California**, generally in January or February.

15 Indians have won Grammy Awards such as A.R. Rahman, Zakir Hussain etc.

44. Investment Forum for Advancing Climate-Resilient Agrifood Systems

The Forum was launched in New Delhi. This initiative aims to create a **strategy for advancing climate-resilient Agrifood systems** through **investment and partnerships among Government of India, private sectors, farmers' organizations, and financial institutions**. It is a joint initiative of NITI Aayog, Ministry of Agriculture & Farmers' Welfare and Food and Agriculture Organisation (FAO).

The Forum will enable discussions and considerations across **6 crucial domains**: (a) Climate-resilient agriculture, (b) Digital infrastructure and solutions, (c) Financing climate-resilient agri-food systems (domestic and global), (d) Climate-resilient value chains, (e) Production practices and inputs for climate resilience, (f) Gender main streaming and social inclusion for climate resilience.

The forum will help Integrate climate considerations into agri-food systems and improve flow of investments to the field.

45. National Mission for Mentoring (NMM)

It is a programme in line with the **National Education Policy (NEP) 2020**. It provides mentors with opportunities to share expertise with mentees, assisting them in **becoming effective teachers**. Its objective is to establish a **strong mentorship system** that **empowers teachers to improve teaching practices and effectiveness**. It **keeps teachers updated** and **relevant in today's dynamic educational landscape**.

46. National Council for Teacher Education (NCTE)

It is a governmental **statutory body** established under the **National Council for Teacher Education Act, 1993**. This council advises both central and state governments on Teacher Education matters. Its objective is to achieve coordinated development of teacher education nationwide and to regulate and uphold Norms and Standards in teacher education and related matters.

47. Vidyanjali Scholarship

It has been launched by Ministry of Education. It has been launched to ensure that meritorious **Navodaya Vidyalaya** students **lacking financial means** have **access to high-quality learning systems**. It will facilitate a smooth transition from secondary to higher education while also providing financial support. Educational Consultants India Limited (EdCIL) is the implementing agency for the scheme. The beneficiaries of the scheme are Students of Class XI and XII attending Navodaya Vidyalayas nationwide.

48. Educational Consultants India Limited (EdCIL)

It is the **sole Public Sector Undertaking (PSU)** under the **Ministry of Education**. It was incorporated under the Companies Act, 1956, in June 1981. It is classified as a '**Mini Ratna**' by the Government of India. It provides consulting and technical services in Education and Human Resource Development, both domestically and internationally.

49. Satellite-based Toll Collection

The Union Government has reiterated its intention to introduce satellite-based toll collection on highways. It is a **GPS-based toll collection system**. The **National Highways Authority of India (NHAI)** will implement this system. It will enable vehicles to move freely without the need to stop for toll payments. It will capture the vehicle's registration plate photo and debit the toll amount **based on the actual distance travelled by the vehicle on the highway**. Every vehicle in this GPS-based toll collection system will need **an onboard unit (OBU)** linked to a constellation of satellites.. The OBU will also **connect to a wallet for toll deductions**. It will replace the existing **radio frequency identification-based FASTag system**.

50. Digital Detox Campaign

The Government of Karnataka initiated a Digital Detox campaign in partnership with the All India Game Developers Forum (AIGDF). This initiative has special emphasis on gaming and social media. It encourages people to **cut back on using digital devices** like smartphones, computers, tablets, and social media platforms through structured programs or campaigns. Its aim is to **encourage mindfulness, lessen screen time, address digital addiction, and foster healthier habits** with technology. It often involves activities such as unplugging from devices, engaging in offline hobbies and activities, spending time in nature, and fostering face-to-face social interactions.

The Government of Karnataka will collaborate with AIGDF and the **National Institute of Mental Health and Neuro Sciences (NIMHANS)** to **promote awareness** about mindful technology. It will establish digital detox centers state-wide.

51. Track Child Portal

It has been launched by the **Ministry of Women and Child Development**. It enables **tracking of the missing and found children** in all States/UTs. It will be implemented with support and involvement of various stakeholders namely Ministry of Home Affairs, Ministry of Railways, State Governments, UT Administrations, Child Welfare Committees, Juvenile Justice Boards, National Legal Services Authority, etc. It is integrated with the **CCTNS or Crime and Criminal Tracking & Network Systems** of the Ministry of Home Affairs. This allows **interoperability** in terms of matching of FIRs of missing children with database of Track Child to trace and match missing children.

"Khoya-Paya" is one of the component of Track Child Portal. In this portal, **any citizen can report for any missing or sighted children**.

52. GHAR (Go Home and Re-unite) Portal

It has been launched by the **National Commission for Protection of Child Rights (NCPCR)**. The GHAR portal has been developed to **digitally monitor and track the restoration and repatriation of children** as per the protocols under the **Juvenile Justice (Care and Protection of Children) Act, 2015**. It has enabled **digital tracking and monitoring of children** who are in the Juvenile Justice (JJ) system and have to be repatriated to another Country/State/District. It will enable digital transfer of cases of children

to the concerned Child Welfare Committees (CWCs) of the State. It will help in the **speedy repatriation of children**.

53. SAMARTH Centres

The **Smart Advanced Manufacturing and Rapid Transformation Hub** (SAMARTH) centres are set up under the Scheme for **Enhancement of Competitiveness in the Indian Capital Goods Sector**. Their objective is to **provide assistance to the MSMEs to train the workforce** and make them aware about **Industry 4.0 technologies**. SAMARTH centers provide training through organizing seminars, workshops and knowledge sharing events. They also provide consultancy in areas such as IOT Hardware, Software development, data analytics.

54. Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector

It has been launched by the **Ministry of Heavy Industries**. Its objective is to address the **technological obsolescence**, limited **access to quality industrial infrastructure** and **common facilities**.

Under the scheme, Advanced Centres of Excellence and Common Engineering Facility Centres have been set up.

55. Kilkari

The **Union Ministry of Health and Family Welfare** has launched Mobile Health Service 'Kilkari' to **improve health services**. It is a centralized **interactive voice response (IVR)** based **mobile health service**. Its objective is to **improve families' knowledge** and **uptake of life-saving preventative health practices**. The programme is integrated with the centralized **Reproductive Child Health (RCH)** portal of MoHFW's.

It delivers free, weekly, time-appropriate **72 audio messages** about **pregnancy, childbirth, and childcare directly to families' mobile phones**. Women who are registered in Reproductive Child Health (RCH) portal also receive a weekly call with pre-recorded audio content directly on their mobile phones.

56. Middle-class Housing Scheme

The Union Finance Minister has announced a Middle-class housing scheme for the middle class as part of **'Housing for All' policy**. Its announcement was made in the Interim Budget for FY2024-25. The Government will start a program to **assist middle-class individuals** living in rented houses, slums, chawls, and unauthorized colonies to **purchase or construct their own homes**. This is not an extension of **Pradhan Mantri Awas Yojana (PMAY)**. It is a **new scheme** where the **Government will define income levels, location, and accommodation types to identify beneficiaries**.

There is no defined criteria for the identification of the middle class in India yet.

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.