

MESSAGE FROM DR. KHAN

Dear Students,

There are many challenges and hurdles in the UPSC journey. Students always enjoy their glories like friendships, relationships, freedom, etc., but they get stuck in obstacles, which affects their preparation, and they fail to achieve their goals repeatedly.

*This month, let's talk about one such obstacle we all are familiar with, i.e. the **Lack of focus**. These days, aspirants need help **managing their concentration** especially while sitting long.*

*Occasionally, we all face **Brain Fog**, but there are some tools I would like to share with you all that can help eliminate the lack of concentration and, in turn, increase focus.*

***Manage the noises:** These noises could be both internal and external. External could include your mobile phone or your **TEXTPECTION**, i.e., expecting texts all the time, etc. But not all noise is external. When your thoughts wander too much, and they express themselves as self-doubt or anxiety, they lead to internal noise. Both are harmful to sustaining focus. Manage it. Give your mind a fixed time to think about that issue. And that's the way you can get your focus back.*

***Enlarge the size of your goal:** If you have something you are driven towards and are putting effort into, nothing can eclipse your hard work. We all know there was a fish, but Arjun had enlarged his goal so much that he could not see anything but the eye. This tool benefits a lot of students. If you have enlarged the size of your goal and think this is "THE" exam that you must clear, nothing can eclipse your path to success.*

***See through the individuals as well the problems:** Nothing is permanent; not everyone will understand what you are trying to achieve and your sacrifices for the same. Stay close to people who understand you and support you. If your focus on the goal is sharp, you can see through the problems.*

***Meditation:** It is also a very beautiful time-tested Indian Methodology for concentration. Even five minutes of meditation can help achieve mental peace and calm. It teaches you how to respond rather than to react to stimuli.*

***Sleep:** Yes, sleeping does help. When you are exhausted, it isn't easy to focus. But a sound sleep can improve your concentration levels and memory.*

Your preparation is not a 100m race; it is a marathon and you run daily.** Thus, cultivating focus and staying away from burnout should be your priorities. **You must regularly learn to focus and refocus until you achieve perfection.

And I am sure when you are very clear about your goal; there is nothing that is going to stop you.

My best wishes are with you.

Stay Blessed!

GS CONNECT

It gives us immense pleasure to present an innovative approach to mastering current affairs. Current is a passing wind and diverse issues happen at the same time. It is to an extent chaotic. Newspapers, magazines, and various other sources report the chaos per se. With our experience of current affairs, we have tried to give "the current" a medium to travel. It is the syllabus of the UPSC with its components that are the medium through which the "Current is Passed" to the readers. **Ever since the new syllabus of the UPSC came into existence, the current has been gaining significance both at prelims as well as mains examination.** This book is meant to cover current affairs and related questions arising from those events. We have not only covered the current events for their factual contents but also presented them in such a way that any question asked from that topic gets covered. Moreover, topics are also "peppered" with the relevant facts/key concepts that are related to the theme. We have also given **questions for practice both, subjective and objective**, so that candidates are oriented to the examination mode. It is a collection covering myriad sources yet in a manageable size. To use this book, we recommend you to, master the components of the General Studies (GS) syllabus as broken into rows and columns (provided on the subsequent page). Each cell comprising the portion of GS becomes the connection for the current and every news subsequently covered guides the reader to the address of the syllabus. It is logical to expect that the same issue may be connected to more than one topic of the syllabus. Further, the news also has some additional vistas opened for the readers by adding a box with the title "**PEPPER IT WITH**" where we expect the students to build further around the theme. We are also trying to reach the remotest part of the country with our spirit and zeal of "Mains Answer Writing", which has been admired by students, CSE rank holders, and other scholars. Continuing in line with the effort, we have started **programs like Navigator, NEEV, AWSDP plus, KOL, DL& MP, Advance Foundation Course, Weekend Courses as well as Optional Courses (PSIR and Sociology)**. When it comes to evaluation, we are all together at a different level. We are also reaching every nook and corner with this expertise for the aspirants of CSE. Now you can write a Mains Answer and get it evaluated by our Expert Team and can get Feedback. **Drop a mail at evaluation@ksgindia.com** to register yourself in our race to perfection. Don't wait, it's your golden chance to crack this exam and fulfill your passionate dream.

Team KSG

www.ksgindia.com

DELHI VN: 9717380832 & DELHI ORN: 9811293743 | JAIPUR: 8290800441 | PATNA: 7463950774 | RANCHI: 9939982007 | BHOPAL: 7509975361 |
INDORE: 7314977441 | BENGALURU: 7619166663 | HYDERABAD: 79960 66663 | IMPHAL: 9650245599 | SRINAGAR: 98712 35599 | MUMBAI: 9871265599 |

S. No.	GS -I	GS- II	GS- III	GS-IV
1	Indian Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian constitution- Amendments, acts and bills.	Various measures to boost Indian economy- planning, policies, management	Ethical issues related to family society, education, Corruption etc.
2	Indian History significant events, personalities, issues and the Freedom Struggle.	Legislative, executive and judicial processes.	Government budgeting and issues related to budget.	Ethics in public and private administration
3	Post independence issues, National boundary and disputes.	Constitutional, non-constitutional, judicial, quasi-judicial, administrative and other types of bodies.	Agriculture, animal husbandry and transport	Issues
4	Indian society features, issues, globalization and diversity	Federal structure and local bodies. Their powers and functions.	Food security- measures to boost food security and food processing. Issues related to land- land reforms	Related laws and rules
5	Women - issues and developments	Government policies and various governance issues like transparency, accountability and – governance	Industries and infrastructure- their growth and investment model	Governance/e- Governance
6	Urbanization – problems and remedies	Committees and schemes.	Space and technology, IT space, robotics and computer	Ethics in international issues
7	Distribution of industries and resources – India and world	Non-government issues, self-help groups and role of civil society	Disease, biotechnology and human welfare	Personalities and their teachings
8	Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc	Vulnerable sections of our society and social sector issues like Poverty, Hunger, Education, and their initiatives.	Innovations, intellectual property, Awards, POI and other important aspects of S&T	Other important topics
9		International Relation- India and other countries, various Indian and international agreements, effects of other countries on India and international institutions.	Environment; government initiatives, various judgment, pollution, degradation and conservation efforts	
10			Disaster & Disaster Management	
11			Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity; money laundering and its prevention.	



SCAN THIS QR FOR HIGH-RESOLUTION IMAGES

Contents

POLITY & GOVERNANCE.....5	India- Bhutan- China.....55
Role of Governors in Legislature.....5	10th ASEAN Defence Ministers' Meeting - Plus (ADMM-Plus) ..57
Electoral Bonds7	India holds '2+2' Ministerial dialogue with the US.....58
Universal Basic Income.....9	PRE- SHOTS.....59
Sub-categorization within Castes10	Abu Dhabi weighs investment pledges worth \$ 50 billion for
The Maratha quota demand.....11	India.....59
Haryana's Private Sector Quota.....13	Indian Veterans in Qatar.....59
CARA, India's Adoption Regulation Body14	International Migration Outlook Report 2023: OECD.....60
The IIT crisis.....15	Concept Of Prisoner's Dilemma in International Relations.....61
Local Governance Issues.....17	Vienna Convention on Diplomatic Relations 1961.....61
State Food Safety Index (SFSI) 202318	Rafah Border Crossing.....61
Merely Liking a Post is not an Offence under the IT Act.....20	123 Agreement.....62
PRE-SHOTS21	ENVIRONMENT & ECOLOGY63
Digital Advertisement Policy of 202321	State of Climate Services Report.....63
Use of Donor Gametes through Surrogacy.....22	White Hydrogen64
'One Nation, One Student ID' - APAAR ID.....23	Energy Conservation Building Code66
'Can't Regulate Political Alliances' - ECI.....24	Plastic Pellets.....67
Mixed Member Proportional System.....24	Champions of the Earth 2023.....69
Indian Succession Act of 1925.....25	Cleaning Our Rivers Due to Polluted Basins.....70
SOCIAL ISSUES26	Air Pollution71
Adolescent Leadership Beyond Schools: UNCRC.....26	PRE-SHOTS.....75
Mandatory reporting provision under POCSO.....27	NDC Synthesis Report.....75
Hunger Hotspots: FAO-WFP.....29	WWF Plowprint Report, 2023.....76
Rise in road accidents.....30	Brazzaville Summit.....77
India's First district-level Study on Hypertension.....31	World Organization for Animal Health (WOAH).....77
WHO Global Tuberculosis Report 2023.....33	Solar Energy Mini-Grids.....77
State of Muslim education in India: Report.....34	SCIENCE AND TECHNOLOGY.....79
PRE-SHOTS35	Bio-economy is the technology of tomorrow.....79
Smart Cities Ranking.....35	Carbon Dioxide Capture Technology80
Gender Disparity among Organ Recipients: NOTTO.....35	India's New Guidelines on Genetically Modified Insects.....81
National Health Claim Exchange (NHCE).....36	Non-melanoma Skin Cancer82
ICMR finds COVID-19 infection behind the sudden deaths.....36	India's own CAR-T Cell Therapy.....83
Unique ID for Doctors in the National Medical Register.....37	PRE-SHOTS SPACE.....84
Global Coalition for Social Justice37	Supergiant Betelgeuse star.....84
ECONOMY38	China's Shenzhou-17 Mission.....84
India Finance Report- CAFRAL.....38	Fast Radio Bursts.....85
India's 50-year bond39	Tellurium produced in Neutron Star Mergers.....85
Liberalized Remittance Scheme (LRS)40	China to build the world's largest 'ghost particle' detector.....86
The Perils of Patent Amendments.....41	NANOTECHNOLOGY86
Reputation of India's Pharma Industry.....42	Nanophotonic electron accelerator (NEA).....86
Cyber Insurance is Critical for MSMEs.....43	Carbon Nanoflorets.....87
Digital Consent Acquisition (DCA) System.....44	HEALTH87
PRE-SHOTS44	Calixcoca Vaccine.....87
International Competition Network.....44	Chikungunya Vaccine.....88
Securities Appellate Tribunal (SAT).....45	Helicobacter pylori (H. pylori) bacteria.....88
Penny Drop Verification.....45	Recycling of Diapers through UV lights.....88
Embedded Finance.....45	INFORMATION TECHNOLOGY89
International Monetary Fund Proposal to Increase IMF Quotas.....46	7th India Mobile Congress.....89
India inks Supply Chain pact at IPEF.....47	Dark pattern sales deemed "Cybercrime".....89
Lewis Model.....47	Flamingo Project.....90
AGRICULTURE48	World's first Artificial Intelligence (AI) Safety Summit.....90
Rise in Horticulture Output.....48	BASIC SCIENCE.....91
Agricultural losses due to extreme weather events.....49	Ball Lightning.....91
Nutrient-based subsidy.....50	Thallium.....91
Pusa-2090 to replace Pusa-44.....51	GEOGRAPHY92
PRE-SHOTS52	India gets ready with rare earth R&D push.....92
Expanding cultivation of GI-tagged Onattukara Sesame.....52	British project 'DEFIANT'.....93
Agri Stack Project.....52	Two New Coral Reefs Discovered in Galapagos Islands.....93
Seed preservation among the Ao and Sümi Nagas.....53	Kra Isthmus.....94
INTERNATIONAL RELATIONS.....54	Cyclones and Hurricanes in News.....95
India- Bangladesh Ties.....54	Volcanoes.....95

Earthquakes in News.....	97
Uttarakhand Tunnel Collapse.....	98
INTERNAL SECURITY	100
India and its National Security Strategy	100
Spike in fighting in Myanmar.....	101
Meitei Extremist Organizations	101
Violent Extremist Organization Under Investigation	102
Rise in Cyber Attacks in India.....	104
Indian Maritime Blue Economy	105
DNA and face-matching systems at police stations.....	107
PRE-SHOTS	108
Goa Maritime Conclave (GMC)	108
Indo-Pacific Regional Dialogue 2023	108
Ransomware Attack.....	109
30 years of Border Peace and Tranquility Agreement (BPTA)	109
Exercises in News:	109
ART AND CULTURE.....	110
Creative Cities of Literature and Music by UNESCO.....	110
Dhordo Village.....	110
Dogra Architecture	111
Uttarakhand GI Tags	111
Janjatiya Gaurav Diwas.....	112
Pichwai Painting	113
Temple Caves discovered in Ratnagiri	113
Rock Art dating back to the Neolithic period	113
Wood Technology- Stone Age.....	114
Vajra Mushti Kalaga.....	115
Banni Festival.....	115

Arattu Festival.....	115
Chhath Puja: A Holy Festival of Bihar.....	115
GOVERNMENT SCHEMES.....	117
NITI Aayog SATH-E Report	117
AAINA Dashboard for Cities' Portal	117
Pradhan Mantri Anusuchit Jaati Abhuyday Yojana (PM-AJAY)	118
Meri Maati Mera Desh campaign	118
PM-Kisan Bhai (Bhandaran Incentive) Scheme.....	119
PM Garib Kalayan Anna Yojana.....	120
MISCELLANEOUS	121
Anubhav Awards	121
Rohini Nayyar Prize	121
Indira Gandhi Peace Prize.....	121
Hattee community	122
National Unity Day.....	122
World Thrift Day	122
CONTEMPORARY ETHICS CASE STUDY	123
PHILOSOPHY OF THE MONTH	124
Work-Life Balance: A Must-have Conversation.....	124
SPECIES IN NEWS	125
MAP CONNECT	128
India 128	
World	130
THEMATIC ESSAYS	131
MAINS PRACTICE QUESTIONS:	131
PT ORIENTED QUESTION	132
ANSWER KEY	135



FOUNDATION COURSE



Key features of our Foundation course



UPCOMING BATCHES

BENGALURU (Koramangala)	25 th Nov.	☎ 7619166663
INDORE (Bhawar Kuan)	27 th Nov.	☎ 9893772941
PATNA (Exhibition Road)	27 th Nov.	☎ 7463950774
DELHI (Rajender Nagar)	3 th Dec.	☎ 9811293743
JAIPUR (Tonk Road)	11 th Dec.	☎ 8290800441
BHOPAL (M.P. Nagar)	18 th Dec.	☎ 7509975361
HYDERABAD (Himayatnagar)	Admission Open	☎ 7996066663
DELHI (Vijay Nagar)	Admission Open	☎ 9717380832
KOLKATA (SALT LAKE)	Admission Open	☎ 9007709895
IMPHAL WEST (Keishamthong Hodam Leirak)	14 th Nov	☎ 9650245599
MUMBAI (Oshiwara)	14 th Nov	☎ 9871265599
SRINAGAR (BAGHAT)	14 th Nov	☎ 9871235599

☎ 8826002521 / 9990999707

🌐 www.ksgindia.com

POLITY & GOVERNANCE

Role of Governors in Legislature

News Excerpt:

The Supreme Court (SC) agrees with the Tamil Nadu government's argument that the **Constitution** does **not** provide the Governor the "**discretion**" to **withhold** the 10 bills it re-enacted or refer them to the President.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

- Previously, the Punjab and Kerala state governments have **petitioned** the SC, requesting that it **instruct Governors** on how long they can **postpone assent** to bills passed by state assemblies.

About the news:

- Tamil Nadu Governor has "**withheld**" **assent** for certain bills passed by the Tamil Nadu Legislative Assembly.
 - The Tamil Nadu Assembly also approved a motion requesting, that the President of India set a deadline for the assent of Assembly-passed bills.
 - This follows the SC expressing "**serious concern**" over inaction by the Governor on these bills.
- The court expressed **displeasure** on similar **delays** by Governors of **Telangana, Punjab** and **Kerala**.
 - According to the **Punjab** government, the Governor had not assented to seven bills that the assembly had passed. The Governor had neither sent the bills back to the government for consideration nor he has passed the bills.
 - The **Kerala** government also moved a special leave-petition before the SC, complaining that the Governor had indefinitely delayed assent to the Bills passed by the State Legislature.
 - The Kerala University Amendment Bill and the Lokayukta Amendment Bill were both officially vetoed by the State Governor.
 - The SC has also sought a **response** from **Kerala Governor** on that petition.
 - The State of **Telangana** had already filed a petition, alleging that the Governor had postponed numerous significant bills.

Constitutional status:

- Article 154:**
 - It states that the **executive power** of the State shall be vested in the Governor and **shall be exercised by him either directly or through officers** subordinate to him in accordance with this Constitution.
- Article 200:**
 - It gives four alternatives to the Governor when a bill is presented to him after a state legislative


assembly (and the legislative council, wherever existent) passes it. The Governor can -

- **assent** to the bill,
 - **withhold** assent,
 - **send it back** to the **assembly** to reconsider it, **or**
 - **send** it to the **President** for his/her consideration.
- The Governor has to assent to the bill even if the Assembly passes the bill again without accepting any of the Governor's suggestions.
 - The Governor can refer a bill to the President if the bill encroaches upon any rights of the **High Court** or, in the Governor's discretion, a subject in the **Concurrent list**.
- Article 201:**
 - When a bill is reserved for the consideration of the President, s/he **may assent** to or **withhold assent** from the bill.
 - The President may also **direct the Governor** to return the bill to the House or Houses of the Legislature of the State for reconsideration.
 - Article 361:**
 - The **Governor** has complete **immunity** from **court proceedings** for any act done in the exercise of their powers.
 - This provision poses a unique situation when a government may need to **challenge** a **Governor's action** of withholding assent to a Bill.
 - In this case, the Governor should **disclose** the **reason** for such **refusal** since, being a high Constitutional authority, they cannot act arbitrarily.

Concerns associated with the Powers of Governor:

"Reservation of bill":

- The Governor by sitting on a bill passed by the Assembly is acting **against** the **Constitutional direction**.
- However, the Governor can **reserve** a bill and **not grant assent** in certain circumstances. This includes if the bill is -
 - against the **provisions** of the Constitution,
 - opposed to the Directive Principles of State Policy (DPSP),
 - against the **larger interest** of the country,
 - of grave **national importance**, or
 - deals with compulsory **acquisition of property** under **Article 31A** of the Constitution.
 - those which reduce the powers of the **High Court**.



SUPREME COURT'S STAND

01 RAMESHWAR PRASAD AND ORS V. UNION OF INDIA AND ANR

The immunity granted by Article 361(1) does not take away the court's power to examine the validity of the Governor's action.

- Thus, if the Governor's refusal to grant assent is unconstitutional, the Court can strike it down.

02 NABAM REBIA AND BAMANG FELIX VS DY.SPEAKER (2016)


Governor's discretion under Article 200 is limited to deciding whether a bill should be reserved for the President's consideration, i.e. actions or inactions by the Governor regarding bill assent can be subject to judicial review.

03 SHAMSHER SINGH CASE (1974)

Governor does not exercise their discretionary powers while withholding assent or returning a bill to the state legislature. They are required to act as per the advice of the council of ministers.

04 GUBERNATORIAL PROCRASTINATION

- The bills sent to the Governor for assent should be returned "as soon as possible" and not be delayed making State Legislative Assemblies wait indefinitely.
- The Governor must take action on bills before the matter goes to the SC.
- Governors are not elected representatives of the people.



- o bills on **Concurrent List subjects** that are repugnant to a Union law based on ministerial advice.

"Withholding assent":

- The situation of "withholding assent" may arise in case of a **Private Members' Bill** (any Member of State Legislature other than a Minister) passed by the State Legislature, which the council of ministers do not want to be enacted into law.

- o In such an instance, the **council of ministers** would **advise** the Governor to "withhold assent."
- o However, this is an unlikely scenario as the council of ministers who enjoy a majority in the legislative assembly would not allow the passage of such a bill.

- If the incumbent government whose bill has been passed by the legislature falls or resigns before it is assented to by the Governor, in that case, the **new council** may **advise** the Governor to "withhold assent."

"Returning the bill":

- The return of any bill to the state legislature for reconsideration is also to be done based on **ministerial advice**.
 - o Governors in the past have exercised their discretion in returning bills, like the Tamil Nadu Governor concerning the **bill** prohibiting **online gambling**.
 - o However, the Governor **shall assent** to such a bill if it is passed again by the state legislature.

Way Forward:

- The Governor's **delay** in giving assent to bills passed by the Assembly **violates** the **state's Constitutional obligation** and **hinders** the **functioning** of the State Government.

PEPPER IT WITH:

Sarkaria Commission, Governor's discretionary powers, Federal Structure of the Constitution.

- o If the Governor persists in such behaviour, the state government can **notify** the **President** under **Article 355** and seek appropriate instructions to **ensure compliance** with the Constitution.
- The drafters of the Constitution did not anticipate the Governors' inaction on bills under **Article 200**.
 - o It is clear from Article 200 that a Governor cannot postpone signing a bill.
 - o To preserve the nation's **federalism**, the **Supreme Court** should provide a **fair period of time** for Governors to consider a bill enacted by the Assembly.
- **Punchhi Commission (2010)** recommended establishing a time limit for the Governor to decide on granting assent or reserving a bill for the President's consideration.
- **The National Commission to Review the Working of the Constitution (NCRWC)** proposed a four-month time limit for the Governor to decide on a bill's fate.

It also suggested removing the Governor's power to withhold assent except in cases explicitly mentioned in the Constitution.

Electoral Bonds

News Excerpt:

The Supreme Court (SC)'s **five-judge bench** will resolve the conflict between a voter's **right to know** the source of political funding and a company's **right to privacy** and confidentiality while choosing which party to fund, w.r.t. the **validity** of the **Electoral Bond Scheme**.

About the news:

- According to the report released by the Association for Democratic Reforms (ADR) in July 2023, Electoral bonds have emerged as the **primary source** of **donations** for political parties in India, with the ruling party securing the majority share.

Issues to be resolved in the current hearing by a five-judge bench:

- Electoral bonds legalized **anonymous donations** to political parties. This violation of citizens' **right to know** about the funding of political parties ultimately leads to **corruption**.
- The above two issues concern violating **Articles 14, 19, and 21** of the Constitution of India.

Issues to be resolved later by the seven-judge bench:

- The electoral bonds scheme was passed as a **money bill**, circumventing the Rajya Sabha. A subsequent **seven-judge SC bench** will be hearing whether the electoral bond bill could be designated as a money bill.

About the Electoral Bond Scheme:

- It is a financial tool used to make donations to political parties.
- These are available at branches of the State Bank of India (SBI). One can purchase the bonds digitally, by demand-draft or cheque in multiples of Rs 1,000, Rs 10,000, Rs 1,00,000 and Rs 1 crore.
- A donor with a KYC-compliant account can purchase the bonds and donate to a political party or individual. The political party can encash the bonds within fifteen days.
- These are available for ten days at the beginning of every quarter, viz, January, April, July, and October. The electoral bonds do not bear the name of the donor.
- Any party registered under section **29A of the Representation of the Peoples (RPA) Act, 1951**, having secured at least **1%** of the votes polled in the most recent general or assembly elections is entitled to receive electoral bonds.

About Campaign Financing Framework (election finance/ political donations/ political finance):

- Funds raised to promote candidates, political parties, or policy initiatives and referendums. Donors and recipients include individuals, corporations, political parties, and charitable organizations. For instance,
 - US**- Elections revolve around individual candidates' campaign machinery and even national

presidential campaigns are run, mostly by individual candidates.

- India**- Parties are central to electoral politics, not individual candidates.

A fruitful party funding framework requires attention to four key aspects-

1. Regulation of Donations:

- Donations banning:** Some individuals or organizations, for instance, foreign citizens or companies, may be banned from making any donations.
- Donation limits:** They are aimed at ensuring that a party is not captured by a few large donors — whether individuals, corporations, or civil society organizations.

2. Expenditure limits:

- Safeguard politics from a financial arms race.
- It relieves parties from the pressure of competing for money before they even start to compete for votes.

3. Public Funding:

- Funded with money collected through income tax donations or taxes.
- An attempt to move toward a **"one voice, one vote" democracy**, and remove undue corporate and private entity dominance.
- Jurisdictions such as the United Kingdom, Norway, India, Russia, Brazil, Nigeria, and Sweden have considered legislation that would create publicly funded elections.
- Problem:** Unless we decide to ban private funding altogether, public funding only tops up party funds and does not solve the challenging task of regulating private money.
- Ways of implementing public funding:**
 - Predetermined criteria:**
 - For instance, in Germany, parties receive public funds based on their importance within the political system.
 - This is measured on the basis of the votes they received in past elections, membership fees, and the amount of donations received from private sources.
 - Also, German "political party foundations" receive special state funding dedicated to their work as party-affiliated policy think tanks.
 - Democracy vouchers:**
 - It is in place for local elections in Seattle, US. Under this, the government distributes a certain number of vouchers to eligible voters.
 - Each voucher is worth a certain amount.

- While the voucher is publicly funded, the decision to allocate the money is taken by individual voters.
- This system may be more egalitarian but may also promote more extremist candidates.

4. Disclosure Requirements:

- Less intrusive form of regulation, not outrightly preventing parties or donors from receiving or making donations.
- It nudges voters against electing politicians who have used or are likely to use their public office for quid pro quo arrangements. It may discourage parties from using public office to benefit their donors.
- As a regulation, it rests on an assumption that the information supply and public scrutiny may influence politicians' decisions and the electorate's votes.
- Donor anonymity serves a useful purpose of protecting donors. E.g., donors may face the fear of retribution or extortion by the parties in power. The threat of retaliation may, in turn, deter donors from donating money to parties of their liking.

Views on electoral bonds:

- **Supreme Court (SC):** It requested all political parties to provide the **ECI** with a record of all donations made through electoral bonds.
 - Additionally, it requested that the **Finance Ministry** shorten the 10-day timeframe to a 5-day during which electoral bonds may be purchased.
- **Election Commission of India (ECI):** The ECI told the SC that it does not approve anonymous donations to political parties.
- **Reserve Bank of India (RBI):** It had warned the government that the bonds would "undermine the faith in Indian banknotes and encourage money laundering."

Way Forward:

- **Opacity and the unaccounted financing of political parties** will have a **counter-effect** on **democracy** and should not be promoted.
- The **right to know** about political party funding must be balanced with the **right to maintain personal privacy**. **Also, no right can be absolute.**
- The judiciary must maintain **separation of powers** from other organs and not transgress the legislative field.

PEPPER IT WITH:

ECI, Finance Act, Money Bill, Right to Privacy, RPA 1950 and 1951

Arguments in Favour of Electoral Bonds	Arguments Against Electoral Bonds
<ul style="list-style-type: none"> • Right to privacy: Political self-expression through voting or donations to one's preferred party or candidate. • Tax obligations: Contributions of clean money and abiding by tax obligations due to the confidentiality clause. • Digital transactions: <ul style="list-style-type: none"> ○ Use banking channels and reduce black money. ○ Further the goal of Digital India as all transactions of electoral bonds are carried out via cheques or digitally. • May aid the opposition's donors: Confidentiality protects fair elections, advances the public interest, and balances conflicting needs and the right to know. • Transparency: All are redeemed by the party's bank account, and only disclosed to the ECI. • Weeding out inactive parties: Hold back political parties solely operated to collect funds from the public and not politically active. • Accountability: Election funding becomes safe and accountable, as any donation going above Rs 2000 is required to be in the form of electoral bonds and cheques. • No legal limit on expenditure by political parties: A party can spend as much as it wants for its national or state-level campaign as long as it does not spend that money towards the election of any specific candidate. 	<ul style="list-style-type: none"> • 90% of donations to ruling parties: Negatively affect democracy and skew the level playing field during elections. • Favour corruption: The influential entities may covertly set up persons with verified accounts to purchase electoral bonds for them through the regular banking route to give favour or anonymously enter into a quid pro quo with ruling political parties. <ul style="list-style-type: none"> ○ The donations could even be kickbacks from criminals seeking to avoid prosecution. ○ Increase black money circulation and money laundering. • Opacity: It does not require political parties to mention the names and addresses of those contributing to the reports filed with the ECI annually. <ul style="list-style-type: none"> ○ Affects transparency in political party finances and fundamentally alters the perception around political donations. • Unaccountability: Infringe on citizens' fundamental 'Right to Know'. It makes the political parties unaccountable by withholding crucial public information, which goes against the spirit of the "Rule of law." • Only the government may obtain donor information by requesting data from the SBI, not the citizens. • Amendments made via the Finance Acts of 2016 and 2017: The amendments have removed the caps on campaign donations by companies and have legalised anonymous contributions. <ul style="list-style-type: none"> ○ Finance Act of 2017- use of electoral bonds will be exempted from disclosure under the RPA, 1951. ○ Finance Act of 2016- amended the Foreign Contribution Regulation Act (FCRA), 2010, to allow foreign companies with subsidiaries in India to fund Indian political parties. <ul style="list-style-type: none"> ▪ These amendments allowed the corporate sector to conceal individual political donations from their shareholders and violated their "right to conscience" under Article 25, who may not support the political party that benefited from the contribution. • Loopholes: Parties are required to disclose donations of more than Rs 20,000 unless they are made through electoral bonds but not donations that are below Rs 20,000. Thus, parties generally break large donations from a single donor into multiple small donations.

Universal Basic Income

News Excerpt:

Localized experiments with Universal Basic Income (UBI) have shown mostly positive outcomes across states, strengthening calls in favour of the social policy.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About Universal Basic Income (UBI):

- UBI is a form of **social security** where every citizen, regardless of their employment status or income level, receives a **regular, unconditional cash payment** from the government.
- **Objective:** To provide financial security and reduce poverty, while also enabling individuals to pursue education, entrepreneurship, or other opportunities that contribute to societal well-being.
- In **2016-17, the Economic Survey of India** studied the idea and presented a model for UBI.
 - Accordingly its basic premise was: "A just society needs to guarantee to each individual a minimum income which they can count on, and which provides the necessary material foundation for a life with access to basic goods and a life of dignity."

The essential difference between UBI and MIG:

Universal Basic Income:

UBI provides a monthly stipend that would ensure that a person would be **above the poverty line** without any other source of income. (Thus, the Economic Survey of India suggested a UBI of Rs 7,620 per annum).

Minimum Income Guarantee:

MIG, on the other hand, is pretty much at the discretion of the government of the day - it can be equal, **more or less than the poverty line** expenditure.

Suresh Tendulkar and C Rangarajan headed committees studied poverty in India and arrived at different qualifications of poverty.

According to the **C Rangarajan Committee**, the number of poor was 19% higher in rural areas and 41% more in urban areas than what was estimated using the **Tendulkar Committee** formula.

Regional successful Case studies related to Universal Basic Income:

- The basic income pilot in **Hyderabad, Work FREE**, has seen increased health insurance coverage among participants.
- The Delhi pilot by the **Self-Employed Women's Association (SEWA)** saw people gaining access to better quality food and thus improving nutritional outcomes.

As a solution to overcome the loopholes present in government services:

- Cash, as a universal medium of exchange, has the unique potential to provide each person with a basic economic floor and empower them to meet their needs as they deem fit.

- India's diversity has **unique governance challenges** like - A tribal woman in Assam, a young jobless graduate in Delhi, a landless labourer in Maharashtra belonging to a marginalized caste and a homemaker in Peri-urban Tamil Nadu all having diverse and distinct needs.
- Distribution of sewing machines to empower women misses the key point that tailoring is the path they want to pursue, or if employment is an even bigger challenge.
- Good quality and accessible government services are essential, but the addition of **cash-based support allows for protecting and enhancing people's capacity to access better services.**

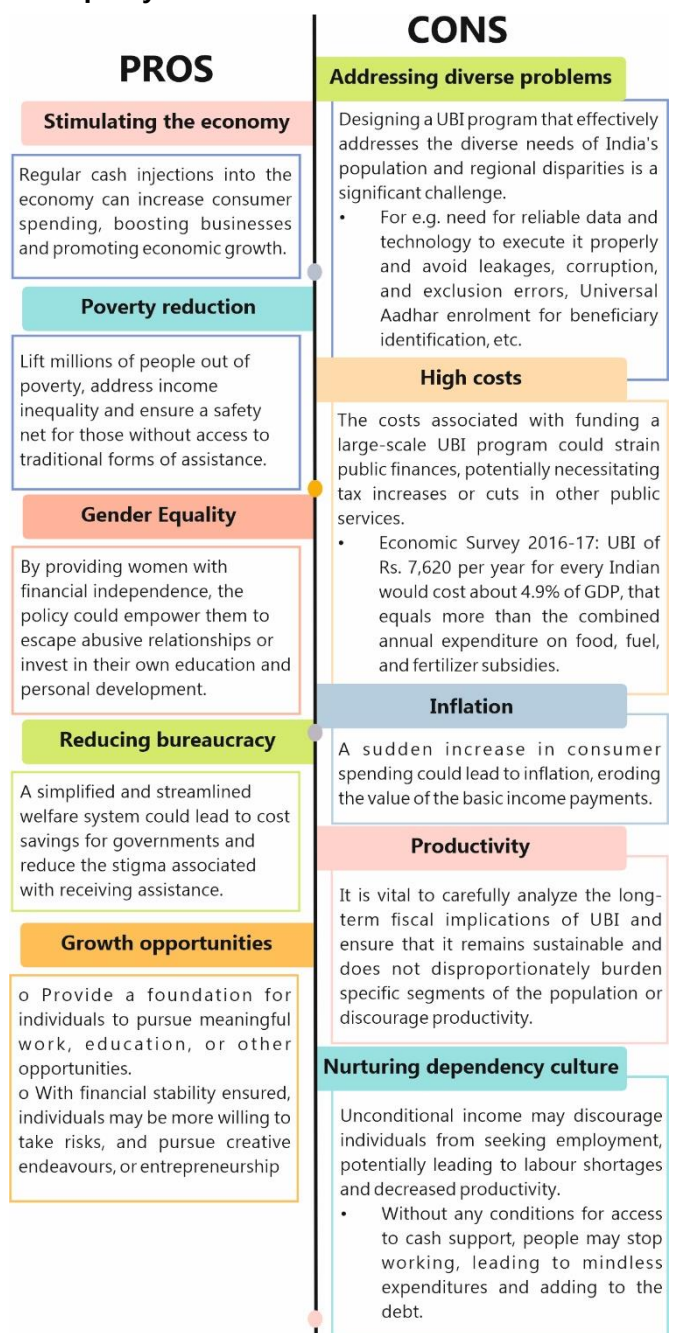


FIGURE 1 PROS & CONS OF UBI

- Additionally, the universality and unconditionality of the scheme would mean that the government does not need to spend time and resources in assessing the eligibility of the potential beneficiaries, and poor and vulnerable people are freed from the burden of the associated paperwork.

Worldwide Trails on UBI:

- **United States (1968-1980 and ongoing):**
 - The U.S. conducted several income maintenance experiments between the late 1960s and early 1980s in cities like Seattle, Denver, and Gary.
 - The results showed a modest reduction in labour force participation but also highlighted positive effects on education, health, and family stability.
- **Iran (2011-present):**
 - Iran launched a nationwide UBI program in 2011 to offset the effects of subsidy reforms.
 - The impact on employment and labour force participation has been mixed.

Way Forward:

- **Need for detailed analysis and diverse mechanism:** Implementing **rent caps and price indexes** might have varying impacts across different regions and market conditions.
 - The conversation about UBI is multifaceted and requires careful analysis and consideration of various factors, including the impact of AI on the job market.
- **Accommodating diverse workforce:** UBI could potentially provide the necessary **support and flexibility for individuals to find suitable work or pursue education and entrepreneurship.**
- **Monitoring:** Ensuring that UBI payments reach the intended beneficiaries without being lost due to corruption or inefficiencies is crucial.

PEPPER IT WITH:

Poverty, Inflation, Income Distribution, Labour Force Participation, Employment

Sub-categorization within Castes

News Excerpt:

In an election rally in **Telangana**, the Prime Minister promised to investigate the sub-categorisation of Scheduled Castes (SCs) to identify and help the most backward among them.

- The **Madigas** are the most populous SC communities in the state but have claimed that another SC

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

community, the **Malas**, was taking up their share of representation.

- The **Ministry of Social Justice and Empowerment's** annual report shows **1,263 SCs** in India in **2018-19**, with no community specified as SC in Arunachal Pradesh, Nagaland, Andaman & Nicobar Islands, and Lakshadweep.

About:

Sub-categorization of Castes:

- States argue that certain SCs are **under-represented** despite reservation compared to other castes.
- Over the past two decades, several Indian states, including **Andhra Pradesh, Punjab, Bihar, and Tamil Nadu**, have attempted to introduce reservation laws at the state level to sub-categorize SCs and determine their respective quantum of reservation.
 - However, these plans have been **stalled** in courts as the Supreme Court forms its **larger Constitution Bench** to decide the matter.

Background:

- The issue first surfaced in **1996** when the **Andhra Pradesh** government formed a **Commission of Justice Ramachandra Raju**, which **recommended sub-categorizing** SCs based on community representation.
 - In 2000, the Andhra Pradesh legislature passed a **law** reorganising Scheduled Castes into sub-groups.
 - However, this law was declared **unconstitutional** in a 2005 Supreme Court ruling.
- In **2007**, **Bihar** established the **Mahadalit Commission** to identify castes within Scheduled Castes that were left behind.
- In **Tamil Nadu**, a **3% quota** is given to the **Arundhatiyar caste**, as they hold only 0-5% of jobs.
- **Punjab** has had laws that provided preferential treatment to **Balmikis** and **Mazhabi Sikhs** within the SC quota.

Constitutional status regarding sub-categorisation:

- The Indian Constitution allows **special treatment** for **SCs** and **STs** to achieve **equality** but does **not specify** the castes and tribes to be called Scheduled Castes (SCs) and Scheduled Tribes (STs).
- This power is left to the Union Central Executive, i.e., the **President**.
 - **Articles 341 and 342:** The President, after consultation with the Governor, may specify the castes, races, tribes or parts of groups within castes or races, which shall be deemed to be SCs and STs.
- According to the Constitution, all SCs shall be treated as a **homogeneous group**.

Judicial Interventions:

- In **2004**, the Supreme Court ruled that the State did **not** have the power to unilaterally **sub-categorize**

NCSC:

- Article 338** of the Indian Constitution deals with the **National Commission for the Scheduled Castes**.
- It provides safeguards against the exploitation of **Scheduled Castes** and **Anglo-Indian** communities.

NCST:

- The **National Commission for Scheduled Tribes** (NCST) was established by amending Article 338 and inserting a new **Article 338A** in the Constitution through the Constitution (**89th Amendment**) Act, 2003.
- It is vested with the duty of the **socio-economic** development of STs and to evaluate their **development progress** under the Union and any State.

communities in the list of SCs or STs.

- In the 2005, **E.V. Chinnaiah case**, **Supreme Court** ruled that special protection of SCs is based on the premise that all SCs can **collectively enjoy** the benefits of reservation regardless of **income inequality**.
 - It also stated **only** the **President** has the power to notify the **inclusion** or **exclusion** of a caste as SC, and states **cannot tinker** with the list.

- However, in **2020 Supreme Court** ruled that deciding on the quantum of benefits in the notified lists would **not** be considered **"tinkering."**

- In the 2018, **Jarnail Singh v Lachhmi Narain Gupta judgement**, the Supreme Court upheld the concept of the **"creamy layer"** within SCs; justifying that it provides an income ceiling on those eligible for reservation.

Executive actions:

- In 2004, the Supreme Court ruling on SC sub-categorization prompted the Union government to **explore legal options**.
- In **2005**, the Attorney-General of India (**AGI**) suggested that it was possible to sub-categorize SCs, provided there was "unimpeachable evidence to indicate a necessity" for it.
 - The AGI suggested a **Constitutional amendment** to facilitate this.
- The **Union government** formed a **National Commission** to investigate this issue in **Andhra Pradesh**, and the **cabinet** recommended an **amendment to Article 341** of the Constitution.
 - However, the **National Commission on SCs** and **STs** argued that a Constitutional amendment was unnecessary.

Arguments for sub-categorization

- Special protections for SCs in India stem from the belief that **all castes have suffered social inequity**, regardless of economic or educational factors.
- Justice Raju Commission**: It is needed due to **graded inequalities among communities**.
 - The more forward communities have access to basic facilities, while backward communities are disadvantaged.
- States**: It aims to represent all SCs in government services equitably and provide them with fruitful opportunities and **does not violate the right to equality**.
- It leads to the further upliftment of the SCs, **leveraging their social status and correcting social injustice**.

Arguments against sub-categorization

- Supreme Court: Social and educational backwardness tests** cannot be applied to SCs and STs suffering from untouchability.
- Allowing states to change the proportion of reservations will **appease one vote bank or another**.
- Reservation's objective is to ensure that **all backward classes march together**, but social transformation's Constitutional goal **can't be achieved without dealing with the changing social realities**.
- NCSC and NCST believe separate reservations within categories will not address the root cause.
 - The NCST believes that backward SCs are lagging forward SC communities, and a separate quota would not help.

Way Forward:

- Need for **concrete data**: The **Parliament** can handle the sub-categorization of castes. Still, concrete **population numbers** and **socio-economic data, along with appropriate percentages**, are crucial for determining how castes can be classified.
- NCSC** and **NCST** recommend that **existing schemes** and government **benefits reach** the SCs before sub-categorization. Both bodies believe **addressing these disparities** is **crucial** for ensuring representation at all levels.

PEPPER IT WITH:

Caste Survey, Attorney General of India, Reservation

The Maratha quota demand

News Excerpt:

The Maharashtra government has formed a **panel** of three former **High Court judges** to advise it on the legal battle over the issue of the Maratha quota in the Supreme Court.

Recent developments:

- The government presented the protestors with copies of a Government Resolution (**GR**) based on a cabinet decision **to issue Kunbi caste certificates** to certain members of the Maratha community and an **older GR from 2004** promising reservation to eligible **Maratha-Kunbis** and **Kunbi-Marathas**.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

- The government has also **constituted a panel**, to explain how Marathas from the **Marathwada region** can be included in the Other Backward Classes (OBC) category and given the Kunbi caste certificate. The panel need to **establish** that the Maratha community is **backward**.

About:

- The Marathas want to be identified as **Kunbis**, entitling them to benefits under the (OBCs) quota.
- The demand for OBC reservation became prominent after the **Supreme Court**, in 2021, **struck** down the quota for Marathas under the state's Socially and Educationally Backward Class (**SEBC**) **Act, 2018**.
 - The act provided **reservation** to the **Maratha community**, which took the total quota in the state beyond the 50% ceiling set by the court in its **Indra Sawhney judgment**.
- The **Marathas community** predominantly consists of **two sections**: the **upper section** with surnames like Deshmukh, Bhonsle, More, Shirke and Jadhav are the Kshatriyas, while the rest belong to a predominantly agrarian sub-caste called **Kunbi**.

Need for the reservation – Gaikwad Commission Report 2018:

- Agrarian society:** 76.86 % of Maratha families were engaged in agriculture and farm labour, around 70% lived in mud houses; only 35%-39% had personal tap water connections; 13.42% of Marathas were not literate, with only 35.31% having primary education; 43.79 % had cleared HSC and SSC.
- Economic backwardness:** According to the State Backward Class Commission, 93% of Maratha families had an annual income of ₹ 1 lakh, 37.38% were below the poverty line against the state average of 24.2%, and 71% owned less than 2.5 acres.
- Vulnerable status of women:** The report stated that the '**purdah system**' is prevalent in Maratha society. As a result, Maratha women were not allowed to leave home for education. The **widow's remarriage** was also **restricted**, thus leaving the children destitute. The women had to work in the fields and consequently could not progress.
- Lack of opportunities:** The prevalence of child marriage and dowry came in the way of the girl education. Due to poverty, children from the community, mainly girls, did not get a chance to pursue primary and higher education. As a result, they could not appear for **competitive exams** and had lower representation in **government jobs**.
- Morale deficit:** The community had **lost its self-esteem**, which could be remedied by giving them reservations under the SEBC category.

Constitutional provision:

- The **102nd Amendment Act (2018)** introduced **Articles 338B and 342A**.
- Article 338B deals with the **National Commission for Backward Classes**, and Article 342A empowers the **President to specify** the state's socially and educationally backward communities.
- The **Parliament** can include a community in the **Central List**.

Maharashtra's reservation scenario:

- Marathas make up almost **a third of the population** of Maharashtra.
- The **52% reservation** in the state is currently divided into Scheduled Castes **13%**, Scheduled Tribes **7%**, OBCs **19%**, Special Backward Classes **2%**, Vimukta Jati **3%**, Nomadic tribe (B) **2.5%**, Nomadic tribe (C) Dhargar **3.5%**, and Nomadic tribe (D) Vanjari **2%**.
- Separately, a **10% Economically Weaker Section (EWS) quota** applies to the non-quota section of the population, irrespective of caste and religion, with an **annual income limit** of Rs **8 lakh**.
- OBC organisations have vehemently opposed the Maratha quota demand. They believe the reservation should not come at the cost of OBC. **OBCs already get only 19% reservation** in Maharashtra compared to **27% nationally** and cannot be expected to share the quota with the politically and numerically dominant Marathas.

Judicial pronouncements:

- In 2018, the **Maharashtra legislature** passed the **Socially and Educationally Backward Class (SEBC) Act, 2018** proposing **16% reservation** in education and government jobs for the Marathas.
- In **2019**, the **Bombay High Court** upheld the Maratha quota under the SEBC Act.
 - However, the court ruled that the 16% quota was not "justifiable". It reduced it to **12% in education and 13% in government jobs**, as recommended by the State Backward Class Commission (**Gaikwad Commission**).
- In **2021**, the **Supreme Court** struck down the SEBC Act of the state government and later turned down a plea to review its decision.

The Maratha reservation issue remains a source of intense **controversy**. It has led to a **politically charged atmosphere** in Maharashtra and has affected the **state's social fabric** by creating a division between the Maratha community and the OBCs.

PEPPER IT WITH:

PESA Act, SEBC, National Commission for Backward Classes

Haryana's Private Sector Quota

News Excerpt:

The Punjab and Haryana High Court (HC) recently **quashed a law** passed by the Haryana government in 2020 that **provided 75% reservation in private jobs to local state residents**.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Key Points:

- According to the HC, a government cannot discriminate against individuals simply because they do not belong to that state.
- According to the bench of **Justices G S Sandhawalia and Harpreet Kaur Jeewan**, the **Haryana State Employment of Local Candidates Act 2020** violated **Part III of the Indian Constitution**, containing fundamental rights.
 - In its ruling, the court said the law would be ineffective **"from the date it came into force"**.
- The **Andhra Pradesh Employment of Local Applicants in Industries/Factories Bill 2019**, reserved three-fourths of jobs for local applicants within three years of the Act's implementation.
 - The Andhra Pradesh HC challenged the law, saying that it **"might be unconstitutional."** The challenge, however, has yet to be heard on the merits.

About the Law:

- The Haryana Assembly enacted a bill in **November 2020** that **reserved 75% of jobs in the private sector** that paid less than Rs 30,000 (initially Rs 50,000) per month for Haryana residents.
 - The Bill came into effect on January 15, 2022.
- The Act covered all corporations, organisations, trusts, limited liability partnership firms, partnership firms, and significant individual employers.
- Any person or entity that employs 10 or more individuals on salary, wages, or other remuneration for manufacturing or delivering any service and any entity that the government may notify were covered.
- However, the Act **did not apply to national or state governments or organisations owned by them**.
- According to the law, a candidate **"domiciled in the State of Haryana,"** known as a **"local candidate,"** might take advantage of the reservation after registering on an authorised internet portal. Employers were obligated to conduct all recruitments through this platform.
- Employers could apply for an exemption under the Act, but doing so required a lengthy procedure and the belief of government-appointed officers that the employer's exemption request was valid.

Arguments against the act:

- The **Faridabad Industries Association and other Haryana-based associations** filed a lawsuit, claiming that Haryana was attempting to create reservations in the private sector by **instituting a "sons of the soil" policy**, which **violated employers' Constitutional rights**.
- Petitioners' Argument:**
 - The petitioners argued that **jobs in the private sector are solely based on skills** and an analytical mindset and that employees have a fundamental right to work in any part of India.
 - They argued, "The act of the respondent or government forcing the employers to employ local candidates in the private sector vide this impugned Act is the **violation of the federal structure framed by the Constitution of India**, whereby the government cannot act contrary to the public interest and cannot benefit one class".

Arguments in favour of the act:

- Haryana Government argument:**
 - It had the power to make these reservations under Article 16(4) of the Constitution, which states that the State may "make any provision for the reservation of appointments or posts in favour of any backward class of citizens".
 - It does not preclude the right to equality in public employment.

High Court's judgement:

- The court noted that **Section 6** — which required employers to submit quarterly reports with details of local candidates employed and appointed — and **Section 8** — under which authorised officers could call for documents or verification to ensure the law was being implemented — of the Act amounted to "Inspector Raj", and that private employers were being put under the State's anvil on whom to employ.
- Under **Section 20** of the Act, the bar on legal proceedings against any authorised or designated officer acting in "good faith" tied the employer's hands.
- The state's action amounted to exercising **"absolute control over a private employer,"** which is **"forbidden for public employment."**
- The restrictions were **"gross to the extent that a person's right to carry on occupation, trade, or business"** under Article 19(1)(g) of the Constitution was being impaired.
- Thus, the current private sector quota provided by the state government to their residents is a violation of the Fundamental Rights of private company owners and outsiders.

Way Forward:

- Voluntarily Code of Conduct to ensure social justice in the organisations.
- Focus on Human Development.
- Shift the government's focus from guaranteeing Jobs to reducing inequalities.
- Upholding Fundamental Rights in Policy Making.

PEPPER IT WITH:

High Courts and its Powers, Human Development, Effects of quota on other sections

CARA, India's Adoption Regulation Body**News Excerpt:**

India's adoption system faces a **significant delay**, with **nearly 30,000** prospective parents **waiting** for an average of **three years** to adopt a child, resulting in **only 10%** of orphaned children being adopted annually, prompting the Supreme Court to question the issue.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
V											

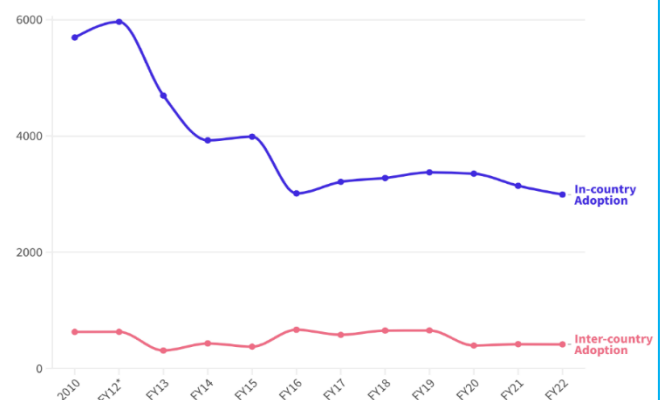
About:**CARA and the JJ Act:**

- The Juvenile Justice (Care and Protection of Children) Act 2015 **aimed** to reform the adoption system and curb inter-country adoption rackets.
 - The Act empowered CARA to streamline the process, establish an **e-governance system- Child Adoption Resource Information & Guidance System (CARINGS)**, and allow childcare institutions and civil society organisations to give a child for adoption directly.
 - In-country adoption increased from 3,011 to 3,374, and in 2018, CARA **allowed** individuals in a **live-in relationship** to adopt children from and within India.
 - In 2022, India **amended** the **JJ Act**, authorising local District Magistrates (**DMs**) to **issue** adoption orders and **inspect** local childcare institutions, child welfare committees, and juvenile justice boards.

CARA (Central Adoption Resource Authority):

- It was established in **1990** to oversee **child adoption** procedures for **Indians** and **non-resident Indians** living abroad.
- It oversees bodies like the State Adoption Resource Agency (**SARA**), Specialised Adoption Agency (**SAA**), Authorised Foreign Adoption Agency (**AFAA**), Child Welfare Committees (**CWCs**), and District Child Protective Units (**DPU**s).
- The organisation centralises **registration**, conducts **home study reports**, refers children, prepares **orders**, and conducts post-adoption **follow-ups**.

- CARA became a **signatory** to the **Hague Convention** on Protection of Children and Co-operation in **1993** to regulate **inter-country adoptions** and prevent the abduction, sale, or trafficking of children.
 - India **ratified** the convention in **2003**.
- Adoption is governed by the **Hindu Adoption and Maintenance Act (HAMA) 1956** and the **Juvenile Justice (Care and Protection of Children) (JJ) Act 2015**.
 - CARA is **relevant** for parents taking the JJ Act route.

In-country and Inter-country adoption statistics

Source: Central Adoption Resource Authority
 *2010 data is from January 2010 to December 2010
 **2011 data is from January 2011 to March 2012

Adoption process:

- Prospective parents** register on **CARINGS**, which conducts a **Home Study Report** and uploads findings.
- Unsuitable parents are rejected, and they are required to reserve one to six children for adoption within a specified time.
- The **SAA** completes the **referral** and **adoption process**, and parents can take in the child for pre-adoption foster care.
- The SAA files a **petition** in court, and CARA conducts **post-adoption follow-up** for two years.
- The SAA is the **first point** of government contact for a child, admitting abandoned or orphaned children into temporary homes.
- CARINGS provides a platform to around 469 specialized adoption agencies, 625 district child protection units, and 34 state adoption resource agencies.

Challenges:

- Two years ago, civil society organizations and legal bodies flagged that the **COVID-19 pandemic** left children **vulnerable** to exploitation and trafficking and urged CARA to simplify its **onerous adoption processes**.
- CARA's **trials** have remained **unchanged** for a decade, with children awaiting registration evading attention and adoption figures dropping from 6,321 in 2010 to

3,405 in 2021, with only 2,430 available for adoption last year.

- The adoption process in India faces **three main challenges**:
 - Bringing children into safety nets**: Infrastructural deficiencies and lack of awareness hinder the process, with channels like the SAA and CWC failing to identify children due to poor functioning and administrative issues.
 - Declaring them legally free for adoption**: Districts are legally mandated to have licensed adoption agencies, but they fall short, leading to children being **informally placed** by hospitals, nursing homes, or private health clinics directly with families.
 - Ensuring adoption**: The Supreme Court has **criticized** CARA's "**tedious**" process, while the latest JJ Act change empowers DMs to pass adoption orders, **causing confusion among activists and parents**.
 - Inter-country adoptions face difficulties due to CARA's '**no objection certificates**' and the high costs of conducting home surveys. Some argue that procedural challenges are a symptom of a "**parent-centric system**" failing to safeguard a child's well-being and address finer points of care.
- In **2011**, the CARA faced criticism for failing to maintain comprehensive **records**, monitor **placement agencies**, encourage timely **adoption**, and provide **training** to stakeholders.

Way Forward:

- CARA should be governed by a **special adoption law** that is **child-centric**, optional, enabling, and gender-just.
 - HAMA** provides sons to the son-less people for succession, inheritance, and funeral rights, while the **JJ Act** has a small adoption chapter.
 - Both fail** to achieve the objectives of a robust adoption regime.
- A recent report, "**Review of Guardianship and Adoption Laws**" by the **Parliamentary Standing Committee** on Personnel, Public Grievances and Law and Justice, suggests -
 - Ensure that **orphan** and **abandoned** children found begging on the streets are **made available** for adoption at the earliest.
 - Periodic district surveys** should identify orphaned or abandoned children.

PEPPER IT WITH:

Adoption Rules in Other Countries, Ethics related to Adoption, JJ Act and its amendments

The IIT crisis

News Excerpt:

IIT Madras has recently opened its campus in **Zanzibar** and became the **first campus of IIT** to be **opened abroad**.

- The IIT system is facing serious concerns about educational quality and faculty shortages. At the same time, some of them are building campuses abroad as part of India's soft power efforts.

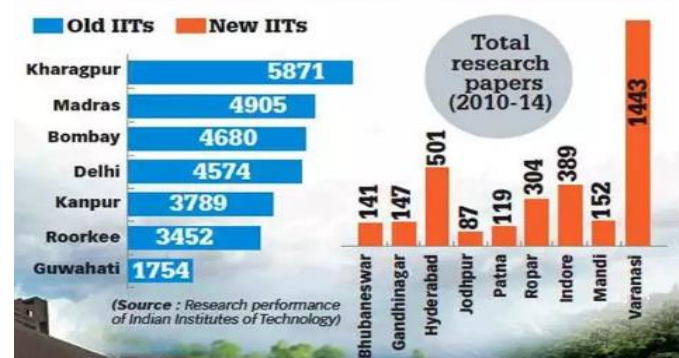
About IITs:

- The first IIT was established in the 1950s at Kharagpur (West Bengal), with four more following in the same decade.
- However, after 2015, when the government promoted IIT institutions and environment, the new IITs were built generally at suburban areas away from the metropolitan cities.
- Thus, these new IITs had its own challenges in meeting the standardized protocols unlike the Old/traditional IITs.

IIT-Madras campus in Zanzibar:

- IIT Madras became the **first campus of IIT** to be **opened abroad**.
- It will offer programs in **Data Science and Artificial Intelligence** at the **Bachelor's and Master's levels**.
- The inaugural batch comprises **students from Zanzibar, mainland Tanzania, Nepal, and India**.
- Of all the students in the first batch, **50 percent are Indians and 40 percent among them are women**.
- It is open to students of **all nationalities**.

RESEARCH PERFORMANCE OF IITs



IITs as a significant source in building India's Growth:

Any renowned institution is recognized through its objectives and principles. The following principles make IITs a significant contributor to India's Growth:

- Dedication towards excellence**: The primary objective was to **excel in technological education and research**, aligning with global standards.

- Upholds a commitment to maintain higher academic standards and a reputation for excellence.
- Contribute to India's development by **producing skilled professionals in emerging technology** at its very root system.
- It does this by practically imparting it in work fields of science and technology.
- **Nurturing Innovation in National Developmental Cause:** IITs catalyze innovation and by bridging the gap between academic theories and actual industrial practices, it helps to address real-world challenges.
- **Global Reputation:** IITs produce graduates and research outputs that make substantial contributions at both the national and global levels.
 - In the recent **World University Rankings 2024**, the IIT Bombay was ranked 149 in the list (first in the country), a significant jump from its previous ranking of 172.

Current Challenges:

- **Quality Concerns:** New IITs struggle to match the standards of traditional institutes, with varying levels of prestige. The recent report on '**Research performance of Indian Institute of Technology**' showed the quality of research carried out in old and new institutes is one of the main reasons that new IITs have not found space in any global ranking list.
- **Faculty Shortage:** Students claim that the teaching staff are usually visiting faculties. The severe shortage of experienced faculties in the IIT system is hindering the quality of education because top professors are unwilling to work in suburban areas.
- **Overseas Campus:** Building an overseas campus is an effort towards building soft power. However, as IIT-Madras opened a branch in Zanzibar and IIT Delhi plans to launch its programmes from Abu Dhabi (in 2024), it raised questions about the international expansion of IITs and its purpose.
- **Standard Disparity:** Unequal standards among IITs, with new institutions needing help to meet the excellence of traditional ones.
 - The campus culture of old IITs is also different – Old IITs have cultural clubs and festivals that help in the overall development of students. The old ones also have more edge over the new ones in the form of dedication to robotics and journalism.
- **Lack of Infrastructure:** Lack of basic facilities, limited connectivity, under-construction college buildings and limited foreign collaboration are some of the reasons that new IITs are struggling for identity. Also, due to poor WiFi connectivity, labs are not fully equipped and the hostels are not enough to accommodate new incoming students.

The Current Status of Education in India:

- **Literacy Rate:** According to the **2011 Census**, Literacy rate is 74%. (Male: 82.1%; Female: 65.5%).
- Literacy rates for both adults as well as youths have increased, still, the absolute number of illiterates in India is as much as India's population was at the time of independence.
- The pace of gender gap in terms of literacy has accelerated, however still lags far behind the global female literacy rate of around 83% (UNESCO 2015).
- During 2001 – 2011, the male literacy rate increased by 6 %, and female literacy increased by nearly 12 %.
- India is still lagging behind the world literacy rate of 86.3% (UNESCO 2015).

Case study - Gujarat hikes OBC quotas to 27% in local bodies:

- It was recommended by **Justice Jhaveri Commission** and is **in line with the Supreme Court's mandate** that the **quotas for OBCs** should be based on their **population**.
- The existing quota for Scheduled Castes (SCs) (**14%**) and Scheduled Tribes (STs) (**7%**) remains unchanged, and there has been **no breach of the 50%** reservation ceiling.
- The quota, however, would **not apply to areas** notified under the Panchayats (Extension to Scheduled Areas) (**PESA**) **Act**- where the population of the SCs and STs was 40 percent or more.

Way Forward:

- **Need for standardization of efforts:** There is a need to **prioritize quality over quantity** in new IITs considering the expansion point of view. Implementing measures to standardize the quality will eventually cater for the over-expansion issue.
- **Need to address resource demands:** Considering the recent vacancy and faculty shortages in IITs, it is a must to attract and retain top talents through the best possible hiring process. Moving further, this issue doesn't get solved. We need to update the skill development process at regular intervals by providing competitive salaries.
- **Need for Evaluation of Foreign Ventures:** Assessing the purpose and viability of overseas campuses is needed while ensuring high educational standards. There is a need to foster foreign collaborations, and industries to bridge the gap between theory and practice.
- The advantageous **older IITs** with faculties who have studied at the best universities of the world can work as a **guiding light in our National Education Programmes and other growth prospects**.

PEPPER IT WITH:

Census 2011, India-Tanzania Relations, Emergent Technologies, Globalisation

Local Governance Issues

News Excerpt:

An **Annual Survey of Indian Cities** shows that most local governments depend financially on their State governments.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Evolution of Local Self-government in India:

- The **first Municipal Corporation** was set up in the former Presidency Town of Madras in 1688, followed by similar corporations in Bombay and Calcutta in 1726.
- Elected local self-government bodies came into existence after 1882, when **Lord Rippon**, took the initiative to create these **local boards**.
- Over a period of time, these village bodies were converted to form Panchayats.
- After the **Government of India Act in 1919**, village panchayats were firmly established in several provinces.
- While **Lord Rippon** is widely known as the **father of local self-government**, **Mahatma Gandhi** is also regarded as a key player in decentralizing political and economic power at the grassroots levels.
 - Gandhi supported the strengthening of village panchayats and **ensured the involvement of local self-governments in all developmental initiatives**.
 - Panchayats**, or **Panchayati Raj**, is one of India's oldest local self-government systems. The word 'Panchayat' means an assembly (ayat) or five (panch) people who rule (raj).
- The **73rd and 74th Constitutional amendments**, made it mandatory for every state to have rural and urban local self-governments in place and the mechanisms to fund these bodies and also to carry out elections every five years.
- This ensured that rural and urban local bodies were given **Constitutional status** with uniformity in their functioning and structure across India.
- At present, there are over 250,000 local self-government bodies across the country, with over 3.1 million elected representatives. Out of this, 1.3 million representatives are women.

The **Annual Survey of India's City - Systems (ASICS) 2023**, was published by the 'Janaagraha Centre' for Citizenship and Democracy, a non-profit institution.

Key Findings from the Report:

- The Local government has limited control over the hiring process and distribution of work responsibilities.
 - However, only **Assam** empowered its city governments to collect all key taxes. Except for five states - **Bihar, Jharkhand, Odisha, Meghalaya, and Rajasthan** - all the others have

to get approval from the State before borrowing money.

- Asymmetry of power:** There is asymmetry of power across four city categories – megacities (>4 million (mn) population), large cities (1-4 mn), medium cities (0.5 mn-1 mn), small cities (<0.5 mn).
 - While megacities have more say over their finances, their mayors do not have five-year tenure and are not directly elected.
 - More mayors in smaller cities have five-year tenure and are directly elected, but they lack a say in the city's finances.
 - Hence, it prevents innovative solutions towards limited resources available in the Indian Economy.
- Limited Power:** Mayors and councils have limited powers in staff appointments and promotions.
 - No city has complete power over its staff. Cities especially lack control over their senior management teams deputed directly by State governments.
 - This makes it tough to initiate disciplinary proceedings against them and also prevents building a **"strong organization or exact accountability"** from the workers.
 - Due to poor control over the appointment of staff, the local governments suffer from high levels of unfilled posts.
- Lack of Transparency:** There exist flaws in publishing city-wise information that citizens can access easily. Only 11 out of 35 States/UT have enacted the Public Disclosure Law that mandates the publishing of key civic data.
 - Financial Transparency:** The City has to make available its overall budget, budget for each ward, and financial statements every quarter and annually. According to the current data available, no city publishes quarterly financial audited statements and only 28% of them disseminate their annual audited financial statements.
- Comparison with foreign cities:** If calculating the number of city staff per one lakh population, there are 5,906 city workers in **New York** and 2,936 in **London** compared to just 317 in Bangalore, 586 in Hyderabad, and 938 in Mumbai. Cities such as New York have also been empowered to impose taxes, approve their own budget, invest, and borrow without approval.

Significance of Local Self-Governance:

- Addressing grassroots problems:** Public issues are majorly solved at the ground level by local governance only where the local self-government is responsible for various necessities such as infrastructure and

maintenance, water availability, educational demands, hospitality, etc.

- **People's say is a priority:** The people have more decision-making power over their problems. The representatives are directly elected from among the same community, thus knowing the issues for that particular region.
- **Efficient provision of public goods:** Governments with smaller jurisdictions can provide services as per the preferences of their residents.
- **Promotes deeper democracy:** Governments closer to the people allow citizens to engage with public affairs more easily.

Way Forward:

- **Maintain a balance between Decentralization and Centralization:** Governments that work harder to achieve more efficient management **need to involve their citizens and other stakeholders** in their good governance.
- **Enhancing Transparency:** The local government should therefore pay attention to the **preparation, presentation, and dissemination of quality financial information** to the citizens in a timely and engaging manner.
- **Need to hire skilled human resources:** Strategic HR practices enable further insights into the linkage of institutional pressures, **training, and development programs at regular intervals.**
- **Need for local capacity instead of concentrated authority:** Gram Panchayat Acts in many States have empowered district-level bureaucrats, to act against local representatives for official misconduct. This kind of power leaves **political interference** against the development of the particular region.
- **Reduce Asymmetry in decision-making:** Asymmetric power relations among local officers within a participatory development space have better results if undertaken as dynamic and not static. Hence, the **reform process** should include the local government and its officers in the power-sharing process.

PEPPER IT WITH:

Annual Survey of India's City – Systems, Reforms under Lord Rippon, Panchayati Raj System- History and features

There is a need for larger discussions about power division and sharing between governments at the Union, State, and local levels. The role and responsibilities of local governments should be foregrounded by normative values that have found expression in the Constitution.

State Food Safety Index (SFSI) 2023

News Excerpt:

The Food Safety and Standards Authority of India (FSSAI), in its **State Food Safety Index (SFSI) 2023**, reported **decreased** food safety scores in 19 out of 20 large states compared to 2019.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About State Food Safety Index (SFSI):

- On June 7, 2019, **World Food Safety Day**, the first-ever State Food Safety Index for 2018–19 was released.
- It aims to bring a **competitive** and **constructive transformation** in the nation's **food safety ecosystem**.
- **5th SFSI Highlights:**
 - Among the larger states, **Kerala** secured the top ranking, followed by **Punjab** and **Tamil Nadu**.
 - Among the smaller states, **Goa** emerged as the leader, followed by **Manipur** and **Sikkim**.
 - Additionally, **Jammu and Kashmir**, **Delhi**, and **Chandigarh** secured the first, second, and third ranks, respectively, among the union territories.

Parameters of State Food Safety Index:

- **Human Resources and Institutional Data (18%):** It measures the **availability** of human resources like food safety officers, designated officers, etc. and **facilities** for **adjudications** and **appellate tribunals** in each state.
 - Scores of **Tamil Nadu** and **Uttar Pradesh** decreased this year compared to previous index rankings.
- **Compliance (28%):** It constitutes the licensing, registration, inspections of food businesses and adherence to the tasks carried out by the State's Food Safety Authority.
 - Jharkhand has the lowest score, while **Punjab** and **Himachal Pradesh** have the highest.
- **Food Testing Infrastructure (17%):** This component evaluates the **availability** of food testing infrastructure in each state.
 - **Maharashtra**, **Bihar**, **Andhra Pradesh** and **Chattisgarh** have recorded lower scores.
- **Training and Capacity Building (8%):** It measures the **resources allocated** to training and capacity building in food safety.
 - The average score for this parameter **improved** this year compared to previous rankings.
- **Consumer Empowerment (19%):** It assesses a state's performance in the consumer empowering **initiatives** taken by the state like - **Eat Right Campus**, **Food Fortification**, **BHOG** (Blissful Hygienic Offering to God), **Hygiene Ratings** of Restaurants, and **Clean Street Food Hubs**.

STATES WITH STEEPEST INDEX FALL

State	2019	2023
Maharashtra	74	45
Bihar	46	20.5
Gujarat	73	48.5
Andhra Pradesh	47	24
Chhattisgarh	46	27

Source: SFSI reports; all scores out of 100

SAFETY MEASURE

Parameter	Weight
Compliance	28
Consumer Empowerment	19
Human Resources and Institutional Data	18
Food Testing Infrastructure	17
Improvement in SFSI Rank (added in 2023)	10
Training and Capacity Building	8
TOTAL	100

- **Tamil Nadu**, followed by **Kerala** and **Madhya Pradesh**, recorded top scores.
- **Improvement in SFSI Rank (10%)**: In the 2023 index, a new parameter was added, which assesses progress in each state's rank from the year before.
 - 14 out of 20 large states received "zero" points in this parameter.
 - Considering the significant impact of nutrition and health on India's development and its being a part of the **Sustainable Development Goals**, it is concerning to note the average score of states on SFSI has declined over the years.

Need for ensuring safety:

- **Prevalence of food-borne disease**: Food-related illnesses and incidences of food poisoning are very **common** in India. Eating **contaminated food** can have detrimental effects on one's health and is a contributing factor in the startling amount of food and water-borne illnesses.
- **Unsafe food practices**: Research indicates that **13.2%** of **Indian households** engage in unsafe dietary practices. This highlights how urgently strong food safety regulations, consumer education, and public health surveillance are needed.

Significance of the index:

- **Setting the benchmark**: The index is a dynamic benchmarking approach that combines **quantitative** and **qualitative** analysis to offer an impartial framework for assessing food safety in all states and territories.

- **Healthy competition**: It will foster healthy competition and catalyse **positive** change among the states.

Challenges in food safety:

- **Lack of clarity**: Food Business Operators (**FBOs**) frequently find it challenging to negotiate complicated legislation and requirements.
- **Limited awareness**: Food safety **procedures** and **laws** are not well known or understood by consumers, food handlers, or officials.
- **Infrastructure and supply chain limitations**: Adoption of **food safety measures** is impeded by ineffective supply chains, poor facilities for storage and transportation, and restricted access to finance, especially for small and medium-sized businesses.

Recent Initiatives taken by FSSAI:

- **Eat Right Millets Melas**: These melas serve as platforms to showcase the diversity of **cuisines**, as well as millet-based recipes, in the country.
- FSSAI is set to train **25 lakh food business operators** in the **next 3 years** to ensure that food quality standards are met across the country.
- Also, **100 Food Streets** are to be set up across the country, which meet the quality benchmark for food safety, hygiene, and nutrition.
- The **Rapid Food Testing Kit (RAFT)** portal is designed to ensure transparency and accountability. Now, applicants can conveniently complete the entire process electronically, from applying for approval to certificate issuance.
 - The **RAFT scheme** was launched in **2019** to promote the adoption of advanced technologies for food testing, screening, and surveillance.

Latest Update:

FSSAI has advised adding a **QR (quick response) code** to food products to facilitate **accessibility** for **visually impaired** people.

About:

- The advisory caters to **two necessary regulations**-
 - **FSSAI's Food Safety and Standards (Labelling and Display) Regulations, 2020**, outlines the information to be included on labels of food products.
 - **Rights of Persons with Disabilities Act, 2016**, recognizes the rights of individuals with disabilities and emphasizes the accessibility of health for persons with disabilities.
- The **front-of-pack labelling (FOPL)**, proposed by FSSAI in **2019**, is a crucial strategy to alert and educate consumers in making an informed choice.
- The new QR codes will **contain complete product information**, such as ingredients, nutritional data, allergens, manufacturing date, best before/expiry/use by date, allergen warning, and customer service contact information.
- However, including a QR code does **not** replace or negate the requirement to provide **mandatory** information on the product label, as prescribed by **Food Safety and Standards (Labeling and Display) Regulations, 2020**.

Need of the QR code:

- Aggressively marketed, cheaper and more readily available **pre-packaged foods** high in **fat, salt, and sugar** find a growing preference amongst Indian consumers.
- According to the **World Health Organization**, India, one of the world's **biggest markets** for packaged foods is seeing an **increase** in the **prevalence** of non-communicable diseases (**NCDs**).
- Every consumer has the **right to know** exactly what he is eating.

Benefits of using QR code:

- Boost consumer loyalty, operational effectiveness, and brand image.**
- Enhances inventory management, reduces waste, and ensures compliance with legal requirements.
- Instant access to product information, recipes, and deals**, enabling them to make informed, customized decisions based on their beliefs and interests.

Challenges of using QR code:

- Need to invest in **hardware, software, modernization and data management** systems.
- Issues due to varying **regulations** and **content**. E.g.- some countries may require labelling for **allergies** and **GMOs**, while others may not.
- Potential **data protection**, privacy, and security issues- **hacking, tampering, and counterfeiting**.
- Technical issues- poor **internet connection** or **incompatible equipment**.
- Other- customer **ignorance**, lack of tools, difficulty in implementation and the **digital divide**.
- FSSAI has released **3 manuals** designed to enhance food safety practices nationwide:
 - Manual of Methods of Analysis of Foods - Fish & Fish Products.
 - Manual of Methods of Analysis of Foods - Cereal and Cereal Products - 2nd edition.
 - Manual of Methods of Analysis of Foods - Beverages: Tea, Coffee & Chicory.

Way Forward:

- Training and employment:** FSSAI and educational institutions may work together to build efficient training **programs** for those who want to work in the field of food safety job options.
- Capacity Building:** By raising the **calibre** of their products, efforts should be made to improve the community of **street vendors**. Increasing consumer traffic and improving street food safety may be achieved by offering training and support in meeting food safety regulations.
- Accreditation and guidelines:** The FSSAI should establish **protocols** and **rules** for certifying laboratories

PEPPER IT WITH:

International year of Millets, NCDs, food borne diseases, Use of Technology to benefit Society

and organisations that do testing and manage food safety. The legitimacy and dependability of food safety procedures are guaranteed by **certification**.

- Assist in market surveillance activities:** This will ensure that the food products are sold in compliance with the standards prescribed.

Merely Liking a Post is not an Offence under the IT Act**News Excerpt:**

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

According to a recent judgement of Allahabad High Court, liking a post on social media platforms like Facebook or X (formerly Twitter) cannot be punishable under Section 67 of the Information Technology (IT) Act.

Background:

- The **Single Judge Bench of Justice Arun Kumar Singh Deshwal** was hearing an application to quash charges filed against a person, who had been accused by Agra police in 2019 of making posts that led to the assembly of 600-700 people for a procession without a permit, thereby threatening peace and security.
- During the hearing, the Investigating Officer of the case relied on the fact that the accused had liked a post on social media, calling for the assembly - despite being unable to provide evidence of himself having posted the content or shared it.

Key points of the judgement:

- According to Allahabad High Court, liking a post on social media applications cannot be punishable under Section 67 of the IT Act because **it does not amount to "publishing or transmitting" the post**.
 - The Court also added that the provision can be attracted if a person had instead shared or retweeted it.



- According to the court, a post or message can be said to be published when it is posted, and a post or message can be said to be transmitted when it is shared or retweeted.

- The High Court noted that Section 67 of the IT Act is for obscene material as opposed to just provocative materials. The words 'lascivious or appeals to the prurient interest' mean relating to sexual interest and desire, therefore, Section 67 of the IT Act does not prescribe any punishment for other provocative material.

Issues related to Social Media:

- It has transformed how individuals communicate and receive information.
- **Regulating social media** has become important to alleviate the challenges associated with its use.
 - **Privacy** is another area where social media regulation is required. Social media platforms amass large amounts of user data, utilized for targeted advertising and other purposes.
- Social media platforms are vulnerable to the **spread of fake news and disinformation**, which can have major consequences such as inciting violence, instilling fear, and destroying public trust.
- Individuals have suffered substantial psychological and emotional suffering as a result of an **increase in hate speech, cyberbullying, and internet harassment** on social media.

Regulation of Social Media in India:

- **Information Technology (IT) Act, 2000:** Social media platforms are generally considered as intermediaries.
 - Any intermediaries, irrespective of their country of origin, rendering their online services in India need to follow the IT Act, 2000 and other applicable laws.
 - It establishes a legal foundation for electronic governance and governs all areas of electronic communication, including social media.
 - The **Cyber Appellate Tribunal** and the **Cyber Regulations Advisory Committee** are established by the Act.
- **Information Technology (Intermediary Guidelines and Digital Media Ethics Codes) Rules, 2021** (IT Rules, 2021): They make intermediaries including social media platforms accountable to their users and enhance user safety online.
- **India's Digital Personal Data Protection Act, 2023:** The DPDP Act applies to all data, whether originally online or offline and later digitized, in India. It also applies to the processing of digital personal data beyond India's borders, particularly when it encompasses the provision of goods or services to individuals within the Indian territory.

Way Forward:

- **Collaborative regulation:** Social media platforms may collaborate with governments, civil society groups and other stakeholders to create a set of best practices and

rules to control harmful content on these platforms. This will create more effective and nuanced solutions that take into account the complexities of social media.

- **Transparency:** Promotion of transparency and increased openness about the working of social media firms can create confidence among users and authorities, as well as highlight the areas where further regulation is needed.
- **Algorithmic accountability:** Algorithms mould the material that people view on social media, more algorithmic responsibility is required. This may provide a guarantee that their platforms are more equitable and inclusive by making their algorithms more open and responsible.
- **Multi-stakeholder governance:** This can help make social media regulation more inclusive and representative of diverse perspectives and demands.
- **International collaboration:** Given the worldwide character of social media, further international cooperation on regulation is required to find more effective answers to the issues of regulating social media.

PEPPER IT WITH:

IT Act 2000, Cyber Appellate Tribunal, Cyber Regulations Advisory Committee, DeepFake, Right to Privacy

Education and media literacy: There is a need for more social media education and media literacy. Through this, we can assist people in becoming more educated and responsible online participants by enhancing their media literacy.

PRE-SHOTS

Digital Advertisement Policy of 2023

News Excerpt:

The **Central Bureau of Communication** recently announced the Digital Advertisement Policy 2023.

About the policy:

- This policy is released by the Central Bureau of Communication (CBC) and is valid for 5 years.
- It **replaces 2016's Policy Guidelines for Empanelment and Rate Fixation for Central Govt Advertisements on Websites.**

About Central Bureau of Communication (CBC):

- A unit of the **Ministry of Information and Broadcasting.**
- Set up on 8 December 2017 by the integration of the erstwhile Directorate of Advertising and Visual Publicity (DAVP), Directorate of Field Publicity (DFP), and Song & Drama Division (S&DD).

- **Advertising and Visual Communication Division (erstwhile DAVP) is the nodal division** of CBC responsible for disseminating information about the Government's policies and programmes through available communication vehicles, viz., **Print Media, Audio Visual, Outdoor and Digital Media.**
- Any "innovative and futuristic platforms" can be onboarded by the CBC with the approval of a **six-member committee** that will be headed by the director general or the principal director general of the CBC.
- **The new policy** allows for the empanelment of **five kinds of entities:**
 - Internet websites and mobile apps (news websites and apps, travel websites, etc.);
 - Over-the-top (OTT) video on demand platforms (such as Disney+Hotstar);
 - Digital audio platforms (such as Spotify);
 - Social media platforms (such as Facebook and Twitter);
 - Media agencies for digital campaigns.
- **For empanelment with the CBC, websites and mobile applications have been classified into four categories –**
 - more than 20 million unique users (A+)
 - between 10 and 20 million unique users (A)
 - 5-10 million unique users (B)
 - 0.25-5 million unique users (C).
- **OTT platforms have been classified into two categories –**
 - **More than 2.5 million** unique users in **category A** and
 - **0.5 To 2.5 million** unique users in **category B.**
- **Podcasters or digital audio platforms** should have a **minimum of five lakh unique** users to be eligible for empanelment with the CBC. Such platforms have also been classified into similar categories, 'A' and 'B'.

Use of Donor Gametes through Surrogacy

News Excerpt:

The Supreme Court (SC) has protected the right of parenthood of a woman suffering from a rare medical condition of Mayer Rokitansky Kuster Hauser syndrome.

Background of the case:

- The woman has the **Mayer Rokitansky Kuster Hauser (MRKH) syndrome.**
 - MRKH is characterized by an underdeveloped or absent vagina and uterus. Women with this disorder develop typical secondary sexual characteristics during puberty but do not have a menstrual cycle.
 - Medical board records showed she has "absent ovaries and absent uterus"; hence, she cannot produce her own eggs.

- A government notification this year amended the law, **banning the use of donor gametes.** It said "intending couples" must use their own gametes for surrogacy.
- The petition was filed in the SC challenging the amendment as a **violation of a woman's right to parenthood.**
- Addressing the Government's contention that the surrogate child should be "genetically related" to the intending couple, the court pointed out that the child would be related to the husband.
- The Supreme Court stayed the operation of Rule 7 of the Surrogacy (Regulation) Act, 2021, which bans the use of donor eggs for the procedure, to allow **the woman suffering from MRKH Syndrome** to undergo surrogacy using a donor egg.

About Surrogacy:

- It is a practice where a woman gives birth to a child for an intending couple with the intention to hand it over to them after the birth.
- Currently, the **Indian Government only allows 'altruistic surrogacy'** for which no monetary compensation can be provided. Surrogacy is **prohibited for commercial purposes.**

Concerns:

- **Exclusionary:**
 - Only a **married heterosexual couple** may be the intended parents—but only under specific circumstances.
 - **Infringement on the fundamental right to equality:** It **denies LGBTQ+ people and intended parents who are unmarried, divorced, or bereaved** their right to reproductive autonomy.
- Additionally, experts think that **limitations** should have been implemented **in place of a total prohibition on commercial surrogacy.**
- Altruistic surrogacy is viewed as a clear **example of the patriarchal mentality as it deprives women of payment for their reproductive labour.**
- The Surrogacy (Regulation) Act 2021 infringes upon the **right to privacy** by requiring the intended couple to disclose their infertility and the identity of the surrogate.
- **Puttaswamy Ruling: Bodily privacy** is the right to control one's body and "the freedom of being able to prevent others from violating one's body". It is not sufficiently protected under the present regulatory framework for reproductive rights.

The Surrogacy (Regulation) Act 2021:

- It allows only married couples with medical conditions requiring gestational surrogacy to apply. They must obtain a recommendation from a **District Medical Board.**

- **Gestational surrogacy** includes having no uterus, missing uterus, abnormal uterus, or surgically removed uterus due to medical conditions, multiple failed conceiving attempts, multiple pregnancy losses due to unexplained medical reasons, graft rejection due to exaggerated immune response, or any illness that makes it impossible for a woman to carry a life-threatening pregnancy.
- **Eligibility of the Couple:** It is only restricted to a **legally wedded infertile couple** who have **no biological children of their own- not including a child who is mentally or physically challenged or suffers from a fatal illness- or a single or divorced woman above the age of 35.**
- **Eligibility of the surrogate mother:** She has to be a close relative of the couple, a married woman with a child of her own, **aged between 25-35 years**, who has been a surrogate only once. She must also possess a **certificate of medical and psychological fitness** for surrogacy.
- The child born out of a surrogacy procedure is considered a biological child.

The Assisted Reproductive Technology (Regulation) Act 2021: It was passed to regulate and oversee assisted reproductive technology clinics and banks. E.g.: In-vitro fertilization (IVF), intrauterine insemination, and gamete donation.

About Commercial Surrogacy:

- **Commercial Surrogacy** is a branch of gestational surrogacy in which a gestational carrier is paid to carry a child to maturity in her womb and is usually hired by higher-income infertile couples.
- Reasons for banning **commercial surrogacy in India:** **Commodification of the Woman's body and the child, Low payment** for reproductive labour, **Gender exploitation and human trafficking, Degradation of the morality of women**, e.g., if she is just justified to do this work, etc.

"One Nation, One Student ID" – APAAR ID

News Excerpt:

Several **state governments** asked schools to get **permission** from parents in order to create a new student identity card called the **Automated Permanent Academic Account Registry (APAAR).**

About:

- The APAAR is intended to serve as a unique ID system for all Indian students.
- It is a part of the **"One Nation, One Student ID" program**, which is founded on the National Education Policy (NEP) 2020.
 - The new NEP is based on the **pillars of Access, Equity, Quality, Affordability, and**

Accountability. It aims to make both school and college education more holistic, multidisciplinary, and flexible.

- **Contains all of a student's personal information:** It includes details on the student's name, residence, date of birth, gender, picture, sports participation, educational loans, scholarships, and other honours, among other things.
- **Portal to Digi locker:**
 - Allow students to keep their accomplishments and academic data online, including report cards, degrees, awards, scholarships, and other student credits.
 - Makes it simpler for students to access and utilize these materials later on, e.g., when applying for jobs or continuing their studies.
- The registration for the creation of the APAAR ID is **voluntary and not mandatory.**

Need of APAAR ID:

- Students carry several **tangible** academic documents with them.
- The state governments are unable to monitor **dropout** and **literacy rates** among other metrics, hindering educational reforms.
- Educational establishments frequently face issues like **fraud** and **duplications of certifications** due to the lack of a single, reliable source of academic achievements.

Significance:

- **Permanent identifying number** for students, making monitoring their academic progress simple.
- Track academic records of students of all ages.
- **Academic Bank of Credit** will be connected to the APAAR ID.
- Help **monitor** student **dropout rates** and **aid** in the government's attempts to **reintegrate** them into the community and re-engage them in educational pursuits.
- **Transferring** students across schools would be more **straightforward** since it would include all student academic information and is transferable to all Indian colleges.

Concerns: Sharing Aadhar details raises concerns about personal information, Unified District Information System for Education (UDISE) database already exists for students, compulsory extra non-academic work.

Way Forward:

- The **Ministry of Education** should **guarantee** that all of the data on it is safe, won't be abused and solely used for educational purposes.
- Information shared by students should be kept **confidential** and not be shared with any third party

except for entities engaged in educational activities, such as the Unified District Information System for Education Plus (**UDISE+**) database.

- At any given time, students should have the **option to stop sharing** their information with the mentioned parties, and their data processing to be halted.

'Can't Regulate Political Alliances' - ECI

News Excerpt:

Recently, in **PIL** against the use of the acronym "**INDIA**" by opposition parties, ECI said it **cannot** regulate **political alliances** under the Representation of People Act, 1951.

About:

- The Election Commission of India (ECI) has been vested with the authority to **register** associations of bodies or individuals of a **political party** in terms of **Section 29A** of the Representation of People Act (RPA), 1951.
 - Section 29A of RPA, 1951:** A party seeking registration has to apply the ECI within **30 days** following its formation as per **guidelines** prescribed by the ECI in exercising the **powers** conferred by **Article 324** of the Constitution.
- Political alliances are **not** recognized as **regulated entities** under the RPA or the Constitution.
- The **Kerala High Court** in the case of **Dr George Joseph Themplangad v. Union of India & Ors.** held that **there is no statutory provision mandating the ECI to regulate the functioning of political alliances.**

Powers of ECI:

Administrative Authority	Advisory	Quasi-Judicial
<ul style="list-style-type: none"> To establish the boundaries of electoral seats for various elections. To register any political party and monitor its election expenditures. To guarantee the application of the "Model Code of Conduct" for political campaigns. To designate representatives from various civil services as observers for elections and expenditures. 	<ul style="list-style-type: none"> To the President of India about the circumstances behind the disqualification of members of Parliament. To Governors on the disqualification of state legislature members. To the Supreme Court and the High Courts in post-election disputes between candidates and political parties. 	<ul style="list-style-type: none"> Resolve disagreements over the recognition of political parties and candidates. Preside over cases involving disagreements over the distribution of electoral emblems to political parties and candidates. The State Election Commission oversees the elections for municipalities and panchayats and is advised by and accountable to the ECI.

Mixed Member Proportional System

News Excerpt:

The comparison between Auckland (New Zealand) and Odisha shares a stark difference in terms of human development indicators but resembles it in terms of political behaviour.

About the news:

- The Assembly election of Odisha collided with the Lok Sabha elections in 2019, leading to simultaneous elections in the state. In state elections, the BJD won with a thumping majority, while in the Parliamentary election, the BJD was not that effective, which signals the **split in voting patterns.**
- It also indicates that voters made distinct choices at the national and regional levels.

Mixed Member Proportional (MMP) system:

- The MMP system allows voters to cast two votes, **one for the local candidate and another for the political party.**
- New Zealand uses the **Mixed Member Proportional (MMP) system.**
- It permits voters to **choose candidates from different parties for the local and national levels** without affecting the overall party representation in Parliament.

First-Past-The-Post (FPTP) System:

- It is also known as the simple majority system.
- In this voting method, the candidate with the highest number of votes in a constituency is declared the winner.
- This system is used in India in direct elections to the Lok Sabha and State Legislative Assemblies.
- While FPTP is relatively simple, it does not always allow for a truly representative mandate, as the candidate could win despite securing less than half the votes in a contest.

India's Voting System:

- In India, the voting system is different from New Zealand.
- Here, voters only give their vote to the candidate of any political party, and the number of elected candidates decides the victory of a party and the formation of the Government.
- Compulsory voting often limits the liberty of voters to express their genuine preferences.** Voters may hesitate to vote for candidates outside their preferred party or perceived winnable contenders due to the fear of potential repercussions on the broader political landscape.
- In the Indian context, MMP could address issues related to compulsive voting and allow Indian voters to select candidates based on merit.

Challenges in the Indian context:

- **Lack of Electoral education:** In India, people are still uncomfortable with Electronic Voting Machines and VVPAT.
- **Fund issue:** India is a large country, and election expenses will increase if we try a new system where at least two EVM machines are needed in one poll booth.

Advantages of MMP	Disadvantages of MMP
<ul style="list-style-type: none"> • Proportional Representation: The share of seats a party wins closely mirrors its share of the popular vote, thus creating a more representative political landscape. • Diverse Representation of political ideologies and minority groups. • Local Representation while also expressing their preference for a political party. • No "Wasted" Votes: Even if a party doesn't win any local seats, its share of the party vote can still contribute to its legislative representation. • Leads to coalition governments, which can promote political stability. • Accountability of elected representatives addresses both local and national issues. • Flexibility to choose different parties for their local and national preferences. 	<ul style="list-style-type: none"> • Relatively complex due to the need to cast two separate votes to lower voter turnout. • Risk of proliferation of small parties, fragmented parliament, coalition governments, etc. • Over-representation of smaller Parties may have a disproportionate influence in coalition negotiations and policymaking. • Prompt tactical voting, where voters might support a party that they don't necessarily endorse just to keep another party out of power. • Difficulty in Removing Underperforming Representatives.

Indian Succession Act of 1925

News Excerpt:

Recently, the Madras High Court (HC) ruled that mothers are not entitled to the assets of a son who died intestate and is survived by widows and children.

Key points of the ruling:

- The Madras HC passed the ruling while allowing a 2019 appeal suit filed by a Christian widow and her daughter, challenging a district court's order to give 50% of the properties left behind by the first appellant's husband to his mother.
- The Madras HC has ruled that if an individual to whom the Indian Succession Act of 1925 applies dies intestate (without signing a will), leaving behind his widow and children, his mother has no claim to the possessions left behind by him.
- The appellants brought to the High Court's attention that the family in question is Christian and hence is regulated by the Indian Succession Act, which clearly outlines the procedure for inheriting the property left behind by an intestate.
- In the current case, the intestate had left behind a widow and a daughter. As a result, the mother would be denied any portion.

About Indian Succession Act, 1925:

- The Indian Succession Act 1925 governs a **Hindu, Sikh, Christian, Jain, or Buddhist will**. However, Muslims are not covered by this Act.
- According to this Act, a **will** is a legal declaration of the maker's will regarding his property that he wishes to take effect after his death.
 - It is a one-sided or unilateral document.
 - A will becomes effective only after the maker's death.
 - However, the maker can revoke or change it at any time.

As per Section 33 of the Act, if an intestate had left behind a widow and any lineal descendant, one-third of his property should belong to the widow, and the remaining two-thirds should go to the lineal descendants. No other person would be entitled to a share.

Social Issues

Adolescent Leadership Beyond Schools: UNCRC

News Excerpt:

In a changing world, adolescent leaders like Greta Thunberg, Thandiwe Abdullah, Bana Alabed, Malala Yousafzai and others have successfully expressed their voices on contemporary world issues.

- This changing scenario is demanding to expand children's participation in the civic and political arena.

About UNCRC (United Nations Convention on the Rights of the Child):

- The UNCRC is a **legally binding international agreement** adopted in 1989, setting out every child's civil, political, economic, social and cultural rights, regardless of their race, religion or abilities. Every member of the United Nations has ratified this, **except the US**.
- UNCRC comprises **four pillars** - the right to **survival, protection, development and participation**.
- The convention has **54 articles** that cover all aspects of a child's life.
 - **Article 12** focuses on child participation:

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											



Child rights and Indian policy framework on lines with UNCRC:

- India ratified UNCRC in 1992, which states that all children are born with **fundamental rights**.
 - Life, **survival** and development,
 - **Protection** from violence, abuse or neglect,
 - An **education** that enables children to fulfil their potential,
 - Be raised by, or have a **relationship with, their parents**,
 - **Express** their **opinions** and be listened to.

- **National Commission for Protection of Child Rights (NCPCR)** is a statutory body under the Commission for Protection of Child Rights (CPCR) Act, 2005 under the administrative control of the Ministry of Women & Child Development, Government of India.
- **Prohibition of Child Marriage Act, 2006 (Amendment to Child Marriage Restraint Act, 1929):** It prohibits solemnization of marriage where either the groom or the bride is below the marriageable age (18 years in case of girls and 21 years for boys).
- **Child Labour Prohibition & Regulation Amendment Act, 2016:** It prohibits the engagement of children in all occupations and the engagement of adolescents in hazardous occupations and processes and the matters connected therewith or incidental thereto.
- **Immoral Traffic (Prevention) Act, 1956 (Amended in 1986):** This act with respect to children deals with person(s) who procure or attempt to procure any child for prostitution or person(s) who are found with a child in a brothel (it is presumed child has been detained for the purpose of prostitution) and punishes them. It also provides for the due care of rescued children and aims to prevent 'immoral traffic' in women and girls.

Major two challenges in India:

- **Mindset of the society:** Child rearing in India is still set in a very patriarchal and patronizing jacket, where the child learns to cope with drowning its voice.
- **Old institutional structure:** Policies in India lack the sustained approach considering the current system, their rights and entitlements to understand them.
- **Protection of Children from Sexual Offences Act (POCSO), 2012:** It aims at punishing the offenders who are guilty of offences of sexual assault, sexual harassment and pornography against children below the age of 18 years of age.
 - It provides for the establishment of Special Courts, and also lays down procedures for the trial like the name of the child victim shall not be disclosed; case proceedings to be conducted in court with cameras recording the trial, etc.

Way Forward:

- **Bringing behavioural change:** The stakeholders related to the child rights system, policymakers, child rights and protection service providers, state and non-state actors and parents need to be oriented on their understanding, attitude and behaviour towards children.
- Need for sustained institutional structure, investment for leadership development, and perspective building of stakeholders.

- **Adolescent leadership:** It should go beyond the school campus, creating a sustainable institutional structure with level playing space.
 - The structures could be representative of adolescent leaders at different levels of local self-governance (from Gram Panchayat to district).
 - **Odisha Balya Bibaha Pratirodh Manch** encourages youth and adolescents to become agents of change to stop child marriage.
 - **The Child Friendly Village Campaign in West Bengal** was led by adolescents on advocacy to Panchayats to include activities and budget in the annual Gram Panchayat Development Plan (GPDP).
- **Updating the policies:** The schemes focusing on promoting self-awareness and life skills need to be oriented on current system/policies.
- **Awareness through Media:** Social media is used by children to share their ideas and aspirations to draw public attention. It should be responsibly used and provide possibilities for digital activism.

PEPPER IT WITH:

NCPCR, UN Declaration of The Rights of the Child (1959), NSS and NCC

Mandatory reporting provision under POCSO

News Excerpt:

The **Himachal Pradesh High Court** recently ruled that the failure to report sexual crimes against children below 18 years is a bailable offence.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About POCSO (Protection of Children from Sexual Offences) Act:

- It was enacted by the Parliament in **2012 under the Ministry of Women and Child Development** to create a safer environment for children aged less than 18 years from offences like sexual harassment, sexual assault, and child pornography.
 - The Government also notified the **POCSO Rules, 2020**, which enabled the implementation of amendments to the Act.
- It also mandates the **setting up of Special Courts** that are better equipped to deal with such offences more effectively.
- The **National Commission for Protection of Child Rights (NCPCR)** and the **State Commission for Protection of Child Rights (SCPCR)** have been constituted under the **Commission for Protection of Child Rights Act, 2005**.

Salient Features:

- **Gender-neutral law:**
 - By defining a child as '**any person**' below the age of **18 years**, the POCSO Act sets a gender-neutral tone for the legal framework available to child sexual abuse victims.
 - Consequently, a child of any gender who has been sexually wronged has access to the remedies provided under the act.
- **Not reporting abuse is an offence:**
 - The **mandatory reporting obligation is imposed under Section 19**.
 - It requires every person who suspects or has knowledge of a sexual offence being committed against a child to **report it to the local police or the Special Juvenile Police Unit**.
 - Any person in charge of a company or an institution who **fails to report** to the NCPCR, a sexual offence relating to a subordinate under their control is **liable to be punished with imprisonment and a fine under Section 21 of the act**.
 - The act, however, exempts children from any non-reporting liabilities. Over the years, criminal actions have been initiated against several individuals, particularly those in charge of educational institutions, for hushing up child sexual abuse offences.
- **No time limit for reporting abuse:**
 - The trauma that child sexual abuse victims endure prevents them from voicing their complaints immediately.
 - In 2018, the Union Ministry of Law and Justice clarified that there is **no time or age bar for reporting sexual offences under the POCSO Act**. A victim can report an offence at any time, even a number of years after the abuse has been committed.
- **Maintaining confidentiality of the victim's identity:**
 - **Section 23 of the POCSO Act prohibits disclosure of the victim's identity** in any form of media except when permitted by the special courts established under the act.
 - A violation of this section can attract punishments under the act, regardless of whether such disclosures are made in good faith.
 - Reiterating this position, the Supreme Court issued a host of directions in 2018 forbidding, among other things, revealing a POCSO victim's identity on social media.
- **New obligations under the POCSO Rules:**
 - In 2022, the government introduced a fresh set of POCSO Rules which includes three chief takeaways for any organisation dealing with children in India.

- Any institution housing children or coming in regular contact with them must conduct a **periodic police verification and background check** of every employee who might interact with a child.
- Such an institution must impart **regular training to sensitize its employees** on child safety and protection.
- It has to adopt a child protection policy based on the principle of **zero tolerance to violence against children**.
- The **NCPCR** and **SCPCRs** have been given the authority to monitor the implementation of the act's provisions.

Challenges towards implementing the POCSO Act:

- **Multi-layered and Multi-dimensional issue:** Sexual abuse, especially Child sexual abuse are multi-layered issues. It has a detrimental impact on the child affecting their mental health, physical well-being, and behaviour.
- **Increase in unsafe digital usage:** With the progress and availability of technology and the internet, new problems have surfaced like Child pornography, online harassment, and bullying.
- **Implementation Issues and ineffectiveness:** The POCSO Act came into immediate effect in 2012, but its implementation has staggered and, thus, failed its objective due to the following reasons:
 - **Low Conviction Rate:** Only 32% of the reported cases get to the conviction stage and nearly 90% of cases are pending under this act.
 - **Delay in Judicial Action:** The Act mentions that all cases will be resolved within a year of reporting the

crime. A prolific case like the Kathua Rape case went on for 16 months before a judgment was served.

- **Hostility towards the Child:** The law speculates only on the biological age, not the mental age. Hence, multiple challenges are age-dependent.

Way Forward:

There is a need for a multifaceted approach.

- **Protecting the rights of all children:** Children in **conflict areas and LGBTQ children** need to be specifically targeted for protection, as they are at high risk of sexual violence and exploitation.
- **Public awareness and engagement:** Engaging with **communities** and involving them in efforts to prevent child abuse and provide support for survivors is crucial for creating a supportive and protective environment for children.
- **Strengthening implementation:** It needs to be effectively implemented, with **improved conviction rates and faster legal processes** that prioritize the needs of child survivors.
- **Strengthening law enforcement:** Law enforcement officials need to be **better trained and equipped** to effectively implement the provisions of POCSO and respond to cases of child abuse.

PEPPER IT WITH:

LGBTQ, State Commission for Protection of Child Rights (SCPCR), Commissions for Protection of Child Rights Act, 2005, Indian Penal Court, Juvenile Justice Act

Supreme Court Judgments related to POCSO Act:

Shankar Kisanrao Khade vs. State of Maharashtra (2013)

The SC ruled that "the non-reporting of the crime by anybody, after having come to know that a minor child below the age of 18 years was subjected to any sexual assault, is a serious crime."

Greater obligation was put on certain categories of professionals, such as medical practitioners and those in charge of educational institutions, to report cases of child sexual abuse to the nearest Juvenile Justice Board or Special Juvenile Police Unit.

This created a conundrum for medical practitioners since their professional ethics require them to maintain the confidentiality of their clients.



X vs the Principal Secretary, Health and Family Welfare Department, Govt of NCT of Delhi (2022)

A three-judge SC bench led by Chief Justice DY Chandrachud tried to strike a balance between the mandatory reporting provision under POCSO and the confidentiality provision under the Medical Termination of Pregnancy Act 1971.

The bench pointed to cases where minors might approach a Registered Medical Practitioner (RMP) for a medical termination of pregnancy arising out of consensual sexual activity.

It recognized that minors or their guardians might be wary of the mandatory reporting requirement to avoid entangling themselves with the legal process and thus approach an unqualified doctor for abortion instead.

Hunger Hotspots: FAO-WFP

News Excerpt:

The Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) have released the report “**Hunger Hotspots**”, which predicts a worsening of **food insecurity** in **18** hunger hotspots, including **22 countries** from **November 2023 to April 2024**.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Key findings of the report:

- In the hunger hotspots, parts of the population will likely face a significant **deterioration** of already high levels of acute **food insecurity**, putting lives and livelihoods at risk.
- Highest concerns - hotspots with catastrophic conditions:**
 - Burkina Faso, Mali, South Sudan, and Sudan** are among the countries with the highest concern level due to their populations **facing starvation or risk of catastrophic conditions**.
 - Palestine** was added due to the escalating **conflict** in October 2023, requiring urgent attention due to critical food insecurity and aggravating factors.
- Very High concerns - hotspots with deteriorating critical conditions:**
 - Afghanistan, the Democratic Republic of the Congo (**DRC**), Ethiopia, Haiti, Pakistan, Somalia, the Syrian Arab Republic, and Yemen are high-risk hotspots.
 - They have high levels of acute **food insecurity** and worsening drivers are expected to intensify **life-threatening conditions**.
- Since the May 2023 edition, **Chad, Djibouti, Niger, Palestine, and Zimbabwe** have been **added** to the list of hunger hotspot countries/territories.

Food and Agriculture Organisation (FAO):

- It is a **specialized agency** of the **United Nations** that leads international efforts to defeat hunger.
- It was founded in **1945** and headquartered in **Rome**. **India** is a member of FAO.
- Its goal is to achieve **food security for all** and make sure that people have regular access to enough **high-quality food** to lead active, healthy lives.
- With **195 members** - 194 countries and the European Union, FAO works in over 130 countries worldwide.
- World Food Day** is celebrated on **16th October** every year to mark the anniversary of the FAO.

World Food Programme (WFP):

- It is a **humanitarian organization** founded in **1961**, saving and changing lives, delivering food assistance in emergencies and working with communities to improve nutrition and build resilience.
- For its efforts to combat hunger, for its contribution to bettering conditions for peace in conflict-affected areas, WFP was awarded the **Nobel Peace Prize** in **2020**.

Food insecurity drivers:

- Organised violence and conflict risks:**
 - Armed violence, mainly civilian targeting, is likely to continue driving global **displacement**. The **Gaza Strip's** hostilities are expected to intensify humanitarian issues, with potential regional implications.
 - Instability and violence in the **Sahel region**, including **recent coups** in Burkina Faso, Mali, and Niger, are also escalating. The withdrawal of peacekeeping missions from Mali, the Democratic Republic of the Congo, and Somalia could amplify security voids, allowing increased Non-State Armed Group (**NSAG**) activities and attacks against civilians.
 - Insecurity and conflicts are also expected to exacerbate **food access**, leading to displacement, **market disruption**, and **abandoned cultivated areas**, further deepening food crises.

Country-wise key drivers/ risk narratives of food insecurity:

- Asia and Pacific:**
 - Afghanistan: protracted economic crisis.
 - Pakistan: Economic deterioration.
- Latin America and the Caribbean:** Below-average rainfall, high prices and above-average seasonal hurricanes.
- West Africa and the Sahel:** Conflict.
- Economic risks:**
 - The global economic outlook for 2024 is **sluggish**, with **tight** monetary policies following a decline in 2023.
 - International **food prices** remain **high** but are expected to rise due to oil price dynamics and El Nino conditions.
 - Low- and middle-income countries face challenges in **importing goods**, with **high** commodity **prices**, weak currencies, and depleted foreign exchange **reserves**.
 - Limited economic access and reduced **donor support** further exacerbate the situation.
- Natural hazard risks:**
 - Hunger hotspots like Afghanistan, Haiti, Palestine, Somalia, the Syrian Arab Republic, Yemen, Malawi,

Uganda, and Cox's Bazar face ongoing **reductions** and **gaps** in emergency agriculture, food, and livelihood assistance.

- **Weather extremes** like heavy rains, tropical storms, cyclones, flooding, drought, and climate variability drive acute food insecurity.
- **El Nino**, which reached its **peak** activity in September 2023, is expected to persist in the coming six months, **negatively** impacting regions in Southeast Asia and Latin America.

Way Forward:

- The report provides recommendations on priorities for:
 - **Anticipatory action** – short-term protective interventions to be implemented before new humanitarian needs materialise.
 - **Emergency response** – actions to address existing and emerging humanitarian needs.
- **Humanitarian intervention** in terms of **financial resources** and **capacity generation** is of vital importance in regions where severe hunger is likely to develop to save lives, preserve livelihoods, and avert starvation and death.
- **Weather forecasts, technical know-how**

PEPPER IT WITH:

National Food Security Act 2013, PDS, Global Hunger Index and State Hunger Index

and their effects on output need to be continuously monitored. To save livelihoods and expand access to food, all 18 hunger hotspots need immediate and increased support.

Rise in road accidents

News Excerpt:

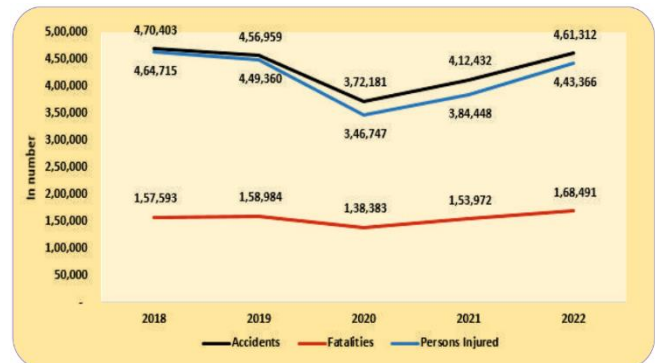
The annual report on “**Road Accidents in India-2022**” has been published by the **Ministry of Road Transport and Highways (MoRTH)**.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
V											

Key findings of the report:

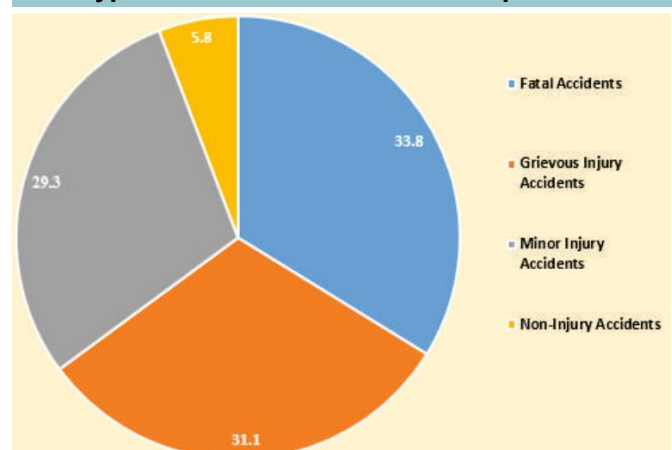
- India experienced a **12% increase** in road accidents in 2022, reaching **over 4.6 lakh**, resulting in **19 deaths per hour**, with **53 accidents** occurring **every hour** in the country.
- Out of the total **accidents** recorded -
 - **32.9%** of the accidents took place on **National Highways** including Expressways,
 - **23.1%** took place on **State Highways**,
 - **43.9%** on **Other Roads**.
- Out of the total **fatalities** reported -
 - **36.2%** were on **National Highways**,
 - **24.3%** were on **State Highways**,
 - **39.4%** were on **Other Roads**.

Trends in number of Accidents, Fatalities and Persons Injured: 2018 to 2022



- For the **fourth consecutive year** in 2022, the **fatal road accident victims** largely constituted young people in the productive age groups.
 - **66.5 %** of victims: **Young adults** in the age group of **18-45 years**.
 - **83.4 %** of total fatalities: People in the working age group (**18-60 years**).
- **Two-wheelers** accounted for the **highest share** in total accidents and fatalities, followed by light vehicles.
 - The share of two-wheeler riders in total fatality was the highest (44.5%), followed by pedestrian road users, with **19.5%** of persons **killed** in road accidents.

Type of Road Accidents in 2022 (in percent)



State-related findings:

- **Tamil Nadu** recorded the **highest number** of road accidents on **National Highways** in 2022, followed by **Madhya Pradesh** (11.8%).
- **Uttar Pradesh** topped the states regarding **fatalities** due to road accidents, followed by **Tamil Nadu** (10.6%).

Causes of accidents:

- **Over-speeding** (71.2%) was a major killer, followed by **driving on the wrong side** (5.4%).
- Human error, road environment and vehicular condition.

Rural-Urban scenario:

- Rural Areas: **68%** of road accident deaths.
- Urban areas: **32%** of total accident deaths.
- **Million Plus Cities** (fifty in number)- **16.6%** of the total number of accidents and **10.1%** of total accident fatalities.

International scenario:

- A **comparison** of select indicators published in **World Road Statistics, 2022** of the International Road Federation has been undertaken.
- **Chinese Taipei** has the **highest rate** of injury accidents per 1,00,000 population.
- The **United States** has the **highest** total number of injury accidents.
- **India**, Indonesia, and Brazil have **relatively low** injury accident rates per 1,00,000 population.
- **India** has the **highest number** of total persons killed due to road accidents, followed by **China** and the **United States**.
- **Venezuela** has the **highest rate** of persons killed per 1,00,000 population. Several countries, such as Brazil, Pakistan, and Nigeria, have low rates of persons killed per 1,00,000 population.

Measures taken by MoRTH:

- **Education Measures:**
 - Publicity measures and **awareness campaigns** through social media, electronic media and print media.
 - **Scheme** to provide **financial assistance** to various agencies for administering **Road Safety Advocacy**.
 - Observance of **National Road Safety Month/Week** every year.
 - Scheme for setting up of Institute of Driving Training & Research (**IDTRs**), Regional Driving Training Centres (**RDTCs**) and Driving Training Centres (**DTCs**) at state/district level across the Country.
- **Engineering Measures:**
 - **Road engineering:**
 - Road Safety Audit (**RSA**) of all highway projects has been made mandatory at all stages.
 - High priority to identification and rectification of **black spots /accident spots** on National Highways.
 - Five stretches of NH having a higher number of accidents/blackspots are being developed as **Model Safe Roads**.
 - The **Electronic Detailed Accident Report (e-DAR) Project** has been initiated to establish a central repository for reporting, management and analysis of road accident data across the country.

Vehicle engineering:

- Mandatory provision of an **airbag** for the **passenger** seated on the front seat of a vehicle, next to the driver.
- Norms related to safety measures for **children below four years of age**, riding or being carried on a motorcycle.
- Seat Belt Reminder (**SBR**), Over speed warning system, **Reverse Parking Alert** System, Anti-Lock Braking System (**ABS**), Crash Norms, and **Vehicle Scrapping Policy**.

Enforcement Measures:

- **The Motor Vehicles (Amendment) Act, 2019** provides for strict penalties for ensuring compliance and enhancing deterrence for violation of traffic rules and strict enforcement through the use of technology.
- **Electronic Monitoring and Enforcement of Road Safety rules** specify the detailed provisions for placement of electronic enforcement devices, Automatic Number Plate Recognition (**ANPR**), etc.

Emergency Care:

- Rules for the protection of **Good Samaritan**.
- Enhanced **compensation of victims of hit-and-run motor accidents**.
- National Highways Authority of India (**NHAI**) provisions for **ambulances** with **paramedical staff**/Emergency Medical Technicians/Nurses at **toll plazas**.

PEPPER IT WITH:

Golden Hour, e-DAR Project, Brasilia Declaration on Road Safety, Motor (Amendment) Act 2019, BNCA

India's First district-level Study on Hypertension

News Excerpt:

A recent district-wise analysis of hypertension flags disparities in healthcare practices in India.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
V											
VI											
VII											
VIII											
IX											
X											
XI											
XII											

About the study:

- For the first time in India, a district-level study on hypertension was published in JAMA Network by the American Medical Association conducted by AIIMS Delhi in collaboration with scientists from Europe and the US.
- The scientists used the hypertension data from the **National Family Health Survey data NFHS-5** as a base report, released in May 2022.
- An **output dashboard** was created as a part of the study and has gender-wise, area-wise educational levels data on hypertension.

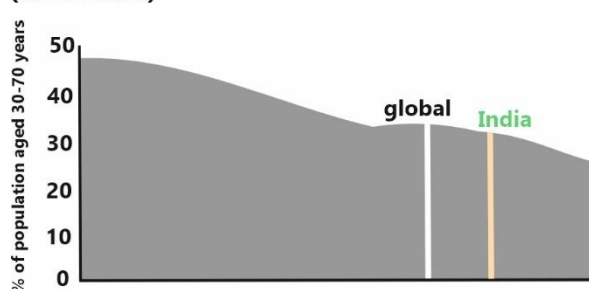
Current Scenario of Hypertension in India:

- According to a **WHO report**, 188.3 million people in India suffer from hypertension but only 37% get diagnosed, 30% start treatment, and 15% manage to keep their blood pressure under control.
- Nearly **4.6 million deaths** can be prevented in India by **2040** if half of the hypertensive individuals can control their blood pressure.
- To tackle the issue, the government this year launched an ambitious initiative to put 75 million people with hypertension or diabetes on treatment by 2025.

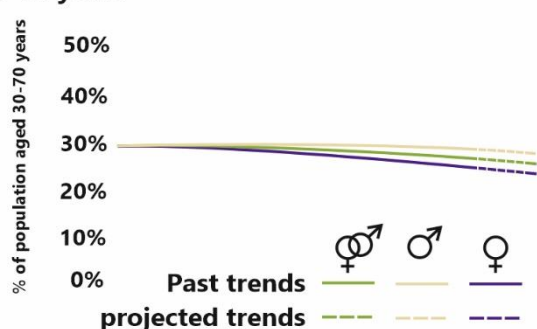
Key Outcomes from the Report:

- In South India:**
 - Karnataka's four districts namely, Chikmagalur, Shimoga, Udupi and Chitradurga, have a similar prevalence of hypertension.
- In Northeast India:**
 - In Meghalaya, the districts of Garo, Jaintia and Khasi Hills all have a similar prevalence of hypertension, but the proportion of those diagnosed is much lower in Garo Hills as compared to Jaintia and Khasi Hills.
- The substantial variations across districts with respect to:**
 - Blood pressure diagnosis (range: 6.3%-77.5%)
 - Treatment (range: 8.7%-97.1%)
 - Control (range: 2.7%-76.6%)
- Raising a red flag:** The national mean values of hypertension "hide considerable" variation at the district level.

Prevalence of hypertension -global comparison (both sexes)^a



Trends in uncontrolled hypertension in adults 30-79 years^c

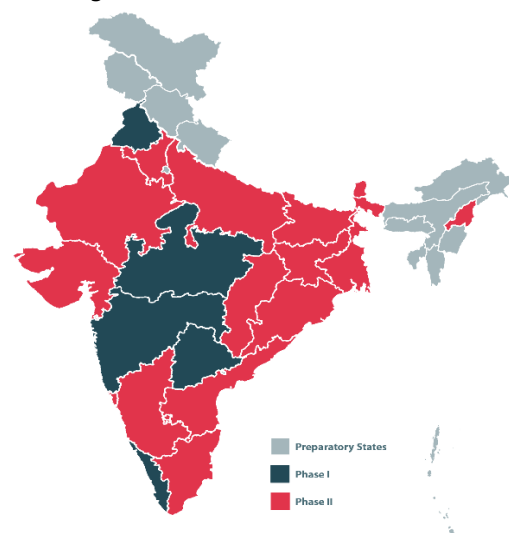


Significance of study:

- The district-wise analysis is important to **highlight "the heterogeneity" within states** and particularly the regions.
- With the help of this new dashboard, every district will gain **momentum in its policy and healthcare implementation programmes**.
- This will help the Indian government to **record the database and seek the issue of gender and socio-demographic disparities**.

Indian Hypertension Control Initiative (IHCI)

- Indian Hypertension Control Initiative (IHCI)** is a 5-year initiative involving the Ministry of Health & Family Welfare, Indian Council of Medical Research, State Governments, and WHO-India.
- Hypertension is a serious, and growing, health issue in India today. There are an estimated 20 crore adults with hypertension, of whom approximately only 2 crores have it under control.
- Aim:** To reduce premature mortality due to **non-communicable diseases (NCDs) by 25% by 2025**. One of the nine voluntary targets includes **reducing the prevalence of high BP by 25% by 2025**.
- IHCI aims to accelerate progress towards the Government of India's NCD target by supplementing and intensifying evidence-based strategies to strengthen the building blocks of hypertension management and control.
- IHCI was launched in November 2017.
 - Year 2017:** IHCI covered 26 districts across five states - Punjab, Kerala, Madhya Pradesh, Telangana, and Maharashtra.
 - Year 2020:** IHCI was expanded to 52 districts across ten states - Andhra Pradesh (1), Chhattisgarh (2), Karnataka (2), Kerala (4), Madhya Pradesh (6), Maharashtra (13), Punjab (5), Tamil Nadu (1), Telangana (13) and West Bengal (5).



Health-Care challenges related to hypertension in India:

- **Regional Variations in India:**
 - **State Variation:** Southern states have a higher prevalence of hypertension (29.9%) compared to the national average (26.8%). Diagnosis rates are similar, but the proportion of treatment with controlled hypertension is higher in the southern states.
 - **District Variation:** Within districts, significant disparities exist. For instance, in Meghalaya, the proportion of diagnosed individuals varies across districts with similar prevalence. Similarly, in Karnataka, districts with similar prevalence show differences in treatment and control rates.
- **Unavailability of Treatment:** A significant proportion of people with hypertension remain undiagnosed, and many diagnosed individuals do not initiate treatment due to non-serious behaviour.
- **Poor Blood Pressure Control:** Even among those who initiate treatment, just one in twelve achieves blood pressure control.

Way Forward:

- **Increment in infrastructure:** Controlling hypertension would require a focus on active screening of people, putting them on treatment, ensuring the availability of medicine close to their homes, and ensuring follow-ups.
- **Primary health care:** It is essential that healthcare systems are planned differently for the management of chronic conditions like hypertension. The local government has to ensure that the medicines are available regularly and at centres close to people's homes.
- **Digitization of Records:** It can help health workers ensure regular follow-ups and stock-taking of medicines.
- **Need to increase the number of registrations and coverage:** To promote opportunistic screening and assign support staff in every health facility to check the blood pressure of all adults visiting the facility.
- **Need to have a database for every visit:** Encourage the use of IT tools for better documentation of visits and send periodic automated reminders for patients who did not return for follow-up visits.
- **Need to improve Blood pressure control Rate:** Improve compliance to **State-specific Hypertension treatment protocol** at all levels of facilities in the public sector.
- **Need to improve the availability of Drugs:** Identify the gaps in procurement systems and strengthen systems to procure annual requirements of drugs based on rational forecasting on time.

PEPPER IT WITH:
WHO reports, NFHS-5, NCDs, National Health Mission

WHO Global Tuberculosis Report 2023

News Excerpt:

The **Global Tuberculosis (TB) 2023 report** recently released by the **World Health Organization (WHO)** revealed that India accounted for the highest number of TB cases in the world in 2022 accounting for **27% of the global burden**.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Key Highlights of the Report:

Global:

- 7.5 million new cases of TB were recorded in 2022, the highest figure since 1995.
- 30 countries were responsible for 87% of the world's TB cases in 2022.
- **Top 8 high-burden countries:** India (27%) Indonesia (10%), China (7.1%), Philippines (7%), Pakistan (5.7%), Nigeria (4.5%), Bangladesh (3.6%), and the Democratic Republic of Congo (3.0%).
- The net reduction from 2015 to 2022 was 8.7%, far from the WHO End TB Strategy milestone of a 50% reduction by 2025.
- The treatment success rates have improved to **88% for people treated for drug-susceptible TB and 63% for people with Multidrug-Resistant TB (MDR-TB)**.

India:

- India recorded 2.8 million (28.2 Lakh) TB cases in 2022 with a case fatality ratio of 12%.
- 1.1 lakh cases were recorded in India with **MDR-TB**.

About Tuberculosis (TB):

- It is a **bacterial** infection mostly affecting the lungs.
- **Agent:** Mycobacterium Tuberculosis
- **Transmission:** Communicable, Spread from person to person by inhaling the tiny droplets from coughs or sneezes of an infected person.
- **Types of TB:**
 - **Latent TB:** The person carries the infection, but there are no symptoms and it is not contagious. It lies dormant in the body; the immune system prevents it from spreading to other parts of the body. But it may become active one day.
 - **Active TB:** The Immune System weakens and is unable to prevent it. Then it spreads to the lungs or the other parts of the body. The symptoms start developing and it becomes contagious.
 - **Drug-Resistant TB:**
 - **MDR-TB:** It is ineffective or resistant towards the two most powerful first-line drugs **Isoniazid and Rifampicin**. MDR-TB becomes treatable through the second line of drugs.
 - **Extensive Drug Resistant TB (XDR-TB):** It is a more serious form of MDR-TB as it becomes

resistant towards the first line as well as the second line of drugs leaving the patients with no further treatment options.

Challenges to Eliminating TB:

- **Detection of TB:** According to WHO, it is difficult to detect TB cases among children. Globally about 1.2 million children less than 15 years of age are being affected by TB every year. 56% of these are not detected placing them at a higher risk of developing TB at a later age.
- **Multi-Drug Resistant TB:** India has recorded a rise in MDR-TB making ~1.1 lakh people non-responsive to the first line of drugs and causing them to develop a more severe form of TB.
- **COVID-19 Pandemic disruptions:** As per the **Global TB 2023 report**, the death of 1.30 million due to TB in 2022 is on an upward trend, reaching the same level as that of 2019. This is attributed to the disruption in access to healthcare and treatment during the pandemic.
- **Social stigma and mental health:** Patients with TB often face **isolation in healthcare systems, are discriminated against** by communities and families and are also likely to give up on the treatment.

India's efforts to eliminate TB:

- **National TB Elimination Programme (NTEP):** It aims to reduce the TB burden by 2025 strategically.
- **Ni-kshay Portal:** The Indian government has launched an online portal to track the notified TB cases.
- **Pradhan Mantri TB Mukh Bharat Abhiyan:** To augment community involvement to reach India's target to eliminate TB by 2025.
- **Setting up of Machines and Laboratories:** There are 4760 Molecular diagnostic machines covering all districts of the country. Also, 79 Line probe assay laboratories and 96 Liquid culture testing labs have been set up to diagnose MDR and XDR TB.
- **Ni-kshay Mitras:** The government launched the **community engagement program** to remove the social stigma associated with it. Under this program, 71,000 Ni-Kshay Mitras have adopted 10 lakh TB patients.
- **Availability of New Drugs:** Bedaquiline and Delamanid are provided for free for TB patients.

Way Forward:

- As TB remains the **world's second-leading cause of death from a single infectious agent** after COVID-19, more efforts are required toward early diagnosis which should be followed by an affordable treatment.
- India must collaborate globally to **develop new and effective vaccines**.

- A multi-sector approach is needed to understand the key determinants like **poverty, tobacco, lack of awareness, and under-nutrition** causing widespread TB.

PEPPER IT WITH:

DOTS, 90-90-90 TB strategy by WHO, Anti-Microbial Resistance, USAID'S Global TB Strategy 2023-30

State of Muslim education in India: Report

News Excerpt:

A report titled "**State of Muslim Education in India**" based on **UDISE data** discusses **greater gender parity in education**.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Key Highlights of the report:

- There is greater gender parity in the enrolment of Muslim children in school than in total enrolment with more Muslim girls than boys being enrolled in upper primary, secondary, and higher secondary levels.

GENDER PARITY INDEX IN SCHOOL ENROLMENT

	Muslims		Total	
	2012-13	2021-22	2012-13	2021-22
Primary	0.97	0.95	0.94	0.92
Upper primary	1.06	1.01	0.95	0.94
Secondary	1.04	1.04	0.89	0.92
Higher Secondary	0.99	1.10	0.87	0.94
Total	1.00	0.99	0.93	0.93

Note: Index value indicates number of girls for every boy Source: TOI

- According to data spanning from 2012-13 to 2021-22, there has been a **noticeable improvement in gender parity among Muslims** enrolled in **primary school** (class I-V), **although overall Muslim enrollment skew** has continued to **worsen**.
- The data also shows that **Muslim students face challenges in transitioning to higher levels of education**, with **smaller shares of students progressing to the next level** compared to other students.
 - While the report does not explain why, **one possible reason** could be the **worsening sex ratio at birth during the years preceding this period**.
 - India's **sex ratio at birth** was **905 in 2008-10**, which would be reflected in the children joining primary education in 2012-13.
 - This **ratio kept worsening to a low of 896 in 2015-17** from where it improved to 910 in 2018-20.
- Since the **children attending primary level in 2021-22** would be those born between 2011 and 2016, a

period when the sex ratio at birth was steadily worsening, it is logical that there would be **far fewer girls joining primary level than boys over the years.**

- The **improvement in the sex ratio at birth from 2016 onwards** should reflect **greater gender parity in primary enrolment** in the coming years.
- Though **Muslims have a higher sex ratio than the overall population**, it has been **going down among Muslims too**, which could be why the gender parity index is falling for Muslim enrolment too.

Way Forward:

- **Provide Financial Assistance:**

Offering financial support to economically

PEPPER IT WITH:

National Commission for Minorities (NCM), Sachar Committee

disadvantaged Muslim students would help alleviate the financial burden associated with higher education.

- Scholarships, grants, and educational loans tailored to the needs of Muslim students can encourage them to pursue higher studies.
- **Increase Scholarships and Grants:** Increasing the number of scholarships and grants explicitly targeting Muslim students would incentivize and enable them to access higher education.
 - These financial aids can make a significant difference in encouraging enrolment.
- **Improve Access to Quality Education:** Ensuring Muslim students in rural and underserved areas have access to quality education is vital.
 - **Establishing more schools and educational facilities** in these regions and **improving their infrastructure and teaching standards** can enhance the likelihood of students progressing to higher education.

PRE-SHOTS

Smart Cities Ranking

News Excerpt:

The Smart Cities Mission approaches its June 2024 deadline.

Key Points from the data of the Ministry of Housing and Urban Affairs (MoHUA):

- As per the data, cities in **Gujarat, Uttar Pradesh, Madhya Pradesh, Karnataka, Tamil Nadu, and Rajasthan** are among the top ten in terms of project completion and financial progress, while UTs and cities in Northeastern states are among the bottom ten.
- **Approximately 22% of the projects are still under progress, accounting for 33% of the total expenditure.**
 - Still the majority of projects **(6,202)** have been completed.

- Surat (Gujarat) topped in terms of **completion of projects, fund usage and other criteria**, followed by Agra (UP), Ahmedabad (Gujarat), Varanasi (UP) and Bhopal (MP) in the top five.
- The rest of the top 10 include **Tumakuru (Karnataka), Udaipur (Rajasthan), Madurai (TN), Kota (Rajasthan) and Shivamogga (Karnataka).**
- The **UTs and Northeastern cities**, on the other hand, have **continued to lag.**
 - The **bottom 10 cities** are Kavaratti (Lakshadweep), Puducherry, Port Blair (Andaman and Nicobar Islands), Imphal (Manipur), Shillong (Meghalaya), Diu, Guwahati (Assam), Aizawl (Mizoram), Gangtok (Sikkim) and Pasighat (AP).
- However, the ongoing projects are likely to meet the **June 2024 deadline.**

About Smart City Mission:

- This mission launched in **2015.**
- From January 2016 to June 2018, the **Smart cities Mission selected 100** cities through a phased process.
- The selected cities were expected to complete all of their proposed projects within **five years** of being chosen.
- The deadline for all cities was **extended in May of the current year (2023) to June 2024.**

There is no standard definition or template of a smart city. In the context of our country, the six fundamental principles on which the concept of Smart Cities is based are:



Gender Disparity among Organ Recipients: NOTTO

News Excerpt:

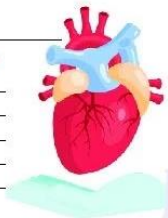
Data from the **National Organ and Tissue Transplant Organization (NOTTO)** in India between 1995 and 2021 reveal a significant gender disparity among organ recipients.

About the news:

- NOTTO data shows a significant increase in overall transplant numbers in the country, reaching a record high in 2022.
 - Delhi led in living donor transplants**, while **Tamil Nadu** remained a **leader in deceased donor transplants** involving organs from brain-dead patients.

OVER 58,000 TRANSPLANTS IN LAST 5 YEARS

Year	Total transplants	Living donor transplants	Deceased donor transplants
2018	10,340	78.19%	21.81 %
2019	12,666	83.72%	16.28 %
2020	7,443	86.75%	13.25 %
2021	12,259	86.78%	13.22 %
2022	16,041	83.15%	16.85 %

**Highest number of living donor transplants***

Delhi	3,422
Tamil Nadu	1,690
Kerala	1,423
Maharashtra	1,222
West Bengal	1,059

Source: NOTTO

Highest number of deceased donor transplants*

Tamil Nadu	555
Telangana	524
Karnataka	478
Gujarat	398
Maharashtra	303

*In 2022

Growing disparities:

- 4 out of 5 organ recipients during this period were men, indicating a **notable imbalance** in healthcare access between genders.
- Legal safeguards are in place to prevent forced consent for organ donation from women under **the Transplantation of Human Organs (Amendment) Rules, 2008**.
- The **number of women undergoing transplants remains disproportionately low** in India.
- Gender disparities in accessing transplants:
 - There is also a concern that women in need of transplants **might not be receiving adequate treatment** which necessitates increased awareness on this front.
 - There's a trend where more men tend to receive critical surgeries like transplants compared to women.
 - Gender bias is among both recipients and donors. **Counselling efforts have led to a shift in donations**, with more men now contributing to organ donation.

About NOTTO:

- It is set up under the Ministry of Health and Family Welfare.
- It is the apex centre for the procurement and distribution of Organs and Tissues and the registry of Organs and Tissues Donation and Transplantation in the country.
- Transplantation of Human Organs (Amendment) Act 2011 has established two divisions:
 - National Human Organ and Tissue Removal
 - Storage Network National Biomaterial Centre (National Tissue Bank).

National Health Claim Exchange (NHCE)**News Excerpt:**

The National Health Authority (NHA) and the Insurance Regulatory and Development Authority of India (IREDA) have joined hands to operationalize NHCE.

About:

- It is a digital health claims platform developed by NHA.
- Benefits:** seamless interoperability of health claims processing.

Objectives:

- Reduce receivable cycles and increase acceptance of cashless claims.
- Standardized the claims process.
- Facilitate insurance innovation.

About National Health Authority (NHA):

- It is the apex body established on 2nd January 2019, for implementing India's flagship public health insurance scheme called **"Ayushman Bharat Pradhan Mantri Jan Arogya Yojana."**
- It has been entrusted with the role of designing strategy, building technological infrastructure and implementing of "Ayushman Bharat Digital Mission" to create a National Digital Health Eco-system.
- NHA is the successor of the **National Health Agency** and an attached office of the **Ministry of Health and Family Welfare**.

About IREDA (Insurance Regulatory and Development Authority):

- It is a statutory body constituted by the **Insurance Regulatory and Development Authority Act, 1999** under the jurisdiction of the Ministry of Finance.
- It is tasked with regulating and licensing the insurance and re-insurance industries in India.

ICMR finds COVID-19 infection behind the sudden deaths**News Excerpt:**

The Indian Council of Medical Research has identified past COVID-19 infection as one of the **risk factors** behind the sudden death of **young Indians**, reported from states since the pandemic days.

Key findings:

- The ICMR team enrolled **729 cases**, compared them against **2,916 controls**, and collected information on their **medical history, behaviours, hospitalisation, and vaccination status**.
 - The investigation **ruled out** any link between **COVID-19 vaccination** and sudden death but identified family history and past COVID-19 infection as contributing factors.
 - The study is yet to be published in a peer-reviewed journal.
- The study found that **factors** that increased the chances of sudden death included -

- having a **family history** of sudden death,
- being in the hospital for **COVID-19** in the past,
- certain behaviours like **binge drinking** and
- **intense physical activity** shortly before death.
- The Union Health Minister quoted the ICMR study to **warn** people **not** to **over-exert** themselves if they have a past history of COVID-19 infection.

About ICMR:

- It is the **apex** body in India responsible for **coordinating** and **promoting** biomedical research.
- It is **neither** a statutory **nor** regulatory body.
- The Indian government **funds** it through the Department of Health Research and the Ministry of Health and Family Welfare.
- The ICMR hosts the **Clinical Trials Registry** – India (CTRI), a free online public record system for clinical trial registration in India.
 - Trial registration at CTRI has become **mandatory** since **2009**, encouraging registration before the first participant's enrollment.
- The governing body of ICMR is presided over by the Union Health Minister of India and comprises **27 institutes/regional medical research centres**.

Unique ID for Doctors in the National Medical Register

News Excerpt:

A **pilot assessment** system regarding **unique ID** has been conducted in eight colleges nationwide, with the **National Medical Commission (NMC)** consulting the stakeholders.

About:

- The **National Medical Register** will provide a unique identification number for all doctors in India, expected to be launched by the end of **next year**.
- The current Indian Medical Register, created using **data** from **state medical councils**, will be **replaced** by the new register.
 - The new one includes details like registration number, date of registration, place of work, medical qualifications, speciality, university, and year of passing, to be **updated every five years**.
- The new register will **allow doctors to seek licences to practise in multiple states**.
- This dynamic register will **enable** people to **check** their **doctor's credentials**.

National Medical Commission:

- It is a **statutory body** established under the **National Medical Commission Act of 2019**.
- The Medical Council of India (**MCI**), founded in 1934, was superseded by the NMC.
- NMC **guarantees** high-quality medical education and training nationwide by maintaining the highest standards in healthcare education.

Global Coalition for Social Justice

News Excerpt:

ILO's governing body to discuss the Global Coalition for Social Justice in the 349th session of the **International Labour Organisation (ILO)**.

About the Agenda of the 349th session:

- It took place from **30 October–9 November 2023** at **Geneva**.
- The **agenda** of this session Governing Body of ILO includes **discussions on the Global Coalition for Social Justice and developments at the United Nations**.
- The agenda includes the strategy for the **right to collective bargaining**, the **Youth Employment Action Plan**, and the **Global Strategy on Occupational Safety and Health 2024–30**.

About the Global Coalition for Social Justice:

- It aims to generate increased political commitments and investments and to **foster concrete actions for social justice and decent work**, in support of national priorities.
- The Coalition will increase multilateral cooperation and partnerships and play a key role in galvanizing support for the recognition of social justice in the multilateral agenda, particularly at the **UN Summit of the Future in 2024 and the proposed World Social Summit in 2025**.

About (ILO):

- It was created in **1919**, as part of the **Treaty of Versailles** that ended World War I.
- **The Governing Body of ILO is its executive body.** (Office is the secretariat of the Organization).
 - It meets **three times a year, in March, June and November**.
 - It makes decisions on **ILO policy** and elects the Director-General.
 - It decides the agenda of the International Labour Conference.
- **India and Governing Body:**
 - Since 1922, India, a **founding member** of the ILO, has been holding a **non-elective** permanent member **seat on the Governing Body** as one of the 10 countries of chief industrial importance.
 - India was a member of **all six committees of the Governing Body**.
 - The first ILO Office in **India started in 1928**.
 - Indian employers and workers' representatives **have been elected as Members of the Governing Body** from time to time.
 - **So far four Indians** have been elected as Chairman of the Governing Body.

ECONOMY

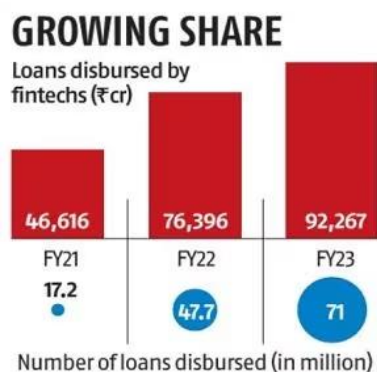
India Finance Report- CAFRAL

News Excerpt:

The **Centre for Advanced Financial Research and Learning (CAFRAL)** recently published a report that said fintech lending was poised to exceed traditional lending by 2030.

Key points of the report:

- Fintech lending is **set to surpass traditional lending by 2030 for mid-small income**.
- This projection was a testament to the growing influence of technology in the financial sector and an indication of the evolving preferences of borrowers and lenders.
- According to the report, **of the 14,000 newly founded start-ups between 2016 and 2021, close to half belonged to the fintech industry.**
 - Fintech lending is projected to exceed traditional bank lending by **2030**.
- As the sector grows, customer needs and preferences for digital financial services, paired with better accessibility, would be the major factors for fintechs to rise above traditional bank lending.



Concerns:

- The **CAFRAL report highlighted** concerns such as usurious interest rates, unethical recovery practices, and data privacy issues, among others, in the backdrop of the rapid growth in digital lending.
- Borrowers are often not aware of the total costs of borrowing.**
 - Information on the charges is not communicated to them upfront.
- Another concern** is many fake/illegal apps in the marketplace.
 - Users downloading a lending app cannot verify whether it is legal or not.
 - Moreover, **there are many instances of third parties harassing** borrowers regarding the recovery of loans and bothering consumers at odd hours and by using physical and violent means.

CAFRAL:

- The **Centre for Advanced Financial Research and Learning (CAFRAL)** is a not-for-profit organization set up in 2011 as an independent body by the **Reserve Bank of India (RBI)** to promote research and learning in banking and finance.
- The **Governor of RBI is the Chairman** of the Governing Council of CAFRAL.
- CAFRAL seeks to develop into a world-class global institution for research and learning in banking and finance.

Way Forward:

- It has become imperative for fintechs **to invest in technology and systems** that can improve **digital lending processes** in practices such as **underwriting, cyber security, and data privacy**.
 - Lending practices of unscrupulous authorized players, who are many, often colour the perception of fintech lending.
 - Individually, fintech lenders constantly invest in technology, systems, and processes to overcome the challenges to improve efficiencies, underwriting, cyber security, and data privacy.
- Fintech lenders working in regulated environments follow the regulatory framework, including digital lending guidelines and a code of conduct on pricing and recovery practices.
- Self-regulation is necessary to protect customers' interests when the industry is expanding in scale.
 - Collectively, fintech lenders are setting higher standards for customer protection like the **FACE Code of Conduct** and **remitting FACE to monitor the market practices and take action if anyone breaks the rules**.
 - The Fintech Association of Consumer Empowerment (**FACE**) Code of Conduct focuses on implementing responsible and ethical lending practices.
- With so much **industry diversity, innovation, scale, and speed, self-regulation is critical to customer protection**.

PEPPER IT WITH:

FACE Code of Conduct, RBI Governor's Functions, India's Initiatives related to FINTECH

India's 50-year bond

News Excerpt:

India debuted and fully sold its **first-ever 50-year bond** at a cut-off yield of 7.46%.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

FACTORS AFFECTING GOVERNMENT BOND PRICES:

Economic Conditions:

Interest Rate Risk

More significant for long-term bonds, as they are exposed to price fluctuations over a longer duration.

Inflation Risk

To fixed-income investments like government bonds, as it erodes the purchasing power of money over time.

Credit Risk

Generally considered low-risk due to government backing, but variations exist among different governments.

Liquidity Risk

Selling bonds before maturity could be challenging, as finding buyers or selling at a discounted price may impact the overall return on investments.

Market Sentiment

Investor sentiment and market psychology can impact bond prices.

Demand and Supply in the Bond Market

High demand for government bonds can increase prices, while oversupply can decrease prices.

Geopolitical Events

Create uncertainty in financial markets, leading investors to seek safety of government bonds, driving up prices. E.g., Interest rate hike by US Fed, cause more capital flows towards the US economy.

About the news:

- The government sold **100 billion rupees worth of the 2073 bond** to fulfill a long-standing demand by life insurance companies and pension funds, notably the Life Insurance Corporation of India (LIC).
- The inaugural auction of India's 50-year bond saw robust demand, signaling a growing interest in **ultra-long-term securities** among insurance companies and pension funds.
- The government's issuance of long-term bonds can extend the tenure of **debt sales** and manage interest costs effectively.

Why demand for the 50-year bonds?

- Over the past few years, insurers and pension funds have increased their purchases of government debt due to the strong demand for their financial products.
- Insurance products often necessitate an additional 10 years of bond duration to align with asset-liability management gaps.
- A 50-year bond will likely lead to a flat yield curve, extending the maturity of the government's debt while keeping its overall interest costs in check. It will also extend the weighted average maturity of outstanding bonds.

About Bond Yield:

- Bond yield is the return an investor realizes on an investment in a bond. A bond can be purchased for more than its face value, at a premium, or less than its face value, at a discount. Price and yield are **inversely** related, and as the price of a bond goes up, its yield goes down.

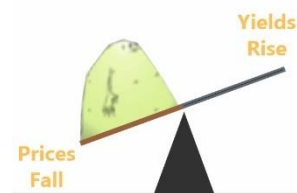
WHAT IS A BOND?

A bond is a debt instrument in which an investor loans money to an entity (typically corporate or government) that borrows the funds for a defined period of time at a variable or fixed interest rate. **Companies, municipalities, states, and sovereign governments** use bonds to raise money to finance various projects and activities. Owners of bonds are debt holders, or creditors, of the issuer.

Relation between interest rates and bond price & bond yield:

- Interest rates:** These rates are set by RBI and influence the overall cost of borrowing and returns on investments. Higher interest rates generally attract foreign investors seeking better returns, while lower rates may deter them.
- Bond Prices:** Bond prices have an **inverse correlation** to interest rate movements, that is, if market rates increase after a bond issue, the price of these bonds declines, and vice-versa.
- Bond Yields:** They reflect the fixed interest payments as a percentage of the bond's current price. Rising interest rates lead to higher bond yields, making bonds more attractive to foreign investors seeking better returns.

If interest rates RISE:



If interest rates FALL:



Types of Government Bonds in India:

- Government Securities (G-Secs Bonds):** Long-term debt instruments issued by the Government of India through auctions conducted by the Reserve Bank of India (RBI).
- State Development Loans (SDLs):** Issued by the State Governments and RBI coordinates the actual process of selling these securities.

Benefits of Government Bonds:
 - Regular Income
 - Tax Benefits
 - Safety and Security
 - Reliable Information
 - Diversification
- Treasury bills (T-Bills):** Short-term debt instruments issued by the Government of India and presently issued in three tenors, namely, 91 days, 182 days, and 364 days.
- Inflation-Indexed Bonds (IIBs):** The principal value of these bonds is adjusted for inflation, and they offer a

fixed interest rate on top of the inflation-adjusted principal.

- **Sovereign Gold Bonds (SGBs):** Dated government securities denominated in grams of gold. The RBI Gold Bond scheme allows investors to invest in gold without holding physical gold. **Recently, they have been allowed for NRIs as well.**
- **RBI Floating Rate Bond:** Unlike traditional fixed-rate bonds, the interest rate on these bonds is not fixed but fluctuates periodically based on changes in a reference rate. In the case of RBI Bonds, the reference rate is usually the Repo Rate set by the Reserve Bank of India (RBI).

Way Forward:

India's debut of a 50-year bond with a 7.46% yield signals strong demand from life insurance companies, reflecting a growing interest in long-term securities. This issuance helps the government manage its debt tenure and interest costs, extending beyond previous 40-year bonds.

PEPPER IT WITH:

LIC, G-Secs, SDLs, Sovereign Gold Bond, Credit Rating Agencies

Liberalized Remittance Scheme (LRS)

News Excerpt:

According to the **Reserve Bank of India's (RBI) monthly bulletin for September**, outward remittances under the **Liberalised Remittance Scheme (LRS)** in the April-September quarter of the fiscal year 2023-24 has shown growth on a year-on-year basis.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About LRS:

- It is a foreign exchange policy initiative under the **Foreign Exchange Management Act, 1999 (FEMA'99)**, introduced by the Reserve Bank of India in **2004**. It intended to simplify and streamline the process of remitting funds outside India.

Working of LRS:

- The FEMA'99 states that LRS is available to all resident individuals, including **minors** and students.
- The eligible citizens **must** have an Indian bank account, a valid Permanent Account Number (PAN), and a passport.
- They can use the remitted amount for educational, business, personal, or other purposes.
- Residents can avail of foreign exchange facilities within the **limit of USD 2,50,000 only**, revised from a limit of previous USD 25,000 consistent with prevailing macro and micro economic conditions.
- There are **no restrictions on the frequency** of remittances under LRS.
- The remittances can be made in **any freely convertible foreign currency**.

Prohibited Items Under LRS:

- Remittance for any purpose specifically prohibited under **Schedule I** (like purchase of lottery tickets/sweepstakes, proscribed magazines, etc.) or any item restricted under **Schedule II of Foreign Exchange Management (Current Account Transactions) Rules, 2000**.
- Remittances for trading in foreign exchange abroad.
- Capital account remittances, directly or indirectly, to countries identified by the Financial Action Task Force (FATF) as "non-cooperative countries and territories" occasionally.
- Remittances directly or indirectly to those entities identified as posing a significant risk of committing acts of terrorism as advised separately by the Reserve Bank.

Key Highlights of the bulletin:

It mentions both positive and negative changes in various sectors of the economy. **The table below shows positive change in all sectors except five, i.e. Deposits, Donations, Medical Treatment, Study Abroad and Others.**

STEADY GROWTH

Outward remittances under LRS for resident individuals

	Q2FY23 (\$ million)	Q2FY24 (\$ million)	% change Y-o-Y
Total	7,321.65	9,231.96	26.09
Deposit	231.28	229.42	-0.80
Purchase of immovable property	38.53	60.31	56.53
Investment in equity/debt	189.78	360.59	90.00
Gift	681.37	886.55	30.11
Donations	3.73	2.19	-41.29
Travel	3,887.67	5,224.21	34.38
Maintenance of close relatives	989.89	1,220.5	23.30
Medical treatment	13.91	13.48	-3.09
Study abroad	1,168.50	1,146.65	-1.87
Others	117.01	88.09	-24.72

LRS: Liberalised Remittance Scheme

Source: RBI bulletin

Reasons for the increase in Remittances:

- **Tax Change:** The surge in outward remittances is likely due to the change in the LRS tax scheme.
 - During the Union Budget FY- 2023-24, the government proposed increasing the tax collected at source (TCS) on liberalized overseas remittances **from 5% to 20%** for amounts above Rs 7 lakh for all purposes **except education and medical treatment**.
- **Capital Inflow:** This has resulted in a sharp increase in equity and debt investment and the purchase of immovable property.
- **Growth in international travel:** International travel increased by 34.38 percent year-on-year, leading to increased remittances.

The LRS has made the **transfer of remittances easy and transparent**, thus allowing resident Indians to avail of **hassle-free foreign education, overseas travel, and medical treatment**.

PEPPER IT WITH:

FERA 1973, FEMA 1999, Tax collected at source (TCS), Capital and Current Account Convertibility

The Perils of Patent Amendments

News Excerpt:

The Union government recently released the **Draft Patents (Amendment) Rules, 2023**, which proposes several significant changes, including introducing **fees for pre-grant opposition filings** and centralizing authority with the patent controller.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Impact:

- **The Indian Patents Act of 1970**, by allowing **process patents** and introducing shorter terms for patent protection, fueled the growth and innovation of the pharmaceutical industry while ensuring a balance between innovators' rights and public health concerns.
- The proposed **amendments to the Patent Rules 2003** raise concerns about **how they may impact the standard of patents granted** by the Patent Office and the **transparency of the patent system** in India.

Reason for Impact:

- India is the leading generic drug producer in the world. **India fulfils more than 60 per cent of the global demand for vaccines**. India plays a critical role in vaccines by meeting 40-70% of the World Health Organization's demand for DPT and BCG vaccines and **90% of the global demand for measles vaccines**.
- However, India has long struggled **to access good quality and affordable medicines**. Soaring costs of healthcare, including medicines, push 3% of Indians into poverty every year.
- The Economic Survey 2023 projects the **share of out-of-pocket expenditure (OOPE) in healthcare at 48.2%**, significantly higher than the global average of 18 per cent.

Amendments and its effects:

- Proposed amendments include **introducing fees for pre-grant opposition filings** and centralizing authority with the patent controller. These changes **deviate from** not charging fees for pre-grant opposition filings and allowing anyone to provide crucial information to the patent office under **Section 25(1) of the Indian Patents Act, 1970**.
- **Restricting who can file pre-grant oppositions**, especially patient groups, could impede efforts to prevent the issuance of undeserved patents for medicines. This is concerning, as it might affect the timely availability of cost-effective generic medications.
- The working statement submission interval may be **extended from annually to once every three financial years**, and the **need to disclose whether patented products are made in India or imported**, along with their pricing details, could be eliminated. These proposals could have a detrimental effect on India's healthcare system, limiting the ability of patient

groups to initiate pre-grant oppositions, which are crucial for preventing undeserved patents on medicines.

- **Discretionary powers may be granted to the patent controller** to determine who can file pre-grant oppositions, contrary to previous judicial decisions that allowed both organizations and individuals to do so. These changes could weaken the safeguards in India's patent system, which is ironic considering that earlier in the year, the Indian Patent Office rejected a US pharmaceutical giant's application to extend a monopoly on a key tuberculosis drug.
- **Extending the time frame for working statement submissions and eliminating the need for manufacturing details and pricing information** may obstruct the procedure for obtaining compulsory licenses, potentially hindering access to essential medicines at affordable rates.

Need to stand firm:

- India should actively address challenges related to patents and intellectual property rights and **strongly oppose any efforts to restrict the waiver of patents for drugs and vaccines**. India is already compliant with the World Trade Organization's Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement and has aligned its Patent Act accordingly.
- Access to affordable medicines is vital for vulnerable communities globally, and India, often considered the 'pharmacy of the world', plays a crucial role in ensuring this accessibility. With India's growing population, the government must explore **ways to keep high-quality medications affordable and accessible to impoverished and marginalized populations**.
- The Indian Patent Office is currently overwhelmed with patent applications, straining its capacity to process them effectively. Proposed amendments aim to simplify the patent application and granting process. While these amendments may ease the burden on the patent office, there are concerns that they disproportionately favour global pharmaceutical giants; hence, a balance should be maintained.

Way Forward:

The existing patent regulations are essential for ensuring access to a wide range of newer medicines. The anticipated impact of these amendments is negative, potentially reducing the availability and accessibility of medicines and promoting monopolies and profiteering by major pharmaceutical companies. Therefore, the government must reconsider the proposed amendments to **protect the accessibility of affordable medicines and eliminate provisions that benefit the global pharmaceutical industry**.

PEPPER IT WITH:

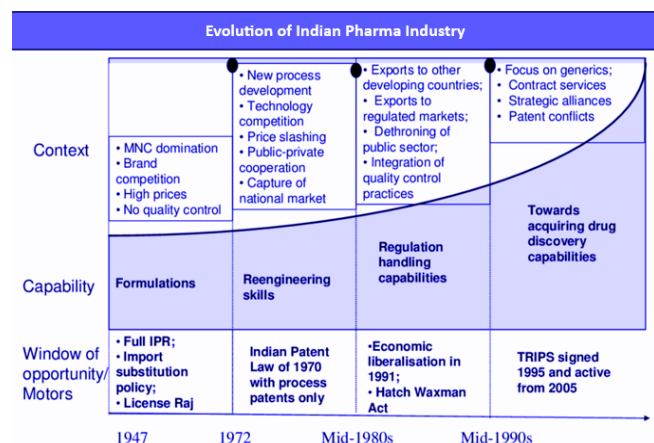
Indian Patents Act, 1970, Patent rule 2003, Economic Survey, TRIPS, WTO

Reputation of India's Pharma Industry

News Excerpt:

Recently few countries have accused 'Made in India' medicines of causing deaths, blindness and severe injury to their citizens. Also, Indian doctors protested against a new rule introduced by the **National Medical Commission (NMC)** mandating that all doctors write prescriptions with only the generic names of drugs, not brand names.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											



Concern Regarding Quality of Made in India Medicine:

- Quality Control and Testing:** The instances of adulteration leading to fatalities in India and other countries suggest a systemic failure in quality control measures. **The need for rigorous inspections, adequate testing equipment, and qualified personnel within manufacturing facilities is crucial.** While mandating testing for exported cough syrups is a step, it's insufficient.
 - The focus should also be on ensuring domestic products meet the same standards to safeguard Indian patients.
- Doctor Opposition to Generic Prescriptions:** The lack of faith among doctors in prescribing only generic names stems from concerns about therapeutic equivalence and quality variations among generics.
 - This distrust affects patient access to competitively priced medicines. Instead of addressing these concerns, the government paused the new rule, missing an opportunity to educate and engage doctors and the public on generics' benefits and quality assurances.
- Regulatory Framework and Legislation: The Drugs, Medical Devices, and Cosmetics Bill of 2023** seems to overlook fundamental issues highlighted by expert committees.
 - The absence of a centralized regulator and a proposal for an independent, skilled regulatory setup remain unaddressed.

- Harmonizing regulations across states and empowering a competent central regulator could enhance oversight and consistency in drug quality.

- Reputation and Global Impact:** Ineffective regulation impacts public health and damages the reputation of India's pharmaceutical industry globally.
 - This has led to repercussions, such as the US contemplating onshoring pharmaceutical manufacturing and African nations aiming to reduce dependence on Indian imports.
 - This threatens India's position as the "pharmacy to the developing world."

Addressing the challenges:

- Enhanced Oversight:** Invest in robust inspection processes, quality control measures, and training to ensure compliance with stringent standards for both domestic and export markets.

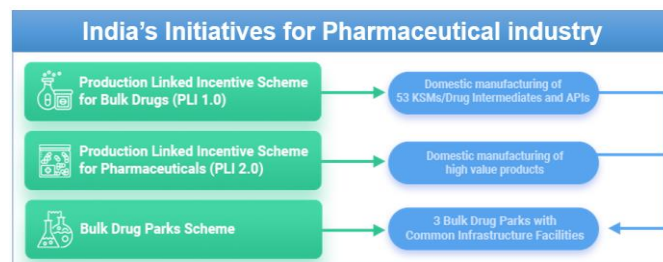
PEPPER IT WITH:

National Medical Commission, Drugs, Medical Devices, and Cosmetics Bill of 2023, Generic vs Branded Drugs, Bulk Drugs Park Scheme, Drugs and Cosmetics Act, 1940

- Education and Engagement:**

Communicate transparently with doctors and the public regarding generic medicines' benefits and quality assurances, fostering trust in domestically produced drugs.

- Regulatory Reforms:** Revise legislation to establish a centralized regulator with specialized skills and resources to standardize and enforce drug quality nationwide.



- Global Reputation Management:** Prioritize rebuilding trust by actively addressing quality concerns and complying with international standards to maintain India's status as a reliable pharmaceutical supplier.

Way Forward:

The concerns raised regarding the quality of 'Made in India' medicines, both domestically and in international markets, highlight critical issues within the pharmaceutical industry that need urgent attention and resolution. The Indian government must prioritize a holistic approach, considering public health and the industry's global standing. **Addressing structural issues, enhancing regulatory measures, and fostering trust in 'Made in India' medicines** are pivotal for a sustainable and reputable pharmaceutical industry.

Cyber Insurance is Critical for MSMEs

News Excerpt:

Cybersecurity has become a major concern for Micro, Small and Medium Enterprises (MSMEs).

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About the Contribution of MSMEs:

- India's economic progress today heavily depends on the Micro, Small and Medium Enterprises (MSMEs) that are the **backbone** of the business ecosystem.
- Together, these enterprises contribute more than **28%** to the **GDP**, generating employment and trade opportunities.
- MSMEs contributed **45.04%** to overall **exports** during the Financial Year 2022.
- The MSME sector plays a significant role in **alleviating poverty** and **correcting regional imbalances**.
- MSME development can assist in better meeting **SDG goals**, including SDG 1 (ending poverty), SDG 2 (ensuring zero hunger), etc.

Vulnerability of MSMEs to cyber-attacks:

- MSMEs need a robust shield against any risks, given the **high stakes**. In this age of heavy digital reliance, businesses cannot afford to overlook the high financial and legal implications that come bundled with cyber risks.
- Increase in cyber-attacks:** A recent **report** by cyber security firm **Acronis** indicated that companies in India have reported more cyber-attacks than anywhere else.
- Wide range of risks:** MSMEs have become prime targets for cybercriminals. They face a wide range of cyber risks, including data breaches, **malware** attacks, **phishing** attacks and **denial-of-service** attacks.
- Soft targets:** They are soft targets because, compared with large corporations, they often have **fewer resources** to invest in cyber security. Also, they are **less likely** to have a team of **security experts**.
- Multi-pronged consequences:** Studies indicate that about **43%** of all cyber attacks are directed at small businesses and start-ups. The consequences are multi-pronged. They often result in **financial losses**, **damage to reputation**, and **operational disruptions**.

Cyber insurance needed for MSMEs:



- Financial safety net:** It provides a **financial safety net**, covering the costs associated with data breaches, **ransomware attacks**, and **cyber incidents**. For cash-strapped SMEs, this can be the difference between survival and insolvency.
- Cyber extortion protection:** Cyber-attacks on MSMEs often involve ransomware and cyber extortion. The perpetrators hack into the systems and block all access unless the victim pays a ransom. Cyber insurance can help navigate through such risks.
- The policy can cover a wide range of costs, including **notification costs**, which are the costs of notifying customers and other affected parties about a data breach.
- Against operational disruptions:** Such incidents can lead to operational disruptions. Cyber insurance typically offers coverage for business interruption, compensating for lost income during downtime caused by a cyber event.
- Affordable coverage:** Cyber insurance can provide MSMEs with protection at a **cost** they can afford.
- Intangible costs coverage:** A cyber insurance policy often includes provisions for **reputation management**, helping businesses navigate the aftermath of a cyber-attack and rebuild trust with stakeholders.

Cybersecurity insurance for small businesses in other countries:

- US:** The US has created the '**Ransomware Risk Management Program**' to improve access to affordable cyber insurance for small & medium businesses and provide guidance on risk management.
- EU:** The European Union's **General Data Protection Regulation (GDPR)** requires businesses to take necessary measures to protect their customers' personal data.
- Japan:** Countries like Japan have introduced cyber security **insurance pools** that provide coverage for small & medium businesses.

Steps taken by India:

- Cyber Swachhta Kendra:** The program provides free online security services to Indian citizens and organizations, including MSMEs. These services include anti-virus and anti-malware scanning, vulnerability assessments, and security awareness training.
- Digital MSME scheme:** This scheme encourages MSMEs to reduce risks associated with data storage, store data in the cloud, and reduce risks associated with data storage.
- National Cyber Security Policy:** This policy aims to strengthen the regulatory framework for ensuring a secure cyberspace ecosystem. It implies the protection of MSMEs from cyber-attacks as well.
- MSME Sambandh:** The government launched this scheme to monitor and track the implementation of various government schemes, including cybersecurity-related initiatives, to benefit MSMEs.

Way Forward:

- **Awareness of cyber risks:** Improve awareness of the various types of endpoint risks that your organization currently faces by conducting regular security checks and boosting the IT team's capabilities.
- **Authentication:** Ensure multi-factor authentication for all applications and devices and emphasize strong passwords to avoid security breaches.
- **Affordable tools:** Facilitate MSMEs' access to affordable cybersecurity tools and services through partnerships with cybersecurity providers.
- **Collaboration and information sharing:** Create platforms where MSMEs can collaborate and share information about emerging threats and best practices.
- **Awareness about regulation:** Ensure that MSMEs know and comply with relevant data protection and privacy regulations, such as the Personal Data Protection Bill.
- **R&D and Innovation:** Encourage MSMEs to invest in research and development for cybersecurity innovations, offering financial incentives and support.

PEPPER IT WITH:
MSME, SDGs, Cyber Security, GDPR, Cyber Swachhta Kendra

Digital Consent Acquisition (DCA) System

News Excerpt:

The **Telecom Regulatory Authority of India (TRAI)** has asked banks and other entities sending out commercial messages to telecom subscribers via SMS or voice calls to take "urgent" steps to be onboard the **Digital Consent Acquisition (DCA) system** as per stipulated timelines.

About:

- The crackdown on **Unsolicited Commercial Communications** like spam and pesky messages had seen **TRAI issuing directions in June 2023 to all the access providers to develop and deploy the DCA facility** for creating a unified platform and process to seek and register customers' consent digitally across **all telecom operators and 'Principal Entities'**.
- TRAI has set a **deadline of September 30** for onboarding **Principal Entities (PEs)** from the banking, insurance, finance, and trade sectors and **November 30** for onboarding PEs from the remaining sectors.

About TRAI:

- Established on February 20, 1997, by the Telecom Regulatory Authority of India Act 1997.
- It was established to regulate telecom services, including fixation/revision of tariffs for telecom services, which were earlier vested in the Central Government.

- One of the main **objectives of TRAI** is to provide a fair and transparent policy and competition environment.

Principal Entities (PE):

- Banks, other financial institutions, insurance companies, trading companies, business entities, and real estate companies are **Principal Entities or Senders** in Telecom Commercial Communications Customer Preference Regulations, 2018 (TCCCPR-2018).
- They send commercial messages to telecom subscribers through SMS or voice calls.

Limitation of the Prevalent System:

- In the **prevalent** system, consent is obtained and maintained by various PEs. As a result, the Access Providers **could not verify the authenticity of consent**.
- Furthermore, there was **no unified system** for clients to provide or withdraw consent, necessitating a revision by TRAI.

The new DCA process has been established to streamline the process of seeking and revoking the consent of the consumers.

- It is clearly stated that, following the implementation of DCA, **all current consents obtained by alternative means will be considered null and void**, and all PEs will be required to seek new consents solely through digital means.

TRAI works for a fair and transparent policy environment that promotes a level playing field and facilitates fair competition.

PEPPER IT WITH:
Internet Freedom, Data Privacy, Data Protection Framework

In this line of business, the Digital Consent Acquisition (DCA) system will be an effective tool for future regulation.

PRE-SHOTS

International Competition Network

News Excerpt:

The Competition Commission of India (CCI) joined the International Competition Network's (ICN) steering group.

About ICN:

- It is an informal, virtual network that seeks to **facilitate cooperation** between competition law authorities globally.
- The ICN is unique as it is the **only global body** devoted exclusively to competition law enforcement, and its members represent national and multinational competition authorities.

- It comprised **132 member states** from 120 competition jurisdictions exclusively devoted to international competition enforcement.
- Members produce work products through their involvement in flexible project-oriented and results-based working groups.

About the Competition Commission of India (CCI):

- CCI is the chief national competition regulator in India.
- It is a **statutory body** within the Ministry of Corporate Affairs. It is responsible for enforcing the Competition Act 2002 to promote **competition** and **prevent activities** that adversely affect competition in India.
- The CCI looks into cases and **investigates** them if the same hurts competition.
- CCI also approves combinations under the act so that two merging entities do not overtake the market.

Securities Appellate Tribunal (SAT)

News Excerpt:

The SAT **quashed SEBI's order** that had barred Zee Entertainment Enterprises promoter from holding key managerial posts in the company.

About

- The SAT is a **statutory** and **autonomous** body created as per provisions of **Section 15K** of the Securities and Exchange Board of India (**SEBI Act, 1992**).
- The **presiding officer** and other board members are elected by the selection committee by the Prime Minister of India.
- The **jurisdiction** of the SAT extends to **companies** situated across India.
- It hears and disposes of **appeals** against orders passed by the SEBI or an adjudicating officer under the act and exercises jurisdiction, powers and authority conferred on the Tribunal.

Penny Drop Verification

News Excerpt:

The Pension Fund Regulatory and Development Authority (PFRDA) makes 'penny drop' verification mandatory for NPS fund withdrawal.

About:

- Penny drop verification is a form of bank account **validation** in which a penny, usually **INR 1**, is deposited into the bank account.
- For example, if a business registers a new vendor, one of the foremost requirements would be to verify the **vendor's bank account** details.

- This is done to ensure the validity of the account so that neither the business nor the vendor faces any problems during payment transfers.
- The procedure not only verifies the authenticity of the customer's bank account but also checks whether the mentioned account is operative.
- In addition, the procedure also helps ascertain whether the account details provided belong to the same vendor or not.
- The PFRDA has made 'penny drop' verification mandatory for timely money transfer.

Embedded Finance

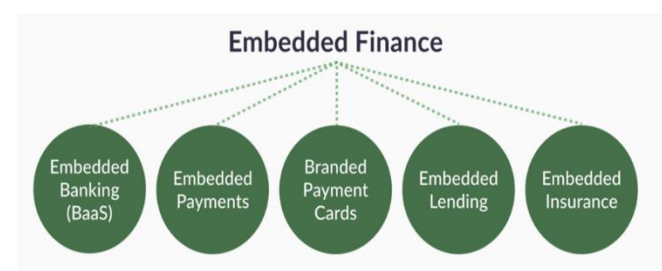
News Excerpt:

Embedded finance has emerged as an innovative approach to connecting with a vast pool of consumers. It has expanded into markets that were once the stranglehold of conventional financial institutions.

About Embedded Finance:

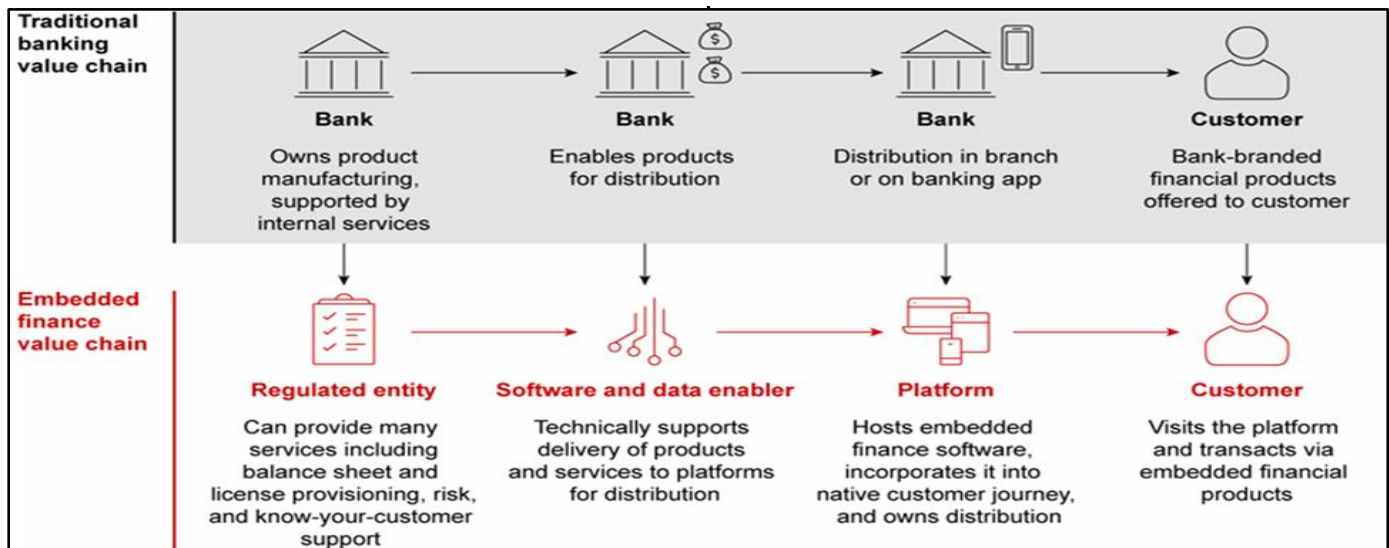
- Embedded Finance is the seamless integration of **financial services** into a traditionally **non-financial platform**.
- It enables customers to access financial services within the **app and in context**.
 - E.g.- customers can make cashless payments within a ride-hailing app, "**buy now pay later**" services, banking apps in ridesharing platforms, integrated payment processing on e-commerce platforms, and insurance products offered through travel sites and services.
 - Enables businesses in the **MSME, B2C, and B2B** segments to increase their customer lifetime value, monetize their customer base, and vertically scale their product offering.

Types of embedded finance:



Growth of embedded finance in India:

- The payment vertical within embedded finance has undergone a substantial transformation, boasting a compound annual growth rate (CAGR) of **76 % and 28 %** in transaction volume and value, respectively, between fiscal 2021 and 2023.
- The embedded finance market in India is expected to reach **\$530 billion by 2025**.



Benefits

- **Financial inclusion:** Offers services that customers may not be able to find elsewhere, meaning that users can take advantage of more opportunities.
- **Streamlined or "frictionless" payments:** Provide access to better payment and financial options and help businesses handle transactions in a simplified way.
- **Adoption of digital payment:** Diminishing the dependence on cash and enhancing the efficiency of financial transactions.
- **Contribute to economic growth:** Contribute to economic growth by fostering a thriving fintech ecosystem and supporting various industries.

Challenges

- **Transparent and ethical business practices:** There are concerns about customer protection from unfair practices, transparency, high fees, or predatory lending.
- **Data privacy and security issues:** There is a risk of a higher susceptibility to data breaches, fraud, and cyber security threats, potentially eroding trust.
- **Inequality due to Digital Divide:** Certain populations are excluded, or access is limited to those with smartphones and internet connectivity.
- **Connectivity issue:** The limited digital infrastructure and connectivity may hinder the seamless adoption of embedded finance.

current quotas. **The quota increase would enhance the IMF's permanent resources and strengthen the quota-based nature of the Fund by reducing the reliance on borrowing** and thus ensuring the primary role of quotas in Fund resources.

- **Effect:** The proposal envisages that once quota increases are in effect, borrowed resources comprising the Bilateral Borrowing Agreements and New Arrangements to Borrow (NAB) would be reduced to maintain the Fund's current lending capacity.

Importance of Quotas:

- The membership has also acknowledged the urgency and importance of quota share realignment to better reflect members' relative positions in the world economy while protecting the quota shares of the poorest members, and many members would have supported a quota realignment now, together with the proposed quota increase.

Benefit of the Quotas:

- Concluding the 16th Review with a quota increase will help preserve a strong, quota-based and adequately resourced IMF at the centre of the Global Financial Safety Net. An adequately resourced IMF is essential to safeguard global financial stability and respond to members' potential needs in an uncertain and shock-prone world.

How does the IMF use quotas?

- **Resource Contributions:** Quotas determine the maximum amount of financial resources a member is obliged to provide to the IMF.
- **Voting Power:** Quotas are a key determinant of voting power in IMF decisions. Members get one vote per SDR100,000 of quota plus basic votes, which are the same for all members.
- **Access to Financing:** Quotas determine the maximum amount of loans a member can obtain from the IMF under normal access.

International Monetary Fund Proposal to Increase IMF Quotas

News Excerpt:

International Monetary Fund (IMF) Executive Board Approves a Proposal to Increase IMF Quotas.

About the news:

- The Executive Board approved a proposal to be considered by the Board of Governors to conclude the **16th General Review of Quotas** (16th Review) with a significant increase in quotas.

Proposal of Quotas:

- The proposal is centred around an increase in quotas of 50 percent, allocated to members in proportion to their

- **SDR Allocations:** Quotas determine a member's share in a general allocation of SDRs.
- The proposed quota increase comes at a complex time for the global economy and the IMF's membership. In the spirit of international cooperation, this proposal will garner the broadest possible support from the membership, and we will then make progress on a quota realignment under the 17th Review.

India inks Supply Chain pact at IPEF

News Excerpt:

Recently, India, the USA and 12 other members of the **Indo-Pacific Economic Framework (IPEF)** have signed a supply chain resilience agreement.

About IPEF:

- The Indo-Pacific Economic Framework (IPEF) initiative involves **14 member countries**, including India, USA, Australia, Japan, Fiji, South Korea, New Zealand, Singapore, and Thailand.
- This framework **represents 40% of the global gross domestic product and 28% of the global trade in goods and services**.
- The primary aim of this collaboration is **to enhance economic cooperation and reduce dependence on China** by strengthening supply chain resilience among member nations.
- The framework is **structured around four pillars: trade, supply chains, clean economy, and fair economy (addressing issues like tax and anti-corruption)**.
- India has joined all the pillars except the one concerning **trade**.

Key developments in the IPEF agreement:

- **Supply Chain Resilience Agreement:** This agreement **aims to reduce reliance on China** and relocate the production of critical sectors and essential goods among member nations.
- **Agreement Details:** The signed supply chain agreement **aims to make IPEF supply chains more resilient, integrated, and robust**. It is expected to contribute to the region's economic development as a whole.
- **Implementation and Benefits:** The pact will come into force after implementation by any five member countries.
 - It is expected to bring benefits like supply chain diversification, increased investments, deeper integration of India into global value chains, support for small and medium enterprises (MSMEs), and **a seamless regional trade ecosystem**.
- **Establishment of Bodies:** The agreement includes establishing three new bodies within IPEF to facilitate cooperation among partners: **the Supply Chain Council, the Supply Chain Crisis Response Network, and the IPEF Labour Rights Advisory Board**.

- The advisory board aims to promote labour rights, sustainable trade and investment, and opportunities for investment in businesses that respect labour rights.

- **Ongoing Negotiations:** While the supply chain agreement has been signed, negotiations for the **fair economy and clean economy** pillars are nearing conclusion. However, the trade pillar is taking more time to finalize.

These developments highlight the collaborative efforts among member nations to fortify supply chains, foster economic development, and promote sustainable and fair-trade practices within the Indo-Pacific region.

Lewis Model

News Excerpt:

With manufacturing turning increasingly capital-intensive, India may have to **replace the old farm-to-factory with a new farm-as-factory labour model**.

About Lewis Model:

- The economist **William Arthur Lewis** argued in 1954 about the immense opportunities for industrialization for developing nations with an unlimited supply of workers at subsistence levels.
- Their withdrawal from the farm would not reduce agricultural output. Although, they can make the existing manufacturing industries more viable and amenable to **productivity-enhancing mechanization**.
- For this, it requires to pay wages just high enough to make men leave the family farm.

How does Lewis Growth Model Work:

- The Lewis Growth Model operates in terms of inter-sectoral connections in a dual economy consisting of capitalists and subsistence sectors.
 - For example, the agricultural sector has a huge amount of surplus labourers. If these surplus workers are withdrawn, then the net output of the agricultural sector will not be affected.
- The industrial sector subsequently absorbs these excess workers, triggering an increase in output and employment, ultimately resulting in economic growth.

Potential factors supporting the feasibility of the Lewis model in India:

- India still has a **near-unlimited supply of surplus labour** working in subsistence sectors.
- India has a good **working-age population**.
- **NITI Aayog** is working on a **"new" economic development model** for India, exploring the scope for remunerative job creation "in and around agriculture" itself.
 - Such jobs needn't be on the farm but outside it - in the aggregation, grading, packaging, transporting, processing, warehousing, and retailing of produce or supplying inputs and services to farmers.
- The use of grain, sugarcane, and oilseeds as **bio-fuel** is already growing, and so can the crop stubble and residues that farmers are now burning in the fields.
- There is also rising demand for **bio-based products**, whether cosmetics and medicines, building materials, polymers, speciality chemicals, or even insecticides and fertilizers.

AGRICULTURE

Rise in Horticulture Output

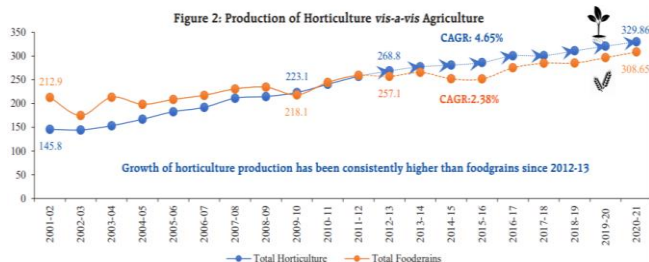
News Excerpt:

India's horticulture production is estimated to have risen annually by 1.37 % to 351.92 million tonnes in 2022-23 due to better productivity.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Status of Horticulture in India:

- It contributes around **30.4%** to GDP while using only **13.1%** of the gross **cropped area**, making it a significant player in India's agricultural growth.
- The productivity of horticulture has increased significantly from **8.8 tonnes per hectare (TPH)** in 2001-02 to **12.1 TPH** in 2020-21.
- India has emerged as a **world leader** in producing various fruits like mango, banana, guava, and papaya. It is the second-largest producer of fruits and vegetables.
- Among the new crops, kiwi, gherkins, kinnow, date palm, and oil palm have been successfully introduced **for commercial cultivation in the country**.
- Bangladesh, UAE, Nepal, Netherlands, Malaysia, Sri Lanka, the UK, Oman, and Qatar are India's major export destinations for fresh fruits and vegetables.



What is Horticulture?

- Horticulture is a field of plant agriculture focusing on garden crops such as fruits, vegetables, and ornamental plants.
- This encompasses the growth of a wide range of items, such as fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds, and non-edible plants like grass, ornamental trees, and decorative plants.
- Additionally, horticulture **extends to activities like plant preservation and the restoration of landscapes**, as well as **arboriculture**, which focuses on the care of ornamental trees and lawns.

Significance of horticulture in India:

- Rural development:** It provides a way to generate income and employment, particularly for **women** and the **marginalized sections** of society.
- Source of foreign exchange:** It is also an important source of foreign exchange for India, with a significant

National Horticulture Mission (NHM):

It is one of the sub-schemes of the Mission for Integrated Development of Horticulture (MIDH). It aims to promote holistic growth in the horticulture sector.

National Horticulture Board (NHB):

It serves to encourage horticulture, aid farmers, and increase crop productivity and profitability in India.

Horticulture Cluster Development:

The Cluster Development Programme (CDP) is designed to leverage the geographical specialization of horticulture clusters and promote integrated and market-led development.

Central Institute of Horticulture:

The institute provides technical support on different aspects of horticulture.

National Bamboo Mission:

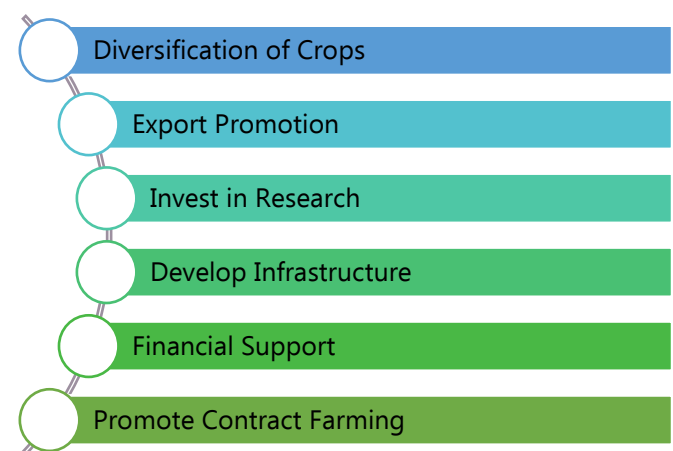
The Mission envisages promoting holistic growth of the bamboo sector by adopting an area-based, regionally differentiated. **This mission has now been merged with the Mission for Integrated Development of Horticulture (MIDH) scheme.**

portion of the country's horticultural produce being exported to other countries.

- Food and nutrition security:** Horticultural crops, such as vitamins and minerals, play a vital role in providing food and nutritional security.

Challenges:

- Post-harvest losses:** The post-harvest period refers to the time from when the food is harvested until it reaches retail markets for consumption. This time lag leads to significant losses in the quantity and quality of the produce. In 2022, India lost **about 5-13% of its fruits and vegetables** between harvesting and consumption.
- Logistical issues:** India's inadequate cold storage & warehousing, rail, road, and logistics infrastructure impacts the transport and storage of horticultural products.



- Market Access:** Lack of **efficient marketing** channels challenges reaching consumers and **export markets**.
- Biotic Stress:** The states in India face pest and disease challenges due to their unique agro-ecological

conditions. E.g.- Pests like the **Assam tea mosquito bug** and diseases like **blister blight** affect tea and other horticultural crops.

- **Shifting Climatic patterns and water crisis:** The horticultural crops are susceptible to climate conditions. **Erratic monsoons**, extreme weather events, and water crises in **west, central**, and parts of **peninsular India** result in crop failures and reduced yields.

Way Forward:

Enhancing horticulture in India necessitates a comprehensive strategy encompassing government

initiatives, technological progress, farmer involvement, and private sector engagement. Further, prioritizing sustainability, product quality, and market accessibility is crucial for unleashing horticultural crop potential.

PEPPER IT WITH:

Mission for Integrated Development of Horticulture, Contract Farming, Arboriculture, National Bamboo Mission

Agricultural losses due to extreme weather events

News Excerpt:

A report by the **Food and Agriculture Organization (FAO)** found that the frequency of extreme disaster events has risen significantly over the past 50 years.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

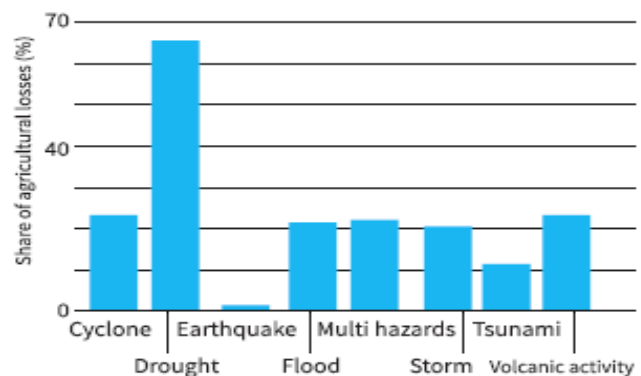
Details from the report:

- The report titled '**The Impact of Disaster on Agriculture and Food Security**' found that disaster events are becoming more **frequent** and **severe**, and their **impact** is also expected to worsen.
- The year **2023** ended the **warmest decade** on record, marked by unprecedented extreme **weather events** and **large-scale** disasters.
- Ongoing **conflicts** and the **COVID-19** pandemic worsened these catastrophes.
- The **1970s** saw approximately **100** disaster events per year. In the last 20 years, that number has increased to about **400** globally.

Impact of extreme weather events on world agriculture:

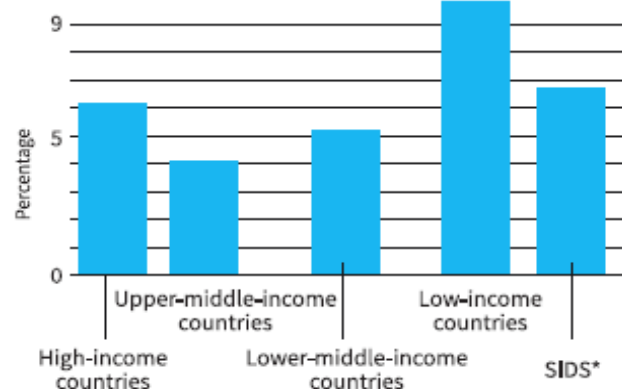
- Agricultural activities and livelihoods rely heavily on environmental conditions, natural resources, and ecosystems. Globally, the agriculture sector faces growing threats from hazards such as **flooding, drought, and environmental degradation**.
- For instance, in **Pakistan**, exceptional monsoon rainfalls in 2022 led to **nearly \$4 billion in damages** to the agricultural sector.

The chart shows the share of loss in agriculture by hazard type. About 65% of losses were caused by droughts



- In the **U.S.**, the National Oceanic and Atmospheric Administration **estimated over \$21.4 billion** in crop and rangeland **losses in 2022**.
- **Data from 88 Post Disaster Needs Assessments surveys (PDNAs)** conducted from 2007 to 2022 in 60 countries indicated that agricultural losses constituted an average of **23%** of the overall impact of disasters across all sectors.

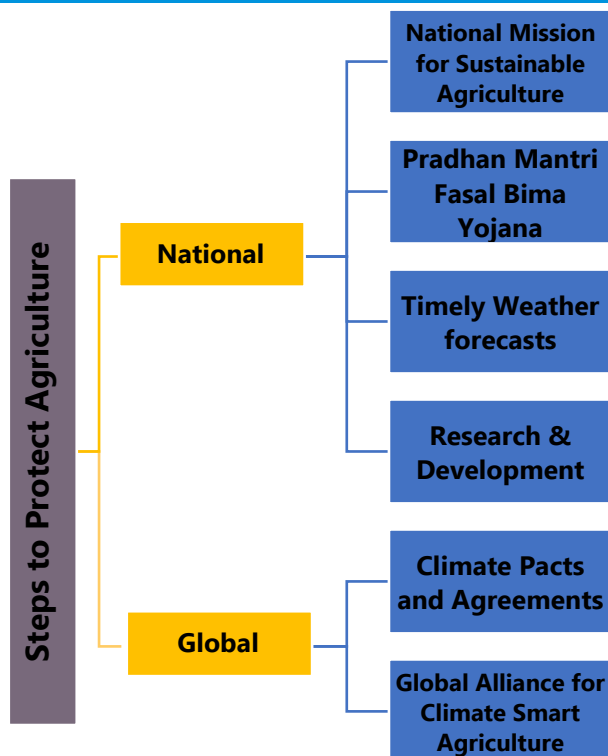
The chart shows total agricultural losses as a share of agricultural GDP by country groups (1991-2021)



- PDNAs revealed that more **than 65%** of losses attributed to drought affected the agricultural sector, while **floods, storms, cyclones, and volcanic activities** each accounted for **roughly 20%**.

Region-wise impact: Asia bore the largest share of economic losses (**45%**), while **Africa, Europe**, and the **Americas** displayed similar orders of magnitude. **Oceania** experienced the lowest total losses.

- In absolute terms, **high-income, lower-middle-income, and upper-middle-income countries** reported higher losses, while low-income countries and **Small Island Developing States** experienced lower levels.
- However, when considering **losses relative to agricultural value added**, low-income countries suffered losses more than double those of upper-middle-income countries on average.



Impact on Indian agriculture:

- **Loss of cropping areas:** In the last six years, the country lost **33.9 million hectares** of cropped area due to **floods** and excess rains and **35 million hectares** due to **drought**.
- **The threat of mass hunger:** The **IFPRI Global Food Policy 2022**, climate change and food systems, India's food production **could drop by 16 per cent**, and the number of those at risk of hunger could be **increased by 23 percent** due to climate change.
- **Drop in yield of crops:** Coastal regions are prone to cyclones and flooding, which destroys **rice** and **jute** crops in regions such as **West Bengal**. Also, unpredictable monsoons have caused fluctuations in crop yields, particularly in cash crops like **cotton** and **sugarcane**.
- **Effects on Water Availability:** Reduced monsoon rainfall, cold waves, and prolonged dry spells have affected the water availability for irrigation in **UP, Bihar, Punjab, and Haryana**, impacting crops like **wheat** and **rice**.
- **Landslides and glacial melting:** In states such as **Himachal Pradesh** and **Uttarakhand**, climate change-induced glacial melting and increased landslides affect **apples** and other **horticultural** produce.

Way forward:

- **Sustainable farming practices:**
 - **Crop diversification:** To **reduce dependence on a few staples**, lessening extreme weather risks.
 - **Resilient crop varieties:** Promote crops resistant to extreme weather like drought and heat.

- **Climate change mitigation:** Prioritize adaptation and tackle climate change at its source by reducing greenhouse gas emissions through energy efficiency and renewables.
- **International collaboration:** Cooperate globally for climate adaptation and agriculture best practice sharing for food security.
- **Water management:** Allocate resources to enhance irrigation and water management for efficient water use, minimizing crop loss from drought.

PEPPER IT WITH:

FAO, Paris Agreement, National Mission for Sustainable Agriculture, Climate Resilient Crops

Nutrient-based subsidy

News Excerpt:

Cabinet approved nutrient-based fertilizer subsidy for the **Rabi** season 2023-24

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About

- The Union Cabinet approved Rs. 22,303 crore subsidies on **P&K (Phosphorus and Potassium) fertilizers** for the current Rabi season to ensure farmers continue to get soil nutrients at reasonable rates despite **high global prices**.
- The Centre will provide farmers with **25 grades/types** of P&K fertilizers at subsidized prices through fertilizer manufacturers/importers.
 - The current NBS Policy covers 25 grades of P&K fertilizers, namely **DAP, MAP, TSP, MOP, Ammonium Sulphate, SSP, PDM, and other 18 grades of NPKS** complex fertilizers.
- The revised rates are lower than what was approved for the **kharif season**. The Union Cabinet had approved a Rs 1.08 lakh crore fertilizer subsidy for the 2023-24 Kharif season.
- The Nutrient-Based Subsidy Scheme governs **the subsidy on P&K fertilizers**.

Fertilizer industry in India:

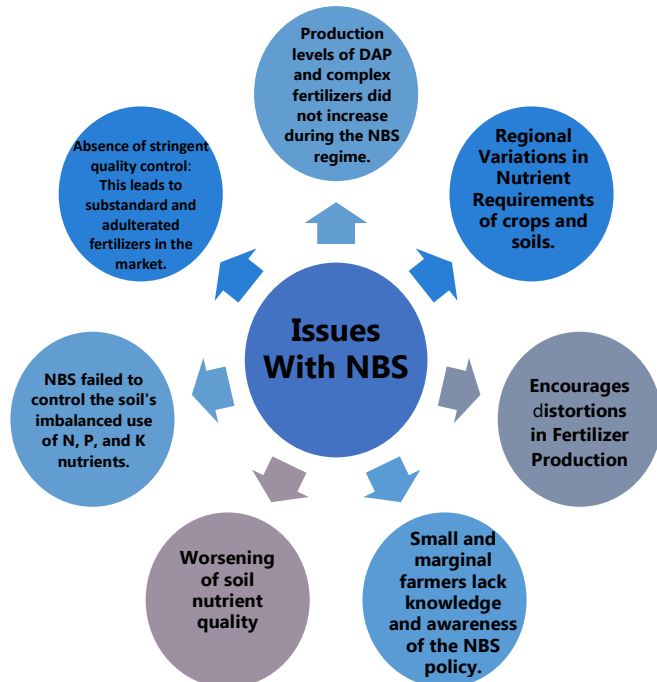
- **India's Fertilizer Market** was valued at INR 990.40 Bn. in 2022 and is expected to reach INR 1459.95 Bn. by 2029, at a **CAGR of 5.7%**.
- **Types of Fertilizers:** The Indian fertilizer industry primarily **produces Nitrogen, phosphorus, and potassium (NPK)**. Nitrogenous fertilizers are the most widely used, followed by phosphatic and potassic fertilizers.
- **Fertilizer Subsidy:** The Indian government provides subsidies to make fertilizers affordable for farmers. This subsidy is a significant financial burden on the

government and ensures farmers can access reasonably priced fertilisers.

- In May **2015**, the Centre made it mandatory to coat all indigenously manufactured and imported **urea with neem oil**. This was followed by replacing 50-kg bags with 45-kg ones in March 2018 and the launch of liquid '**Nano Urea**' by the Indian Farmers' Fertiliser Cooperative (IFFCO) in June 2021.

What is Nutrient-based subsidy (NBS)?

- The **NBS** Policy implied that subsidies would be fixed for each fertiliser nutrient. It has been instrumental in ensuring the availability of essential nutrients to farmers at subsidized prices since 1 April **2010**.
- Based on the **nutrients (N, P, K&S)**, the fertilizers are provided to the farmers at the subsidized rate under NBS.
- The government has now approved the revision in NBS rates to provide 25 grades of P&K fertilizers to farmers during the rabi and kharif seasons.
- It will ensure the availability of **diammonium phosphate DAP** and other P&K fertilizers to farmers at subsidized, affordable, and reasonable prices during the Kharif season.
- This will enable farmers to access essential fertilizers necessary for their agricultural activities.



- The decision rationalizes the subsidy on P&K fertilizers, ensuring effective and efficient utilization of government resources.

The objective of NBS:

- To ensure the balanced application of fertilizers
- To improve the growth of the indigenous fertilizer industry

- To contain the subsidy bill
- To leave open MRP to be fixed by fertilizer manufacturers/importers at a reasonable level.

Way Forward:

- Price Rationalization:** To reduce the overuse of certain fertilizers and encourage the use of more sustainable and environment-friendly alternatives.
- Soil Health:**
 - Crop diversification** to reduce the need for certain nutrients.
 - Promote soil health cards** to provide farmers with information about the specific nutrient requirements of their soil.
- Promote organic farming practices:** To reduce the reliance on chemical fertilizers.
- Strengthen regulation:** To prevent adulteration and ensure the quality of fertilizers.
- Implement targeted subsidies:** To ensure that they benefit small and marginalized farmers more effectively.

PEPPER IT WITH:

NPK fertilizers, Kharif and Rabi cropping seasons, DAP, Nano Urea, Soil Health Cards

Pusa-2090 to replace Pusa-44

News Excerpt:

A short-duration rice variety called Pusa-2090 can replace Pusa-44.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About:

- The Supreme Court has directed the Punjab, Haryana, Uttar Pradesh, and Rajasthan governments to **stop crop stubble burning** immediately to address pollution issues in the National Capital Region.
- The Pusa-44 variety of paddy and "the period in which it is grown", i.e. its **extended maturation period**, contribute to the problem of stubble burning.
- The Indian Agricultural Research Institute (IARI) has developed an improved rice variety called **Pusa-2090** as an alternative to Pusa-44.
- Pusa-2090 offers similar high yields to Pusa-44 but matures in a shorter period, potentially reducing the need for stubble burning.**

What is Pusa-44?

- Pusa-44 is a long-duration rice variety developed in 1993 by the **Indian Agricultural Research Institute (IARI)** that takes 155-160 days to mature.
- The crop is transplanted in **mid-June** and is ready for **harvesting only towards late October**. Since that leaves little time for field preparation to sow the next wheat crop, ideally before mid-November, farmers

resort to burning the standing stubble and loose straw that remains after harvesting.

- With Punjab facing severe groundwater depletion and the availability of short-duration paddy varieties, the government aims **to conserve one month of irrigation water by banning the variety and shifting to Pusa-2090.**

What is Pusa-2090?

- It is an improved version of Pusa-44 that yields just as much and matures in only 120-125 days.
- It is **a cross between Pusa-44 and CB-501**, an early-maturing Japonica rice line.
- It is not only early-maturing but also contributed to a **stronger stem and produced more grains per panicle** (grain-bearing ear-heads).

Way Forward:

The new variety, combining both the higher yields and grain attributes of Pusa-44 and the lower duration of CB-501, will help Punjab and its neighbouring states **use water efficiently and reduce the problem of stubble burning and smog to a large extent.**

PEPPER IT WITH:
IARI, Stubble Burning,
Photochemical Smog,
Rice Crop, Crossing two
different crops

PRE-SHOTS

Expanding cultivation of GI-tagged Onattukara Sesame

News Excerpt:

Efforts are being made to **expand** the cultivation of geographical indication (GI)-tagged **Onattukara sesame.**

About the scheme:

- The **Kerala government** has launched a financial **incentive scheme** for farmers to grow sesame on fields and homesteads to **increase the area** under sesame cultivation.
- The **seeds** can be **procured** at the **market price** from government shops.
- It will also **allow** farmers and groups to **use the workforce** of Thekkekara Karshika Karma Sena and a **tractor** for field preparation and other activities.

Onattukara Sesame:

- The sesame seeds grown in the Onattukara region have exceptional **medicinal benefits** due to their high levels of **Vitamin E** and **antioxidants**.
- They also contain **oleic, linoleic, and palmitoleic acids**, essential for maintaining good health.
- In addition to the traditional **Ayali variety**, farmers in the region are also growing other varieties, such as **Kayamkulam-1, Thilak, Thilathara, and Thilarani.**

Other GI products from Kerala:

- Alleppey Green Cardamom
- Brass brodered coconut shell craft
- Chendamangalam saree
- Kasaragod saree
- Kuthampully Saree
- Malabar pepper
- Pokkali Rice
- Screw pine craft of Kerala
- Wayanad Gandhakasala rice, etc.



Geographical Indication (GI) tag:

- It is a status that the government gives to products that correspond to a **specific geographical location or origin.**
- It helps identify the product's source as part of certification that it possesses certain qualities and is made according to traditional methods or its geographical origin.
- GI tag can be used for any manufactured product, agricultural, food, or handicraft.
- **India enacted The Geographical Indications of Goods (Registration and Protection) Act, 1999**
- Laws and treaties covering GIs are administered by -
 - World Intellectual Property Organisation (**WIPO**)
 - The World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights (**TRIPS**).

Agri Stack Project

News Excerpt:

India has recently launched the Agri Stack project **to promote digital agriculture nationwide.**

About:

- Twenty-three States have formed Steering Committees to oversee the implementation of Agri Stack.
- 22 States have provided Application Programming Interfaces (APIs) to verify farmer land records.
- States like Odisha, Karnataka, and Maharashtra are making concerted efforts to digitalize farmer details, land records, crop surveys, and scheme delivery.
- The International Finance Corporation has outlined dimensions for a toolbox design to facilitate the **transition to digitalizing the agricultural ecosystem.**
- Farmers have concerns about sharing extensive farm data due to privacy issues, which the Digital Personal Data Protection Bill 2023 is expected to address.

About Agri Stack Project:

- Agri Stack is the **digital foundation** being set up by the government to make it easier to bring various stakeholders together to improve agriculture in India

and enable better outcomes and results for the farmers by using **data and digital services**.

- It is an effort to bring together **high-quality data** and make it readily available to the stakeholders that need it so that they can create new services using the data.
- Evolved from the thinking of the **InDEA 2.0** Architecture by MeitY, **Agri Stack** is being built by the **Ministry of Agriculture & Farmers Welfare**.
- It aims to make it easier for farmers to access **cheaper credit, higher-quality farm inputs, localized and specific advice, and more informed and convenient market access**.

Seed preservation among the Ao and Sümi Nagas

News Excerpt:

Traditional knowledge of seed preservation has helped Nagaland's native communities ensure continued sustenance.

Seed Preservation:

Inter-village assistance, especially in times of crisis, is a traditional practice followed by both the **Ao and Sümi**

Naga communities for seed preservation. Traditional seed storage and preservation expertise has been verbally passed down from generation to generation and is essential in farming.

Challenges in recent times for Seed Preservation:

- Interpolations such as airtight containers and zip-lock bags are used for seed storage and appliances like refrigerators, **leading to lesser shelf life**.
- Cash crop farming has replaced jhum cultivation. This transition has resulted in the adverse decline of seed diversity and a **potential threat of cash crops invading the native ecosystem**.

With adverse impacts influencing the agricultural environment, communities must navigate possible opportunities successfully while **protecting the cultural legacy and documenting seed storage and preservation knowledge before it is gone**.





KSG
An Institute For IAS Exam...

PSIR OPTIONAL

Target Oriented Programme (TOP)

40+ TOTAL SESSION
& 15 TOTAL TESTS

WEEKEND BATCH
FOR MAINS - 2024 & 2025

With 550+ Questions

ADMISSION OPEN

- 1 Regular assignments along with the periodic tests
- 2 Printed notes prepared by faculty
- 3 Timely updation of other relevant material
- 4 Comprehensive coverage of the optional subject
- 5 Recorded sessions with 1-year recording of the classes.
- 6 Monthly test discussions with the faculty
- 7 Dedicated mentorship facility



RAJEEV CHAUHAN SIR

4 IAS INTERVIEWS & 7+ YEARS OF TEACHING EXPERIENCE



www.ksgindia.com

8826002521 / 9990999707

International Relations

India- Bangladesh Ties

News Excerpt:

A rail link that connects **Northeast India with Bangladesh** was inaugurated recently by the Indian Prime Minister and his Bangladeshi counterpart.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About the project:

- The 12.24 km Agartala-Akhaura railway line is divided into 5.46 km on the Indian side in **Tripura** and 6.78 km in the **Bangladesh Akhaura upa-zilla** in the Brahmanbaria district.
- The journey duration between Agartala and Kolkata will be reduced from **31 hours to 10 hours** by the Agartala-Akhaura project.
- The Ministry for Development of North East Region (DoNER) funded the work on the Indian side, and the Indian Ministry of External Affairs (MEA) funded the expense for the Bangladesh side as 'Aid to Bangladesh'.**
- The project will eventually cover **Dhaka and Kolkata**.
- Two other projects inaugurated simultaneously were the **Khulna - Mongla Port Rail Line** and **Unit - II of the Maitree Super Thermal Power Plant in Rampal, Bangladesh**.



Earlier train services between India and Bangladesh:

- Bandhan Express:**
 - It revives a former train route between Kolkata and Bangladesh's third-largest city, Khulna.
 - The Barisal Express ran this route up to the India-Pakistan conflict of 1965.
 - In 2017, the service was restarted as Bandhan Express.
 - The train uses the Petrapole-Benapole border crossing.
- Maitree Express:** It started in April 2008 between Kolkata and Dhaka Cantonment.
- Mitali Express:** It connects Siliguri in North Bengal with Dhaka.

Significance of this project:

- Gateway for Tourism:**
 - The railway link will open the door for tourism in land-locked Tripura and boost the state's local economy.

Pragmatic relevance:

- The link will significantly reduce the time and distance (from 1600 km to 500 km) needed to reach Tripura, southern Assam, and Mizoram from Kolkata.

Historical context:

- During the 1971 India-Pakistan war and the creation of Bangladesh, Tripura accommodated around 15 lakh East-Pakistani refugees. It ran at least eight major muktijoddha (liberation warrior) training camps.
- Assam's tea industry led to the development of railways and connections to the Chittagong port in the 19th century.

Geographical context:

- Bangladesh surrounds Tripura on all three sides and shares an **856-km international border with Bangladesh**, the second highest after West Bengal.

Strengthen bilateral relationship:

- It will help boost India-Bangladesh trade in agriculture products, tea, sugar, construction items, iron and steel, consumer items, and people-to-people ties.
- With this, people on both sides can hope for closer and smoother ties.

India - Bangladesh relations:

HISTORICAL

- India was the first nation to recognise and establish ties with Bangladesh.

ECONOMIC

- Bilateral Trade grew at almost 44% from \$10.78 bn in FY 2020-21 to \$18.14 bn IN FY 2021-22.
- Multiple rail links connect the two countries such as Haldibari- Chilahati, Petrapole-Benapole, Gede- Darshana, Singhabad - Rohanpur and Radhikapur – Birol.

DEFENCE

- Both jointly commemorated the 50th anniversary of the 1971 War.
- Joint exercises between the two countries include SAMPRITI (Army) and BONGO-SAGAR (Navy).

MEDICAL

- India gifted two mobile Oxygen Plants and 3.3 million COVISHIELD vaccines.
- India operated "Oxygen Express" trains to transport Liquid Medical Oxygen.

CULTURE

- The two nations enjoy civilizational ties and are closely connected by a shared cultural heritage, and a love of the arts, music, & literature.

FIGURE:2-RELATIONS BETWEEN INDIA & BANGLADESH

Way Forward:

India and Bangladesh must work together for the betterment of both nations. The signing of the Teesta Agreement, implementation of already signed agreements, and fostering a favourable ecosystem on platforms such as SAARC, BIMSTEC, and Commonwealth, of which both are a part. **Both countries must address each other's concerns and work towards common.**

PEPPER IT WITH:

DoNER, SAARC, BIMSTEC, Commonwealth, Teesta Agreement, SAMPRITI, BONGO SAGAR

India- Bhutan- China**News Excerpt:**

Beijing and Thimphu held the 25th round of **boundary talks**, which have been on hold since 2016. On the other hand, the **King of Bhutan, Jigme Khesar Namgyel Wangchuk, was on a visit to India**. He also made his maiden three-day tour to the state of Assam.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

What is the "3 Step Roadmap"?

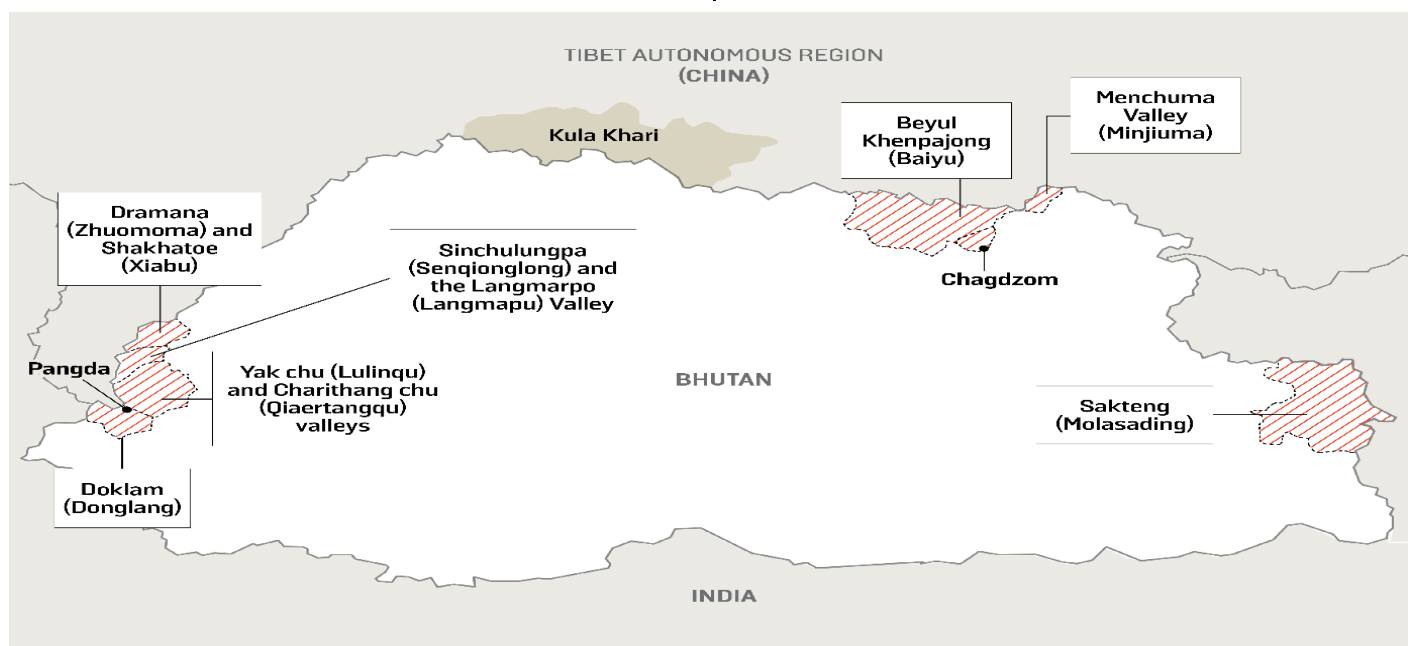
- It is a MoU signed between **Bhutan and China in 2021** for clear demarcation of Bhutanese and Chinese territory.
- It includes a **3-stage procedure**:
 - Agreeing to the Proposed border.
 - Site Visitation
 - Formal demarcation of the border.

Significance of the 25th China –Bhutan Boundary Talks:

- These talks were held after a gap of 7 years; they were stalled after the Doklam Standoff (2017) between India and China. This was the **first official visit to China by the Bhutanese foreign minister**.
- A "Cooperation Agreement" was signed between both countries outlining the functioning of a Joint Technical Team on the **"Delimitation and Demarcation of the Bhutan China Boundary."**
- The negotiations could mark the beginning of establishing full-fledged diplomatic ties between Bhutan and China.
- Both sides expressed commitment towards **actualizing the "3 Step Roadmap"**.

Indo-Bhutan Relations:**Importance of the King's maiden visit to Assam:**

- Assam and Bhutan have traditionally shared peaceful and warm ties.
- The relations were hindered in the 1990s when **insurgent groups from Assam** sought shelter from a crackdown by the Indian military and set up operational camps in the Bhutanese territory.
- On 15 December **2003**, Bhutan undertook a successful military operation, **"Operation All Clear,"** against those militants.
- Bhutan cited a threat to:
 - Its Sovereignty and National Security:** It was felt that the insurgent groups would supply arms to the **ethnic Nepalese Lhotshampas**, which could fuel an ethnic insurgency in southern Bhutan.
 - Excellent bilateral relations with India:** India had expressed displeasure with the working of militant groups from Bhutanese soil.

**FIGURE-3-DISPUTED REGIONS OF BHUTAN**
www.ksgindia.com

DELHI VN: 9717380832 & DELHI ORN: 9811293743 | JAIPUR: 8290800441 | PATNA: 7463950774 | RANCHI: 9939982007 | BHOPAL: 7509975361 |
 INDORE: 7314977441 | BENGALURU: 7619166663 | HYDERABAD: 79960 66663 | IMPHAL: 9650245599 | SRINAGAR: 98712 35599 | MUMBAI: 9871265599 |

Cultural Relations:

- India and Bhutan's ties have **common roots in Buddhism**. As Lord Buddha's birthplace, India has many significant Buddhist sites like Nalanda, Bodh Gaya, and Rajgir. These are visited frequently by the Bhutanese monks.
- The two countries share an **open border** with regular exchange of travellers in both directions for work, tourism, shopping, medical care, etc.

Political Relations:

- India and Bhutan officially marked the beginning of their diplomatic relations by signing the **Treaty of Friendship and Cooperation in 1949**, revised in **2007**. Both countries have agreed to establish peace and expand economic cooperation.
- In **2017**, during the **Doklam crisis**, Bhutan gave Indian army personnel access to its territory to resist Chinese incursions.
- Bhutan also conferred its **Highest Civilian Award to the Indian PM Narendra Modi in 2021**, recognizing his outstanding contribution to strengthening Indo-Bhutan Friendship.

Economic Relations:

- Since the **1960s**, India has been a front-runner in providing financial assistance to Bhutan. India has also economically supported Bhutan in launching its **5-year plans**.
- Bhutan also receives **economic aid** in agriculture, irrigation, health, industrial development, road transport, energy, and education.
- The two countries signed an **Agreement on Trade and Commerce in 1972**, revised in **2016** to promote and boost a free trade regime.
- India is Bhutan's largest trading partner**. In **2021-22**, **India's bilateral trade with Bhutan exceeded \$1422 million**.
- During the **COVID pandemic**, Bhutan was the first country to receive **Indian-made Covishield Vaccines** under the **Vaccine Maitri initiative**.
- Hydropower cooperation**: Hydroelectric projects (HEPs) are covered under the 2006 bilateral agreement for cooperation.
 - There are **4 HEPs** operational that are currently supplying electricity to India, namely **Kurrichhu, Tala, Mangdechchu, and Chukha**, supplying a **total of 2136 MW of electricity**.
 - 2 HEPs, Punatsangchhu-I and Punatsangchhu-II**, are under construction.

Social Relations:

- Education**: Almost 1000 **Scholarships** are provided annually to Bhutanese students in Indian Universities in various disciplines like Engineering, Medicine, etc.
- Indian Diaspora**: Approximately 50,000 Indians are **currently working in Bhutan**, contributing significantly in the fields of Education, Arts, Health, etc.

New Areas of Cooperation:

- Space**: Both collaborated on the joint development of **India- Bhutan SAT** (small satellite). It would help manage natural resources in Bhutan.
- Fintech**: The launch of the **RuPay Card** will enable full interoperability. Bhutan was the second country to launch **India's BHIM app** to promote cashless payment.
- E-learning**: **Integrate Bhutan's DrukRen with India's National Knowledge Network** to create easy access to information for universities, research institutions, etc., of both nations.

India's Concern:

Today, Bhutan maintains no official diplomatic relations with any of the P5 countries, i.e. the five permanent members of the United Nations Security Council (UNSC). Bhutan's increasing proximity to China has created troubles in the Indo-Bhutan relationship. **The concerns include:**

The threat of losing Doklam's strategic significance:

- Doklam is located on the tri-junction of India, Bhutan, and China. Doklam lies next to the Siliguri Corridor, commonly called the **"Chicken's Neck"** a 22km corridor connecting India to the Northeast region. It is a vital link between India, Tibet, Nepal, Bhutan and Bangladesh. If lost, it will provide a military advantage to China over any conflict with India.

Threat to India's Northeast:

- The Chinese claim **Sakteng Wildlife Sanctuary** lying in the Eastern part of Bhutan **close to Arunachal Pradesh** which China views as a part of its **South Tibet**. This creates an added pressure point on India and could lead to more aggressive Chinese actions in Arunachal Pradesh.

The threat of losing a friendly ally in India's neighbourhood:

- India is Bhutan's largest trading partner, and India has a trade surplus with Bhutan. China's immense economic aid and pressure to establish diplomatic ties with Bhutan could weaken India's influence in the South Asian region.

Way Forward:

India and Bhutan are a part of several multilateral

PEPPER IT WITH:

Doklam Crisis, Operation All Clear, 3-step roadmap, BBIN

organizations like the **South Asian Association for Regional Cooperation (SAARC)**, the **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)**, and **Bangladesh, Bhutan, India, Nepal (BBIN)**. India can work on improving regional cooperation mechanisms to ensure Bhutan's interests are well represented in regional forums.

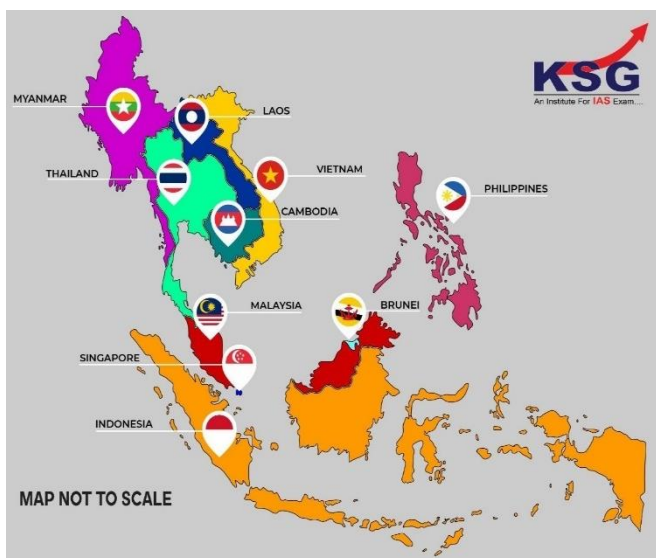
10th ASEAN Defence Ministers' Meeting - Plus (ADMM-Plus)

News Excerpt:

The Defence Minister of India recently participated in the **10th ASEAN Defence Ministers' Meeting - Plus (ADMM-Plus)** in Jakarta, Indonesia.

About the Association of South East Asian Nations (ASEAN):

- It is an international organisation in the Asia Pacific Region that was formed in 1967 in Bangkok under the **Bangkok Declaration**.
- **Motto:** "One Vision, One Identity, One Community"
- **Headquarters:** Jakarta (Indonesia)
- **Member States:** Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Cambodia, Myanmar
- **Objective:** To maintain regional peace and stability to accelerate joint economic growth and cultural development.



What is ADMM-PLUS?

- It is a platform for ASEAN and its eight Dialogue Partners, **Australia, China, India, Japan, New Zealand, the Republic of Korea, Russia and the United States** (collectively referred to as the "Plus Countries"), to strengthen security and defence cooperation for peace, stability, and development in the region.
- **India became the dialogue partner of the ASEAN in 1992.**
- It meets annually to allow enhanced dialogue and cooperation among ASEAN and the Plus Countries amid an increasingly challenging regional security environment.

Key Discussions:

- **Commitment to International Laws:** There is an emphasis India's commitment to the freedom of navigation and unimpeded lawful commerce in international waters in compliance with the **United Nations Convention on the Law of the Sea (UNCLOS) 1982**. This statement indirectly refers to the Chinese claims over the South China Sea and its non-commitment to established international norms.
- **Security Initiatives:** Emphasis on the need for consultative, development-oriented regional security initiatives that reflect stakeholder consensus.
 - India committed to cooperating with **ADMM-Plus** to enhance maritime security in the region.
- **Peace and Stability:** Stressed how conflicts take a toll on human lives and have implications for food and energy security. The minister also reiterated India's commitment to working with ASEAN and other Plus countries for peace, prosperity, and security.
- **Dialogue and Diplomacy:** Highlighted the significance of dialogue and diplomacy for enduring peace and global stability. He urged everyone to move away from a "**US versus THEM**" mindset.
- **India- ASEAN Collaboration:** Appreciated ASEAN Member States' participation in various initiatives, including women in UN peacekeeping operations, marine pollution response, and collaborative maritime exercises.
- **Terrorism Concerns:** Acknowledged terrorism as a serious threat and proposed co-chairing the Expert Working Group (EWG) on Counter-Terrorism, endorsed by ADMM-Plus.

Related News: GCC-ASEAN SUMMIT

Key Highlights of the Summit:

- **Framework of Cooperation (2024-2028):** It was adopted to work on mutual interests like **countering terrorism, ensuring food security, climate change adaptation and innovation**.
- **Regional Strategic Space:** Members of GCC and ASEAN to go beyond bilateral relations and build a strategic alignment at the region-to-region level. It will allow members of both sides to enter into Strategic partnership agreements with each other.
- **ASEAN** agreed in principle to **admit Timor-Leste to be the 11th member of ASEAN** and to grant an observer status to Timor-Leste.
- **Emphasis on Oceans and Seas as a Key Factor in Economic Growth:** Recognizing the importance of maintaining peace and maritime safety in the region by adherence to universally accepted international laws like the **UN Convention on the**

Law of the Sea (UNCLOS), International Maritime Organization (IMO).

- **Diversifying Economic Cooperation:** To boost economic cooperation and trade, the regions are diversifying financial priorities like enhancing the integration of regional markets, digital transformation, inclusivity and people ties.
- **Emphasis on the Promotion of Information Communication and Technology (ICT) in the Region:** Both regions pushed for a digitally enabled open and secure economy. It also highlighted the need for technological advancements to facilitate innovation and entrepreneurship.
- **Promotion of Peace and Prosperity in the Region:** Emphasis on peaceful co-existence and tolerance in the region. This includes adhering to the principles of good neighbourliness, non-interference in the internal affairs of the nations, abstaining from the use of force or threat, and resolving disagreements peacefully.

Gulf Cooperation Council (GCC):

- Established in 1981, it is an economic and political alliance of six countries in the Arabian Peninsula.
- **Member States:** Qatar, Kuwait, Bahrain, Saudi Arabia, Oman and United Arab Emirates
- Headquarters: Riyadh (Saudi Arabia)

**Way Forward:**

There is a need to enhance Regional Security by strengthening mechanisms for co-operation in information-sharing and intelligence, cyber-security, maritime, etc.

PEPPER IT WITH:
UNCLOS, GCC, IMO, Arabian Peninsula, Timor Leste

India holds '2+2' Ministerial dialogue with the US**News Excerpt:**

Recently, the Indian Defence Minister and External Affairs Minister met their counterparts from the US government, Defence Secretary and Secretary of State, respectively, for the fifth 2+2 Ministerial Dialogue held in New Delhi.

**Key points of Dialogue:**

- India and the US are exploring **new educational exchanges, steps to facilitate travel between the two countries and ways to reduce visa wait times.**
 - In addition, the two are fostering **innovation through collaboration in semiconductors, advanced biotechnology, sustainable energy, and space.**
- The 2+2 Dialogue undertook a comprehensive review of **bilateral relations and discussed multiple partnerships in trade and investment, technology, and critical and emerging technologies.**
- Value and supply chain securitisation of various products and services, partnership in **space, engagement in mineral securities, and joint efforts in combating terrorism** were included in the principals' earlier 2+2 dialogue overview of bilateral relationships.
- Both countries discussed a **tie-up in the semiconductors field** as this area is very important for the future and has made strong achievements in the last 4-5 months.

About '2+2' Ministerial dialogue:

- The 2+2 meetings signify the participation of two high-level representatives, Ministers holding Foreign and Defence portfolios, from each of the two countries who aim to enhance the scope of dialogue between them.
- This mechanism enables the partners to understand and appreciate each other's strategic concerns and sensitivities, taking into account political factors on both sides, to build a stronger, more integrated strategic relationship in a rapidly changing global environment.

India's 2+2 Dialogue Partners:

- The **US is India's oldest and most important 2+2 dialogue partner.**
 - The **first 2+2 dialogue** between the two countries was held during the Trump Administration in New Delhi in **September 2018.**
 - It was also seen as a replacement for the Strategic and Commercial Dialogue held between the foreign and commerce ministers of the two countries during the **previous Obama administration.**
 - The launch of the dialogue was seen as a **"reflection of the shared commitment"** by India and the US to provide **"a positive, forward-looking vision for the India-US strategic partnership and to promote synergy in their diplomatic and security efforts".**
- Additionally, India has held 2+2 meetings with ministers from **Australia, Japan, the United Kingdom and Russia.**
- The talks with **Japan** via this platform began in **2019, aiming to "further enhance the strategic depth of bilateral security and defence cooperation".**
- The inaugural edition of the India-Russia 2+2 dialogue was held in 2021.
- The same year, **2+2 dialogue with Australia also began. In October 2023, the first such meeting with the UK took place.**

Defence and strategic agreements under 2+2:

- Over the years, the strategic bilateral relationship with its partners, including the dialogues held in the 2+2 format, has produced tangible and far-reaching results for India.
- India and the US have signed a troika of **"foundational pacts"** for **deep military cooperation**, beginning with the Logistics Exchange Memorandum of Agreement (LEMOA) in **2016**, followed by the Communications Compatibility and Security Agreement (COMCASA) after the **first 2+2 dialogue in 2018**, and then the Basic Exchange and Cooperation Agreement (BECA) in **2020.**

Significance of 2+2 Dialogue:

- The strengthening of cooperation mechanisms between the two militaries is important in the context of an increasingly aggressive China, which threatens many countries in its neighbourhood and beyond and has challenged several established norms and aspects of international relations.
- Another example is establishing the mechanism with **Japan**, which is also cautious of China's role.
- However, India also talks to Russia through 2+2 dialogues, **considering its security and energy interests and the countries' historical depth of relations.**

Way Forward:

The 2+2 dialogue has strategic and economic importance. At present, when the world system is changing, and new issues are emerging in various fields, such dialogues become even more important.

PEPPER IT WITH:

2+2 Dialogue, Semiconductors, Alliance on Emergent Technologies, QUAD

PRE- SHOTS

Abu Dhabi weighs investment pledges worth \$ 50 billion for India.

News Excerpt:

The United Arab Emirates is considering investing as much as \$50 billion in India, its second-largest trading partner, as part of a broader bet on the world's fastest-growing major economy.

About Economic Vision 2030:

- Abu Dhabi's national aspirations and priorities are outlined in **"Economic Vision 2030," a long-term economic diversification strategy** focused on advancing knowledge industries by building a skilled workforce, world-class infrastructure, and an efficient, globally integrated business environment. UAE finds that India can fulfill its requirements to achieve the document's objectives.
- Deals could involve stakes in key Indian infrastructure projects and state-owned assets, with some investments potentially involving sovereign wealth funds like the Abu Dhabi Investment Authority, Mubadala Investment Co., and ADQ.
- **India and the UAE aim to increase non-oil bilateral trade to \$100 billion over the past decade.**

Indian Veterans in Qatar

News Excerpt:

Eight former Indian Navy personnel were sentenced to death by a Qatari Court.

Background:

- The eight Indian veterans worked for the Omani company Dahra Global Technologies in Doha, Qatar. The company's expertise was in training the Qatar Emiri Naval Forces (QENF).
- This role had traditionally been filled by personnel from neighbouring countries like **Pakistan and Bahrain.** Initially, Qatar sought help from the **Indian** government, but the delays led to private enterprises like Dehra Global Technologies filling the space.
- The personnel played a key role in establishing the training model. Their work was focused on junior-level



training, and they had **no involvement in submarine projects, as the allegations suggested**. These veterans only contributed to Qatar and had no role in espionage.

Impact & Legal Assistance:

- The prima facie assessment of the issue shows that this was an unexpected outcome as the **charges were kept opaque, and complete secrecy** was maintained as the case progressed from trial to conviction in seven months.
- India has provided the veterans with legal assistance. After this sentence, two legal levels remain in Qatar's judicial system. **The Emir of Qatar has the power to pardon or offer clemency**, and Qatar does not have a long history of executing people. **However, the geopolitical backdrop adds uncertainties to their situation.**

Way Forward:

Qatar is a **friendly foreign country** with an **existing bilateral agreement** to expatriate convicted citizens. However, **Article 4 of the agreement excludes the death penalty.**

- India's status in the Global South holds importance just as Qatar holds in the Gulf Cooperation Council (GCC), leading to **complementarities as well as future cooperation.**
- It will be far worse if the sentence is executed or the space left behind by Dahra Global **is occupied by radical elements hostile to both Qatar and India.**

Unprecedented situations call for unprecedented leadership. There is a need for greater cooperation among the highest levels of government. India must take the Qatar government in confidence and should not let this become a bone of contention between the two governments.

International Migration Outlook Report 2023: OECD

News Excerpt:

The Organization for Economic Cooperation and Development (OECD) has released the International Migration Outlook Report 2023.

About the report:

- It analyses recent developments in migration movements and the inclusion of immigrants in OECD countries in the labour market.
- It also monitors recent policy changes in migration governance and integration.
- This edition includes **two special chapters on the labour market integration of migrant mothers and fertility patterns among migrant populations** in OECD countries.

About OECD:

- It is an intergovernmental organization comprising **38 member nations.**
- It was established in **1960** by 18 European nations, along with the USA and Canada, to boost economic growth and world trade.
- Headquarters: Paris, France**
- India is not a member.**
- Most of the OECD member countries are '**High-income countries**' and rank high on the Human Development Index (HDI).

Key Takeaways of the Report:

- India accounts for the **highest migration flow** of new migrants to OECD countries in 2020, 2021, and 2022 as well.
- India** has been the top contributor of new migrants with 0.41 million new migrants, **China** in second place with 0.23 million new migrants, and **Romania** with around 0.2 million new migrants.
- Acquiring nationality:** 0.13 Million Indian citizens acquired the nationality of an OECD country in 2021.
- Inflows of refugees from Ukraine:** In the ongoing Russia-Ukraine war, more than 10 million people have been internally displaced or are refugees in the OECD nations.
- Migration of Workers:** Workers migrating to OECD countries from **India, Uzbekistan, and Turkey** saw a significant rise.

Policy on Climate-induced displacement: The report has acknowledged that displacement is climate-led. Few OECD countries have already introduced explicit policies to respond to it. For instance, in April 2023, **Columbia's** Congress introduced a first-of-its-kind bill in Latin America to adopt and establish a national register of climate-induced displacement.

Concept Of Prisoner's Dilemma in International Relations

News Excerpt:

At the Goa Maritime Conclave 2023 edition, the Indian Defence Minister referred to the concept of the "Prisoner's Dilemma" for countries to cooperate and collaborate rather than work at cross purposes.

What is the Prisoner's Dilemma?

Prisoner's dilemma is one of the most popular concepts in Game Theory; it shows how people or entities arrive at decisions in complex situations. **It analyses the human nature of an individual or an entity, whether they choose cooperation over self-interest or vice versa.**

- The Prisoner's Dilemma denotes a situation where the best possible outcome (**known as Nash Equilibrium**) would be to act collectively and choose what is best for both of them.
- **Both players are given the chance to defect despite the option chosen by the other party.** However, due to a lack of trust and uncertainty, both the players will choose what is optimal for them individually but sub-optimal collectively. If they had chosen the Nash Equilibrium, they both would have been better off than before.

Importance of Prisoner's Dilemma in International Relations

This game has been used to understand a wide range of social and economic phenomena, and it can be applied to fields such as **economics, international relations, and psychology**, among others.

- It is used to understand the behaviour of various nations in the international realm and also enables the states to make decisions.
- This helps us understand what governs the **balance between cooperation and competition.**
- For instance, in the **arms race**, there will be few countries who would proliferate their arms to gain strategic advantage over the others.
- According to the prisoner's dilemma theory, they would betray rather than stay silent even though disarmament would lead to collective good and prosperity.
- **This game highlights the tension between individual self-interest and cooperation for the betterment of both the players.**

Vienna Convention on Diplomatic Relations 1961

News Excerpt:

Canada had accused **India** of violating the Vienna Convention on Diplomatic Relations, as India seeks a reduction in the number of diplomats.

About the Vienna Convention:

- It was **adopted** in 1961 by the United Nations Conference on Diplomatic Intercourse and Immunities held in Vienna, Austria.
- At present **193 countries** are party to the document including **India which ratified it in 1965.**
- It aims to ensure **friendly relations** among nations and puts forth a framework for diplomatic **interactions** between nations.

Rafah Border Crossing

News Excerpt:

Israel has ordered the evacuation of Palestinians inhabiting the Northern side of the Gaza Strip. The Palestinians have thus gathered at the Rafah crossing on the Egyptian border located on the southern side of Gaza.

Where is Rafah Crossing?

- **Gaza is a 41km strip** along the eastern coast of the Mediterranean, **bordered by Egypt in the South and Israel to its North and West.**
- Israel controls both the territorial waters and airspace of Gaza.

The Gaza Strip has three functional exit points:

- **North: Erez or Beit Hanoun crossing** (managed by Israel, controls the movement of people between Gaza and the West Bank via Israel).
- **South: Karem Abu Salem (called Kerem Shalom by Israel) and Rafah Crossing.**
 - **Karem Abu Salem:** controlled by Israel exclusively for the movement of commercial goods.



- **Rafah Crossing** shares the **border with Egypt's Sinai Peninsula**. It has been controlled by Egypt since 2007.

Importance of Rafah:

- Israel has closed both the Erez and Karem Shalom points. Thus, the **Rafah crossing becomes the only point that connects the Palestinians to the outside world**.
- It has now become the sole entry and exit point for aid and humanitarian assistance to the Palestinians.

123 Agreement

News Excerpt:

The United States and the Philippines inked a historic agreement that would permit Washington to **transfer nuclear technology and materials to Manila**, which is investigating the use of nuclear power to increase energy independence and decarbonize.

Key highlights of the deal:

- This deal has been signed under **section 123 of the U.S. Atomic Energy Act** (commonly referred as the '123 Agreement').
- The United States will be able to **share equipment and materials with the Philippines** as they work to

develop small modular reactors and other civilian nuclear energy infrastructure.

- It will allow a **peaceful transfer of nuclear material, equipment, and information** in adherence to **non-proliferation requirements**.





An Institute For IAS Exam....



SWETA SINGH



- 01 Timely updation of other relevant material
- 02 Printed notes prepared by faculty.
- 03 Hybrid sessions along with 1-month recording of the classes.
- 04 Comprehensive coverage of the optional subject is delivered through the lectures.
- 05 Regular assignments along with the periodic tests where students can track their progress.

SOCIOLOGY

ADMISSION OPEN

OPTIONAL COURSE

ONLINE OFFLINE

7065293743 / 9811293743

www.ksgindia.com

ENVIRONMENT & ECOLOGY

State of Climate Services Report

News Excerpt:

The World Meteorological Organization (WMO), in its annual **State of Climate Services Report**, has warned that the world is warming faster.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

About the Report:

- WMO has issued annual reports on the **State of Climate Services since 2019** to provide scientifically based information to support climate adaptation and mitigation.
- This 2023 edition of the report** focuses on **health**, one of the priorities of the **Global Framework for Climate Services (GFCS)** and a top priority for countries in their **Nationally Determined Contributions**.

About the World Meteorological Organization (WMO):

- It is an intergovernmental organization with 193 member countries and territories.
- The International Meteorological Organization (IMO) was founded at the 1873 Vienna International Meteorological Congress.
- With the approval of the WMO Convention on March 23, 1950, **WMO became the United Nations specialized organization for meteorology**.
- Its headquarters are in Geneva.

Global Framework for Climate Services (GFCS):

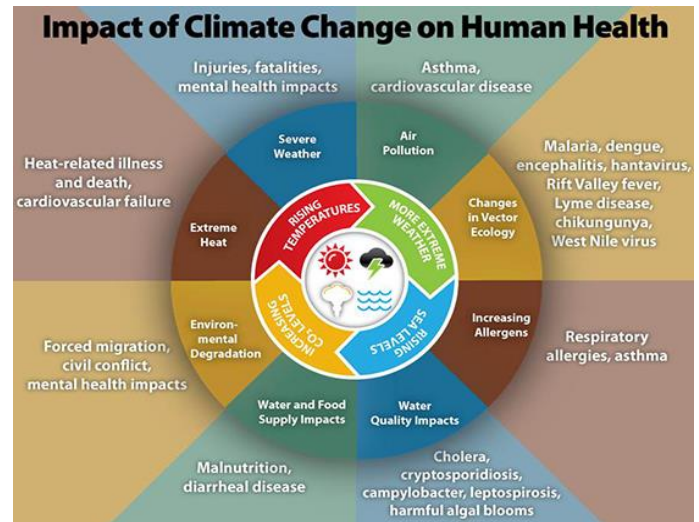
- It was established by the international community at the **World Climate Conference-3** in 2009 to enable better management of the risks of climate variability and change, and adaptation to climate change, through the development and incorporation of science-based climate information.

Highlights of the Report:

- The world is **warming faster** than at any point in recorded history.
- The changing climate undermines health determinants, like **air quality, water quality, food security, shelter, economics, livelihoods, equity and access to healthcare**, and social support structures that are necessary for maintaining good health.
 - Such increasing pressure on health systems threatens to reverse decades of progress to promote human health and well-being, **particularly in the most vulnerable communities**.
- 50% of future excess mortality** from climate change is projected to occur in **Africa**.
- Better climate information and services** are therefore needed to understand better how and when climate

extremes and a changing climate can impact health systems and to manage climate-related risks better.

- Health protection** should be a priority in almost all countries and requires high-quality information to inform decision-making better.



Impact of climate change on health:

- Spread of Diseases:** With the increase in **global temperatures**, the suitability for spreading **infectious diseases such as dengue and malaria is rising**.
 - Between 1951–1960 and 2012–2021, the climate suitability of dengue transmission rose by 12%, and malaria transmission increased in the highlands in the Americas and Africa by 31.3% and 13.8%, respectively.
- Food Insecurity:** It is exacerbated by the increasing frequency of heat waves.
 - In **2012–2021, 29% more global land area** was affected by extreme drought for at least one month per year than in 1951–1960.
 - 98 million more people with moderate to severe food insecurity in 2020 than in the previous 30 years.
- Air Pollution and Heat Waves:** Vulnerable populations are facing **increased exposure to extreme, life-threatening heat** and millions die from **air pollution** every year.
 - Between 2000 and 2019, estimated deaths due to heat were approximately 489,000 per year, with a particularly high burden in **Asia (45%) and Europe (36%)**.
 - Heatwaves also exacerbate air pollution, which is already responsible for **an estimated 7 million premature deaths every year** and is the **fourth biggest killer by health risk factor**.
 - Only 2% of climate finance commitments made by international development funders in**

developing and emerging countries are explicitly aimed at tackling air pollution (in 2015-2021).

- **Effect of El-Nino:** The onset of El Niño in 2023 will greatly increase the likelihood of breaking temperature records further, triggering more extreme heat in many parts of the world and the ocean.
- **Labour Productivity:** 470 billion potential labour hours lost globally in 2021 due to heatwaves - a 37% increase from 1990-1999 and USD 669 billion potential loss of income in 2021.



Success Stories for Betterment of the Future:

- In **Africa**, food security and shock response systems support social protection in Mauritania and the Sahel.
- In **Europe**, a mobile app has been developed to provide information on risks of heatwaves and air pollution in urban environments.
- In **Southeast Asia**, satellites support the integration of climate and environmental information into health surveillance systems for Myanmar, and the development of an integrated early warning system for dengue in Vietnam.

Way Forward:

- Despite the **recognition of health in Article 4 of the UNFCCC**, for the first time, a health programme was promoted in 2021.
- **WHO** launched the **Alliance for Transformative Action on Climate and Health (ATACH)**, which made commitments to **strengthen climate resilience and/or reduce the greenhouse gas emissions associated** with their health systems.
- Due to increased weather-, climate- and water-related health hazards, the **health sector will increasingly need reliable and robust information services.**

- **Integrated and applied climate products, services and systems** that are robust and tailored can enhance the evidence and information available **to health partners to detect, monitor, predict and mitigate climate-related health risks.**

PEPPER IT WITH:

ATACH, UNFCC, WHO, Climate Change, WMO

- **Climate services for health** help the health sector become smarter and more agile in an uncertain and increasingly extreme climate.

White Hydrogen

News Excerpt:

Scientists discovered a large reservoir of naturally occurring "**white hydrogen**" in the **Lorraine region of France** while assessing methane concentrations in the subsoils of the region.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

History of Hydrogen: In 1766, Henry Cavendish was the first to recognize hydrogen gas as a discrete substance, by naming the gas from a metal-acid reaction "inflammable air". In 1783, Antoine Lavoisier gave the element the name hydrogen (from the Greek words- **hydro** meaning "water" and **genes** meaning "former").

What is White Hydrogen?

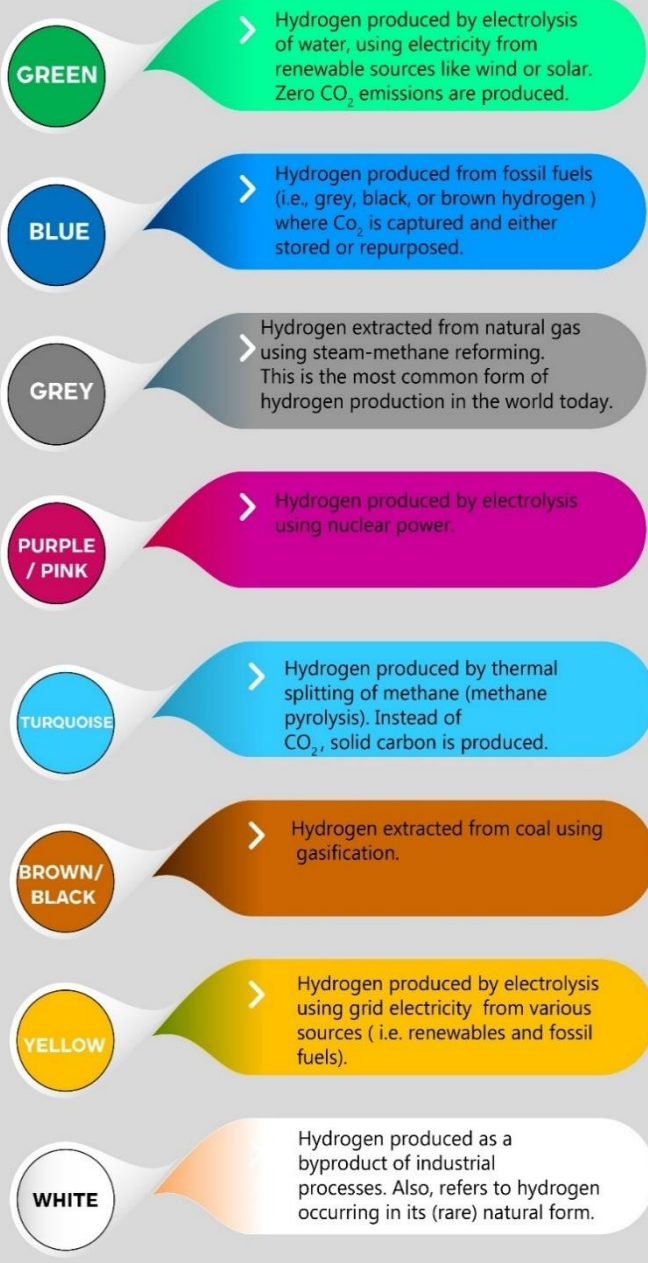
Hydrogen, the lightest element on earth with the **symbol "H" and atomic number 1 is a gas** in standard conditions.

- White hydrogen, also known as natural hydrogen, is a gaseous form of hydrogen that exists naturally within geological formations and is a primary energy source found **deep within the Earth's crust.**
- The Geological Society of America (GSA) forecasts that the demand for hydrogen will quintuple by 2050, with about 100 megatons of hydrogen currently used annually for industrial processes. GSA calculates that white hydrogen could meet at least half of the global demand for sustainable and clean hydrogen by 2100.

Why does White Hydrogen Matter?

- It has the potential to revolutionize the energy landscape by providing a **renewable and eco-friendly alternative to traditional fossil fuel-based energy sources.**
- It is considered **highly promising from a climate perspective** because it produces only water when burned, making it an attractive **clean energy source** for various industries such as **aviation, shipping, and steel production.**

THE COLORS OF HYDROGEN



Where does White Hydrogen reside?

- Geologically, it can be found in various locations around the world, concealed within the Earth's crust and often discovered accidentally during geological surveys or explorations for fossil fuels.

How White Hydrogen is Extracted and Utilized?

- It is extracted by **drilling into geological formations and using hydraulic fracturing (fracking)**.
- The process involves injecting a mixture of water, sand, and chemicals at high pressure to release the hydrogen gas from rocks.
- In fuel cell vehicles, hydrogen can be converted into electricity, presenting a promising **alternative to traditional fuel sources** and contributing to the reduction of harmful emissions.

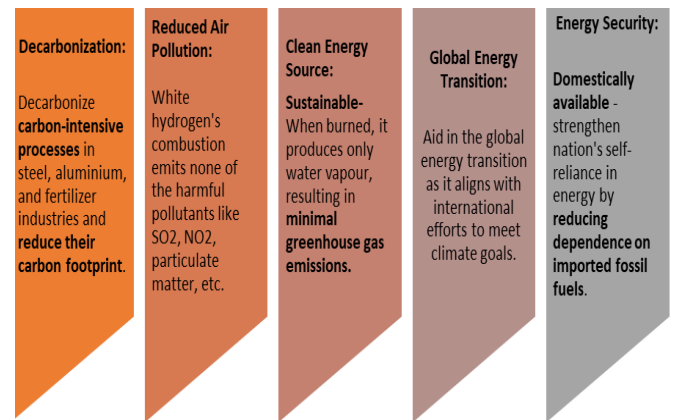


FIGURE:4-ADVANTAGES OF WHITE HYDROGEN

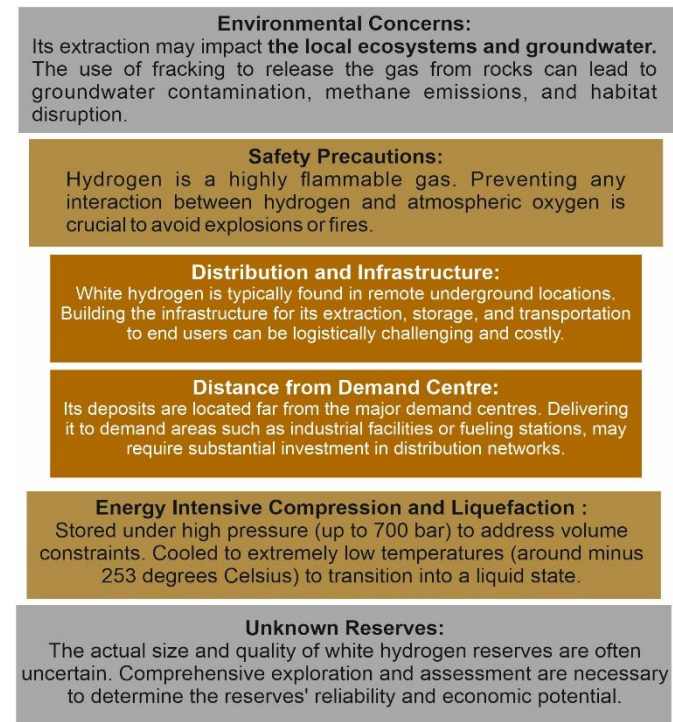
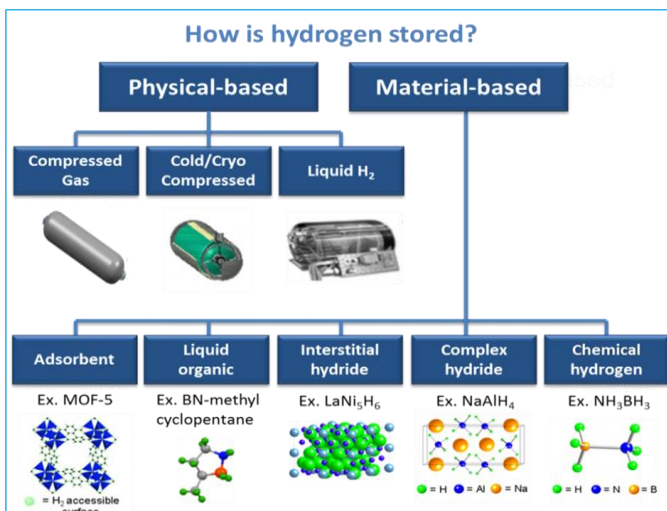


FIGURE: 5-CHALLENGES ASSOCIATED WITH WHITE HYDROGEN



Way Forward:

White hydrogen represents a promising avenue for advancing the global shift toward sustainable and renewable energy sources. **Its natural abundance and clean energy properties** position it as a key player in the ongoing efforts to combat climate change and reduce the environmental impact of traditional energy production. While challenges related to extraction, storage, and distribution persist, ongoing research and technological advancements offer hope for overcoming these obstacles and realizing the full potential of white hydrogen.

PEPPER IT WITH:

Different Types of Hydrogen and their Formation, Decarbonize, Traditional fuel Sources

Energy Conservation Building Code

News Excerpt:

The **International Energy Agency (IEA)**, has launched its **World Energy Outlook 2023** Report.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Key Points:

- **IEA**, highlighted through its report that **India's Energy Conservation Building Code (ECBC), 2017** for commercial buildings sets it apart from other developing economies where "energy efficiency in buildings stands out as a laggard".
- Being one of the few rising markets and developing economies with energy efficiency construction rules, India was cited as a "notable exception."

What is the Energy Conservation Building Code (ECBC)?

- ECBC establishes minimal energy requirements for commercial buildings to allow compliant structures to achieve energy savings of 25–50%.
- The code applies to **commercial buildings** with a **connected load of 100 kW** or more, or a **contract demand of 120 kVA** or more, such as hospitals, hotels, schools, shopping centres, and multiplexes.
- **Building envelopes (walls, roofing, windows), lighting systems, HVAC systems, and electrical power systems are the six main components** of building design that are examined. The standards under each of these components are divided into two categories: **mandatory and prescriptive**.
- This code is for both new buildings and retrofitting existing buildings.
- Three tags in ascending order of efficiency, namely **ECBC, ECBC Plus, and Super ECBC** are assigned to Compliant buildings.

Background of ECBC in India

- The ECBC was first released by the Ministry of Power's Bureau of Energy Efficiency (BEE) in **2007**, followed by an update in **2017**.
- Currently, **23 states have notified rules** to enforce ECBC compliance.
- Compared to ECBC, 2007, the updated 2017 code has additional priorities of renewable energy integration, ease of compliance, inclusion of passive building design strategies, and flexibility for the designers.

Implementation status of ECBC in India:

- Although **ECBC serves as a national standard**, individual states in India are free to alter it to suit their own particular requirements. States must create regulations and publish them as state laws in order to enforce the code.
- **Only 15 states have notified rules based on the most recent ECBC, 2017**, even though 23 out of 28 states have notified rules. States like Uttar Pradesh, Punjab, Telangana, Karnataka, Andhra Pradesh, and Kerala are among them.
- **Gujarat, Maharashtra, J&K, Ladakh, and Manipur are the Five states/UTs, yet to notify ECBC rules.**
 - These states risk losing out on the advantages of guaranteeing energy efficiency in commercial buildings if the ECBC regulations are delayed.
 - For example, according to the **National Research Development Corporation, with effective ECBC compliance, where about 90%** of newly constructed commercial buildings would be compliant with some level of the ECBC, Gujarat can save nearly 83 terawatt-hours (TWh) of energy by 2030.
 - The potential savings are fairly high given **Gujarat's total electricity consumption of 106 TWh in 2022**.

International Energy Agency (IEA):

- Created in 1974 to help co-ordinate a collective response to major disruptions in the supply of oil.
- **Mission:** Works with governments and industry to shape a secure and sustainable energy future for all.
- Made up of 31 member countries, 13 association countries, and 4 accession countries.
- Headquarter: Paris, France.

Bureau of Energy Efficiency (BEE):

- The Government of India set up BEE on 1st March 2002 under the provisions of the Energy Conservation Act, 2001.
- **Vision:** To improve the energy intensity of the Indian economy thereby contributing towards sustainable development of the country.

- **Objective:** To reduce energy intensity in the Indian economy.

State Energy Efficiency Index (SEEI):

- In 2022, **BEE** released the SEEI, which ranked states according to a number of energy-efficiency criteria.
- **Karnataka scored 22.5 out of a possible 25 points**, making it the highest-rated state in the SEEI for energy efficiency in buildings.
- It was followed by **Telangana, Haryana, Andhra Pradesh, and Punjab**.
- **Bihar** was given the lowest score of 0.5 points. With Bihar, states like Odisha, West Bengal, Tamil Nadu, and Jharkhand were the five worst-rated states.

Energy Conservation (Amendment) Act in 2022:

- India passed the **Energy Conservation (Amendment) Act (ECA) in 2022**, expanding the ambit of building codes in the country.
- It provides for the **transitioning of ECBC into the Energy Conservation and Sustainability Building Code** by incorporating measures relating to embedded carbon, net zero emissions, materials and resource efficiency, deployment of clean energy, and circularity.
- It also makes **ECO Niwas Samhita**, the Residential Building Energy Code, mandatory.

Standards and Labeling Programme

- Initiated by BEE for equipment and appliances in 2006 to provide the consumer an informed choice about the energy saving and thereby the cost saving potential of the relevant marketed product.

National Mission for Enhanced Energy Efficiency (NMEEE)

- NMEEE is one of the eight missions under the **National Action Plan on Climate Change (NAPCC)**.
- Aims to strengthen the market for energy efficiency by creating conducive regulatory and policy regime and has envisaged fostering innovative and sustainable business models to the energy efficiency sector.

Promotion of Energy-Efficient LED Bulbs – UJALA scheme

- Aims to **promote efficient use of energy** at the residential level, enhance the awareness of consumers about the efficacy of using energy-efficient appliances, and aggregate demand to reduce the high initial costs thus facilitating higher uptake of LED lights by residential users.

FIGURE:6- SCHEMES TO PROMOTE ENERGY CONSERVATION AND ENERGY EFFICIENCY

Way Forward:

As India is facing rapid urbanization it is important to keep focus on energy conservation otherwise it will be hard to meet the energy demand for the growing economy of our country. ECBC code presents a great opportunity to not just move towards environmental sustainability but also gives a positive message for the world to adopt such code in order to meet their commitment towards environmental goals.

PEPPER IT WITH:
IEA, World Energy Outlook, Eco Niwas Samhita

Plastic Pellets

News Excerpt:

The International Maritime Organization (IMO) should categorise plastic pellets as environmentally hazardous due to the chemicals added to them and the threat they pose to marine biodiversity.

What are Plastic Pellets?

- They are lentil-sized pieces of plastic ranging between **1 millimetre (mm) to 5 mm** that are melted together to create almost all plastic items in existence.
- These are made up of polymers like **polyethene, polypropylene, polystyrene, polyvinyl chloride**, etc.
- They are extremely **strong and durable** for many years.
- The top 3 major exporters of plastic pellets **as of 2023 are Indonesia, India and China**.

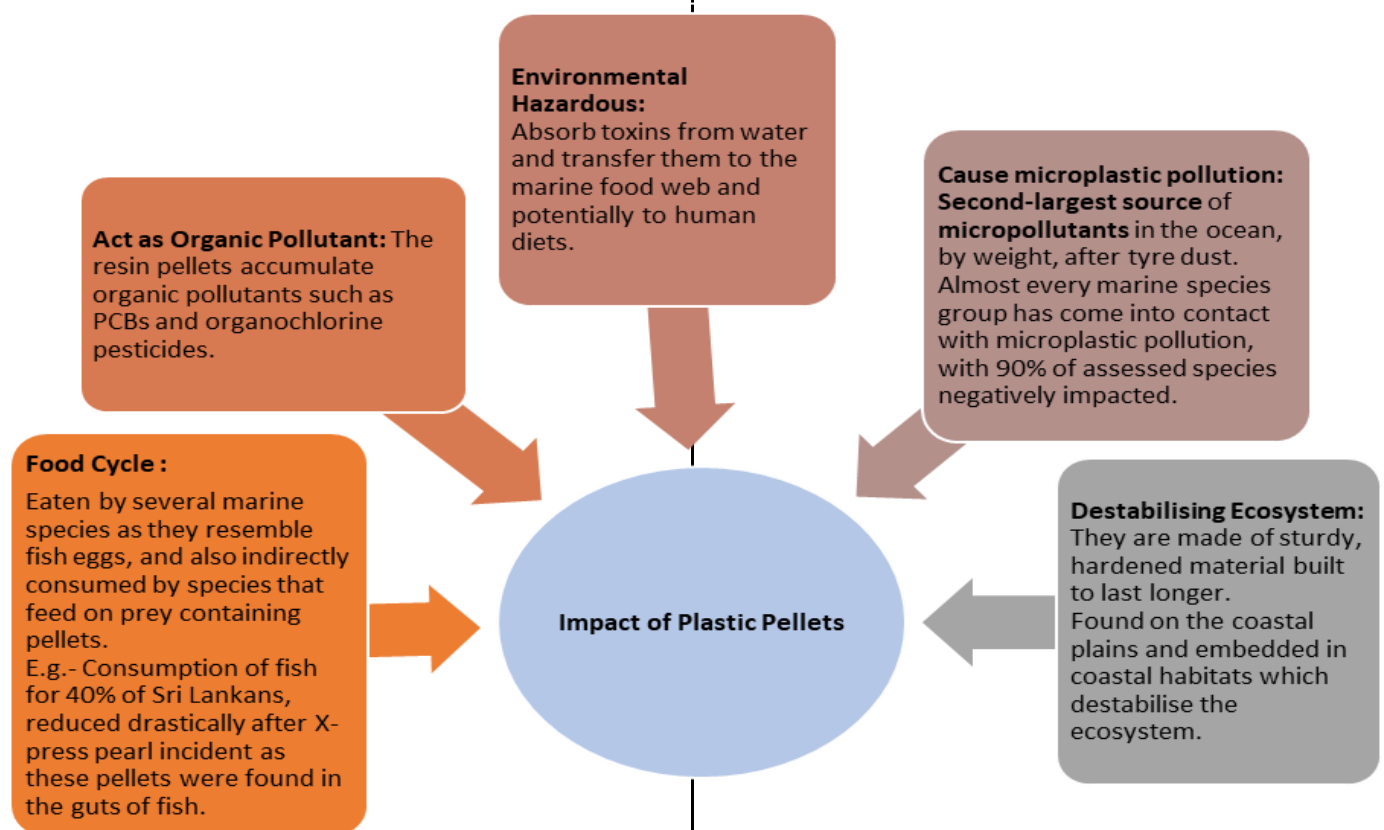


Uses of plastic pellets:

- Raw material or feedstock for the plastic industry to manufacture products ranging from carry bags to irrigation pipes.
- To manufacture various kinds of products used in sectors like **packaging, automotive, construction, agriculture, medical**, and others.

Spillage of Plastic pellets:

- Incidents regarding the **spillage of Plastic pellets** through various sources:
 - **Chronic Spills:** These result from smaller-scale leaks and losses **occurring over time and on an ongoing basis** during the various stages of pellet handling including **production facilities, Storage, and Recycling activities**.
 - **Acute Spills:** Shipping incidents are the source of acute spills on lands, water bodies and



transportation, which happen once in a while but contribute heavily to their quantity in natural

ecosystems.

- A report titled '**Mapping the Global Plastic Pellet Supply Chain, 2023**, by Fidra highlighted that more than **80 percent of the spills** were caused as a result of leakage from the plastic industry or the transportation partner.

Ex: The latest plastic pellet spill reported in India affected the beaches across **Mumbai and Palghar**.

- The Asia-Pacific region reported the first such plastic pellet spill **in China in 2012**, followed by the X-press Pearl plastic pellet spill in **Sri Lanka in 2021**.

Fidra:

- Fidra is an environmental charity working to reduce plastic waste and chemical pollution.
- Fidra seeks to monitor the carbon emissions of all travel and energy use and to find out the most suitable and effective way to limit the impact.
- It is named after the Scottish island.

Challenges:

According to the **United Nations Environment Programme (UNEP)** report titled **Chemicals in Plastics**, it is estimated that **more than 13,000 chemicals** are used by the plastic industry.

- These are of very small size which makes it difficult to clean them up from the beaches.
- More than **24%** of these have been identified to constitute a risk to human health but remain unregulated internationally. Only 1% of chemicals are governed by multinational treaties such as the **Stockholm Convention, Minamata Convention, and Montreal Protocol**.
- **Approximately half (46%)** of the compounds used in the plastics industry have **no hazard data** in the regulatory databases. This means that there are no safe criteria for handling and using polymers that contain these compounds.

Initiatives Taken for Pellet Pollution:

- **The Convention for the Protection of the Marine Environment of the North-East Atlantic**, commonly known as the **OSPAR Convention** recognised the need for comprehensive action on pellets.
- The **European Commission** in 2022 consulted on regulatory options including a supply chain approach that addresses the handling and transport of plastic pellets at all stages of the life cycle.
- The **International Convention for the Prevention of Pollution from Ships** also called the **MARPOL Convention**.
- **International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS Convention)** launched by the **IMO**.

- It sets out the rules covering compensation to be paid in the event of accidents at sea involving hazardous and noxious substances.
- It establishes the principle of '**polluter pays**' by ensuring that the shipping and HNS industries provide compensation to those suffering loss or damage resulting from an HNS incident.
- The current HNS Convention was adopted in **2010**, amending a previous instrument that had been **adopted in 1996**. However, the 2010 HNS Convention has still not entered into force.
- In **2016**, a new **IMO** regulation entered into force requiring the **gross mass of a container to be verified before it is loaded onto a ship**.

International Maritime Organization (IMO):

- It is a specialized agency of the United Nations responsible for improving the safety and security of international shipping and to prevent pollution from ships.
- It was established by means of a UN Convention adopted in 1948 and met for the first time in January 1959.
- IMO currently has 175 Member States.
- India joined the IMO in 1959. The IMO currently lists India among the 10 states with the 'largest interest in international seaborne trade'.

OSPAR Convention:

- It was open for signature at the Ministerial Meeting of the Oslo and Paris Commissions in 1992.
- In this decade, the Convention will be implemented through **OSPAR's North-East Atlantic Environment Strategy 2030**.
- Series of Annexes contained with the convention:
 - Annex I: Prevention and elimination of pollution from land-based sources
 - Annex II: Prevention and elimination of pollution by dumping or incineration
 - Annex III: Prevention and elimination of pollution from offshore sources
 - Annex IV: Assessment of the quality of the marine environment
 - Annex V: On the protection and conservation of the ecosystems and biological diversity of the maritime area.

MARPOL Convention:

- It was adopted on **2 November 1973 at IMO**.
- It is the main global regulatory mechanism covering the prevention of pollution of the marine environment by ships from operational or accidental causes, covering oil pollution prevention and regulating the discharge of more than 250 marine pollutants.

Triple Planetary Crisis:

- It refers to the three main **interlinked issues** that humanity currently faces: **climate change, pollution and biodiversity loss**.
- There are UN agencies dedicated to each of the planetary **crisis**:
 - **UN Climate Change** tackles climate change;
 - **UN Environment** tackles pollution and
 - **UN Biodiversity** focuses on biodiversity.
 - The **UN Convention to Combat Desertification** focuses on land and mitigating the effects of drought.

Way Forward:

To mitigate the Environmental Impact of plastic pellets initiatives like **closed-loop recycling, eco-friendly pellets, and sustainable sourcing procedures**

can assist in mitigating this impact. Higher liability should be placed on petrochemical companies, the plastic industry and shipping

partners involved in the movement of plastic pellets. This should be a consideration in the ongoing negotiations to '**End Plastic Pollution across the Life Cycle of Plastics**'.

PEPPER IT WITH:

Circular Economy, Plastic Waste Management Rules, Stockholm Convention, Minamata Convention, and Montreal Protocol.

Champions of the Earth 2023

News Excerpt:

The Champions of the Earth Awards for 2023 have been announced by the **United Nations Environment Programme (UNEP)** as nations prepare to meet in **Nairobi** to discuss a **globally binding Plastic Treaty**.

About Champions of the Earth Award, 2023:

- The UN's highest environmental honour- '**Champions of the Earth Award**' recognizes **individuals, groups, and organizations** whose efforts have a significant environmental impact.
- The winners for 2023 are working to **eliminate plastic pollution** through solutions and legislation.
- **Since 2005**, the UN recognized heroes who inspire, and encourage others to join them and defend a better, more sustainable future.
- Champions of the Earth are celebrated in **four** categories:

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											



World-Wide Initiatives Covered Under Champions of the Earth Award 2023:

- According to the **United Nations Environmental Program (UNEP)**, "Plastic pollution is a deeply concerning strand of the triple planetary crisis."
- Plastic pollution must be eliminated to minimize the amount of plastics produced and eliminate single-use plastics and alternatives that avoid the negative environmental and social repercussions associated with plastic pollution.

The Champions of the Earth awardees for 2023:

- Mayor Josefina Belmonte (Philippines)**, was recognised in the **Policy Leadership category** for her role in advancing environmental and social action. Her initiatives include single-use plastic restrictions, a plastic pollution trade-in scheme, refill stations for necessities, and advocacy for strong global plastics regulation.
- The **Ellen MacArthur Foundation (United Kingdom)**, was awarded in the **Inspiration and Action category**, for leadership in mainstreaming a lifecycle approach, including plastics. It is the driving force for the Global Commitment to UNEP.
- Blue Circle (China)**, was recognised in the **Entrepreneurial Vision category**. It uses blockchain technology and the Internet of Things to monitor and track the entire lifecycle of plastic pollution, from collection to regeneration, re-manufacturing, and re-sale. It has gathered approximately **10,700 tonnes of marine garbage**, making it the **largest marine plastic waste collection** initiative in China.
- José Manuel Moller (Chile)**, was also recognised in the **Entrepreneurial Vision category**. He is the founder of Algramo, a social enterprise dedicated to offering refill services that minimise plastic pollution while simultaneously lowering the cost of everyday needs.

Cleaning Our Rivers Due to Polluted Basins

News Excerpt:

Namami Gange initiative can work for the polluted river stretches.

About Polluted River Stretches (PRS):

Two or more polluted locations identified on a river in a continuous sequence are considered as a stretch and defined as a **Polluted River Stretch**. If there is a single location on a river or stream and the location does not comply with Biological Oxygen Demand (BOD), it is identified as a **Polluted Location**.

- According to a report published in **2022** by the **Central Pollution Control Board (CPCB)**, there are approximately **311 Polluted River Stretches** in 279 rivers (out of 603 rivers analyzed).
- The **Central Pollution Control Board (CPCB)** executes the **National Water Quality Monitoring Programme (NWMP)** for the assessment of the water quality of aquatic resources in the country.

Central Pollution Control Board (CPCB)

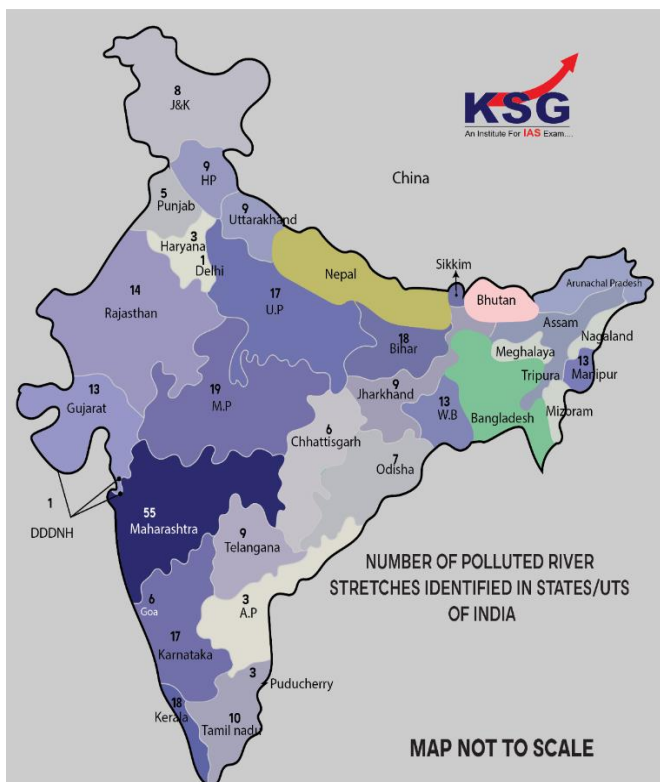
- It is a statutory organization, constituted in **September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974**.
- It **advises** the Ministry of Environment Forest and Climate Change on the implementation of the Environment (Protection) Act of 1986.
- The CPCB's primary functions, **as outlined in the Water (Prevention and Control of Pollution) Act of 1974 and the Air (Prevention and Control of Pollution) Act of 1981**, are (i) **to promote the cleanliness** of streams and wells in various areas of the States by **preventing, controlling, and abating water pollution**, and (ii) **to improve air quality** and prevent, control, or abate air pollution in the country.

According to the **Report 'Polluted River Stretches for Restoration of Water Quality- 2022'**:

- It is observed that in the year 2015, **70% of rivers monitored (275 out of 390)** were identified as polluted whereas, in the year 2022, **only 46% of rivers monitored (279 out of 603)** were identified as polluted.
- The state of **Maharashtra** has the highest number of polluted river stretches i.e. **55**, followed by **Madhya Pradesh (19)**, **Bihar (18)**, **Kerala (18)**.
- In 18 states/UTs, **46 polluted river stretches** have been recognized in **Priority Class - I**, with **Gujarat and Uttar Pradesh** having the **maximum number (6 each)**.

Various Reasons for the PRS"

- CPCB reveals that the discharge of **untreated wastewater** is one of the main causes of river pollution



in states. There is either not sufficient treatment capacity or capacity is under-utilised in the states.

- As estimated by **CPCB (2021)**, the sewage generation from the **urban cities** is about **72,368 million litres per day (MLD)** while from the **rural areas** is about **39,604 MLD**. There are about **1,631 Sewage Treatment Plants (STPs)** with a **total capacity of 36,668 MLD** to treat the sewage generated.

Most Polluted River Basin: The Ganga River Basin:

- It **flows down** from its glacier source (**Gangotri**) in the **high Himalayas**, through **five states in the northern plains**, and into the **Bay of Bengal** through the **Sunderbans delta**, the world's largest mangrove system.
- The Ganga River Basin comprises **11 states and 17 major tributaries** including **Yamuna, Kosi and Chambal**.
- Area of the basin: 860,000 km²** i.e. **26% of India's landmass**.
 - According to estimations, the five states through which the river flows – **Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal** – create around **11,765 MLD of sewage**, of which **only 20%** is currently executed. In addition to **agricultural runoff**, wastewater from industries is a cause of pollution.

The Ganga basin is home to over **2,500 species of flora and wildlife**. There are around **49 PRS** throughout the entire basin.

Namami Ganga Initiative:
Integrated Conservation Mission authorised in **June 2014** to achieve effective pollution abatement, conservation and revitalization of the National River Ganga. **Main pillars include** Sewerage Treatment Infrastructure, River-Front Development, River-Surface Cleaning, Biodiversity Afforestation, Ganga Gram, basin protection against disasters, etc.

National Ganga River Basin Project:

This **World Bank funded \$1 billion Project** is helping the **National Ganga River Basin Authority (NGRBA)** to build institutional capacity for rejuvenating the river.

The Centre has provided **financial and technical help** to mitigate river pollution through the **National River Conservation Plan (NRCP)** in 1995 and the **National Mission for Clean Ganga (NMCG)** in 2014.

AMRUT Mission: Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was launched in 2015. It focuses on the development of basic infrastructure, in the sectors of **water supply, sewerage and septage management, storm water drainage; green spaces and parks, and non-motorized urban transport**.

Smart City Mission:

It was launched as a **Centrally sponsored scheme** in 2015 to promote cities that provide core infrastructure, clean and sustainable environment and give a decent quality of life to citizens through the application of 'smart solutions'.

FIGURE-7- GOVERNMENT INITIATIVES FOR POLLUTED RIVER STRETCHES IN INDIA

Way Forward:

States need to take responsibility for setting up infrastructure by either drawing funds from various Organizations or on their own like the **World Bank Funded Guangdong Pearl River Delta Urban Environment Project of 2004**. There should be online monitoring of **Sewage Treatment Plants** by regulators for better compliance by industrial units. The minimal flow must be maintained to sustain and restore the wholesomeness of the river (Aquatic ecology). A **comprehensive waste management policy** that highlights the importance of decentralized garbage disposal practises is required, as this will encourage private actors to engage.

PEPPER IT WITH:

CPCB, Sewage Treatment Plants, Ganga River and its tributaries, BOD

Air Pollution

News Excerpt:

There is an increase in air pollution in Urban India in cities like Delhi and Mumbai which impacted economic growth.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

- Also, the Supreme Court banned the Barium chemical to be used in firecrackers all over India.
- Delhi-NCR's air quality has deteriorated due to increased instances of Stubble burning.

About Air Pollution:

Over the years, there has been a massive-scale expansion in industries, population density, anthropogenic activities, and the increased use of automobiles, that has degraded the air quality in India.

What does the IQAir published World Air Quality Report 2023 say?

PM_{2.5} is particulate matter that is less than 2.5 microns in diameter and is used as the standard air quality indicator for IQAir's World Air Quality Report.

- India's average PM_{2.5} concentration, measured in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), in 2022 was **53.3%** – against the **WHO's recommended annual guideline level of 5 $\mu\text{g}/\text{m}^3$** .
- The average calculated by **IQAir** was also higher than the liberal standard of **40 $\mu\text{g}/\text{m}^3$** set by **India's Central Pollution Control Board**.
- Delhi ranks 4th in the world's most polluted cities** after **Chiang Mai (Thailand), Kathmandu (Nepal), and Shenyang (China)**.
- According to the World Air Quality Report, **India and Pakistan** are the countries with the **worst air quality**.
- Bhiwadi, Ghaziabad, and Jaunpur** are some additional Indian cities that have been on the World Air Quality Report multiple times.
- India Ranks 8th among the most polluted countries** in the world with **Chad, Iraq and Pakistan** in the top three.
- The study found that a total of **38 cities and municipalities** had seen pollution levels rise in recent years in India.
- The survey found that **Kolkata** was the most polluted of the six major cities, followed by Delhi.

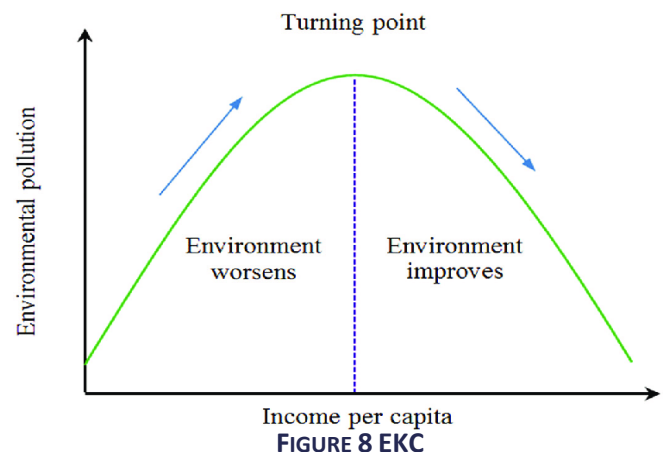
Air Pollution Impact on Urban India:

About **1.67 million (95% uncertainty interval)** deaths were attributable to air pollution in India in 2019, accounting for 17.8% (15.8–19.5) of the total deaths in the nation. The majority of these deaths were due to ambient particulate matter pollution (0.98 million) and household air pollution (0.61 million).

- Blooming of several other problems from Single-source:** The "usual" is becoming "unusual" and getting triggered by additional anthropogenic factors – like particulate pollution which are largely related to the unusual triple dip **La Nina conditions** understood as linked to climate change. In other words, the pollution from anthropogenic activities was not cleansed due to which the city experienced its worst air decade.
- Rising Diseases:** **Carbon monoxide (CO), sulphur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), and particulate matter (PM)** are the toxins produced during pollution that affect human health.

- Rising deaths:** **WHO** estimated that air pollution in India is responsible for over 1.2 million deaths each year.
- Economy Growth:** India is an emerging economy, so there is widespread concern about the impact of its deteriorating environmental conditions on the health of its economy.

Environmental Kuznets Curve (EKC): It explains the relationship between Economic Growth (determined by Per- Capita Income) and Environmental Pollution.



- It is based on an **inverted U-shaped** curve created by Kuznets in 1955.
- The curve consists of 3 phases:**
 - Intensive use of resources and a rapid increase in environmental degradation.
 - The turning point is reached when a certain level of income is achieved, and a change in the pollution trajectory occurs.
 - This phase leads to environmental improvement and mitigation of pollution through clean technology.

Traditionally, **air pollution is seen as an inevitable by-product of economic growth**. And thus, a policy response to it is extremely slow.

Pollution in Mumbai:

Recently, the **Air Quality Index (AQI)** went beyond 300 in some parts of Mumbai. **(An AQI of 200 or above is considered 'poor' air quality, while 300 and above signifies 'very poor' air.)**

Effects on Economic Growth:

The total cost includes both market and non-market costs.

Market costs are those that are associated with biophysical impacts that directly affect economic activity as measured in the national accounts and GDP.

Non-market costs include the monetized welfare costs of mortality (premature deaths), and of the disutility of illness (pain and suffering).

The costs of poor air quality were manifested in these ways:

- **Lower labour productivity:**
 - **Reserve Bank of India's Currency & Finance Report 2022-23** that up to **4.5% of India's GDP could be at risk by 2030** due to lost labour hours from climate change issues, including extreme heat and humidity.
- **Lower consumer footfall:**
 - Fewer people prefer to step out when the air quality is worse.
 - It is a matter of concern because the services sector accounts for **more than 50% of the Indian GDP**.
- **Increased health expenses:**
 - Nearly **all Indian children (98%)** breathe unsafe air that exceeds WHO guidelines, leading to an increasing number of respiratory and cardiovascular diseases.
 - **DALYs** are a measure of health burden, including both reduction in life expectancy and diminished quality of life.
- **Premature mortality:**
 - A **2018 report** titled '**Air Pollution and Child Health Prescribing Clean Air**' released by the **World Health Organization (WHO)** revealed that India records the highest number of premature deaths among under-5 children due to toxic air.
- **Lower crop yields affect agricultural production:**
 - High levels of concentration of pollutants, particularly ozone, reduce crop yields and thus affect agricultural productivity.

Reason for deteriorating air quality of Mumbai this year in 2023:

- **Big temperature gradient between the city and the nearby hilly regions in the Sahyadri ranges (meteorological condition) which was triggered by the heavy pollutants:**
 - Winds from the hilly regions in the Sahyadri ranges areas began moving towards Mumbai, picking up dust from the major construction projects being carried out in Navi Mumbai and surrounding areas.
 - The increasing number of sources of pollutants and not the meteorological conditions that make the situation worse.
- **El Nino:** It refers to a warming of the ocean surface, or above-average sea surface temperatures, in the central and eastern tropical Pacific Ocean. This year El-Nino factor played a role in deteriorating Mumbai's air quality.

Mumbai's municipality needs to catalyse innovation, sensitise builders and provide them with information to reduce construction-sector emissions.

Pollution in Delhi:

Delhi gets the most attention for its notoriously high pollution levels. But it has been evident for some time now that bad air problems are also affecting the other larger parts of the country.

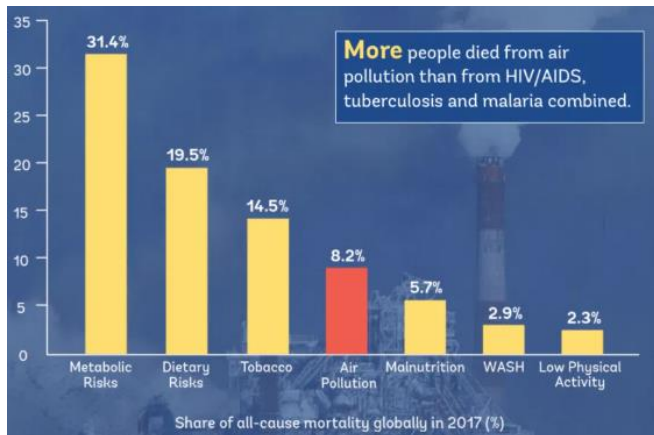
Reasons for Delhi Air Pollution:

Stubble Burning:

- **Stubble (parali) burning is a method of removing paddy crop residues from the field to sow wheat from the last week of September to November.**
- It is a process of setting on fire the straw stubble, left after the harvesting of grains, like paddy, wheat, etc.
- Crop residue burning is practised by the farmers to **prepare the land for the next cultivation.**
- The process of burning farm residue is one of the **major causes of air pollution in parts of north India, deteriorating the air quality.**
- The **major reason** behind stubble burning is the **short time available between rice harvesting and sowing of wheat** as delay in sowing wheat affects the wheat crop. Between the harvesting of the paddy crop and the sowing of the next crop, there is only a two to three weeks' three-time window left.
- **Northwesterly winds** usually help **carry smoke from crop residue burning to Delhi.**
 - For the situation to improve, we need rainfall, which has been elusive as there has been no active western disturbance. There is no likelihood of an improvement in wind speed in the next 3-4 days.
 - The **Indian Institute of Tropical Meteorology, Pune**, established the **Decision Support System (DSS)**, which shows that on November 1, biomass burning contributed 12.96% of Delhi's PM 2.5 levels, up from 7.175% on 31 Oct.
 - On October 27, the system reported the greatest biomass-burning contribution of 23.48% so far this year.
 - Data from **SAFAR** shows that last year, the daily peak contribution of stubble burning to PM 2.5 levels in Delhi was 34% on November 3, while it was 48% in 2021, 42% in 2020, and 44% in 2019.

Impact of Stubble Burning:

- **Air Pollution:**
 - Stubble burning emits toxic pollutants in the atmosphere containing harmful gases like **Carbon Monoxide (CO), methane (CH₄), carcinogenic polycyclic aromatic hydrocarbons, and volatile organic compounds (VOC)**. It contributes to a lot of greenhouse gas emissions.



- These pollutants disperse in the surroundings and eventually affect air quality and people's health by forming a thick blanket of smog.
- Stubble fires in **Punjab and Haryana** contribute to **Delhi's winter haze** and about **40% of fine dust particles on the surface**.

Soil fertility and Heat penetration:

- Soil becomes less fertile and its nutrients are destroyed when the husk is burned on the ground.
- Burning crop residues destroys other microorganisms and their organic matter present in the top layer of the soil and are important for fertile soil.

Initiative taken for Delhi Air Quality:

- **The Graded Response Action Plan (GRAP)** has already been enforced due to the rising pollution.
 - **GRAP is a set of emergency measures** that kick in to prevent further deterioration of air quality once it reaches a certain threshold.
 - For this, the **Commission for Air Quality Management (CAQM)** relies on air quality and meteorological forecasts by the **Indian Institute of Tropical Meteorology (IITM)** and the **India Meteorological Department (IMD)**.
- **Baler Machine:** A baler is a piece of farm machinery used to compress a cut and raked crop (such as hay, cotton, flax straw, salt marsh hay, or silage) into compact bales that are easy to handle, transport, and store.
 - 'Baler' machines have been around for a decade, and currently around 2,000 of them operate in Punjab. Of these 1,268 are highly subsidized (50-80%) under **the Centre's Crop Residue Management (CRM) scheme**.
 - The Punjab government will provide **30 balers to farmer groups or custom hiring centres (CHCs) at a subsidy of 65%**.
 - Since 2018, the Centre has funded Punjab's **Crop Residue Management (CRM)** programme, with a

grant of **₹1,370 crores** sanctioned for the state from 2018 to 2022.

- For the current season, ₹350 crores has been sanctioned, with the condition that **Punjab contributes 40% (₹140 crores)** and the rest (₹210 crores) will be contributed by the Centre.

Firecrackers:

The apex court **banned** the production and sale of **all crackers except 'green crackers'** and those with **reduced emissions (improved crackers)**.

What is a firecracker made of?

- Firecrackers typically consist of **four primary ingredients — oxidiser, fuel, colouring agents, and binder**.
- **An oxidiser** is required for the cracker to catch fire.
- **The fuel** sustains the fire, colouring agents give it the colours and sparkles.
- **The binder** holds this mixture in place till the cracker has spent itself.

The stages and restrictions

Good 0-50	Satisfactory 51-100	Moderate 101-200
Poor 201-300	Very Poor 300-400	Severe 401-500

STAGE I (AQI 201-300)

Agencies to strictly enforce orders by NGT, SC on keeping vehicles older than 10 years (for diesel) and 15 years (petrol) off roads.

STAGE II (AQI 301-400)

- Measures to curb air pollution at hot spots
- Diesel generators of more than 19KW cannot be used unless they run on dual fuel or have emission control devices.

STAGE III (AQI 401-450)

- BS-III petrol, BS-IV diesel private cars to be banned in NCR. Last year, the rule was optional for state governments
- Schools will likely be closed for children up to Class 5.

STAGE IV (AQI OVER 450)

- Light commercial vehicles registered outside Delhi will be restricted except those that are EVs/CNG/ BS-VI diesels. Vehicles carrying essentials or providing essential services to be allowed
- Educational institutions will likely be closed. Non-emergency commercial activities and odd-even vehicle policy may be rolled out.

- **Chemicals like barium are colouring agents** and were banned because of their harmful impact on human health, such as irritation in the respiratory tract, skin allergies, breathing difficulties, and even cancer.

Barium as a Harmful Chemical:

- Barium is used to produce the **green colour in firecrackers**.
- It also acts as a stabilising agent for the products' long shelf-life.
- Barium monoxide, a substance that can cause skin irritation, discomfort in the nose, throat, and lungs, and even lead to eye damage resulting in vision loss.

Solution: Green crackers

- Green crackers are so named because they **"do not contain harmful chemicals"** that would cause air pollution.

- The three broad categories of Green crackers are **SWAS, SAFAL and STAR**, developed by CSIR.
 - **SWAS** or “Safe Water Releaser”, and has a small water pocket that is released in the form of vapour when the cracker is burst. This suppresses the dust.
 - **STAR**, or **Safe Thermite Cracker**, does not comprise of potassium nitrate and sulphur and also emits reduced particulate matter at reduced sound intensity.
 - **SAFAL** or **Safe Minimal Aluminium**, replaces aluminium with magnesium instead. This too emits less noise than traditional crackers.

Government of India Acts related to Air Pollution:

- **The Factories Act and Amendment in 1948** was the first to express concern for the working environment of the workers. The amendment of 1987 has sharpened its environmental focus and expanded its application to hazardous processes.
- **The Air (Prevention and Control of Pollution) Act, 1981** provides for the control and abatement of air pollution. It entrusts the power of enforcing this act to the CPCB.
- **The Air (Prevention and Control of Pollution) Rules, 1982** defines the procedures of the meetings of the Boards and the powers entrusted to them.
- **The Atomic Energy Act, of 1982** deals with radioactive waste.
- **The Air (Prevention and Control of Pollution) Amendment Act, 1987** empowers the central and state pollution control boards to meet with grave emergencies of air pollution.
- **The Motor Vehicles Act, of 1988** states that all hazardous waste is to be properly packaged, labeled, and transported.

Initiatives Taken for Air Pollution:

- The Central Government has launched the **National Clean Air Programme (NCAP)** under the **Central Sector “Control of Pollution” Scheme** as a long-term, time-bound, national-level strategy to tackle the air pollution problem across the country comprehensively with **targets to achieve 20 % to 30 % reduction in PM10 and PM2.5 concentrations by 2024 keeping 2017 as the base year** for the comparison of concentration.
- The Central Government notified a **Comprehensive Action Plan (CAP) in 2018** identifying timelines and implementing agencies for actions identified for prevention, control and mitigation of air pollution in **Delhi and NCR**.
- **Farmer education:** Farmers will find it difficult to forget the practice of burning stubble, so they need to be educated about its negative effects and offered an attractive alternative.

Way Forward:

- **Needs for Implementation of:**
 - **Article 21 (Right to Life) of the Indian Constitution**, guarantees the right to a clean and healthy environment including clean air and water as a fundamental right.
 - **Sustainable Development Goals (SDGs)** relevant to ambient air pollution include:
 - **SDG target 3.9.1**, which calls for a substantial reduction in deaths and illnesses from air pollution. (**SDG 3: Health**)
 - **SDG target 11.6.2**, which aims to reduce the environmental impact of cities by improving air quality. (**SDG 11: Cities**)
- **Granular level variation and observation:** The government has significantly increased the number of monitoring stations but to cover a vast country like India, more ambitious and directed initiatives and regulations are required.
- **Encourage Sustainable / Public Transportation:** Encouraging the use of sustainable transportation options can significantly reduce pollution levels. Investing in public transportation systems, promoting cycling infrastructure, and incentivizing the use of electric vehicles can all play an important role in reducing air pollution.
- **Promote Energy Efficiency:** Encouraging the use of energy-efficient appliances, promoting renewable energy sources, and implementing building codes that prioritize energy efficiency can all contribute to reducing air pollution in cities.

The potential economic consequences of both the market and non-market impacts of outdoor air pollution are very significant and underscore the need for strong policy action. Governments and civil society need to work in collaboration to take steps to be able to achieve these SDGs as well as provide a healthy and prosperous world to future generations.

PEPPER IT WITH:

AQI, IQAir, World Air Quality Report, SDG Goals Related to Pollution, IMD

PRE-SHOTS

NDC Synthesis Report

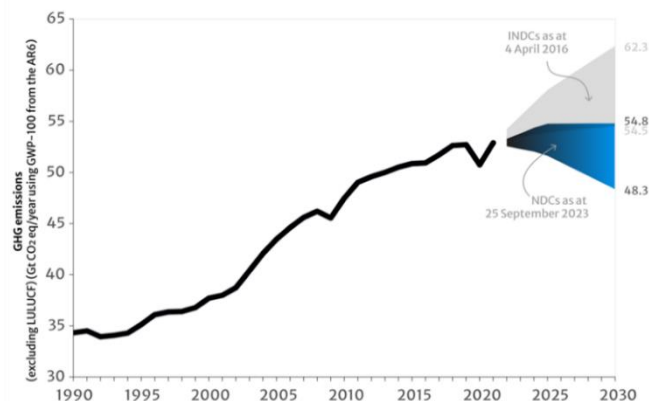
News Excerpt:

Nationally Determined Contributions (NDC) Synthesis Report by the United Nations Framework Convention on Climate Change (UNFCCC) shows inadequate climate pledges, with a projected 87% depletion of the global carbon budget by 2030.

Key Findings of the report:

- The report indicates if the NDCs of all countries are implemented, **global emission levels will be 2% lower in 2030 compared to 2019 levels.**
- The 2% reduction falls significantly short of the **43% emission** reduction required by 2030 to limit global temperature increase to under 1.5 degrees Celsius, as recommended by the Intergovernmental Panel on Climate Change (IPCC).

Projected range and progression of emission levels according to nationally determined contributions



- Despite improved ambition in updated NDCs, the report estimates that **51.6 gigatonnes of carbon dioxide equivalent (GtCO₂e) will be emitted in 2030**, using upto 87% of the remaining global carbon budget.
- Evidence suggests global emissions may peak before 2030 if **conditional elements in NDCs** are met. However, implementing only **unconditional NDCs** would result in a **1.4% increase in emissions by 2030** compared to 2019 levels.
 - Many conditional elements in NDCs, particularly from developing countries, hinge on factors like access to **finance and technology**.
- About **43%** of countries outlined **long-term mitigation plans** in their NDCs.
- The collective emissions of countries with **Long-Term Low-Emission Development Strategies (LT-LEDs)** will be **35.9 GtCO₂e** in 2030, representing a 6% reduction from 2019 levels.
- However, uncertainties exist in **Net Zero targets**, and 43% of LEDS indicate the need for more ambitious emissions reduction measures.
- The reports are expected to feed into the culmination of the first-ever **Global Stocktake** — an assessment of the progress of countries towards their climate commitments — at the 28th Conference of Parties (COP28) to the UNFCCC in Dubai, UAE.
 - Following the findings of the NDC synthesis report, the Global Stocktake offers an

opportunity to strengthen the implementation of targets and improve the flow of finance to achieve commitments from developed to developing countries.

- There is a need **to rebuild trust in the Paris process, i.e., deliver on commitments**, especially **finance**, and **enhance resilience** to climate impacts globally.

About Nationally Determined Contributions (NDC):

- Individual **country-level commitments** that outline the efforts and actions a country intends to take **to reduce its greenhouse gas (GHG) emissions** and adapt to the impacts of climate change.
- Each participating country in the **2015 Paris Agreement** was required to submit its own NDC, reflecting its **national circumstances, capabilities, and priorities**.
- Countries are encouraged to **enhance their NDCs every five years** to reflect increased ambition in tackling climate change.
 - Conditional elements in NDCs:** The commitments that a country makes contingent upon certain conditions being met. E.g.- a country might pledge to reduce emissions only if it receives financial support or technology transfer from the international community.
 - Unconditional elements in NDCs:** The core, non-negotiable commitments that a country pledges to achieve irrespective of external factors or without relying on additional support.

WWF Plowprint Report, 2023**News Excerpt:**

The World Wildlife Fund (WWF) has released the **Plowprint Report 2023**.

Report Findings:

- Significance:** Grasslands are crucial for **agriculture, food security, rural communities**, and the **economy**, providing **water supply, soil health, climate resilience, biodiversity**, and **carbon sequestration**.
- Challenges:** However, grassland loss has significant impacts, including increased **carbon emissions**, frequent **droughts**, and **aquifers not replenishing** due to lost infiltration and increased **run-off**.

About World Wildlife Fund (WWF):

- It is an international **non-governmental** organization that works to protect and conserve the natural world and its species.
- It was established in **Switzerland** on **April 29, 1961**.
- It is currently operational in **over 100** nations worldwide.

Brazzaville Summit

News Excerpt:

The Summit of the Three Basins was held in **Brazzaville, Congo**, on October 26-28, 2023.

Background:

- The **First Summit** of the three tropical forest basins was held in **Brazzaville** in **2011**. It resulted in the **declaration** of the Summit of the Three Tropical Forest Basins.
 - It recognized the need to establish a platform to promote cooperation among the countries of the three basins.
- The Three Basins Threat Report: Fossil Fuel, Mining, and Industrial Expansion Threats to Forests and Communities.**
 - Released by the research and advocacy group **Earth Insight** and other non-profit groups.
 - It documents the **challenges** that the world's remaining **tropical forest** basins face.
 - It showed that large parts of tropical forests in these areas remain **threatened** by **fossil fuel, mining** and **extractive industry** expansion.

About:

- The summit included countries in **three basins** of the **Amazon, Congo, and Borneo-Mekong-Southeast Asia** countries.
- The leaders urged developed countries -
 - to create a **fund** to address climate change **loss and damage**.
 - to meet their commitments, including **\$200 billion annually** by 2030 in the **Kunming-Montreal Global Biodiversity Framework** and **\$100 billion annually** in **climate finance** as new resources for developing countries.

World Organization for Animal Health (WOAH)

News Excerpt:

Recently, India hosted the **33rd** Conference of the World Organization for Animal Health (WOAH) Regional Commission for Asia and the Pacific.

About the WOAH Conference:

- The WOAH has set up **five Regional Commissions** as full-fledged regional institutional bodies to express specific problems faced by its members in the different regions of the world.
- The Regional Commission for Asia and the Pacific** organizes a Conference once every **two years** in one of the countries of the region.

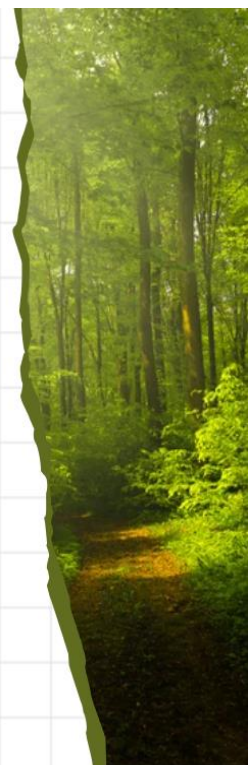
- These conferences aim to develop technical items and foster regional cooperation for the **control of animal diseases**. Regional programmes are also considered to reinforce major **disease surveillance and control**.
- The Regional Commissions report on their activities and submit recommendations to the **World Assembly of Delegates**.
 - The World Assembly of 183 Delegates is the highest authority of WOAH.

About WOAH:

- WOAH was founded in 1924 as the **Office International des Epizooties (OIE)**.
- Currently, 182 countries and all EU Member States are members of WOAH.

Seven-point declaration acknowledged the importance of protected areas and urged nations to -

- Recognise the value of **enhanced cooperation** between the three basins.
- Recognise that **sovereign management of biodiversity, forests and associated resources** of the three basins is essential.
- Develop **solutions** together.
- Pool and capitalize on existing knowledge, experience, resources and achievements.
- Involve **all states and national authorities**, including indigenous peoples, youth, women, civil society, academia and the private sector.
- Encourage **financial mobilisation** and the development of traditional and innovative financing mechanisms.
- Establish a **sustainable system of remuneration** for the ecosystem services provided by the three basins.



- In May 2003, it adopted the common name **World Organization for Animal Health**.
- It focuses on transparently disseminating **information on animal diseases, improving animal health globally** and thus building a safer, healthier and more sustainable world.

Solar Energy Mini-Grids

News Excerpt:

Solar energy mini-grids can help end the energy poverty of rural communities in **climate-vulnerable regions**. Investments in these renewable energy initiatives must be scaled up.

About Mini-Grid:

- It is a **set of small-scale electricity generators and possibly energy storage systems** interconnected to a distribution network that supplies electricity to a small, localised group of customers and **operates independently from the national transmission grid**.
- When it is harnessed using solar energy, it is known as Solar Energy Mini-Grid.
 - They range in size from a few kilowatts **up to 10 megawatts**.

Why it was needed?

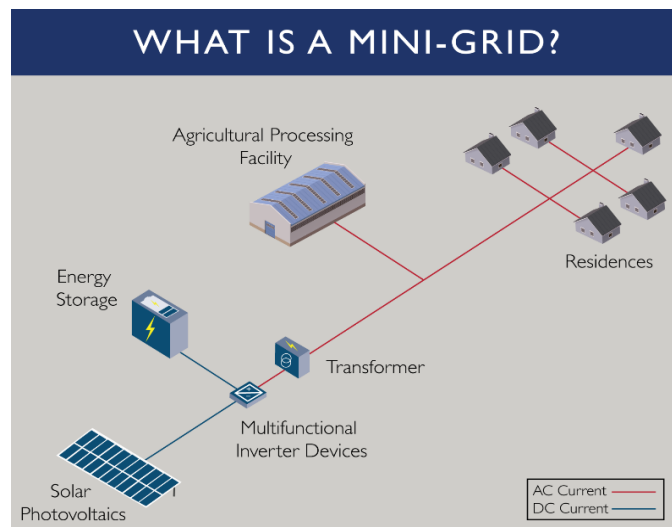
- The primary reason is **due to energy poverty**, as approximately 675 million people worldwide lack access to electricity.
 - The majority of these individuals reside in **Sub-Saharan Africa**.

Potential of Mini Grids:

- Solar mini-grids are identified as a **cost-effective and sustainable solution** to provide electricity for about **75% of the 675 million people** who live without electricity.
- These decentralized energy systems **contribute to climate resilience**, particularly in farming-dependent

rural areas prone to climate shocks like droughts, heat stress, and flooding.

- In instances **where central grid infrastructure cannot reach remote communities**, mini-grids can act as **important complements**.
 - They've been integrated into national grids in some cases, **serving as local distributors and benefiting a significant number of consumers**.





KSG
An Institute For IAS Exam...



AWSDP Plus
ANSWER WRITING SKILL DEVELOPMENT PROGRAM

DURATION OF PROGRAM

- 1 Month • 3 Months
- 6 Months • 12 Months

Starting From... 7th Dec.

Questions Will Be Provided On Daily Basis

Available Online & Offline

Mentorship Program

Evaluation Under The Guidance of Experts

882600 2521 / 9990 999707

www.ksgindia.com



Scan for More Details

SCIENCE AND TECHNOLOGY

Bio-economy is the technology of tomorrow

News Excerpt:

India's Bioeconomy witnessed a double-digit growth rate.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
V											

The goal of bioeconomy is to drive both sustainable development and circularity. The **principles of reuse, repair, and recycling**, are an essential component of bioeconomy.

What is Bio-Economy?

It is defined as "the production of renewable biological resources and the conversion of these resources and waste streams into value-added products **such as food, feed, bio-based products, and bioenergy.**" (EU: 2020)



- **Resource recovery from waste streams such as municipal or industrial**, is one of the **key components** for promoting a circular city approach.
- A circular city approach transforms waste products **into sustainable and environmentally friendly bio-based products** to reduce resource wastage.

Why there is a need for Bio-Economy?

- **Job creation:** It would create millions of **Green Jobs**, especially in rural and coastal areas.
- **Carbon Mitigation and Carbon Neutrality:** It would reduce the overall atmospheric emissions and our dependence on fossil fuels.
- **Modernization:** These processes will introduce innovations in agriculture, aquaculture, forestry, and other industries, thus helping them to become environmentally sustainable.
- **Ecosystem and Biodiversity restoration:** It will help recover the degraded part of our ecosystem by not exploiting excess amounts of resources.

Achieving Sustainable Development Goals (SDGs):

The circular economy holds promise for achieving multiple SDGs, including SDG 6 on Water & Sanitation (energy), SDG 8 on economic growth, SDG 11 on sustainable cities, SDG 12 on sustainable consumption and production, SDG 13 on climate action, SDG 14 on Life Below Water (oceans), and SDG 15 on life on land.

Green jobs

- These jobs contribute to **preserve or restore the environment**, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as **renewable energy and energy efficiency**.
- They **can produce goods or provide services** that benefit the environment, for example **green buildings or clean transportation**.

How is India inching Towards Bio-economy?

- India is set to **achieve \$150 billion Bio-Economy by 2025**, which stood at over \$100 billion in 2022.
- **Biotech Sector:** The biotech sector particularly for **vaccines, diagnostics, and therapeutics** has already shown to the world that India can fight global challenges like the COVID pandemic from the forefront and contribute with best-in-class solutions not only for itself but for the world.
 - ❖ Biotech Startups have grown **100 times in the last 8 years (2014-2022)** from 52 odd startups in 2014 to **6,300 plus** presently.
 - ❖ Bio-Pharma Industry in **2021 tripled their R&D spending to nearly \$1 billion from \$360 million in 2020**.
- **Agriculture sector:** The agriculture sector which employs nearly **60%** of India's population has a large **scope of improvement**.
 - ❖ **BT Cotton, Bio-pesticides, Bio-Stimulants, and Biofertilizers** contributed to **about \$10.48 billion in 2021** for the Bio-economy of the country.

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit, **set up by the Department of Biotechnology (DBT)**, Government of India as an Interface Agency to strengthen and empower the **emerging Biotech enterprise to undertake strategic research and innovation, addressing nationally relevant product development needs.**

- **National Biopharma Mission (NBM):** The National Biopharma Mission (NBM) is an **industry-Academia Collaborative Mission** for accelerating biopharmaceutical development in the country. Under this Mission, the Government has launched the **Innovate in India (i3) program** to create an enabling

ecosystem to promote entrepreneurship and indigenous manufacturing in the sector. This mission is implemented by the **Biotechnology Industry Research Assistance Council (BIRAC)**.

- **Clean Energy International Incubation Centre:** The Clean Energy International Incubation Centre is a **first-of-its-kind International Incubation Centre** jointly established by **DBT/BIRAC, Tata Trust & Tata Power in 2018** under the **Mission Innovation multilateral program**. The **Incubator provides access to advanced labs and equipment, a pool of experts & mentors, and live testbeds** with the opportunity to conduct Pilots.
- **Fostering High-Performance Biomanufacturing:** DBT has undertaken a major initiative on "Fostering High-Performance Biomanufacturing- An integrated approach towards promoting circular economy for **Green, Clean, and Prosperous India**".

Way Forward:

India has a huge unsaturated wealth of bio-resources, waiting to be harnessed. A push to bio-economy will lead to the **development of a skilled workforce, and a surge in job creation**

and entrepreneurship, especially in Tier 2 and Tier 3 cities. A suitable strategy is required in the form of an action plan including both local and central governments to make full use of the bio-resources and for adequate growth of the Bio-Economy sector.

PEPPER IT WITH:

Circular Economy, Carbon Neutrality and Mitigation, National Biopharma Mission, Bio-manufacturing, GRIHA ratings

Carbon Dioxide Capture Technology

News Excerpt:

New technology for **converting CO₂ to CO** holds the potential for carbon capture and energy saving in the **steel sector**.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Importance of Carbon Monoxide in Industries

- Carbon monoxide (CO) is a widely used chemical in the industry especially in the form of **syn gas**.
- CO is a critical component in the **steel industry** for converting **iron ores to metallic iron** in blast furnaces.

Synthesis gas (also known as syngas) is a mixture of **carbon monoxide (CO) and hydrogen (H₂)** that is used as a fuel gas but is produced from a wide range of carbonaceous feedstocks and is used to produce a wide range of chemicals.

Current Technology:

- **Currently**, CO is produced by **partial oxidation of coke/coal**, which results in **extensive CO₂ production** as an end product. If this produced CO₂ can be captured and transformed into carbon monoxide, it could help to create a **circular economy while decreasing the carbon footprint** and associated costs.
- The frequently used technique for **CO₂ to CO conversion happens at elevated temperatures (400-750 °C)**, and the presence of an **equivalent amount of H₂** is required.

Proposed IIT- Bombay Technology:

The technology developed by **IIT Bombay converts carbon dioxide to carbon monoxide** under **electro-catalytic conditions** under **ambient temperatures** in the presence of water.

- It requires only minimal energy as it can proceed under **ambient temperatures (25-40 °C)** in the **presence of water**.
- The energy required for this **electrocatalysis reaction** can be harnessed directly from a renewable energy source (**in the form of a solar panel or windmill**), which ensures a **carbon-neutral** operating scenario for a **CO₂ to CO conversion**.

UNFCCC stands for United Nations Framework Convention on Climate Change.

- The Convention has near universal membership (198 parties) and is the parent treaty of the 2015 Paris Agreement.
- The main aim of the Paris Agreement is to keep the global average temperature rise this century as close as possible to 1.5 degrees Celsius above pre-industrial levels.
- The UNFCCC is also the parent treaty of the 1997 Kyoto Protocol.
- The ultimate objective of all three agreements under the UNFCCC is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system.

Need for this technology:

- India is the **second-largest manufacturer of cement and steel**, the **third-largest consumer of energy**, and the **fourth-largest petroleum refiner**. These are '**hard to decarbonize**' sectors.
- At the **26th Conference of Parties (COP)** to the **United Nations Framework Convention for Climate Change (UNFCCC)** in **Nov 2021**, India Pledged to achieve Net Zero Emissions by 2070.
- **India** decided to achieve its short-term and long-term targets under the **Panchamrit action plan**, like- reaching a non-fossil fuel energy capacity of **500 GW by 2030**; fulfilling at least half of its energy requirements via renewable energy by

2030; **reducing CO2 emissions by 1 billion tons by 2030**; reducing carbon intensity below **45 per cent by 2030**; and finally pave the way for achieving a **Net-Zero emission target by 2070**.

Thus, India has also launched the **Mission Innovation Challenge on Carbon capture, utilization, and storage (CCUS)** to enable near-zero CO₂ emissions from power plants and carbon-intensive industries.

Two National Centres of Excellence in Carbon Capture and Utilization are being established in India.

1. National Centre of Excellence in Carbon Capture and Utilization (NCoE-CCU) at Indian Institute of Technology (IIT) Bombay, Mumbai **2. National Centre in Carbon Capture and Utilization (NCCCU)** at Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru.

Carbon capture, utilization, and storage (CCUS):

It is a method of lowering carbon emissions that could be critical in combating global warming. It is a **three-step process** that involves **absorbing carbon dioxide** produced by power generation or industrial activity such as steel or cement production, **transporting it, and storing it**.

Three-step Process:

- CO₂ is separated from other gases produced in industrial set-ups such as those at coal power plants, steel plants, cement plants, etc.
- The CO₂ is subsequently **compressed and transferred** to a storage location via **pipelines, road conveyance, or ships**.
- Finally, the CO₂ is pumped far below into rock formations for long-term storage.

Way Forward:

- This initiative will help in facilitating research and innovation that can lead to the development of safe and cost-effective CO₂ capture, utilization, and storage (CCUS) technologies.
- India has been ongoing in its transition to clean energy, attaining the highest rate of renewable capacity addition among all major economies and setting aggressive transition targets.
- **India's energy-mix strategies** include a greater shift towards clean energy alternatives, increased manufacturing capacity, energy use efficiency, and a policy push for hydrogen, which includes production-linked incentives. Furthermore, developing technologies such as the **2G Ethanol Pilot, Comfort climate box** for tropical regions, **Hydrogen Valleys**, and Heating and Cooling virtual repository will help achieve India's targets.

PEPPER IT WITH:

Carbon Footprint, Panchamrit Pledges, Kyoto Protocol, Paris Agreement, Ethanol Pilot, Hydrogen Valleys

India's New Guidelines on Genetically Modified Insects

News Excerpt:

The Department of Biotechnology (DBT) has issued the '**Guidelines for Genetically Engineered (GE) Insects**'.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Department of Biotechnology (DBT)

- It comes under the **Ministry of Science and Technology** and supports research and applications in life sciences.
- It aims to speed up the nation's progress towards widespread usage of biotechnology in the fields of industry, agriculture, health care, animal sciences, and the environment.

Prospects of India's Bio-economy:

- The sector accounts for **2.6% share of India's GDP in 2021**.
- According to the "Bio-economy Report 2022", this contribution in GDP **should come closer to 5% by 2030**.
- The current budgetary allocation for DBT is only 0.0001% of India's GDP.

Challenges in creating GE insects:

1. Uncertainty of purpose:

- The guidelines acknowledge that GE insects are becoming **globally available**. However, it **does not outline their permitted uses** or how the government would envision their use.
- The guidelines **only offer regulatory processes** for research and development on insects that can have some useful uses for humans.
- The guidelines are in sync with **the available guidance of the World Health Organization on GE mosquitoes**. Yet they seem to **downplay the economic opportunities** that such insects can provide.
- **Engineering honey bees** to make **better-quality/quantities of honey** will help **reduce imports and facilitate exports**.
 - Similarly, **GE silkworms** may be used to produce **finer and/or cheaper silk**, affecting prices and **boosting sales**.
 - But the **guidelines and policy** are both **quiet on how GE insects** can benefit the bio-economy sector.

2. Uncertainty for researchers:

- The guidelines do not apply to constrained trials or deployment, they are solely applicable to research.
 - This means, researchers can test the insects once they have been "made" and evaluated in

the lab, after getting approval from the Ministry of Environment, Forests and Climate Change (MoEFCC)'s **Genetic Engineering Appraisal Committee (GEAC)**.

- GE insects can't be pulled back after deployment, unlike genetically modified foods. They are **not amenable to individual consumer choice**.
 - For e.g., if a consumer doesn't want to eat a GM organism, she can choose to buy organic food or food must be labelled "contains no GMO".
 - But if a company decides to release a GE insect in an individual's neighbourhood, she will have no choice but to be exposed to it.
- There's **no clarity** on whether the **MoEFCC** will actually **approve the deployment of GE insects** or what criteria it might use to consider a proposal to do so.

3. Uncertainty of ambit:

- The guidelines include **standard operating procedures** for genetically engineered mosquitoes, agricultural pests, and **beneficial insects**; however, the term "**beneficial**" in the context of these insects is unclear.
 - The lack of clarity will **impede funders and scientists** from investing in this research.
 - In a country like **India** where low public as well as private funding persists, the absence of a precise stance to identify and promote research priorities hampers progress.
- A **gene-therapy product** is defined as "**any entity which includes a nucleic acid component being delivered by various means for therapeutic benefit**" in the **National Guidelines for Gene Therapy Product Development and Clinical Trials**.
 - However, without a "**definition of therapeutic benefit**," it is **unclear** which gene therapy items will be allowed in the end.
- **Destructive products** can also be accidentally created through genetic engineering.

Way Forward:

- The **budget allocation for DBT** as well as private funding needs to be significantly increased to create an ecosystem of innovation and industrial action.
- Policies must enable **risk-taking appetite** within the scientists and should also be in line with the financial and social objectives of the country.
- Current **biotechnology-based policies** must be **in sync** with the broader commitment to contributing to the bio-economy.

In the end, it will also be necessary to monitor the effects of GE and ponder over the development both ethically and scientifically.

PEPPER IT WITH:

GEAC, GE existing insects, Wolbachia Method, India's biotech prowess

Non-melanoma Skin Cancer

News Excerpt:

Nearly one in every three **deaths from Nonmelanoma Skin Cancer** is caused by working under the sun, according to a joint report released by the **World Health Organization (WHO)** and the **International Labour Organization (ILO)**.

Key Highlights of the Report:

- A staggering **1.6 billion working-age individuals (15 years or older)** were exposed to **solar ultraviolet radiation** while working outdoors in 2019, representing **28% of the global working-age population**.
- In that same year (2019), **almost 19,000 people across 183 countries succumbed to non-melanoma skin cancer** due to their occupational sun exposure, with the **majority (65%) being male**.

About Nonmelanoma Skin Cancer:

- Nonmelanoma skin cancer refers to a group of cancers that **develop in the upper layers of the skin**.
- The **two main subtypes** of this cancer are **Basal cell carcinoma** and **Squamous cell carcinoma**.
 - **Basal cell carcinoma** – starts in the cells lining the bottom of the epidermis and accounts for about 75% of skin cancers.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

UV Index		
11+	Extreme	Stay inside
8 - 10	Very High	Extra protection
6 - 7	High	Protection essential
3 - 5	Moderate	Protection required
1 - 2	Low	No protection required

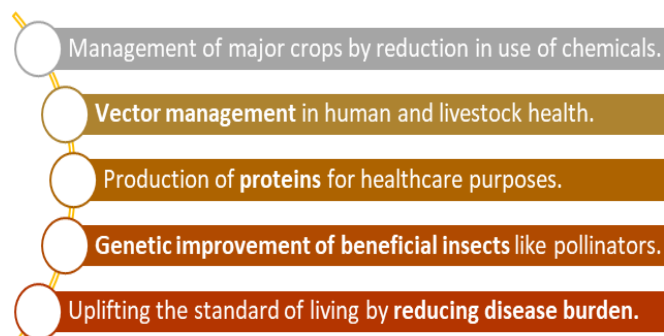


FIGURE 9: ADVANTAGES OF GE INSECTS

- **Squamous cell carcinoma** – starts in the cells lining the top of the epidermis and accounts for about 20% of skin cancers.
- The term 'non-melanoma' distinguishes these more common kinds of skin cancer from the less common skin cancer known as melanoma, which spreads faster in the body.
- The **first sign** of non-melanoma skin cancer is usually the **appearance of a lump or patch on the skin** that doesn't heal after a few weeks.
- In most cases, **cancerous lumps are red and firm**, while **cancerous patches are often flat and scaly**.

Causes:

- It is mainly caused by **overexposure to ultraviolet (UV) light**. UV light comes from the sun, as well as artificial sunbeds and sunlamps.
- In addition to UV light overexposure, certain things can increase the chances of developing non-melanoma skin cancer, such as -
 - a family history of the condition
 - pale skin that burns easily
 - a large number of moles or freckles

Way Forward:

Death caused by unprotected exposure to solar ultraviolet radiation while working is largely preventable through cost-effective measures.

- Measures at the workplace can include providing shade, adjusting working hours away from the solar noon period, and equipping workers with sunscreen and personal protective clothing such as hats for coverage.
- Additionally, when the **Ultraviolet Index**, a measure of skin-damaging ultraviolet radiation, **reaches level three or higher, it becomes essential to take added steps**.

PEPPER IT WITH:

Types of skin cancer, Electromagnetic Spectrum, Epidermis and Endodermis

India's own CAR-T Cell Therapy

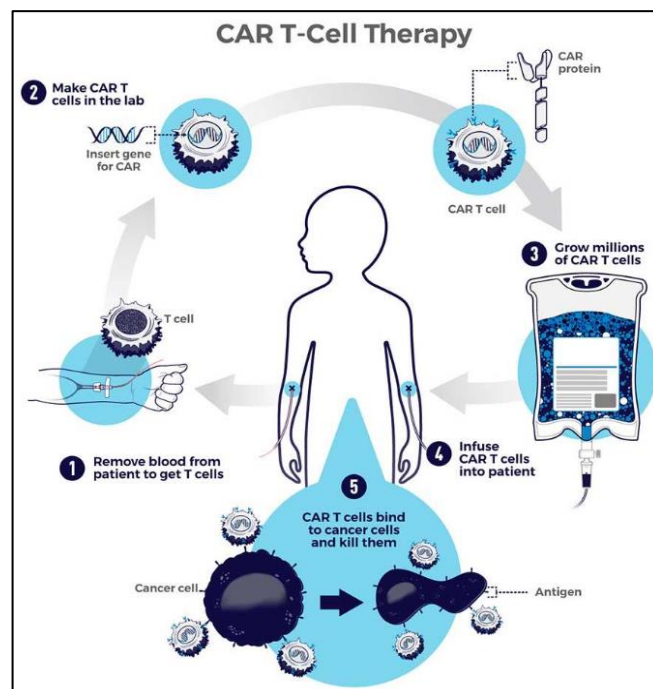
News Excerpt:

The **Central Drugs Standard Control Organization (CDSCO)** has granted market authorization to India's breakthrough **Chimeric Antigen Receptor (CAR)** T-cell therapy for patients with B-cell lymphomas who didn't respond to standard treatments like chemotherapy.

About CAR-T Cell Therapy:

- CAR-T is a revolutionary therapy that **modifies immune cells**, specifically T-cells, by turning them into potent cancer fighters.

- **(CAR)- T cell therapy** involves genetic modification of a patient's autologous T-cells in a laboratory so that they will bind to specific proteins (Antigens) on cancer cells and kill them.



NexCar19: A type of CAR-T therapy indigenously made in India:

- The Food and Drug Administration (FDA) has approved **six CAR-T-cell treatments since 2017**. All are licensed for the treatment of blood cancers such as **lymphomas, leukaemia**, and, most recently, **multiple myeloma**.
- **NexCar19** is a type of **CAR-T and gene therapy** developed indigenously in India by **ImmunoACT and Tata Memorial Centre (TMC)**. ImmunoACT is a company incubated at IIT Bombay.
- **Immunoadoptive Cell Therapy Private Limited (ImmunoACT)** obtained **CDSO** approval for NexCAR19, a CAR-T treatment, to treat relapsed or refractory **B-cell lymphoblastic leukaemia**.
- The approval came after a Phase I/II trial of 60 patients showed a **70% overall response rate** and significant delay in cancer progression.

B-cell acute lymphoblastic leukaemia is a disease that affects your "B lymphocytes" – white blood cells that form in the soft centre of your bones, known as marrow. **B-cell leukaemia is most common among children.**

B lymphocytes are meant to develop into cells that can help in the fight against infections. However, with this disease, they transform into "leukaemia" cells, which live longer than normal cells and proliferate rapidly. They accumulate in your bone marrow and then enter your bloodstream. They can then spread to other organs in your body.

How NexCar19 Works:

- The Patient's white blood cells are extracted by a machine through **leukapheresis** and genetically modified, equipping them with the tools to identify and destroy the cancer cells.
- **NexCar19** is manufactured to an optimal dose for a patient and is typically administered as a single intravenous infusion. Before this, the patient is put through chemotherapy to prime the body for the therapy.

The Central Drugs Standard Control Organisation (CDSCO)

- It comes under Directorate General of Health Services, **Ministry of Health & Family Welfare**.
- It is the **National Regulatory Authority of India** for cosmetics, pharmaceuticals and medical devices, headquartered at New Delhi.
- **Under the Drugs & Cosmetics Act, 1940 and rules 1945**, CDSCO is responsible for **approval of Drugs**, Conduct of **Clinical Trials**, laying down the **standards for Drugs**, control over the quality of imported Drugs in the country and coordination of the **activities of State Drug Control Organizations** by providing expert advice.
- It along with other state regulators, is jointly responsible for the **grant of licenses** of certain specialized categories of critical Drugs such as blood and blood products, **I. V. Fluids, Vaccine and Sera**.

Way Forward:

India is now one of the **first developing countries** to have its **indigenous CAR-T** cell and gene therapy platform, a technology not even owned by all developed countries.

CD19-targeted CAR-T cells are now offering hope to adults and children with advanced aggressive

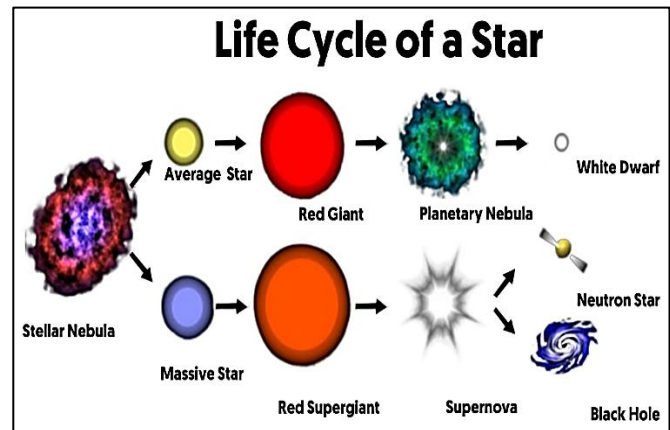
lymphomas. This therapy can show tremendous results to those patients whose cancers return, or relapse, after chemotherapy or a stem-cell transplant.

PEPPER IT WITH:

Types of Cells, Chemotherapy, Immune Cells, Gene Therapy, Stem Cell Therapy

PRE-SHOTS**Space****Supergiant Betelgeuse star****News Excerpt:**

Scientists have established, why the red supergiant star Betelgeuse turned dim between 2018 and 2020, dismissing theories that suggested that it might be entering the last stage of its evolution i.e., **Supernova** or the ultimate explosion.

**Cause of the dimming:**

- Scientists observed that even when the star appeared dim, its photosphere brightened up. The dimming was due to a burst of **dust**, in the form of **silicon monoxide**, coming from the star.
- The burst also might have been caused by the **sudden cooling of the star's surface**.
- The changes in the structure of the photosphere and the silicon monoxide are consistent with both the formation of a cold spot on the star's surface and the ejection of a cloud of dust.
- This fact was established by the **MATISSE telescope**.

About the MATISSE Telescope:

- MATISSE (**Multi AperTure mid-Infrared SpectroScopic Experiment**) is a new spectro-interferometer, part of the second generation of instruments for the Very Large Telescope Interferometer (**VLT**) of the **European Southern Observatory**.
- It is capable of combining the light from up to four of the other telescopes which allows it to increase the detail of data obtained greatly.
- The telescope observes infrared light only.

China's Shenzhou-17 Mission**News Excerpt:**

China has launched its youngest-ever crew of astronauts to the **Tiangong space station**, marking a significant advancement in the country's space ambitions for the future.

- It was launched from the **Jiuquan Satellite Launch Center** on the edge of the **Gobi Desert** in northwestern China atop a **Long March 2-F rocket**.

About the mission:

- The Shenzhou-17 crew will take over from the **Shenzhou-16 crew** which has completed all its tasks.
- Carrying three **Taikonauts (Chinese astronauts, it comes from the Chinese word 'taikong' meaning**

space or cosmos), it is the second manned spacecraft launched by China this year after Shenzhou-16.

- The astronauts will live aboard the orbiting lab for the next six months, performing a variety of scientific experiments in **space medicine, space technology**, and other areas.



Tiangong space station:

- It orbits Earth at an altitude between **340 to 450 kilometers**, approximately the same orbital height as the International Space Station (ISS).
- Chinese Manned Space Agency (CMSA) has launched **three modules** that make up the station **Tiangong**:
 - Tianhe** in April 2021
 - Wentian** in July 2022
 - Mengtian** in Oct 2022
- The Chinese space station is much smaller than the International Space Station with only three modules, compared with **16 modules on the ISS**, which has hosted astronaut crews continuously since November 2000.

Recent Space Missions of China:

Space Missions	Year of launch	Details
Chang'e 1	2007	China's first lunar orbiter
Tiangong-1, or "Heavenly Palace 1"	2011	China's first space lab was launched to carry out docking and orbit experiments.
Chang'e-4 lunar probe	2019	It successfully touched down on the far side of the moon
Beidou 3	2020	A global satellite navigation system providing GPS-like services to China and other customers.
Tianwen-1 spacecraft	2021	It sets down on Mars with the Zhurong rover, completing China's first landing on another planet.
Xihe satellite	2021	For solar observation

Fast Radio Bursts

News Excerpt:

Astronomers have discovered a powerful radio wave burst, named FRB 20220610A, that has traveled 8 billion years to reach Earth.

About:

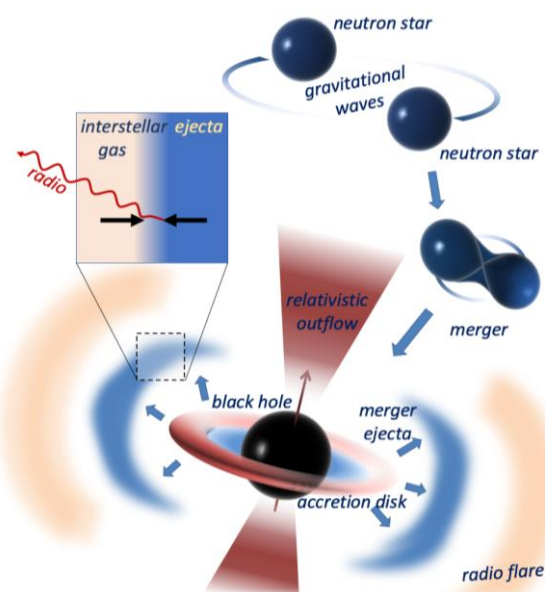
Fast Radio Burst (FRB):

- FRBs are intense, millisecond-long bursts of **radio waves with unknown origins**.
- The first FRB was discovered in **2007**.
- Fast radio bursts have tremendous energy at their sources, but they lose energy as they travel billions of light-years to reach Earth. By the time they arrive, the signal strength becomes too weak.
- Possible causes of fast radio bursts include **magnetars, colliding neutron star binaries, and merging white dwarfs**.
- Its importance lies in the fact that it emits so much energy in a few seconds which the sun will emit in 3 days. Hence it stores a large sum of mysteries that need to be deciphered.
- Scientists believe that fast radio bursts may be a unique method that can be **used to "weigh" the universe** by measuring the matter between galaxies that remains unaccounted for.

Tellurium produced in Neutron Star Mergers

News Excerpt:

Physicists have found evidence that **Tellurium** is produced in **Neutron Star Mergers**. The discovery of tellurium bolsters the theory that these **neutron star mergers are responsible for forming most of the heavy elements in the universe**.



About Tellurium:

- Tellurium is present in the **Earth's crust only in about 0.001** parts per million.
- It is obtained commercially **from the anode muds** produced during the electrolytic refining of copper. These contain up to **about 8% tellurium**.
- This element is a **poor conductor of heat** and only a **fair conductor of electricity**.
- Tellurium burns in air or oxygen with a **blue-green** flame, forming the dioxide (TeO_2).

Uses of Tellurium:

- It is used in **alloys**, mostly with **copper and stainless steel**, to improve their machinability.
- When added to lead, it becomes more resistant to acids and its strength and hardness are improved.
- It has been used to **vulcanize rubber, tint glass, and ceramics, in solar cells**, and rewritable **CDs and DVDs**.
- It is used as a **catalyst** in oil refining.
- It can be **doped with silver, gold, copper, or tin** in semiconductor applications.
- Tellurium found historical applications in the **treatment of microbial infections** before the discovery of antibiotics.

James Webb Space Telescope (JWST)

- It is the world's premier space science observatory led by **NASA with its partners, ESA (European Space Agency) and the CSA (Canadian Space Agency)**.
- Webb will **solve mysteries in our solar system**, look beyond to distant worlds around other stars, and probe the mysterious structures and origins of our universe and our place in it.
- Recently, it has gazed at the **Crab Nebula**, a supernova remnant located 6,500 light-years away in the **constellation Taurus**.

About Neutron Star Mergers:

- When two neutron stars orbit each other, they gradually **spiral inward due to strong gravitational forces**.
- When these two meet, their merger leads to the **formation of either a more massive neutron star or a black hole**.
- The **James Webb Space Telescope** has detected some of these heavy elements being created in a star merger for the **first time**.

China to build the world's largest 'ghost particle' detector

News Excerpt:

China is building an enormous telescope **underwater** named the **Trident** in the **Western Pacific Ocean**.

About the news:

- Trident will be located in the **South China Sea**, a major marginal sea of the Western Pacific Ocean. It will span 7.5 cubic kilometers.
- Its job will be to detect "ghost particles", also known as **Neutrinos**.
- The largest neutrino-detecting telescope currently is the University of Madison-Wisconsin's (US) **"IceCube" telescope**. Situated deep in the **Antarctic**, the telescope's sensors span around 1 cubic kilometer.

About the 'Ghost particle':

- Neutrinos are a type of electron but, like neutrons, they do not have any charge.
- They can only be "seen" when they interact with other particles. **The rarity of interactions with other particles makes them almost impossible to track.** That's why they're called **ghost particles**.
- They are among the most abundant particles in our universe, with trillions of neutrinos passing through us at any given second, and are also among the tiniest.
- Neutrinos' weak charge and almost nonexistent mass have left them undetected for years.

Why does the detection of ghost particles matter?

- Researchers believe that understanding the source of neutrinos will enable them to explain the **origins of cosmic rays** and understand the **origins of our universe**.

Nanotechnology

Nanophotonic electron accelerator (NEA)

News Excerpt:

A team of laser physicists at the University of Erlangen-Nuremberg, Germany recently fired up the **world's smallest particle accelerator**, the **Nanophotonic electron accelerator (NEA)**.

About:

- The NEA consists of a small **microchip** that houses tiny **vacuum tubes**, which are made up of thousands of **individual "pillars."**
- The main acceleration tube of the NEA is approximately 0.02 inches long, which is much shorter than the 27-kilometer ring that makes up **CERN's Large Hadron Collider (LHC)** located in Switzerland. LHC is the world's largest and most powerful particle accelerator.
- Particles are accelerated by **ultrashort laser pulses** illuminating the nanostructures.

Purpose of the accelerator:

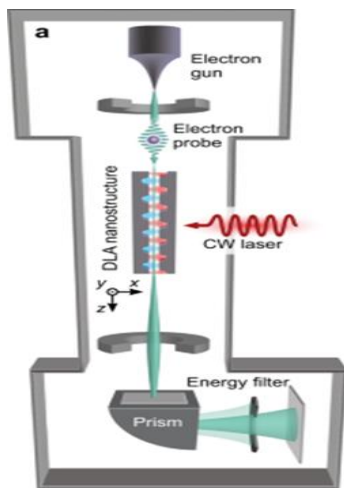
- To utilize the energy given by the accelerated electrons in targeted medical treatments that can replace more

damaging forms of radiotherapy, which is used to kill cancer cells.

- To increase the gain in energy and electron current to such an extent that the particle accelerator on a chip is sufficient for applications in medicine.

How LHC and NEA work:

- Both LHC and NEA create a magnetic field to accelerate particles.
- LHC uses more than 9,000 magnets to create magnetic fields that accelerate particles to around 99.9% of the speed of light.
- NEA works by firing light beams at the pillars in the vacuum tube.
- The electrons accelerated by the NEA only have around a millionth of the energy that particles accelerated by the LHC have.
- Researchers are working to improve the NEA's design, which could further accelerate the particles and thus help achieve its targets in the future.



Commercialization Possibilities and Benefits:

- The material is ripe for commercialization because **carbon is inexpensive**, and the nanoflorets can generate heat sustainably without burning fossil fuels, helping India **reduce its carbon footprint**.
- As per the study, it can **heat other materials**, such as water, because the nanoflorets do not quickly release the heat produced into the environment.
- India is a country blessed with a lot of light but also has areas with low temperatures. In such regions, the nanofloret coatings can **help heat housing and sterilize hospital surfaces**.
- It has a minimum lifespan of 8 years, possesses no risk of inhalation and can be coated on Paper, metal and terracotta clay.
- It's 1 sq. Meter area has the capability to vaporize 5 litres of water in 1 hour which is almost 5 times better than commercial solar stills.

Health

Calixcoca Vaccine

News Excerpt:

Researchers in Brazil have created a vaccine "**Calixcoca**" as a new cure for cocaine and crack.

Global Challenge of Cocaine Addiction:

- According to recent statistics, there are approximately 20 million regular cocaine or crack cocaine users worldwide, with one in four developing addiction or use disorders.
- Despite the alarming rise in cocaine and crack addiction, no approved medications are specified for treating this problem.
- Current treatments often involve a combination of psychiatric, psychological, and social care support.

Working of the vaccine:

- It triggers an immune response that blocks the high from cocaine and its derivatives and stops it from reaching the brain by producing antibodies that bind cocaine molecules to the bloodstream.
- The enlarged molecules will be rendered too large to pass into the **brain's "reward center"** or the mesolimbic system that is stimulated by cocaine to produce **dopamine** - the pleasure-inducing reward chemical.
- Once vaccinated, the drug will potentially help people break the cycle of addiction.
- This drug, however, would be a **supplementary treatment in addition to rehab**.
- It is meant for recovering addicts who are off cocaine and want to stay that way and not for everyone.**

Carbon Nanoflorets

News Excerpt:

Recently IIT Bombay has created a tiny flower like structure made up of carbon that can convert sunlight to heat with 87% efficiency. It is also known as material carbon nanoflorets having resemblance of small marigold flower.

Properties:

- It absorbs sunlight and converts the **light energy into thermal energy** through solar-thermal conversion with a remarkable efficiency of 87%.
- It is **extremely black**, which means it is an excellent light absorber.
- This high efficiency comes from **three properties**:
- The nanoflorets absorb three frequencies from the sunlight – infrared, visible light, and ultraviolet. Whereas normal photovoltaic materials in solar panels absorb only visible and ultraviolet light.
- Infrared radiation makes up more than half of the energy that sunlight carries to Earth. Consequently, the nanoflorets can absorb far more solar energy and don't lose heat to their environment. As a result, heat waves in the material aren't carried over long distances, reducing the amount of heat dissipated.

Efficiency of the vaccine:

- The vaccine has produced significant antibodies against cocaine in animal tests conducted by scientists, which have shown encouraging results.
- In addition to having few side effects, the vaccine helped shield rat fetuses against cocaine.
- As per scientists, it would help prevent addiction from getting passed on to the unborn babies of pregnant addicted people.

Chikungunya Vaccine**News Excerpt:**

U.S. health authorities have approved the **world's first vaccine for Chikungunya**.

About the vaccine:

- It is being **developed by the European company Valneva**.
- **IXCHIQ** becomes the world's first licensed chikungunya vaccine available to address this unmet medical need.
- The vaccine is **injected in one dose** and **contains a live, weakened version of the chikungunya virus**, as is standard with other vaccines.

About Chikungunya:

- It is a **mosquito-borne viral disease** that causes **fever and severe joint pain**.
- It is a **ribonucleic acid (RNA) virus** that was **first recognized in 1952** during an outbreak in southern Tanzania.
- Chikungunya is transmitted to humans by the bites of **infected female Aedes aegypti and Aedes albopictus mosquitoes** which **bite throughout daylight hours**.
- There is **currently no vaccine to prevent or medicine available to treat chikungunya virus infection**.
- It is **generally seen in tropical and subtropical regions of Africa, southeast Asia, and parts of America**.
- It can be **passed from a pregnant person to their unborn child**, and the virus can be fatal to newborns.
- People with **chronic illnesses such as diabetes and heart disease**, as well as those **over the age of 65**, are more **prone to develop severe chikungunya symptoms**.

Helicobacter pylori (H. pylori) bacteria**News Excerpt:**

Researchers from the National Institute of Cholera and Enteric Diseases (ICMR-NICED), Kolkata, have developed a **new two-step PCR test** of the **Helicobacter pylori (H. pylori) bacteria** which is a common cause for peptic ulcers.

Helicobacter pylori (H. pylori) infection:

- It occurs when **H. pylori bacteria** infects the stomach.
- About two-thirds of the world's population has it in their bodies although for most people, it **never causes any symptoms**.
- In **India**, it affects almost **60-70% of the population**.
- This usually happens **during childhood** and remains in the stomach throughout life if not treated with antibiotics effectively.

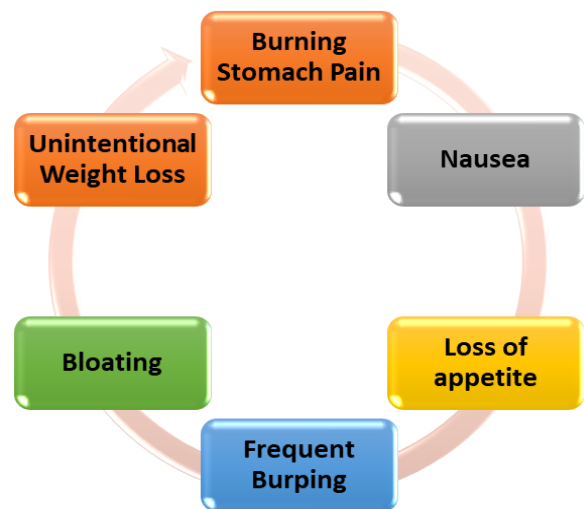


FIGURE: 10 SYMPTOMS

Why is it a concern?

- As it takes **three weeks to culture the bacteria** and carry out tests and thus, the antibiotic is **used without knowing the drug's sensitivity**.
- The growing incidence of **clarithromycin-resistant bacteria** is a big concern and has to be addressed as it is the **most important reason for treatment failure**.
- The new test bypasses this time barrier and is **found to have 100% sensitivity**, thus creating a milestone in this medical journey.

Future threat:

- Public health experts have expressed concerns that Chikungunya could be a potential **future pandemic threat** as **climate change pushes the mosquitoes to inhabit newer regions**.

Recycling of Diapers through UV lights**News Excerpt:**

Researchers have found a unique way to recycle the key components in diapers.

About Diaper Waste Management:

- Single-use Diapers are classified under **municipal solid waste** and are handled after use using traditional

disposal practices (**Central Pollution Control Board, 2018**).

- Diapers are primarily made of **cellulose, polypropylene, polyethylene** and a **super absorbent polymer**, as well as minor amounts of **tapes, elastics and adhesive materials**.
- The new method has been discovered that cross-linked sodium **polyacrylate polymers deteriorate** after being **exposed to UV light**.

Need for Diaper Waste Management:

According to one estimation, approximately 300,000 diapers are dumped every minute around the world.

- **To reduce waste management problem:** Single-use baby diapers are normally thrown away after one-time use, resulting in a waste management problem.
- **For pollution management:** Issues such as **water, air, and soil pollution, resource consumption, and waste production** are mostly due to the burden as it is single-use or Reusable.
- A new way of disposing of diapers **without the need for water** has the **potential to revolutionize waste management**.
- **Use of Reusable nappies:** The UNEP report found that **reusable nappies** generally have lower environmental impacts than single-use nappies.
 - ❖ The **Nappy Alliance, founded in 2003**, is a partnership of independent providers of reusable diapers that promotes their economic and environmental benefits.

Information Technology

7th India Mobile Congress

News Excerpt:

The Prime Minister announced India's ambitious advancements in 6G technology while inaugurating the **7th India Mobile Congress (IMC)**.

About IMC:

- It is the largest telecom, media, and technology forum in Asia, jointly organized by the **Department of Telecommunications (DoT)** and the **Cellular Operators Association of India (COAI)**.
- Since its **inception in 2017**, IMC has promoted India's positioning and serves as a key forum for global thought leaders to design the **next wave of digital innovation**.

About 6G technology:

Benefits

- 100 times faster than 5G
- Reduced Latency
- Reduced worldwide emissions
- Aims to accomplish SDG 9 **which talks about internet access to all**

Uses:

- Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR)
- Mobile Holograms
- Digital Replica

Theme: Global Digital Innovation

Aim of 7th IMC: It aims to strengthen India's position as a developer, manufacturer, and exporter of key cutting-edge technologies.

Key Highlights:

- The Prime Minister will award 100 '**5G Use Case Labs**' to educational institutions across the country. These labs are being developed under the '**100 5G labs initiative**'.
- It will highlight technologies such as 5G, 6G, and Artificial intelligence (AI) and discuss issues about the semiconductor industry, green technology, cybersecurity, etc.
- This year, IMC is introducing a startup program: '**Aspire**'. It will foster connections between startups, investors, and established businesses to catalyze fresh entrepreneurial initiatives and collaborations.

Dark pattern sales deemed "Cybercrime"

News Excerpt:

The Consumer Affairs Secretary has called **online malpractices by airlines** and travel portals "**cybercrime**".

What is a 'Dark pattern'?

A dark pattern is one where an **entity nudges consumers to buy products** they didn't intend to, which is an unfair trading practice and can constitute a cybercrime.

Key grievances of the consumers:

- **Manipulating seat selection:**
 - Despite having free seats available, they show all of them to be unavailable and charge an extra fee to

100 5G Labs Initiative

- It is an endeavor to realize the opportunities associated with 5G technology by encouraging the development of its applications that cater, both to India's unique needs as well as the global demands.
- It aims to foster innovation across various socioeconomic sectors like education, agriculture, health, power, transportation, etc.
- It will play a pivotal role in building a 6G-ready academic and start-up ecosystem in the country.

buy a seat to complete the purchase of the air ticket.

- It employs both "**False Urgency**" and "**Interface Interference**" on its website.
- **Extra fees:**

- The booking websites poke passengers into buying travel insurance by using phrases such as, **"I will risk my trip"** if they choose to decline the purchase, inducing fear that doing so could be harmful.
- **Basket Sneaking:** A convenience fee is added when the consumer reaches the payment gateway after completing their booking but does not display the information upfront.
- **Refunds and compensation:**
 - There are also concerns about being denied boarding and delayed refunds.

Provisions regarding airfares:

- In 2015, the **Directorate General of Civil Aviation (DGCA)** issued a circular allowing airlines to "unbundle" airfares for certain items, which can be charged separately.
 - These include preferential seating, meals, access to lounges, and check-in baggage above 15 kg.
 - These can be offered only on an "Opt-in" basis.
- **According to the Ministry of Civil Aviation's "Passenger Charter" of 2019:**
 - In case of a flight cancellation, an airline must accommodate a passenger on an alternate flight.
 - If it fails to inform the passenger at least 24 hours before departure, it has to pay an additional compensation of ₹5,000 to ₹10,000.
 - Similarly, for denied boarding, there is a compensation of ₹10,000 to ₹20,000 in certain situations.
 - Refunds must happen immediately if payment is in cash or within seven days if payment is made through a credit card.

Flamingo Project

News Excerpt:

FLAMINGO simulation leaves scientists stumped over S8 tension.

About:

- FLAMINGO is a project of the Virgo consortium for **cosmological supercomputer simulations**.
- The project has conducted a computer simulation that incorporates **both dark matter and ordinary matter** to study the distribution of matter in the universe.
- However, the simulation **did not provide a solution** to the S8 tension, which refers to contradictory results obtained from cosmological observations.
- **S8 tension (Sigma 8) is used to measure the clustering of matter or the lumpiness in the universe.**

World's first Artificial Intelligence (AI) Safety Summit

News Excerpt:

28 major countries including India met at Bletchley Park in the UK and have agreed to collaborate to minimize risks from 'frontier AI'.

Two particular categories of risk were focused:

1. **Misuse risks**, for example, where a bad actor is aided by new AI capabilities in biological or cyber-attacks, development of dangerous technologies, or critical system interference. Unchecked, this could create significant harm, including the loss of life.
2. **Loss of control risks** that could emerge from advanced systems that we would seek to be aligned with our values and intentions.

About 'Frontier AI':

- **Developments in frontier AI** are **transforming productivity and software services**, which will multiply the productivity of many industries and sectors.
- The progress in frontier AI in recent years has been rapid, and the most advanced systems can write **text fluently and at length, write well-functioning code** from natural language instructions, **make new apps, score highly on school exams, generate convincing news articles, translate between many languages, summarise lengthy documents**, amongst other capabilities.

The Bletchley Park Declaration in 'Frontier AI' Summit: It was the **world's first-ever Artificial Intelligence (AI) Safety Summit on 'Frontier AI'**.

Why Bletchley Park was chosen for the declaration?

- Bletchley Park **near London** was once the **top-secret base** of the **codebreakers** who cracked the German '**Enigma Code**' that hastened the end of World War II.
- Enigma was a device used by the German military command to **encode strategic messages** before and during World War II.
- This symbolism was evidently a reason why it was chosen to host this summit.
- The declaration was also endorsed by **Brazil, Ireland, Kenya, Saudi Arabia, Nigeria, and the United Arab Emirates**.
- The declaration noted the **"potential for serious, even catastrophic, harm, stemming from the most significant capabilities of these AI models"**, as well as risks beyond frontier AI, including those of **bias and privacy**.
- The declaration encouraged entities **creating cutting-edge AI technology** to be transparent and

accountable about their intentions to measure, monitor, and reduce any dangerous capabilities.

- It outlined a two-pronged approach centered on **identifying risks of common concern and developing scientific knowledge of them.**

Basic Science

Ball Lightning

About:

- It is a rare and **mysterious** form of lightning that appears as a **luminous ball** near the spot where lightning strikes.
- It usually occurs **near the ground** during thunderstorms, in close association with cloud-to-ground lightning.



- It may be **red, orange, yellow, white, or blue** and is often accompanied by a **hissing sound and distinct odor.**
- It normally **lasts only a few seconds**, usually moving about and then vanishing suddenly, either silently or explosively.

- It moves **horizontally** at a speed of a few centimeters per second and explodes at the end but is **not** usually **destructive.**
- It is also known as **Globe lightning** and occurs during **intense electrical activity** in the atmosphere, but scientists have not been able to satisfactorily explain it.

Thallium

News Excerpt:

A case of Thallium poisoning has been reported in Maharashtra.



About:

- It is a soft, silvery-white, **heavy metal** **found in trace amounts in the earth's crust.** It is tasteless and odorless and has been historically used as a rodenticide.
- It is found in pyrites, mainly as a **by-product of copper, zinc, and lead refining**, and in manganese nodules on the ocean floor.
- Thallium is used in **electronics, low-temperature thermometers, optical lenses, and imitation precious jewels.** It is used to produce special glass with a high index of refraction and low melting point.
- **Thallium has no known biological role and is highly toxic**, with evidence of teratogenic (disturbs the development of an embryo or foetus) and carcinogenic effects.

Geography

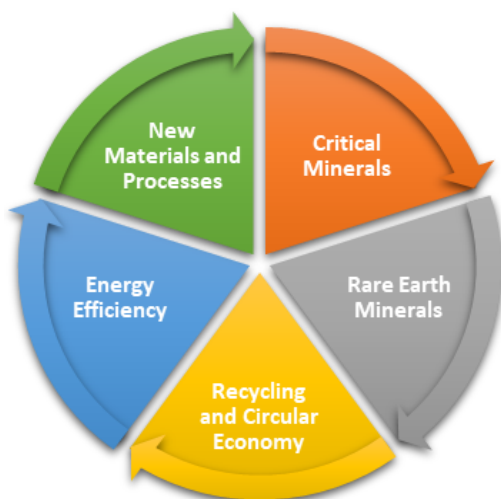
India gets ready with rare earth R&D push

News Excerpt:

The **Ministry of Mines, Government of India (GoI)** has invited research and development (R&D) proposals for mining technology, including deep-sea and green mining to secure supplies of vital and rare earth minerals.

Objective:

- To focus on critical, rare earth and deep-seated minerals like **lithium, nickel, and tungsten** over the next three years.
- To develop sustainable solutions using technologies like **robotics, the Internet of Things (IoT), artificial intelligence, and machine learning** for the exploration, prospecting, and mining of strategically important minerals found in challenging locations.
- This initiative would be directed toward **five broad heads** as shown in the diagram.



Steps being taken for Mining Technology:

- The government has **revised the mining legislation (Mines and Minerals (Development and Regulation) Amendment Act, 2023)** to remove various atomic and critical minerals, including lithium, from the restricted list.
 - It also allowed the **private sector to participate** in off-shore and deep-seated mining, including for **rare earth minerals** critical for industrial use.
- The **critical mineral project** includes the development and establishment of technologies for the **recovery of nickel and lithium from scrap batteries**.
- Projects have also been invited from institutions for the development of a **low-cost automated system able to separate aluminium alloys using laser-induced plasma** to analyze the composition of materials for

rapid and accurate sorting and identification of metals in complex mixtures.

- The Mines ministry is also **focusing** on the development of **energy recovery systems** that would help in making mining more sustainable.
 - In this, the projects would focus on the development of **low-cost heat exchangers or regenerative burners**, which can support the metal recycling industry in tackling energy losses by capturing and repurposing waste heat generated during the recycling process.
 - It will also involve process and technology development for the **production of hydrogen from waste**.
- The projects would also design and develop **pit furnaces with energy efficiency of more than 40%**.
- It has been decided that all R&D project proposals should have mandatory **20% participation** from the **Micro, Small and Medium Enterprises (MSME) sector** as a financial contribution or at least 15% cash contribution.

About Rare Earth Elements (REEs):

- The REEs are a group of 17 elements.
- They are **moderately abundant in the earth's crust** but need to be concentrated enough to make them economically exploitable.
- It finds **key applications** in **defence, electronics, energy systems**, etc. such as magnets, battery materials as well as sustainable energy systems.
- REEs are characterized by **high density, high melting point, high conductivity, and high thermal conductance**.
- The rare earths occur in many minerals and are recoverable as by-products from phosphate rock and from spent uranium leaching. **In India, monazite is the principal source of rare earths and thorium.**
- China dominates the REE market as of now.**

REE in India:

- The Rare Earth (RE) resources in **India** are reported to be the **fifth largest in the world**.
- Indian resource is significantly lean w.r.t. grade and it is tied with radioactivity making the extraction long, complex, and expensive.
- Indian resources contain **Light Rare Earth Elements (LREE)** while **Heavy Rare Earth Elements (HREE)** are not available in extractable quantities.
- 13.07 million tonnes** in-situ monazite (containing ~55-60% total Rare Earth Elements oxide) resource occurs in the coastal beach **placer sands** in parts of **Kerala, Tamil Nadu, Odisha, Andhra Pradesh,**

Maharashtra, and Gujarat and the inland placers in parts of **Jharkhand, West Bengal, and Tamil Nadu**.

- More than 80 % of the usage of RE is in permanent magnets which require **Magnetic REE i.e., Neodymium, Praseodymium, Dysprosium, and Terbium**.
 - These are precious REEs since they find use in energy transition initiatives.
 - **High-value REEs** are **Dysprosium and Terbium**, which are **not available in extractable quantities in Indian reserves** already under exploitation.
 - **The minability of REE** is further **constrained due to Coastal Regulation Zone (CRZ) regulations**, Mangroves, Forests, and inhabitation.
- While **India has existing facilities from mining to separation and refining in oxide form** and has also **developed the capability of metal extraction**, further **industrial-scale facilities** (intermediate) from alloy, magnet, etc. still need to be made available.

Though after metal extraction, the mining sector is under the free category, the industry in the intermediate segment is yet to be established due to **the non-availability of technology**.

British project 'DEFIANT'

News Excerpt:

In the project 'DEFIANT', the researchers are studying and measuring the thickness of sea ice at the remote **Rothera Research Station of the British Antarctic Survey**.

About:

- **Project DEFIANT (Drivers and Effects of Fluctuations in Sea Ice in the Antarctic)**, embarks on one of the most ambitious **observational campaigns** aimed at understanding **Antarctic sea ice variability**.
- The knowledge gained from these observations will help to develop **new ocean and climate models** in order to represent Antarctic sea ice processes more accurately.
- The analysis of these improved models will allow a better understanding of the underlying **drivers of the sudden decrease** in Antarctic sea ice.
- By developing new observations, new satellite records, and new models, DEFIANT will deliver a major advance in understanding the Antarctic sea ice system and its wider impacts on **global climate**.

Two New Coral Reefs Discovered in Galapagos Islands

News Excerpt:

Scientists have discovered **two pristine coral reefs** in the waters surrounding the **Galapagos Islands**.

About the newly discovered Coral Reefs:

In the Galapagos Islands, scientists discovered two new coral reefs and two previously unexplored seamounts.

- The **largest reef is 800 metres** long, approximately around eight football fields and the **second one is 250 metres** long.



- The **SuBastian Remotely Operated Vehicle (ROV)** documented **white polyps** growing from branches of precious coral (Corallium) as it descended at a spot on the northern side of **Isabela Island**.

About Coral Reefs:

- Coral reefs are among the world's most diversified ecosystems.
- **Coral polyps**, the invertebrates largely responsible for reef formation, come in a variety of shapes and sizes, including **huge reef-building colonies, graceful flowing fans, and even small, solitary species**.
- Corals that reside in shallow water have a symbiotic relationship with photosynthetic algae called **zooxanthellae** that live in their tissues.
 - The coral provides a safe environment as well as the substances required by zooxanthellae **for photosynthesis**. In exchange, the algae create carbohydrates and oxygen, which the coral needs for food.

About Sea Mounts:

- Seamounts are underwater mountains that rise hundreds or thousands of feet from the seafloor.
 - They are mainly extinct volcanoes that, while active, produce lava heaps that occasionally break the ocean surface.
 - The highest mountain on Earth is a seamount—**Hawaii's Mauna Kea**, a dormant volcano that **rises more than 30,000 feet from the ocean 7,000 feet below the surface**.

About the Galápagos Islands:

It is situated in the Pacific Ocean some **1,000 km from the South American continent**, these **19 islands** and the surrounding marine reserve have been called a unique **'living museum and showcase of evolution'**.

- The Galápagos are a **'melting pot'** of marine species due to their location at the confluence of three ocean currents (the **Humboldt Current**, the **Panama Flow** and the **Cromwell Current**).
- Three major tectonic plates—**Nazca**, **Cocos** and **Pacific**—meet at the basis of the ocean, which is of significant geological interest.
- In **1978** the islands were designated a **UNESCO World Heritage site**, and in **1986** the **Galapagos Marine Resources Reserve** was created to protect the surrounding waters.
- The **Charles Darwin Research Station on Santa Cruz (Indefatigable) Island** promotes scientific studies and protects the indigenous vegetation and animal life of the Galapagos.



Kra Isthmus

News Excerpt:

The **"land bridge,"** a proposed **infrastructural project**, has put the Kra Isthmus in the limelight recently.

About:

Kra Isthmus:

- The Kra Isthmus, located in Thailand, is the narrowest part of the **Malay Peninsula**.
- It is surrounded by the **Andaman Sea** to the west and the **Gulf of Thailand** to the east.

An **isthmus** is a **narrow land strip** connecting **two larger land masses**. Bodies of water often border it on two sides. **E.g.-** Isthmus of Panama.

Kra Isthmus Canal Project:

- The Kra Canal, also known as the **Thai Canal** or Kra Isthmus Canal, is a **proposed** project to **connect** the **Gulf of Thailand** with the **Andaman Sea** through southern Thailand.
- The original idea was to create a **90-kilometer canal** linking the Andaman Sea and the Gulf of Thailand.
- However, the project has since **evolved** into a **China-backed** economic corridor with ports on both sides.
- In **2021**, Thailand introduced a **new idea** proposing a **land bridge** instead of a canal.

Significance:

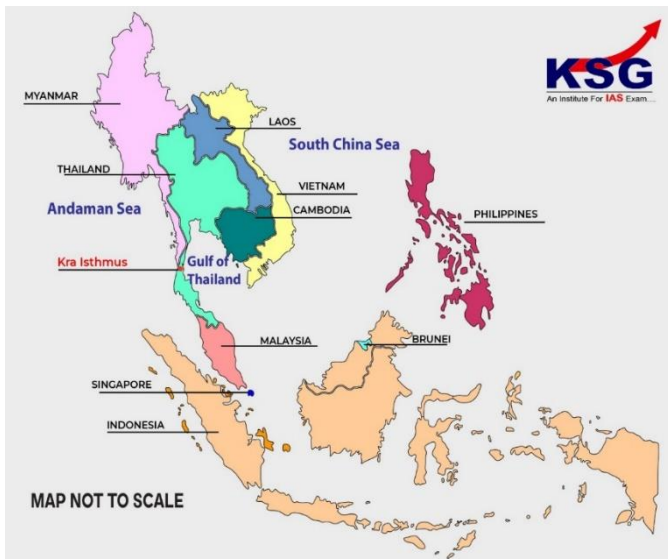
- The proposed project aims to provide a **new route** for transit, **bypassing** the congested **Straits of Malacca**. It would **shorten** the **travel time** for oil shipments to Japan and China by **1,200 km**.
 - This project could take away the **critical value** of the Strait of Malacca.
- This project is expected to have a significant impact on **global trade networks** and the **economy** of Thailand.
 - The 90-kilometre-long land bridge will connect **deep-sea ports** on both coasts with **road** and **rail** networks.
- The project's main **objective** is to create **jobs**, generate **economic growth**, and shorten travel time, which will improve Thailand's economy and its **position** in Southeast Asia.

Challenges:

- **Finances:** The estimated cost of the project is around **\$27.44 billion**. Thailand may consider seeking **Chinese investment** to fund it.
 - Moreover, China has been accused of offering **loans** to developing countries on **unfavourable terms**, making these nations dependent on China.
- China-backed infrastructure projects with issues related to their **viability**, **environmental concerns**, and their **potential impact on marine ecology and tourism**.
 - Similarly, China-supported projects such as the **Pokhara Airport** in **Nepal** and **Hambantota port** in **Sri Lanka** have had difficulties in terms of their viability.
- China's **increased surveillance** in the Indian Ocean region.
- **Strain** on **Thailand's relationship** with the **US**, **Japan**, and **India** due to its close association with China.

Way Forward:

Thailand's proposal to build the Isthmus of **Kra Land Bridge** highlights its determination to **reshape** the global **trade routes**, boost its **economy**, and strengthen its **position** in Southeast Asia. Although there are **significant challenges**, including financial, geopolitical, and environmental obstacles, this project represents Thailand's aspiration to **shape its destiny** in the **global arena**.



Cyclones and Hurricanes in News

News Excerpt:

The Arabian Sea and the Bay of Bengal - two water bodies are experiencing twin cyclonic storms and Hurricane Otis makes landfall in **Mexico**.

About Cyclone Tej and Harmoon:

- **Cyclone Tej:** Extremely Severe Cyclonic Storm Tej is a **tropical cyclone** that formed over the **central-south Arabian Sea** and made landfall on **Socotra and Yemen**. It was the first cyclone to make landfall in the nation since **Cyclone Luban** in **2018**.
- **Cyclone Hamoon:** Very Severe Cyclonic Storm Hamoon is a **tropical cyclone** that is approaching Bangladesh. The Hamoon formed from a **low-pressure area** over the west-central **Bay of Bengal** on **21 October 2023**.
- The sixth depression and the third named cyclonic storm of the season, Tej formed along with Cyclone Hamoon, a rare phenomenon in the Arabian Sea and the Bay of Bengal in which they both experience cyclonic storms.

About Hurricane Otis:

- Hurricane Otis, currently over the **Mexican state of Guerrero near Acapulco**, is rapidly losing its strength.
- It has earned the distinction of being the most powerful Pacific hurricane to make landfall.
- Otis is the fifteenth storm, tenth hurricane, eighth major hurricane, and the second Category 5 hurricane in the 2023 Pacific hurricane season.
- This formidable storm initially formed from a disturbance located hundreds of miles south of the **Gulf of Tehuantepec**.

Volcanoes

News Excerpt:

Klyuchevskoy (Klyuchevskaya) volcano has erupted on Russia's Kamchatka Peninsula and an undersea volcano off the coast of Japan's Ogasawara Islands.

About Volcano:

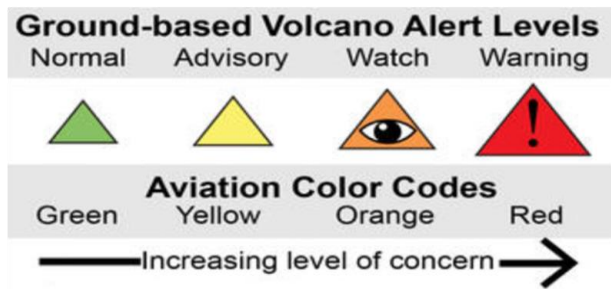
- Volcanoes are **openings, or vents where lava, small rocks, and steam erupt** onto the Earth's surface.
- Volcanoes can be **on land and in the ocean**.
- Mountain ranges like the **Andes in South America** and the **Rockies in North America** have been formed through the **movement and collision of tectonic plates**.
- There are **four main types of volcanoes: Cinder cones, Composite or Stratovolcanoes, Shield volcanoes, and Lava domes**.
 - Their type is determined by **how the lava from an eruption flows and how that flow affects the volcano**, and, as a result, how it affects its surrounding environment.

How do volcanoes erupt?

- It is **magma, or the molten rock, below the surface of the Earth** which rises up.
- The **magma finds its way to vents in the volcano** and gets spewed across the land and into the atmosphere. When magma erupts from a volcano, it is called **lava**.

Can scientists predict volcanic eruptions?




- Volcanic eruptions can be **predicted by scientist's hours, or even days, in advance**.
 - **Earthquakes**, on the other hand, are far more **unpredictable**.
- **Seismographic data** from earthquakes and other tremors is **used by scientists** because it can indicate when a volcanic eruption will occur.
- They **monitor the ground for signs of deformation**, which may be caused by the movement of magma.
- They also **record variations in magnetic and gravitational fields**, as well as releases of volcanic gas.



Aviation Colour Code:

- The **aviation colour code** was elevated to red, the highest warning level, due to the significant emissions of ash into the atmosphere.
- It is a system based on **four colours** and is **only intended for use by the civil aviation community**.

Different Types of Volcanic Eruptions in the news:

Name of Volcano	Details
Klyuchevskoy Volcano	<ul style="list-style-type: none"> It is Kamchatka's highest and Eurasia's tallest active volcano. It is a stratovolcano with a large active crater with frequent eruptions. <ul style="list-style-type: none"> Stratovolcanoes have relatively steep sides and are more cone-shaped than shield volcanoes. They are formed from viscous, sticky lava that does not flow easily. The Kamchatka Peninsula is located in far eastern Russia, lying between the Sea of Okhotsk on the west and the Pacific Ocean and Bering Sea on the east. Two mountain ranges, the Sredinny (Central) and Vostochny (Eastern), extend along the peninsula and the trough between them is occupied by the Kamchatka River. Located along the Pacific Ring of Fire, the Kamchatka Peninsula is home to more than 300 volcanoes. <ul style="list-style-type: none"> The Ring of Fire, also referred to as the Circum-Pacific Belt, is a path along the Pacific Ocean characterized by active volcanoes and frequent earthquakes. Of about 1,500 active volcanoes in the world, 111 are in Japan, which sits on the so-called Pacific "Ring of Fire".  
New unnamed volcano	<ul style="list-style-type: none"> It is located about 1 kilometre off the southern coast of Iwo Jima (Japan). Currently, it is 100 metres in diameter and 20 meters high above the sea. The newly formed island started as a "vertical jet" of solidified magma that shot high above the waves. <ul style="list-style-type: none"> After that, the eruption was sustained by relatively continuous bursts. <p>Earlier emergence of islands due to volcanic eruption:</p> <ul style="list-style-type: none"> In 2013, an eruption at Nishinoshima in the Pacific Ocean south of Tokyo led to the formation of a new island. In 2013, a small island surfaced from the seabed after a massive 7.7-magnitude earthquake in Pakistan. In 2015, a new island was formed as a result of a month-long eruption of a submarine volcano off the coast of Tonga. 

Mount Etna

- **Mount Etna is Europe's most active volcano** and one of the largest in the world.
 - Its recorded **volcanic activity dates back to 1500 B.C.** Since then, it has erupted more than 200 times.
 - It is the **highest Mediterranean island mountain** and the most **active stratovolcano** in the world.
- Other volcanoes that have erupted for much longer than Etna:**
- **Kilauea volcano in Hawaii:** It started to erupt in 1983 and continued till 2018. In 2021, the eruption started again and is still ongoing.
 - **Dukono in Indonesia:** It started erupting in 1933 and is continuing.
 - **Santa Maria in Guatemala:** It began erupting in 1922 and continues to this day.
 - **Yasur in Vanuatu:** It first rumbled to life in about 1270 (± 110 years) and as of June 9, 2023, was still erupting.



Earthquakes in News

News Excerpt:

Recently, A state of emergency has been declared in Iceland after a swarm of **800 earthquakes** rocked the island country's southwestern Reykjanes peninsula.

Key Points:

- Around **1,400 earthquakes** were measured **one day**, and over **24,000** have been recorded in the peninsula **since late October to November 2023**.
- The most powerful of these quakes **had a magnitude of 5.2**, and hit about **40 km from Reykjavík, Iceland's capital** and over **24,000** have been recorded in the peninsula since late October.

What is happening in Iceland?

- Iceland is located on the **Mid-Atlantic Ridge, the longest mountain range in the world, but on the floor of the Atlantic Ocean**.
 - The ridge separates the **Eurasian and North American tectonic plates** — making it a **hotbed of seismic activity**.
- On average, Iceland experiences around 26000 earthquakes a year according to **Perlan, a Reykjavik-based natural history museum**.
 - Most of them are imperceptible and unconcerned.

How can earthquake swarms be portents of volcanic activity?

- Deep under the **Earth's surface, intense heat melts rocks to form magma, a thick flowing substance lighter than solid rock**.
- This drives **it upwards and most of it gets trapped in magma chambers deep underground**.
- Over time, this **viscous liquid cools and solidifies** once again. However, a tiny fraction erupts through **vents and fissures** on the surface, causing volcanic eruptions.
- The movement of magma close to the Earth's surface exerts force on the surrounding rock, which often causes earthquake swarms.

- The **underground movement of magma does not necessarily lead to an eruption**. But the closer it gets to the surface, the more likely **an eruption is, and the more frequent symptomatic earthquake swarms** get.

Volcanic eruption in Iceland:

- **Fagradalsfjall** lies about **40 km to the southwest of Reykjavík** and is the **"world's newest baby volcano."**
- It had been dormant for eight centuries before erupting in 2021, 2022 and 2023.
 - Since the 2021 eruption, tourists from across the world have swarmed to Fagradalsfjall to catch a glimpse of molten lava flowing gushing onto the Earth's surface.
- According to IMO, a considerable amount of magma is moving in an area extending from **Sundhnjúkagígum** in the north towards **Grindavík**.
- **Grindavík, a town of 4,000 on Iceland's southern coast** lies about 10 km from the site of the previous Fagradalsfjall eruptions.

Altiplano-Puna Magma Body (APMB)

- The Altiplano-Puna Magma Body (APMB) in the Central Andes is the largest **imaged magma reservoir on Earth**, and is located within the **second highest orogenic plateau on Earth, the Altiplano-Puna**.
- Although the APMB is a first-order geologic feature similar to the Sierra Nevada batholith, its role in the surface uplift history of the Central Andes remains uncertain.
- Here we show that a long-wavelength topographic dome overlies the seismically measured extent of the APMB, and gravity data suggest that the uplift is isostatically compensated.

Active volcanoes in Iceland:

- Currently, it boasts **33 active volcanoes which have erupted over 180 times in the past 1,000 years.**
- According to the United States Geological Service, active volcanoes are those that have **"erupted within the Holocene (the current geologic epoch, which began at the end of the most recent ice age about 11,650 years ago)," or which have "the potential to erupt again in the future."**
- One of Iceland's most famous volcanoes is **Eyjafjallajökull**. In 2010, this volcano erupted and caused a massive ash cloud to spread across Europe.

Uttarakhand Tunnel Collapse

News Excerpt:

41 workers trapped in the **Silkyara tunnel** in Uttarakhand for 11 days were successfully rescued.

About Silkyara Tunnel:

- It is part of the **Chardham Project** of the **Ministry of Road Transport and Highways (MoRTH)** and is under construction.
- This Yatra or pilgrimage is a tour of four holy sites - **Yamunotri, Gangotri, Kedarnath and Badrinath.**
- The tunnel, once ready, will especially benefit the pilgrims providing an all-weather connectivity, shortening the distance to **Yamunotri by 26 Km.**

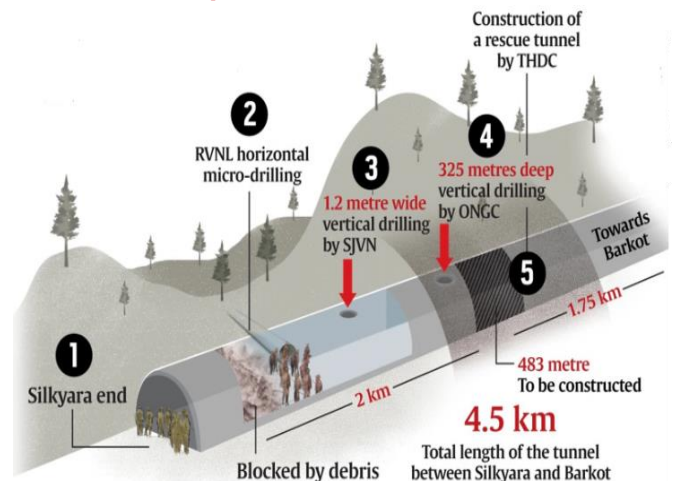
Ways in which tunnels are excavated in rock:

- There are essentially **two ways**: the **Drill and Blast Method (DBM)**, and by using **Tunnel-Boring Machines (TBMs)**.
- DBM involves **drilling holes** into the rock and loading them with explosives. When the explosives are detonated, the rock breaks apart.
- TBMs **bore the rock from the front** (using a rotating head) while supporting the excavating tunnel behind the machine by installing concrete segments.
- Building a tunnel with a TBM is more expensive than DBM, but much safer.**

Impact of terrain on the method of excavation:

- A TBM **cannot** be used to drill through very **tall mountains**. Creating a void through a 1,000-2,000-metre-high mountain by using a TBM leads to a rock burst — when a part of the rock suddenly falls due to high stress.
- TBMs are ideal when the rock cover is up to 400 metres tall.
- Underground tunnels for the **Delhi Metro** were dug using a TBM at shallow depth.
- On the other hand, in places like the Himalayas, including Jammu & Kashmir and Uttarakhand, **DBM is usually used.**

Current Rescue processes:



- Using the American auger machine to horizontally drill from the Silkyara end, the quickest way to reach the workers. This machine helped to rescue the workers
- Digging a 1.2 m wide hole vertically, from above. This will need around 90 metres of digging, and meet the tunnel at the 320-metre mark from the Silkyara side.
- Horizontal micro-drilling from the left to make a tunnel that will be 1.2 metres wide, and 168 metres long.
- Creating another vertical tunnel which will be 325 metres deep and meet workers near opposite end of trapped area.
- Constructing a rescue tunnel from the Barkot end through conventional drill and blast method.

Trenchless technology:

- The rescue operation involves the use of **Trenchless Technology**.
- It will be the **first** time that a **"tunnel inside a tunnel"** will be created as part of a rescue operation in India.
- It involves creating a passage through 900 mm wide mild steel (MS) pipes **for the trapped workers to crawl through.**
- It is a **non-invasive and minimalist approach** to repair the collapsed tunnel without disturbing the loose rock and debris on the surface.
- It will **minimize collateral damage** compared to traditional excavation methods.

How safe are tunnels in the Himalayas? Scientists believe that the tunnel collapse is generally due to **inadequate geological understanding or non-compliance with regulations.**

Geological Understanding:

- The Himalayas are young and are still growing due to the collision between the Indian **tectonic plate** and the **Eurasian tectonic plate**.
- Tunnel construction activities may alter the following:
 - **Stability of Slopes:** It can potentially increase the **risk of landslides and rockfalls**.
 - **Local Hydrology:** Tunnels may intersect with water sources and any alterations to natural drainage patterns can affect water quality as well as availability downstream.
 - **Pollution and relocation:** Noise and Air pollution as well as relocation of communities are major factors in tunnel construction.

Compliance with Regulations:

- **Robust monitoring programs:** Monitoring management during and after construction allows for **adaptive management**, enabling the adjustment of strategies to mitigate unforeseen impacts.
- **Conduct comprehensive EIA:** A comprehensive Environmental Impact Assessment (EIA) before initiating tunnel construction helps identify potential environmental impacts and develop mitigation measures.

Way Forward:

This collapse highlights concerns about the environmental impact of Himalayan tunnel construction. **Balancing** the need for infrastructural development with the preservation of the fragile Himalayan ecosystem requires **careful planning, effective regulation, and a commitment to sustainable practices**.

NAVIGATOR



2024

PRELIMS TEST SERIES

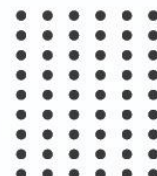
Total Tests - 50

- Full Length Test - 27
- Mini Test - 23



KSG

An Institute For IAS Exam....



Starting From..

10Th Dec.

 **9667779058**
9811293743



www.ksgindia.com

DELHI VN: 9717380832 & DELHI ORN: 9811293743 | JAIPUR: 8290800441 | PATNA: 7463950774 | RANCHI: 9939982007 | BHOPAL: 7509975361 |
INDORE: 7314977441 | BENGALURU: 7619166663 | HYDERABAD: 79960 66663 | IMPHAL: 9650245599 | SRINAGAR: 98712 35599 | MUMBAI: 9871265599 |

INTERNAL SECURITY

India and its National Security Strategy

News Excerpt:

India plans to launch its National Security Strategy (NSS).

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

What is a National Security Strategy (NSS)?

- It is a detailed document **outlining the country's security objectives** and how to achieve them. It **defines traditional and non-traditional threats** as well as **opportunities**.
- It also sets the accountability of **agencies tasked with implementing** such responsibilities.
- It will not just **guide** military and internal security, but also **guide critical defence and security reforms**. It provides a holistic view of overall National Security.
- It guides how military, economic, and diplomatic assets will be allocated to support the national security strategy.
- It also evaluates potential risks, and challenges** in implementing the strategy, **risk management, and mitigation plans**.

NSS developed by:

- The **National Security Council Secretariat** will develop the strategy under the **National Security Council (NSC)**.
 - The NSC is the apex body of the **three-tiered structure** of **India's National Security Management System**.
 - The National Security Advisor** chairs it.
 - It exercises its power through the National Security Council Secretariat, which has **four verticals: Strategic Planning, Internal Affairs, Intelligence and Technology, and a Military vertical**.
- The **Cabinet Committee on Security** then accords the final approval.

Countries having NSS:

Most developed countries with an advanced military and security infrastructure have a National Security Strategy in place, which is updated from time to time. For e.g.- U.S., Russia U.K and also China have published their respective National Security Strategies.

India's Need for NSS:

- Currently, there is only one political directive for defence forces in the document called "**Raksha Mantri's Operational Directive of 2009**", which needs to be revised.
- It would help various government **agencies to work cohesively**, avoiding duplication of efforts, and if the

need arises, this would prevent **ad hoc decision-making**.

- It would ensure the **public understands the nation's security interests**, fostering a sense of national security consciousness.
- It helps signal the nation's position on international security issues and **fosters confidence among allies** while deterring potential adversaries like China and Pakistan.
- In an uncertain geopolitical world, India can remain **responsive to emerging threats**, both from traditional and non-traditional sources.
- It demonstrates that India is **taking a proactive approach to national security**, aligning with its growing stature as a significant player in global affairs.
- It can facilitate the establishment of integrated theatre commands and step up the **pace of military**



The major point in the USA's NSS is a rules-based international order. It highlights the importance of global alliances and partnerships, stressing the role of NATO in collective defence and advocating for a free and open Indo-Pacific.



A unique aspect of the UK's NSS is its emphasis on science and technology as being crucial to national security. It outlines plans for investing in research and development in emerging technologies, such as cyber, space, and artificial intelligence.



China NSS is based on the concept of "comprehensive national security" encompassing all its types. The unique aspect of China's NSS is its focus on "cyber sovereignty," advocating for strict control over the internet and information flow within its borders.



Russia's NSS prioritizes the protection of its national identity. It emphasizes a strong military as a means of deterrence. A unique aspect of Russia's NSS is its focus on countering NATO expansion and opposing its eastward expansion.



Earlier Japan's NSS was shaped by its pacifist constitution, which limited its military capabilities. As a result, it emphasized on the importance of like minded alliances. However, recently Japan revised it with a significant shift away from its post-war pacifist approach. The New NSS highlights China as its top threat and India as its top ally.



Israel's NSS is influenced by its unique security challenges in a volatile region. It emphasizes self-reliance in defence and intelligence capabilities. A key aspect is its commitment in preventing Iran from obtaining nuclear weapons, often leading to tensions with regional adversaries.



Pakistan too, has brought out a National Security Policy 2022-2026, underlining its national security objectives and priority areas.

modernization by offering clear directives to the forces.

Way Forward:

- The counterargument usually given against NSS is that it places critical defence doctrines and strategies in the

public light. However, the benefits of having a well-structured NSS surely outweigh the challenges.

- As India carves its niche on the global stage, a clear and comprehensive NSS is essential for protecting the nation's interests and communicating them to the world.

PEPPER IT WITH:

India and its allies, Cabinet Committees, National Security Council, NATO, Concept of Indo-Pacific

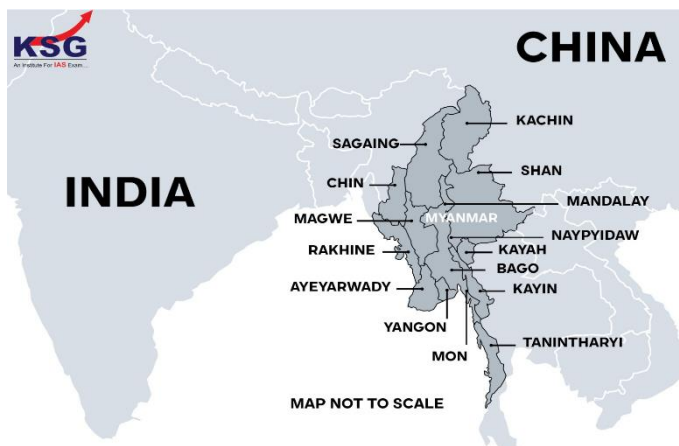
Spike in fighting in Myanmar

News Excerpt:

A recent surge in violence between Myanmar's military and anti-junta forces could have ramifications for security in India's strategic northeast region.

Key Points:

- The **Three Brotherhood Alliance**, including the Myanmar National Democratic Alliance Army (MNDAA), Arakan Army, and Ta'ang National Liberation Army (TNLA), launched **Operation 1027 (named after the date the offensive began)** in northeastern **Shan State** bordering China.
- The alliance reportedly overran more than **135 military sites** and **seized massive stores of weapons and ammunition**.
- This **was followed by similar offensives** by other rebel groups
- Chin, Kachin States, and the Sagaing Region, border India, causing the Indian administration to worry.
- The junta has declared martial law in various towns in Shan, Chin, and Karenni states and the Sagaing Region.



Operation 1027:

- Operation 1027 - aka October 27**, was launched to **eradicate the oppressive military dictatorship** and defend the territory against Myanmar military incursions.

- It was initiated to protect the lives and property of civilians.
- The operation was done to reduce the junta's air and artillery strike capabilities, remove the military regime from power, and crack down on criminal activities – including online scam operations – that have increased along the country's northeastern border with China.

Operation 1107:

- It is an ongoing joint operation **launched on November 7, 2023**, by other insurgent groups bordering China and Thailand against the military junta.
- It was launched **in support of the concurrent Operation 1027**.

What does it mean for India?

- The influx of Refugees:** With the influx of thousands of Myanmar refugees into India, there will be **considerable stresses on natural resources**, leading to both environmental and social impacts on the North Eastern region. Refugee migration also inflicts a significant **economic burden** on the host countries.
- Spillover of Hostilities:** There is an associated fear of the spillover into border regions of India, which would affect the country's internal security situation.
 - Myanmar's Chin ethnic group has significant ties with Manipur's Kukis**, and many militant groups from Manipur have a presence in Myanmar's Sagaing Region and are believed to be supported by the junta.
 - According to experts, this could have **ramifications for the situation in Manipur**.
- Ethnic Problems:** The sudden influx of refugees can aggravate ethnic problems and change the domestic balance of power within communities, thus causing tensions.

Way Forward:

Myanmar's current geopolitical situation **is complex and impacts Indian security**. The Indian authorities need to balance both their geopolitical as well as domestic interests to be able to tide through this crisis.

PEPPER IT WITH:

Operation 1027, Operation 1107, Ethnic Communities, Refugee crisis and its effects on India

Meitei Extremist Organizations

News Excerpt:

The **Union Ministry of Home Affairs (MHA)** has extended the ban **under the Unlawful Activities Prevention**

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Act (UAPA) against **several "Meitei extremist organizations"**.

Key Points:

- It declared the outfits as an **"unlawful association"** for pushing Manipur's indigenous people to secede.
- They are referred to together as **"Meitei Extremist Organizations"** and are now an illegal association for ten years, beginning November 13, 2023.
- After much deliberation over their activities over the last five years, some were given an additional 5-year ban, whereas some were added to the list for the first time.
- This step comes after their **involvement in the recent ethnic violence in Manipur was discovered**.

About the Organizations:

The banned organizations include:

- the Peoples' Liberation Army, generally known as **PLA**, and its political wing, the Revolutionary Peoples' Front (**RPF**),
- the United National Liberation Front (**UNLF**) and its armed wing, the Manipur Peoples' Army (**MPA**),
- the Peoples' Revolutionary Party of Kangleipak (**PREPAK**) and its armed wing, the **'Red Army'**,
- the Kangleipak Communist Party (**KCP**) and its armed wing, also called the **'Red Army'**, the Kanglei Yaol Kanba Lup (**KYKL**),
- the Coordination Committee (**CorCom**) and the Alliance for Socialist Unity Kangleipak (**ASUK**).

Reason for the Extension of Ban:

The Central Government believes that the outfits have been engaging in activities that are:

- Harmful to the sovereignty and integrity of India.
- Employing and engaging** in armed means to achieve their objectives.
- Attacking and killing** the security forces, police and civilians in Manipur.
- Indulging in acts of **intimidation, extortion and looting** of the civilian population for collection of funds.
- Making contacts with sources abroad to influence public opinion and **procure arms and ammunition**.
- Providing training** to achieve their secessionist objectives and using camps in neighbouring countries for sanctuaries.

Unlawful Activities Prevention Act (UAPA)

- It was enacted in **1967** to prohibit illegal activity associations in India effectively.
 - Unlawful activity** is defined as any action committed by an individual or group to undermine India's territorial **integrity and sovereignty**.
- The Act provides the central government with **absolute jurisdiction**, and if the Centre considers an

activity to be illegal, it may declare it such in an official gazette.

- Both **Indian and international nationals** can be **charged under UAPA**.
 - It will apply to offenders in the same way, even if the offence is committed in a foreign country outside of India.
- The investigative agency has 180 days after the arrests to file a charge sheet** under the UAPA, which can be extended further by alerting the court.
- Parliament approved the **Unlawful Activities (Prevention) Amendment Bill, 2019, to designate persons as terrorists under the Act on specific circumstances**.
 - The Act empowers the Director General of the National Investigation Agency (NIA) to approve the seizure or attachment of property when the NIA is investigating the matter.

Continue to **mobilize their cadres for escalating their secessionist, terrorist, and violent activities**.

Propagate anti-national activities in collaboration with forces hostile to India's sovereignty and integrity.

Engage in **killings of civilians** and targeting of police and security force personnel.

Procure and **transport illicit weaponry and ammunition** across international borders.

Extort and collect large sums of money from the people for their illegal actions.

FIGURE: 11-WHAT WOULD HAPPEN IF THE BAN IS NOT EXTENDED?

Way Forward:

India's National Security laws, such as the UAPA, must remain stringent to safeguard the sovereignty and the integrity of the nation from offences such as secession, subversion, organization and perpetration of terrorist activities, and collusion with a foreign country.

PEPPER IT WITH:

Ethnic Communities of North Eastern States esp Manipur and Nagaland, NIA

Violent Extremist Organization Under Investigation

News Excerpt:

The **Financial Action Task Force (FATF)**, in its report **'Crowdfunding for Terrorism Financing'** has

highlighted that a "violent extremist organization under investigation" in India collected funds through "well-structured networks" including offline and online fundraising mechanisms such as circulating QR codes and account details.

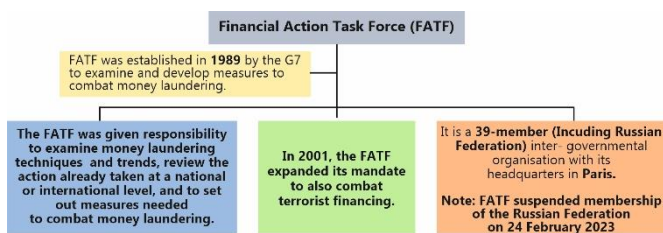
Key points:

- The FATF report referred to the **Popular Front of India (PFI)** as having resorted to a solicitation for funds at

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

mosques and public places, which were ultimately used to procure arms and ammunition and for training the cadres. **But FATF refrains from mentioning its name directly.**

- According to FATF, the **group's fundraising tactics included offline and online mechanisms**, such as circulating QR codes and account details through which donors were asked to send money.
- Over 3,000 bank accounts and informal value transfer systems were used. **The accounts involved domestic and foreign transactions**, making this case extremely difficult to investigate.
- A portion of the funds raised through crowdfunding was also **invested and parked in businesses** and real estate projects to generate regular income for terrorism activities.
- In September 2022, The Ministry of Home Affairs declared the PFI, along with its associates or affiliates or fronts, as an **"unlawful association"** under Section 3 of the **Unlawful Activities (Prevention) Act, 1967**.



About Violent Extremism:

- Violent extremism** is multifaceted and influenced by several political, social, economic, and ideological elements.
- Violent Extremist organizations **use violence to take advantage of current discontent** to present their ideology as the answer to the issues that communities confront.
- Grievances and actual or perceived injustice** are major reasons for the emergence of these organizations.
- For example, terrorist groups such as the **Islamic State** in Iraq and the Levant (ISIL), **Al-Qaida**, **Boko Haram**, etc. are violent extremists working as violent extremist organizations.

Impact of the emergence of such organizations:

- It undermines peace and security, human rights, and sustainable development.
- The spread of violent extremism has further aggravated an unprecedented humanitarian crisis that surpasses the boundaries of any one region.
- Millions of people have fled the territory controlled by terrorist and violent extremist groups, thus leading to massive displacements.
- Migratory flows have increased both away, from, and towards the conflict zones - involving those seeking safety and those lured into the conflict as foreign

terrorist fighters, further destabilizing the regions concerned.

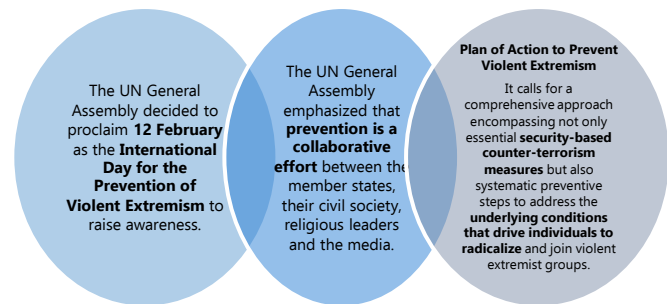


FIGURE:12- STEPS TAKEN BY THE INTERNATIONAL COMMUNITY TO PREVENT EXTREMISM

Steps taken by India to stop extremism:

- A **Fake Indian Currency Notes (FICN)** Coordination Centre Cell is functioning under the **Ministry of Home Affairs** to share intelligence among the security agencies of the Centre/States to counter the problem of circulation of fake currency notes.
- A **Terror Funding and Fake Currency (TFFC)** Cell is functioning under the **National Investigation Agency (NIA)** to conduct a focused investigation of terror funding and fake currency cases.
- Security Related Expenditure (SRE) Scheme:** This Scheme is being implemented as a sub-scheme of the Umbrella Scheme 'Modernization of Police Forces'. The SRE Scheme aims to strengthen the capacity of the **Left-Wing Extremist (LWE)** affected states to fight effectively.
- Special Central Assistance (SCA) for most LWE-affected districts:** This Scheme was approved in 2017, and the main objective of the Scheme is to fill the critical gaps in Public Infrastructure and Services, which are emergent.
- Special Infrastructure Scheme (SIS):** Under the scheme, funds are provided to States for strengthening the security-related infrastructure.
- Scheme of Fortified Police Stations:** Under the scheme, 400 Fortified Police Stations have been constructed in 10 LWE-affected States.
- Civic Action Programme (CAP):** This Scheme is being implemented to bridge the gaps between Security Forces and local people through personal interaction and bring the human face of the forces before the local population.
- Aspirational District Programme (ADP):** The Ministry of Home

PEPPER IT WITH:

FATF, Aspirational District Programme, Fake Indian Currency and its related problems, Left Wing Extremism, SRE scheme

Affairs has been tasked with monitoring the ADP in 35 LWE-affected districts.

Way Forward:

- Particular focus should be put on the **role of women, youth, local stakeholders and civil society**, including religious and community leaders.
- Initiatives aimed at **integrating individuals willing to leave violent extremism behind** and return to their communities should also be enhanced and encouraged.
- Sustainable peace can be built through **safeguarding human rights, building inclusive societies and strengthening the resilience against recruitment to violent extremist groups and ideologies in local communities**.

Rise in Cyber Attacks in India

News Excerpt:

In a massive data breach, details of over 81.5 crore citizens with the **Indian Council of Medical Research (ICMR)** were on sale. The breach includes sensitive data such as Names, Phone numbers, Addresses, Aadhar numbers, and Passport information.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

The surge in Cyber-Attacks in India:

India is seeing a surge in cyber attacks on technological infrastructures, thus impacting sectors like banking, insurance, and healthcare. **India has averaged 1.3 million cyber attacks yearly since 2020, as rapid digital transformation has led to vulnerabilities in new infrastructures.**

- All cyber attacks entail a financial cost. Last year, the Official Cybercrime Report by Cyber-Security Ventures projected this cost globally at \$8 trillion for 2023.
- State-sponsored cyber attacks against India increased by **278%** between 2021 and September 2023.
- The targeted cyber attacks on government agencies went up by 460% and those on **startups and small and medium enterprises (SMEs)** by 508%, according to the **2023 India Threat Landscape Report** by Singapore-based cyber security firm Cyfirma.
- In India, **Cyfirma (a cybersecurity firm)** found that service companies, including **IT and BPO**, were receiving 14.3% of cyber attacks between March 2021 and September 2023. This was followed by **manufacturing at 11.6%**, and **healthcare and education** at around 10% each.

- Retail** agencies, including online platforms, saw **9.8% of attacks**, while government agencies saw **9.6% of attacks**.

What is Cyber Security?

- It **protects computer systems from theft or damage** to their hardware, software, or electronic data, as well as from disruption or misdirection of the services they provide.
- It is the collection of **security concepts and safeguards, training, and best practices** that can be used to protect the organization's cyber environment.
- Cyber security **ensures** the maintenance of the security properties of the organization and user's assets **against security risks in networked environments**.

Challenges to Cyber Security in India:

- Widespread digital illiteracy** makes Indian citizens highly susceptible to cyber fraud, cyber theft, etc.
- Lack of adoption of new technology:** For e.g., Banking infrastructure is not robust enough to cope with the rising digital crime as 75% of the total credit and debit cards are based on a magnetic strip, which is easy to clone.
- Lack of adequate infrastructure and trained staff:** There are currently around 30,000 cyber security job vacancies in India, but demand far outstrips the supply.
- Anonymity:** Even advanced precision threats hackers carry are difficult to attribute to specific actors, state, or non-state.
- Underreporting:** More than 90% of cybercrime incidents remain under the sheet due to fear of reputational and credibility loss of an organization.
- Information Warfare:** Information and communication technologies can be used to manipulate and disrupt the information and perception environment of the country, promoting anti-national elements.
- Leakage of sensitive information** like defence and security through attacks on communication networks which can destabilize **Critical Infrastructure** like Nuclear power plants, power grids, etc.

Steps taken to prevent Cyber Attacks by India:

- National Cyber Security Policy 2013 (NCSP):** The policy aims to protect the public and private infrastructure from cyber attacks.
- National Cyber Security Reference Framework (NCRF) 2023:** The NCRF policy will be aimed at helping critical sectors such as banking, energy, and others with "strategic guidance" to address cyber security concerns.

Indian Computer Emergency Response Team (CERT-In)

- CERT-In is in operation since January 2004.
- It is the **national nodal agency** for responding to computer security incidents as and when they occur under the Ministry of Electronics and Information Technology (MEITY).

Its functions:

- **Collection, analysis and dissemination** of information on cyber incidents.
- **Forecast and alerts** of cyber security incidents
- **Emergency measures** for handling cyber security incidents
- **Issue guidelines**, advisories, vulnerability notes and white papers relating to information security practices.

- **Indian Computer Emergency Response Team, 2004 (CERT-In):** It is crucial in providing alerts, advisories, and continuous monitoring of cyber security threats.
- **Information Technology (IT) Act, 2000:** The Government has enacted and amended laws to address cyber threats and crimes. The IT Act of 2000 and its amendments empower authorities to take action against cyber offences.
- The **Ministry of Home Affairs** has provided financial assistance to all the States & UTs under the **Cyber Crime Prevention against Women & Children (CCPWC) scheme** to support their efforts for setting up

- A **toll-free number, 1930**, has been operationalized to get assistance in lodging online cyber complaints.

Way Forward:

- **Develop intelligent systems:** To mitigate the increasing number of cyber attacks in India, cyber security experts call for **using AI, large language models, and machine learning** to develop intelligent systems for dynamic defence.
- **Budapest Convention:** India may consider acceding to the Budapest Convention.
- **Mock drills:** Cyber Security mock drills should be regularly conducted to prepare the organizations to detect, mitigate, and prevent cyber incidents.
- **Air gapping:** The concept of air gapping, which isolates critical infrastructures from the internet, should be used.
- **International data protection law:** The Indian Government should promote attempts to create a global data protection law that facilitates quick information-sharing with multinational companies that do not host domestic servers.

PEPPER IT WITH:
AI, Machine Learning,
Budapest Convention,
CERT-in, ICMR

Budapest Convention on Cybercrime: It is the first international treaty seeking to address Internet and computer crime. It came into force on 1st July 2004. **India is not a signatory to this convention.**

Cyber-diplomacy: The Indian government has entered into cyber security collaborations with countries such as the USA, European Union, and Malaysia. E.g., U.S. - India Cyber Relationship Framework.

Global Conference on Cyber Space: It is a prestigious global event where international leaders, policymakers, industry experts, etc, gather to deliberate on issues and challenges for optimally using cyberspace.

Global Centre for Cyber Security: It was launched by the World Economic Forum (WEF) to serve as a laboratory and early-warning think tank for future cyber security scenarios and help build a secure global cyberspace.

FIGURE: 13-GLOBAL INITIATIVES TO FIGHT CYBER CRIME

cyber forensic-cum-training laboratories, training, and hiring of junior cyber consultants.

- The Government has established the **Indian Cyber Crime Coordination Centre (I4C)** to provide a framework and eco-system to deal with cyber crimes in a comprehensive and coordinated manner.
- The Government has launched the **National Cyber Crime Reporting Portal (www.cybercrime.gov.in)** to enable the public to report incidents about all types of cyber crimes, with a particular focus on cyber crimes against women and children.

Indian Maritime Blue Economy

News Excerpt:

The Prime Minister recently unveiled '**Amrit Kaal Vision 2047**', a blueprint for the Indian maritime blue economy, during the **Global Maritime India Summit 2023**.

About 'Amrit Kaal Vision-2047':

- **On Port Infrastructure:** It aims to quadruple port capacity to 10,000 million tonnes per annum (mtpa) by

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

2047, aiming to get **100% public-private partnership (PPP) for 12 major ports**.

- The plan includes the development of Next Generation Mega Ports, International Container Trans-shipment Ports, island development, inland waterways, and multi-modal hubs.
- Increased infrastructural investments worth Rs 75-80 trillion over the next 25 years will be used to achieve the following goals:
 - Carbon neutrality at all major ports
 - Attaining the highest rank in cruise tourism
 - Development of 25 cruise terminals
 - Increasing operational waterways more than twofold
 - 500 million tons (mt) of cargo
- **Global Partnerships:** Over 300 Memorandums of Understanding (MoUs) were signed, further solidifying India's international and national maritime partnerships.
- **Transformative Projects:**
 - **Make in India:** Maritime clusters are being established, with shipbuilding and repair centres in development.
 - **Sustainable Maritime Sector:** Efforts are underway to make major Indian ports carbon-neutral through a net-zero strategy for the sector, as India aims to create a '**Green Planet**' through its blue economy.
 - **Ease of doing business:** The initiative aims to reduce business costs and mitigate environmental deterioration.
 - **Sustainability:** The plan includes making major ports carbon-neutral and pushing for domestic hydrogen production and distribution.

Indian Scenario:

India towards Embracing the Blue Ocean Dream:

- India **stands at the threshold of immense untapped potential** in the maritime domain, powered by its abundant naval resources.
- India's maritime sector emerges as a pivotal force that can propel the nation towards becoming a **\$20 Trillion economy by 2040**.
- In the coming decade, India aspires **to lead the cruise sector, offering world-class experiences and attracting travellers** from around the globe.
- As a responsible maritime nation, India is determined to be a global leader in ship recycling, adhering to environmentally sound practices and setting high standards for the industry.

Government Initiative to Build Maritime Infrastructure:

- Initiatives like the '**Sagarmala Programme**' stand tall as a testament to the power of port-led development, streamlining logistics and propelling the coastal regions into vibrant centres of progress.
 - By optimizing the transportation of goods, this initiative has made it cost-effective and faster and elevated India's position in the international trade landscape. As a result, major ports' capacity has soared by 102%, reaching a staggering 1617 MTPA (Metric Tonnes Per Annum) from 800 MTPA.
- **Digitization** of operational processes has been a game-changer, introducing a seamless and efficient single-window platform, i.e., **Sagar Setu – National Logistics Portal (Marine)**. Empowering exporters, importers, and service providers, it has revolutionized logistics solutions, facilitating smooth document exchange and transactions.
- The **Jal Marg Vikas Projects** have unlocked the potential of waterways, promoting commercial navigation. This green and economically viable mode of transportation has elevated the sector to new heights, with National Waterways experiencing an astounding **1734% increase in cargo handling**, rising to 126 MTPA from 6.89 MTPA.
- The **Revised Model Concession Agreement** has further catalyzed the sector's growth by reducing arbitrations and litigations. Embracing public-private partnerships (PPP) has ushered in clarity, transparency, and a favourable environment for investors. The operationalized **PPP projects** have witnessed a **150% increase** in value, reaching INR 40000/- crore.
- The **Ministry of Ports, Shipping, and Waterways** has taken bold steps to modernize infrastructure, promote coastal shipping, and foster a thriving Blue Economy.

Challenges in the Maritime sector:

- **Inadequate infrastructure:** **Subdued capacity utilization** at ports is an area that needs a complete overhaul. To meet this target, major investments would have to be made in the capacity enhancement of all ports and harbours, regardless of their status, whether major or minor, public or private.
- **Coastal Security:** Coastal security includes **preventing ships from running around and other challenges like smuggling**, piracy, maritime terrorism, etc. In addition to these aspects, the environmental impact of offshore economic activities like fishing also has security implications for the country.
- **Poor connectivity:** The lack of expressway connectivity between major ports and the hinterland impacts the

turnaround time of ports and India's trade competitiveness.

- **Regulatory hurdles:** Several **export-import (EXIM) processes** are not digitized, impacting the efficiency of logistics. Currently, ports and harbours in India are governed by several laws, resulting in a lack of standardization and management. **For example**, the definition of a major or minor port is not based on its cargo handling capacity or its financial capacity/turnover but instead on its inception at the outset as an entity under the law.

Way Forward:

- **Inclusion in Maritime activity:** Ports, shipbuilding, ship repair, deep sea shipping, coastal shipping and offshore economic activities need to be grouped together and given the status of an Infrastructure Sector or Strategic Sector, highlighting their importance and emphasising their rapid development.
- **Capacity Building:** There is also a need to revisit the country's tariff and tax policies to provide a level playing field to Indian shipping entities. This is important as foreign shipping companies do not have to bear an unfavourable tariff regime, unlike their Indian counterparts.
- **Finalizing the maritime borders:** The environmental impact of offshore economic activities like fishing and its security implications on the country's security needs to be sorted—for example, Pakistan and Sri Lankan fisherman issues.

PEPPER IT WITH:

Sagarmala Project, EXIM processes, National Logistics Portal (Marine), National Waterways and its usage, Cruise Tourism, Blue Economy

DNA and face-matching systems at police stations

News Excerpt:

The Indian Union government plans to install **"DNA and Face Matching"** systems at 1,300 police stations.

GS CONNECT											
GS	1	2	3	4	5	6	7	8	9	10	11
I											
II											
III											
IV											
M											

Background:

- The **Criminal Procedure Identification Act (CrPI, 2022)** enables police and central investigating agencies to **collect, store, and analyze** physical and biological samples, including **retina and iris scans** of arrested persons.
 - It **replaced** the **Prisoners Act, of 1920** whose scope was limited to capturing **finger impressions, foot-print impressions, and photographs**.
- The **National Crime Records Bureau (NCRB)** is assigned to finalize the Standard Operating Procedure

(SOP) to be followed by police officials while recording the measurements.

DNA profiling:

- It is the process of identifying individuals based on their unique **genetic makeup**. Even though people may have similar facial features, and eye and hair colour, their **DNA is different**, which makes this procedure useful in solving crimes more accurately.
- By comparing DNA found at the crime scene, such as blood or hair, to DNA samples from suspects, forensic scientists can either rule out or confirm a suspect. If there is a match, the police are likely to investigate the suspect more closely.
- After a convict is found guilty, their DNA is collected and stored for any future investigations.

Face matching system:

- **Facial recognition technology (FRT)** refers to a technique used to **identify or verify** individuals by their unique facial features as a **biometric identifier**. This technology captures a person's facial features through a digital image or video and then uses **algorithms** to compare that image or video to a database.
- It has numerous advantages in law enforcement – identifying criminals, improving public safety, reducing the workload of law enforcement personnel, and enhancing the accuracy of criminal investigations. However, the use of FRT also raises concerns regarding privacy and civil liberties.

Challenges:

- **Misuse of databases:** The use of derivative data, such as **"analysis"** and **"behavioural attributes"**, has raised concerns that data could be exploited for **predictive policing**.

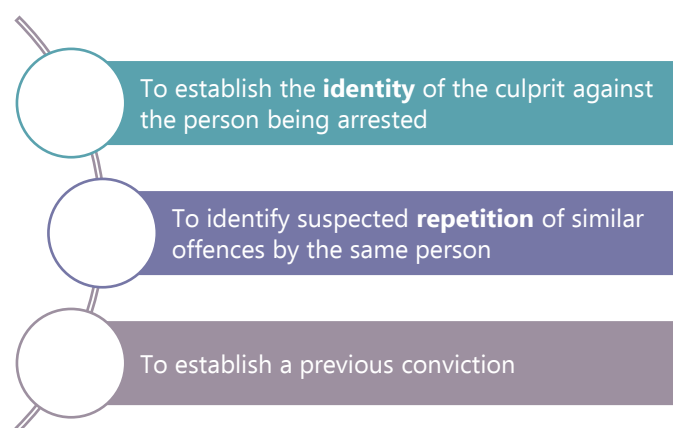


FIGURE:14-NEED OF IDENTIFICATION IN CRIMINAL TRIALS

- **Overburdening:** The "measurements" are to be taken after a conviction or arrest, even for minor offences. The necessity of such measurements for investigations is unclear, and the **discretionary power** involved can lead to **abuse** and overburdening of the **storage system. These records are kept for 75 years.**

- **Privacy concerns:** Such collection can also result in **mass surveillance**, with the database being combined with **other databases** such as those of the Crime and Criminal Tracking Network and Systems (**CCTNS**).
- **Burden of Funding:** Although Union Home Ministry will cover the cost of hardware, the **state** will have to bear the **cost** of a secure internet connection and other technological and operating expenses like advanced tools and proper training of police personnel.

Way Forward:

- It is crucial to **define the purposes** for which the "measurements" will be processed. Simply recording core measurements without conducting the necessary forensics would considerably limit their usability.
- The authorities must ensure that appropriate **safeguards** are **identified** and **deployed** and that only **designated officials** have real-time access to the measurements.
- The **tools** and **systems** used by the police must be technologically, legally, and forensically sound and accredited.

PEPPER IT WITH:

Surveillance and its measures, Predictive Policing, CCTNS, Face Recognition Technology, NCRB, CrPI, 2022

PRE-SHOTS

Goa Maritime Conclave (GMC)

News Excerpt:

The Indian Navy hosted the **fourth edition** of the Goa Maritime Conclave (GMC).

About GMC:

- It is the Indian Navy's **outreach initiative** for harnessing maritime thought and realizing the Prime Minister's vision of **SAGAR (Security and Growth for All in the Region)**.
 - **SAGAR** is India's Policy of Maritime Corporation in IOR, announced in 2015.
- With the **Indian Ocean Region (IOR)** becoming the focus of the 21st-century strategic landscape, the GMC aims to bring together the regional stakeholders and deliberate on collaborative implementation strategies in dealing with contemporary maritime security challenges.

About GMC, 2023:

- **Theme:** "Maritime Security in the Indian Ocean Region: Converting Common Maritime Priorities into Collaborative Mitigating Frameworks"
- **12 IOR countries attended.** They included Bangladesh, Comoros, Indonesia, Madagascar,

Malaysia, Maldives, Mauritius, Myanmar, Seychelles, Singapore, Sri Lanka and Thailand.

Deliberations were held on four sub-themes:

- **Identifying Gaps in Regulatory and Legal Frameworks** for Achieving Maritime Security in the IOR.
- Formulation of a **Common Multilateral Maritime Strategy** and **Operating Protocols for GMC Nations** for Collective Mitigation of Maritime Threats and Challenges.
- Identification and Establishment of **Collaborative Training Programmes** with the Center of Excellence across the IOR.
- Leveraging Activities Pursued through Existing Multilateral Organizations in the IOR towards Generating **Collective Maritime Competencies**.

Indo-Pacific Regional Dialogue 2023

News Excerpt:

The Indo-Pacific Regional Dialogue (IPRD), the Indian Navy's **annual** international conference, took place in New Delhi.

About:

- It is the principal manifestation of the Navy's international engagement at the strategic level, **addressing maritime security issues across the Indo-Pacific**.
- The **National Maritime Foundation (NMF)** is the Indian Navy's knowledge partner and chief organizer of each edition of the IPRD.
- It **aims** to review various maritime trends within the Indo-Pacific region and to foster the exchange of solution-oriented dialogue among key stakeholders.

National Maritime Foundation (NMF):

- It was **established in 2005** as the nation's first independent and autonomous maritime think-tank for the conduct of policy-relevant research.
- Its intellectual and organizational development is supported by the **Ministry of Defence and the Indian Navy**.
- It is designed to create and heighten maritime awareness amongst India's policy-makers, intellectual echelons, and civil society at large.

2023 edition:

- **Theme: Geopolitical Impacts upon Indo-Pacific Maritime Trade and Connectivity**
- **Six professional sessions** will encompass the discussions over three days. They are
 - Nodes of Maritime Connectivity
 - China's Impact vis-à-vis Maritime Connectivity across the Indo-Pacific
 - Maritime Connectivity through Shipping and Trade

- Maritime Connectivity through Shipping and Trade (Part 2);
- Private Industry in the Safety and Security of Indo-Pacific Maritime Trade and Shipping
- Maintaining a Rules-based, Safe, and Secure Indo-Pacific.

Ransomware Attack

News Excerpt:

A US unit of the Industrial and Commercial Bank of China (ICBC) was recently hit by a ransomware attack. It is believed that a ransomware called **Lockbit 3.0** was behind the attack.

What are Ransomware Attacks?

- It is a type of malware attack in which the attacker locks and encrypts the victim's data and critical files.
- They then **demand a payment** to unlock and decrypt the data.
- This type of attack takes **advantage of system, network, and software vulnerabilities** to infect the victim's device.

About Lockbit 3.0:

- It was created by Lockbit, a group that effectively sells its **malware to non-state actors** on the **dark web**.
- It is the most popular strain of ransomware, accounting for around **28 %** of all known attacks **from July 2022 to June 2023**.
- Execution of over 1,400 attacks against victims in the United States has come to light, and over **\$100 million worldwide** has been asked in ransom demands.
- The group, suspected to have Russian origins, also claimed responsibility for ransomware attacks on **Boeing in October 2023**.

What is the Dark web?

It is the hidden collective of internet sites only accessible by a specialized web browser. It is used for keeping internet activity anonymous and private, which can be helpful in both legal and illegal applications.

30 years of Border Peace and Tranquility Agreement (BPTA)

News Excerpt:

Thirty years after the **first India-China border agreement**, the mechanisms built to keep the peace on the Line of Actual Control are fraying and urgently need a revisit.

About BPTA:

- It was signed in September **1993** between India and China under the **Prime Ministership of Narasimha Rao**.
- Its **objective** was to maintain **peace along the Line of Actual Control (LAC)** by committing both nations to

respect the status quo and reduce the risk of **unplanned confrontations**.

- It **prohibited** either side's use or threat of force and strict adherence to the LAC until a final boundary solution was reached.
- It also calls for **minimal military presence** along the LAC, with reductions to be mutually agreed upon.
- Over the 30 years since its signing, the **BPTA** has faced challenges due to inherent ambiguity surrounding the LAC, ultimately contributing to breakdowns in border agreements and increased tensions.
- The limited nature of the agreement prompted an infrastructure race and escalated incidents, leading to the deadly **Galwan clash in June 2020**.

Line of Actual Control (LAC):

- It is the demarcation that separates Indian-controlled territory from Chinese-controlled territory.
- India considers the LAC to be 3,488 km long, while the Chinese think it to be only around 2,000 km.
- It is divided into **three sectors**: the **eastern sector**, which spans Arunachal Pradesh and Sikkim; the **middle sector** in Uttarakhand and Himachal Pradesh; and the **western sector** in Ladakh.

Exercises in News:

NAME OF THE EXERCISE	PARTNERING COUNTRY	ABOUT:
HARIMAU SHAKTI	MALAYSIA	<ul style="list-style-type: none"> • It is a joint bilateral military training exercise between Indian and Malaysian armies. • This exercise aims to boost the joint deployment of drones and helicopters. • Intelligence collection, casualty management, evacuation drills, logistics management, and survival training would also be a part.
BONGOS AGAR	BANGLADESH	<ul style="list-style-type: none"> • The 4th edition of the bilateral exercise BONGOSAGAR-23 was held between the two navies. • The 5th edition of Coordinated Patrol (CORPAT) was also conducted in the Northern Bay of Bengal. • It includes joint patrolling along the International Maritime Boundary Line (IMBL). • It included the maiden Humanitarian Assistance and Disaster Relief (HADR) drills.
KAZIND	KAZAKHSTAN	<ul style="list-style-type: none"> • This is the 7th edition of the joint military exercise between India and Kazakhstan. • It was initiated in 2016 as "Exercise Prabal Dostyk" but has now been renamed.
MITRA SHAKTI	SRI LANKA	<ul style="list-style-type: none"> • It is an annual military exercise between the armies of India and Sri Lanka. • The 2023 Mitra Shakti Exercise is the ninth edition.

ART AND CULTURE

Creative Cities of Literature and Music by UNESCO

News Excerpt:

Kozhikode in Kerala has been designated as the UNESCO 'City of Literature' and Gwalior as the 'City of Music' in the latest UNESCO list of Creative Cities Network.

About:

- The **UNESCO Creative Cities Network (UCCN)** (Established in 2004) is a global initiative that recognizes cities for their **commitment to using culture and creativity as catalysts for sustainable development** and displaying innovative practices in human-centred urban planning.
- The Network now counts 350 cities in more than one hundred countries and represents **seven creative fields: Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts and Music.**
- Apart from Kozhikode and Gwalior, **Varanasi (music), Srinagar (crafts and folk arts) and Chennai (music)** are part of the network.
- The newly designated Creative Cities will participate in the 2024 UCCN Annual Conference, in Braga, Portugal, from July 1 to July 5, 2024, under the theme '**Bringing Youth to the Table for the Next Decade.**'

Gwalior and Kozhikode find their place in UNESCO's Creative Cities Network



Gwalior for Music



Kozhikode for Literature

Kozhikode (Kerala) as a 'City of Literature':

- In 2022 a proposal for Kozhikode was initiated by the Kerala Institute of Local Administration.
- Upon receiving enthusiastic support, the Kozhikode Corporation formed a collaborative partnership with Charles University in Prague, the capital of the Czech Republic.
 - Notably, **Prague** was the **first city to be honoured with the title of 'City of Literature' by UNESCO in 2014.**
- Kozhikode, known for its **literary vibrancy**, is a permanent venue for the **annual Kerala Literature Festival** and hosts numerous other book festivals. This recognition solidifies its status as a hub for literary enthusiasts.

- The first Malayalam novel Kundalatha was born in Kozhikode in 1887.

Gwalior (Madhya Pradesh) as the 'City of Music':

- Gwalior, the city that gave the world the legendary musician **Tansen**, has been bestowed with the prestigious title of "**City of Music**" by UNESCO as a tribute to the city's rich musical heritage.
- **About Tansen:**
 - Previously, Tansen was a court musician during the reign of Raja Ramachandra of Bandhavgarh (Rewa).
 - When **Akbar** heard of his prodigious talent, he sent a 'Farman' to the king asking for Tansen and made him one of the **Navaratnas** in his court.
 - He gave him the title of '**Mian**' and also the '**Sangit Samrat**'.
- **Gwalior Gharana**, one of the oldest Hindustani musical Gharanas, is believed to have originated in this very place, solidifying its status as the birthplace of this iconic musical style.
 - In **Hindustani music**, a gharana is a system of social organization linking musicians or dancers by lineage or apprenticeship, and by adherence to a particular musical style.
- **The Scindias**, the erstwhile royal family of Gwalior, have diligently preserved and propagated music for centuries, adding to the city's musical legacy.

Dhordo Village

News Excerpt:

Dhordo village in **Gujarat** has been selected in the **United Nations World Tourism Organisation (UNWTO) Best Tourism Villages list.**

About Dhordo:

- It is in **Kutch district**, Gujarat and is situated near the India-Pakistan **border.**
- Dhordo is famous for hosting the annual **Rann Utsav**, which showcases the region's traditional art, music, and crafts.
- It also hosted the first **Tourism Working Group Meeting** of the **G-20** held under India's presidency.

About Best Tourism Villages initiative:

- Launched in **2021**, it is **part of the UNWTO Tourism for Rural Development Programme.**
- A global initiative to highlight those **villages where tourism preserves cultures and traditions celebrates diversity**, provides opportunities and safeguards biodiversity.
- **Areas of evaluation:**

About UNWTO:

- It was formed in **1974** with headquarters in **Madrid**, Spain. India joined it in 1975.
- It **promotes** tourism as a driver of economic growth, inclusive development and environmental sustainability.
 - Cultural and Natural Resources.
 - Promotion and Conservation of Cultural Resources.
 - Economic, Social, and Environmental Sustainability.
 - Tourism Development and Value Chain Integration.
 - Governance and Prioritization of Tourism.
 - Infrastructure and Connectivity.
 - Health, Safety and Security.
- Other villages selected in 2023 are from Japan, China, Jordan, Chile, Egypt, etc.

Dogra Architecture**News Excerpt:**

The Jammu and Kashmir administration and the **Indian National Trust for Art and Cultural Heritage (INTACH)** are collaborating to preserve Dogra Architecture.

About Dogra Architecture style:

- Dogra Hindu kings introduced architectural elements in Kashmir between 1846 and 1947.
- Key features: colonnaded walkways, decorative pilasters, exposed moulded brickwork**, dome-topped arch terraces and "**mehraab**" style doorways.
- Mubarakmandi** was the centre of Dogra culture. The **domes** at Mubarakmandi illustrate how shikhara and dome styles can coexist.
- Bahu Fort, Jasrotra Palace**, and **Billawar Palace** are some other examples of the Dogra style. The **local sandstones** and **pebbles** are utilized in the construction.
- The **Rajput monarchs** of Jammu executed and studied the **Jharokha style** of the balcony, which was **inspired** by the Rajasthani style of architecture.
- The **12th century** saw the creation of **Krimchi temples in Udhampur**, which combined Jammu architecture with **Hellenistic** building styles.
- Purmandal**, a holy site for Hindus, was established by Gulab Singh.

About the Indian National Trust for Art and Cultural Heritage (INTACH):

- INTACH** is a non-profit charitable organisation founded in 1984, registered under the Societies Registration Act, of 1860.
- In 2007, the United Nations awarded INTACH a special consultative status with the United Nations Economic and Social Council (UNESCO).

Uttarakhand GI Tags**News Excerpt:**

Recently, **over 15 products from Uttarakhand** have been given the coveted **GI tag** by the Geographical Indications Registry.

About the Products that were given GI tags:

- Berina tea from Uttarakhand** is highly sought after by London tea establishments and tea blenders. It is manufactured from the leaves of a plant that grows wild in the Himalayas and is then compacted into a solid mass.
- Bichhu buti fabrics** are manufactured from Himalayan nettle fibres.
 - As the plant's fibres are hollow, they have a unique ability to accumulate air inside, resulting in natural insulation and a perfect clothing material for both winter and summer.
- The **Uttarakhand mandua, a finger millet** grown in Garhwal and Kumaon is a staple in many parts of the state.
- Jhangora, is a homegrown millet** typically farmed in the rain-fed districts of the Himalayas in Uttarakhand.
- Gahat is one of the most important pulses** grown in the state's dry regions, with medicinal properties known to Ayurveda and traditional physicians for ages.
- Uttarakhand lal chawal, is a red rice** farmed organically in the Purola district.
- Other products to receive GI tags included
 - Uttarakhand kala bhat** (black soybean)
 - Malta fruit**
 - Chaulai** (ramdana), a grain used on fasting days
 - Buransh juice** obtained from the red flowers of the Rhododendron arboreum
 - Pahari toor dal;**
 - Uttarakhand likhai** or wood carvings
 - Nainital mombatti (candles)**
 - Rangwali pichhoda of Kumaon,**
 - Ramnagar Nainital litchis**
 - Ramgarh Nainital peaches**
 - Chamoli wooden Ramman masks**
 - Almora Lakhori mirchis**, a chilli variant.

WHAT IS A GI TAG?

- A GI tag is a geographical indication of an item which is specific to a particular place
- GI status can be sought for agricultural products, handicrafts, handloom and food products
- The RGI (registration of geographical indications) logo given to a particular product can only be used by registered and authorised users
- When marketed, a GI tagged product must carry a logo showing its place of origin
- Civil and criminal proceedings can be initiated against those using the logo in unauthorised manner

HOW TO APPLY?

- An association or collective body can apply to GI Registry
- Application should be backed by proof of uniqueness, historical records to show proof of origin, quality and special character
- After rounds of verification, presentation and meetings, if registry is satisfied, application goes to GI Registry journal
- If application receives no opposition within four months, it gets the GI tag



Janjatiya Gaurav Divas

News Excerpt:

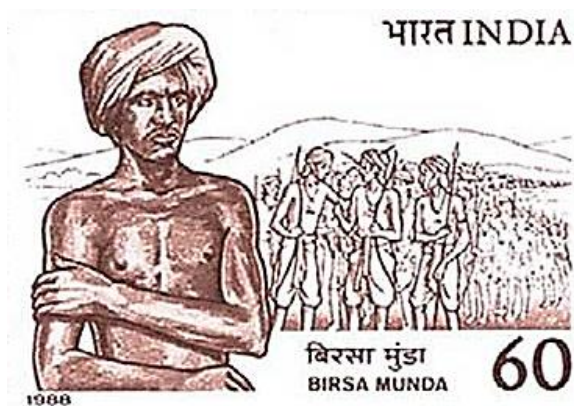
Janjatiya Gaurav Divas was celebrated all over India on 15th November 2023.

About Janjatiya Gaurav Divas:

- The Government of India has decided to celebrate **November 15** as '**Janjatiya Gaurav Divas**' to mark the birth anniversary of Tribal Freedom Fighter "**Birsa Munda**" from the year **2021**.
- Every year, the Janjatiya Gaurav Divas is held to **honour tribal efforts in the preservation of cultural heritage and the promotion of Indian ideals such as national pride, valour, and hospitality**.
- Birsa's birth anniversary is marked as the **Statehood Day** in Jharkhand.

About Birsa Munda:

- He was born on **November 15, 1875**.
- He was not only a **freedom fighter but also a social reformer** and led the tribal movement, namely **Ulgulan (Revolt)** against the **exploitative systems of the British Colonial Government**.
- He is also known as **Dharti Abba** as he encouraged tribals to understand their cultural roots & observe unity.
- He belonged to the Munda tribe in the Chhotanagpur Plateau area. Under the guidance of his teacher Jaipal Nag, Birsa converted to Christianity to join the German Mission school.
- However, having gained awareness of the British colonial ruler and the efforts of the missionaries to convert tribals to Christianity, Birsa started the faith of '**Birsait**'. Soon members of the Munda and Oraon community started joining the Birsait sect.
- Birsa Munda is known **to have mobilised the tribal community against the British** and had also **forced the colonial officials to introduce laws protecting the land rights of the tribals**.
- He **died on June 9, 1900**, at a young age of 25.



Other related initiatives launched by the Prime Minister on Janjatiya Gaurav Divas:

PM-PVTG Development Mission:

- It aimed at the overall development of the 75 Particularly Vulnerable Tribal Groups (PVTGs) communities living in remote areas.
- It has been **established to provide basic infrastructure** such as power, water, road connectivity, housing, education, and healthcare.
- Through the **coordinated efforts of nine Ministries**, **approximately 11 interventions** such as the PM-Gram Sadak Yojana, PM-Gram Awaas Yojana, Jal Jeevan Mission, and others **would be delivered to these target villages**.

Viksit Bharat Sankalp Yatra:

- It was launched from **Khunti (Jharkhand)** — in an attempt to achieve saturation of flagship government schemes across the country.
- The Yatra starts in **tribal-dominated districts of the country and will eventually reach all districts by January 2024**.
- The Yatra's main goal will be to **reach out to people and raise awareness about various welfare programs**.
- Top issues tackled in tribal regions- Sickle Cell Anaemia Elimination Mission; Enrollment in Eklavya Model Residential Schools; Scholarship Schemes; Forest Right Titles: Individual and Community Land; Van Dhan Vikas Kendra: Organizing Self-Help Groups.
- It is one of the country's largest-ever outreach initiatives and intends to cover over **2.55 lakh Gram Panchayats and over 3,600 urban local bodies by January 25th, 2024, touching every district**.

PM JANMAN (PM- Janjati Adivasi Nyaya Maha Abhiyan):

- It is aimed at the comprehensive development of 75 PVTG communities residing in 18 states and 1 UT who continue to lag behind in socio-economic indicators of educational, health and livelihood.
- The population of these communities is about 28 lakh and are living in about 22000 habitations in more than 800 blocks located in 200 districts.
- Even after 75 years of independence, various development schemes of the Central and State Governments have not been able to adequately address the critical infrastructure needs of the villages and habitations of these communities.
- The PM also launched the portal on the **PM Gatishatki Platform** which will be used for reaching out and monitoring the progress and outcomes of the PM-JANMAN.

Pichwai Painting

News Excerpt:

Chennai hosts an **art exhibit** showcasing Pichwai paintings.

About the Pichwai painting:

- Pichwai is a traditional style (400 years old) of **painting** from **Rajasthan** and usually depicts **Lord Krishna** and related stories. They show various moods of Krishna and are executed in the **miniature style**.
- This unique word Pichwai comes from the Sanskrit words, '**pitch**' meaning back and '**wais**' meaning hanging. It therefore means traditional paintings are hanging behind the idol of Shrinathji.



- Other **themes** are also portrayed, such as the **map** of the **Nathdwara temple**, and **cows** (as symbols of Lord Krishna) among others and not very often, are also created on **paper**.
- The paintings are **made of cloth** and are used as a **backdrop** to the idol in the temple.
- The classic styles are generally made with **natural colours** and even natural brushes. The base is mostly **red** woven with **yellow** or any bright-coloured embroidery. Some of the paintings are filled with **pure gold**.

Temple Caves discovered in Ratnagiri

News Excerpt:

Two rock-cut Shaivite temple caves have been discovered in **Ratnagiri, Mumbai**.

About Shaivite Temple Caves:

- These were created about **5 or 6 century CE**, near **Bondla Wildlife Sanctuary, Rajapur, Ratnagiri**, about 380 km from **Mumbai**.
 - Ratnagiri** is also famous for the **Ratnagiri caves**. They are known as the **Buddhist Centre** as **Buddhist monuments** were constructed here in the **15th century**.
- The **Shiva linga** forms an integral part of the cave that has a **rectangular entrance**.
- These are **older** than the **Elephanta caves** and are the **type of monolithic rock-cut caves**.

- Such Shaivite caves are **also found in Ellora Caves**.

About Elephanta Caves:

- The Elephanta Caves are located in **Western India** on **Elephanta Island** (otherwise known as the **Island of Gharapuri**), district **Raigad** is located on island hills about **11 km northeast of the Apollo Bandar, Mumbai**. The island is named after a colossal elephant found on the island, which is popularly known as '**Gharapuri**'.
- These archaeological remains reveal evidence of occupation from **as early as the 2nd century BC**.
- The rock-cut Elephanta Caves were constructed about the **mid-5th to 6th centuries AD**.
- The most important among the caves is the **great Cave 1**, which measures **39 metres** from the **front entrance to the back**.
- The Elephanta Caves are protected primarily by the **Archaeological Survey of India**.

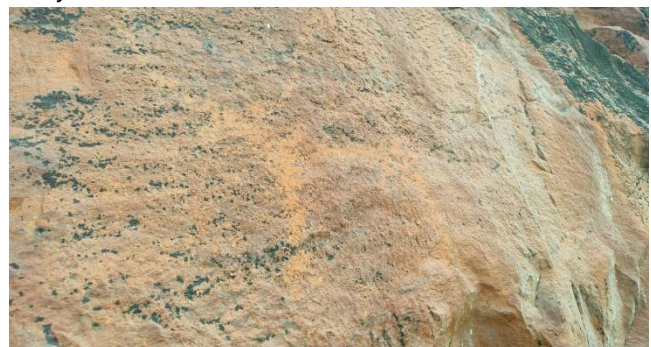
Archaeological Survey of India (ASI):

- It is** under the **Ministry of Culture**, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation.
- Maintenance of ancient monuments and archaeological sites and remains of national importance is the prime concern of the ASI.

Rock Art dating back to the Neolithic period

News Excerpt:

A rock bruising of a stag and a man dating back to the Neolithic period was found in the Gundala-Veerlavagu Valley of Andhra Pradesh.



About Rock Bruising:

- They form the second most important type of rock art which is done either by **rubbing, hammering, scooping or pecking** of rough granite surface.
- It is found on **quartzite rocks** because of the extreme toughness of the stone.
- These include **shallow dots, small holes, and conical and U-shaped cup marks** and were probably done by a drilling technique with the help of metallic instruments.

- In southern India, rock bruising were noticed quite early by in **1892** on **Kupgallu Hill of Bellary District of Karnataka**.

Findings in Gundala-Veerlavagu Valley:

- A rock bruising dating back to the Neolithic period was found in **Palnadu district** in the **coastal Andhra Region**.
- It was discovered during the survey as a part of a heritage awareness campaign titled '**Preserve Heritage for Posterity**'.
- **Vaishnavite temples** dating back to the Kakatiya period (13th Century CE) were also found on the right side of **Veerula Vagu (deep and narrow gorge)**.
- A rock bruising of a stag **measuring 20 cm in length and 15 cm in height** delineated on the cliff of a rock shelter towards Koppunuru village at a height of 10 metres was spotted.
- A few megalithic burials called **cairn circles** dating back to around **1,000 BCE** were also found.
- **Remains of bricks** and potsherds called **redware** of the **Satavahana era** (1st century CE) were also found.

Wood Technology- Stone Age

News Excerpt:

Archaeologists recently published robust and well-dated evidence for the earliest known use of wood technology.

About Wood Technology in the Stone Age:

- Humans spent roughly 99% of their history in the Stone Age.
- The Early Stone Age is thought to be the earliest and possibly longest "technological age," lasting almost four million years and ending 300,000 years ago.
- Inorganic materials like rocks are nearly indestructible when compared to those constructed of perishable materials like wood.
 - **Wood is extremely uncommon in Early Stone Age deposits**, necessitating excellent preservation conditions to prevent deterioration.
 - It can only thrive in extremely dry areas like **deserts** or in **extremely wet situations like Kalambo Falls**.



Findings of Wood Structure in Kalambo Falls:

The **University of Liverpool's** archaeologist produced well-dated evidence for the oldest known usage of wood technology.

- Researchers uncover **wooden artifacts on the banks of the Kalambo River in Zambia**, near where the oldest-known use of wood in construction was found.
- The **wooden structure and artifacts** were found from wet strata at **Kalambo Falls, Zambia, 476,000 years ago**.
- These include **a wedge (a sort of wooden tool), a digging stick, a log carved with tools, and a branch with a notch cut into it**.
- This evidence shows that early hominins (old human cousins) had a remarkable capacity to **acquire wood and form it with tools**.
- Archaeologists have excavated **two logs of the large-fruited bushwillow tree** that were notched, shaped and joined nearly half a million years ago.
 - The structure is **made up of two trees** that have been intentionally shaped to form a framework of two interlocking supports.
- There were **no human remains discovered**, but the artifacts were created by a species known as **Homo heidelbergensis**, which lived between 700,000 and 200,000 years ago.
 - **Homo heidelbergensis** had a **larger brow ridge, a larger braincase, and a flatter face** than previous hominins - species in the human evolutionary lineage.

Importance of this Finding:

- Wood being perishable is a more sustainable material than certain modern construction materials, which are practically indestructible and leave visible ruins.
- This evidence suggests that **early hominins were able to use materials other than stone for their daily needs**, such as tool-making and shelter.
 - Early humans may have also been able to employ the materials available in their **habitat for fuel and medication**.
- While the vast majority of archaeological sites of this age preserve only the stone tools, **Kalambo Falls provides** us with a unique insight into the **wooden objects that these tools** were being used to create, allowing us a much richer and more complete picture of the lives of these people.

Vajra Mushti Kalaga

News Excerpt:

A martial art form Vajra Mushti Kalaga, that takes place during the Dussehra festival is facing terminal decline.

About Vajra Mushti Kalaga:

- It is a unique Indian martial art that incorporates various techniques of hand-to-hand combat like **grappling, wrestling, and striking**.
- It makes use of a knuckle duster, a small metal weapon (usually made of animal horns) hence it is called a '**Vajra Mushti**' (Thunderbolt Fist).
- The objective behind the celebration of the martial art is to neutralize the opponent and counter his weapon.
- History:**
 - This form of martial art finds its evidence from the **Vijayanagara Empire** reigned between the 14th and the 17th centuries.
 - The **Medieval Era Portugal travellers** had noticed this form of wrestling during the Navratri days in the Vijayanagar Empire and have left detailed accounts of it in their writings.

Banni Festival

News Excerpt:

Banni festival was recently celebrated in **Andhra Pradesh**.

About:



- Banni, an ancient custom celebrated under the **Vijayanagara Empire**, involves mock fights for capturing idols during the **Dussehra** (Vijayadashami) festival.
- In this practice, villagers gather with sticks and clash with one another on the sidelines of the main festival.
- The idols of **Parvati (Malamma)** and Shiva (**Malleshwara Swamy**) at Mala Malleswara Swamy temple located in **Kurnool district** (Andhra Pradesh) are brought down to the foot of the hill.
- Some devotees form a security ring, while others try to capture them. The procession, led by farmers, symbolizes the **killing of demons** by Mala-Malleshwara (Shiva).
- Despite a Supreme Court **ban**, locals continue the tradition.

Arattu Festival

News Excerpt:

The 'Arattu' festival was celebrated at the Sree Padmanabha Swamy Temple in Thiruvananthapuram.



About Arattu Festival:

- The word Arattu means **holy bath**. As the name suggests, the festival is about the sacred bath of the idol of **Lord Padmanabha**.
- This festival is celebrated for **ten days** in different temples of **Kerala**.
- This festival is celebrated **twice a year**. This festival is celebrated in the spring Festival in **March or April** and in the autumn festival in **the month of October or November**.
- This festival **starts on Karthika day** and **ends on Uthram day**, according to the Malayalam calendar.
- The festival begins with a flag hoisting and ends with the holy bath.

Chhath Puja: A Holy Festival of Bihar

News Excerpt:

Honourable President and Prime Minister led political leaders wishing people for Chhath Puja on November 19.

About Chhath Puja and Festival:

- For centuries, the Chhath festival has been celebrated in **Bihar and some parts of eastern Uttar Pradesh and Nepal**, making it much more visible across the country.
- Almost all civilisations have worshipped the '**God Sun**', but it has a unique form in Bihar Chhath Puja, the only occasion where the **setting sun is worshipped along with the rising sun**.
- According to the Hindu calendar, Chhath Puja is celebrated on the **sixth day of Kartik month**.
- Chhath Puja, also known as **Surya Shashti**, is a **bathing festival followed by a four-day period of abstinence and ritual purity**.
- Chhath Puja is **the only Vedic Festival** celebrated in India.



Mythological stories behind Chhath Puja:

Some believe it is a **carryover from when man worshipped nature.**

- **Ramayana Epic:** After Lord Ram and Goddess Sita returned victorious to Ayodhya from Lanka, they are said to have observed a fast and conducted a yagna for the Sun god.
- **Mahabharata Epic:** When the Pandavas were in exile, Draupadi went to sage Dhaumya for help, who advised her to observe a fast and pray to the Sun, and eventually, all her prayers were answered. Karna also organised an elaborate ceremony in the same epic honouring his father, Surya (the Sun).

Significance of Chhath Puja:

- **Environmental:** Countless devotees who join their hands as the Sun's rays spread over them feel the touch of divinity and devotion in a measure little else brings to them.
 - The entire community gets involved in making the festival a success — **cleaning river banks and the roads** leading up to those banks.
- **Cultural:** People gather all the little things needed for the rituals while preparing **thekuas (Bihari cuisine)**. This festival means the coming together of the community, the **legendary Bihari migrants returning home to soak themselves in their culture.**
 - **Equal treatment:** People from **any caste can observe** this festival. **No priests** are involved; the devotee is fasting for and praying to a visible, apparent **Sun God**, who **shines on everyone equally.**
- **Scientific:** Chhath Puja is the best way to **detoxify our body by taking dips in water and exposing the body to the sun.** It increases the flow of solar bioelectricity, improving the human body's functionality.
 - Chhath Puja helps to **kill harmful bacteria and prepares the body for the upcoming winter season.**

BUILD A STRONG FOUNDATION FOR UPSC

Live Class From...

COMPLETING ALL NCERTS IN JUST 3 MONTHS

27th December



Dedicated Mentorship

Special sessions with the mentor to track the student's performance

150 hours of live online classes covering all NCERTs from in 3 months.

Faculty Support: A hand-holding approach with students

Focus on memorisation and retrieval

Comprehensive Notes based on NCERTs



8826002521 / 9990999707 | ksgindia.com/neev

GOVERNMENT SCHEMES

NITI Aayog SATH-E Report

News Excerpt:

Recently, NITI Aayog published its outcome report on **the Sustainable Action for Transforming Human Capital in Education (SATH-E)**.

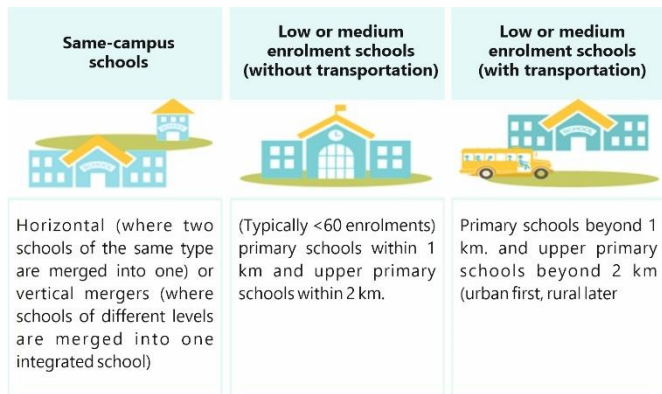


Exhibit 3.2: Types of school mergers

About the SATH-E project:

- Project SATH-E was launched in 2017 to identify and **build three 'role model' States for the school education sector**.
- After an elaborate selection process, Jharkhand, Odisha and Madhya Pradesh were chosen.
- The SATH-E project is an **exemplary cooperative and competitive federalism initiative**.

Issues highlighted by NITI Aayog through SATH-E report:

- According to the SATH-E report, India continues to have five times the number of schools as China for the same enrollment, and more than half of primary schools in many states have fewer than 60 students.
- The NITI Aayog has underlined the significant **disparity between the number of teachers needed and those recruited**.
 - More than a million teachers are needed in India, and certain states have anywhere from 30% to 50% of teacher vacancies.
 - Inequitable distribution:** More teachers available than needed in urban regions and disproportionately higher vacancies in rural areas.
- According to NITI Aayog, the cost of such subscale schools is very high due to extensive multi-grade teaching, a lack of a student and parent community that can demand accountability, poor infrastructure, the same 1-2 teachers handling all administrative responsibilities in the absence of headmasters/principals, and so on.

Measures suggested by NITI Aayog:

- To tackle this issue, **India should merge small, sub-scale, and low-enrolment schools with nearby ones**

and rationalize teacher recruitment to optimize its learning outcomes.

- This has been successfully implemented across SATH-E states.
 - Jharkhand** merged **4,380 schools** in conjunction with the NITI Aayog, saving **Rs 400 crore**.
 - In **Madhya Pradesh**, over **35,000** schools have been identified for consolidation with surrounding educational institutions. **Earlier, only 20%** of these schools had a principal or headmaster. This **increased to 55%** as the number of schools had decreased to **16,000 after the merger**.
 - The state government of **Odisha consolidated 2,000 schools** into same-campus schools.
- The NITI Aayog has suggested that **states delegate authority to principals, as well as district and block officers**, in order to improve governance.
 - This includes giving them greater financial powers and autonomy to make decisions.
- For a long time, school mergers have been considered a policy intervention. Still, there has been **worry about their influence on access to education, particularly in areas with inadequate or remote connectivity**.
- Along with mergers, states should establish a network of large schools (**10-20% scattered across the state**) as integrated K-12 schools and provide transportation to ensure that all children have equitable access to them.

Way Forward:

States' education systems cannot practically transform and deliver much higher outcomes with such high teacher vacancies. That's why **NITI Aayog** has called for rationalizing teacher recruitment to ensure equitable access. Other measures highlighted by the think tank include **tightening teacher accreditation standards** for pre-service training institutes and overhauling teacher-training curricula.

AAINA Dashboard for Cities' Portal

News Excerpt:

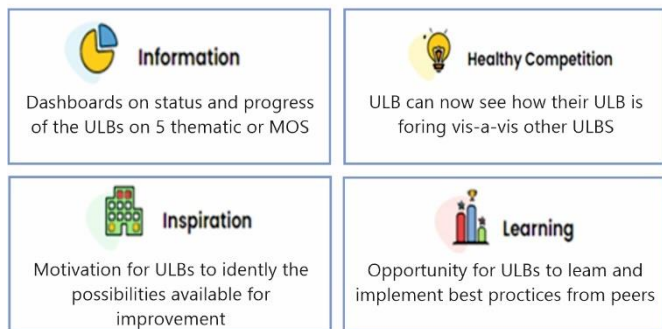
The Ministry of Housing and Urban Affairs (MoHUA) recently made the **'AAINA Dashboard for Cities'** portal live.

About:

- The portal, **www.aaina.gov.in**, serves as the nationwide platform for Urban Local Bodies (ULBs) to voluntarily submit critical data regularly.
- ULBs submit data, including audited accounts and self-reported performance metrics, through an easy-to-fill data entry form on the portal.

- Envisioned as a permanent platform, the AAINA Dashboard aims to create a **robust database of key performance metrics for ULBs**, updated regularly.
- Handholding support is provided to ULBs by MoHUA through **Digital India Corporation** as needed.
- While not ranking the ULBs, the AAINA dashboard would serve as a **tool for comparing similarly placed cities and promoting peer learning among cities.**

Objective



Information Collection on Five Thematic Areas



About ULBs:

- They are small local bodies that govern a city or a town of a specified population. There are several types of ULBs in India, such as Municipal Corporation, Municipality, Notified Area Committee, Town Area Committees, Special Purpose Agency, Township, Port Trust, Cantonment Board, etc.
- The 74th Constitutional Amendment Act of 1992 sought to empower ULBs to perform functions and implement schemes in relation to the 18 subjects specified in the 12th Schedule of the Constitution.

Pradhan Mantri Anusuchit Jaati Abhuyday Yojana (PM-AJAY)

News Excerpt:

The Ministry of Social Justice and Empowerment recently launched the PM-AJAY scheme by merging **three centrally sponsored schemes.**

PM AJAY (Pradhan Mantri Anusuchit Jaati Abhuyday Yojana)

PMAGY (Pradhan Mantri Adarsh Gram Yojana)

Special Central Assistance to Scheduled Castes Sub Plan (SCA to SCSP)

Babu Jagjivan Ram Chhatrawas Yojana (BJRCY)

About PM AJAY:

- The scheme **aims to reduce poverty** among SC communities by providing additional employment opportunities, **improving socio-economic developmental indicators** by ensuring adequate infrastructure, etc., in SC-dominated villages and **increasing literacy.**
- It has the following **components:**
 - Development of SC-dominated villages into an **"Adarsh Gram"**.
 - "Grants-in-aid"** for District/State-level Projects for the socio-economic betterment of SCs - construction of schools, livelihood projects, etc.
 - Construction of **hostels** in higher educational institutions and schools.
 - Financial support for Monitoring and Evaluation of the Scheme implementation.

Meri Maati Mera Desh campaign

News Excerpt:

The **Amrit Kalash Yatra** of the Meri Maati Mera Desh campaign **culminated at Kartavya Path.**

About Meri Maati Mera Desh:

- It is a nationwide campaign launched on **9 August 2023** to pay tribute to the **'Veers'** who laid down their lives for the country.
- This campaign concludes the **'Azadi Ka Amrit Mahotsav,'** which began on **12 March 2021.**
- It envisions a unified celebration of **India's soil and valour**, commemorating the nation's journey of freedom and progress.

- This campaign comprises many **activities** and **ceremonies** conducted across the country at Panchayat/Village, Block, Urban Local Body, State and National levels:
- **Dedication of Shilaphalakam (Memorial):**
 - Shilaphalakam, inscribed with the names of Bravehearts, shall be **erected** locally within Panchayats/Villages and urban sites—likely near Amrit Sarovar.
- **Panch Pran Pledge:**
 - People will take a solemn pledge covering the Panch Pran at the memorial site, affirming their commitment to the country.
- **Vasudha Vandhan:**
 - Panchayats/villages/urban local bodies will **replenish Mother Earth by planting 75 saplings** of indigenous species and developing the 'Amrit Vatika'.
- **Veeron Ka Vandan:**
 - Felicitation ceremonies shall be held to honour the **freedom fighters** and the **families** of deceased freedom fighters.
- **Rashtragaan:**
 - Hoisting of the **National Flag** and singing of Rashtragaan shall be undertaken at the sites.
- **Amrit Kalash Yatra:**
 - **Volunteers** from all corners of the country would **collect Mitti** (soil) from Panchayats/Villages and bring it to the block level. Similarly, Mitti shall be collected from smaller urban bodies and brought to larger municipalities/urban local bodies.
 - Subsequently, Mitti Kalash, having the soil from the Panchayats/Villages/urban areas, would be carried to the **National Capital**.



PM-Kisan Bhai (Bhandaran Incentive) Scheme

News Excerpt:

The government of India is planning to launch the **PM-Kisan Bhai scheme**.

About the Scheme:

- **Objective:** To help small and marginal farmers who cannot hold their produce in warehouses and wait for better prices.
- This is considered an attempt to **disrupt traders' monopoly on determining crop prices**.
 - It is expected to **empower farmers by allowing them to keep their crops for at least three months after harvest**.
- This initiative grants farmers the autonomy to sell when they want, as opposed to the current system, in which most crops are sold during the harvesting season, which usually lasts 2-3 months, with dealers and stockists controlling supplies throughout the off-season.

Pilot launch:

- In the **first phase**, the scheme may be implemented on a pilot basis in **Andhra Pradesh, Assam, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh**, with an estimated expenditure of **₹170 crore in three years**, including the current fiscal year.
- There appears to be a strong need for incentivizing the storing of farmers' produce in scientifically built warehouses and further reducing the interest rate on pledge finance availed against a secured instrument of **e-negotiable Warehouse Receipts (eNWRs) through Prompt Repayment Incentive (PRI)** on trading such eNWR via **e-National Agriculture Market (e-NAM)** platform or other registered e-trading platforms interoperable with e-NAM.

Major components:

There are two components of the proposal —

- **Warehousing Rental Subsidy (WRS):**
 - Small and marginal farmers and farmer producer organizations (FPOs) will be eligible to avail of **WRS benefit at ₹4 per quintal per month** irrespective of the warehousing (storage) rental charges and whether charged per quintal basis or area basis by the warehouse operator.
 - The government has proposed that the storage incentive be provided for a maximum of three months.
 - Besides, **the produce stored for 15 days or less will not be eligible for the subsidy**.
 - The storage incentive will be calculated **on a day-to-day basis**.
- **Prompt Repayment Incentive (PRI):**

- The government **proposes to extend the 3 percent additional interest subvention under the Kisan Credit Card (KCC) scheme** so that farmers can pledge their produce and get a loan at a subsidized interest rate.
- All KCC-holder farmers will be eligible for **prompt repayment incentive at a 3 percent lesser interest rate for three months** on stocking their produce with registered warehouses, availing digital finance against eNWR and trading via eNAM.
- Once farmers get the desired monetary support for storage during harvesting season, they can refuse the buyer-dictated prices.
- By promoting e-NWR trade through the online portal e-NAM, farmers will get access to many buyers across the country and be able to sell the produce, even if it is in a warehouse, by using e-NWR on an online platform.

Challenges:

- The scheme's success depends a lot on the **buyers' response** as they will still be the key influencers on prices because of their large capital base in the agri value chain.
- If they do not show the desired interest in buying through the online portal, the farmers will again have to return to the agri market yards (mandis).
- This new scheme will be successful if farmers become the decision-makers.

PM Garib Kalyan Anna Yojana

News Excerpt:

In a Chhattisgarh election rally, PM Narendra Modi recently announced the extension of the Pradhan Mantri Garib Kalyan Ann Yojana (PM-GKAY) for over five years till 2028.

- By 2028, the government expects India to become the world's third-largest economy, with a GDP of \$5 trillion.

About the scheme:

- The Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY) was launched in **March 2020**.
- The **Department of Food and Public Distribution operates the program under the Ministry of Consumer Affairs, Food, and Public Distribution**.
- PM-GKAY provides **5 kg of rice or wheat per person and 1 kg of dal** to each family holding a ration card.
- In 2020, the Government of India announced the PM-GKAY for all beneficiaries covered under the National Food Security Act, 2013 (NFSA) as part of the **pro-poor PM Garib Kalyan Package** for the period April–November 2020.

- **Around 80 crore NFSA beneficiaries were allocated an additional 5 kg of foodgrains (wheat or rice) free of charge** for a period of 8 months (April–November 2020), thereby ensuring the food security of poor, vulnerable beneficiaries and households in the wake of economic disruptions caused by the COVID-19 outbreak in the country.
- The scheme has been extended multiple times. Though it was initially meant for only three months, the government extended the scheme six times to provide the additional free foodgrain for 28 months.
- In December last year, the government announced the amalgamation of the PMGKAY scheme with the NFSA, making the earlier highly subsidized foodgrain completely free for the poor.

Economic burden of the scheme:

- Under PM-GKAY, the government's annual expenditures on account of the food subsidy are estimated at Rs 2 lakh crore, and this is likely to increase in the next financial year due to a corresponding increase in the economic cost of foodgrain management by the Food Corporation of India's support price to farmers, storage, transportation, and other costs of rice and wheat.

Extension benefits and government focus:

- The cabinet had earlier approved the free foodgrain scheme for only one year (i.e., the calendar year of 2023), and now the PM's announcement puts to rest any speculation about the continuation of the scheme until 2028.
- **PMGKAY's five-year extension will help the "pro-poor" platform.**
- The government **ensures all beneficiaries of the world's biggest food security program are entitled.**
- Under the **One Nation One Ration Card**, those entitled to **get free 5kg foodgrain**, including migrant workers, can avail them from any part of the country.
- Necessary steps have already been taken for smooth implementation of the PMGKAY in the field, i.e., essential notification has been issued for making the price of foodgrains zero for AAY and PHH beneficiaries, resolution of technical issues at Fair Price Shops (FPS), advisory related to margin to the Fair Price Shop Dealers, zero prices in the print receipts given to beneficiaries, etc.



MISCELLANEOUS

Anubhav Awards

News Excerpt:

The Department of Pension and Pensioners' Welfare has held the Anubhav Awards 2023 Ceremony in Vigyan Bhawan, New Delhi.

About:

- In order to **encourage** submission of write-ups by **retired Government servants**, an annual Award Scheme was started in 2016.
- It also allows the retiring employees to convey information related to their contribution to enhancing the effectiveness of the various Government policies.
- It is envisaged that this culture of leaving notes by retirees will become the foundation stone of **good governance** and **administrative reforms** in future.

Rohini Nayar Prize

News Excerpt:

The **Second edition of the Rohini Nayar Prize** was awarded to **Deenanath Rajput** for Outstanding Contribution to Rural Development.

About the Rohini Nayar Prize:

- It has been established to honour the **exemplary contribution of young Indians under the age of 40** who are committed to improving the lives of rural people.
- It has been instituted in the memory of the life and work of eminent economist-administrator Dr. Rohini Nayar.
- Rohini Nayar served as the principal advisor in the Erstwhile Planning Commission and as IAS under the Uttar Pradesh Cadre.

Contribution of Deenanath Rajput:

- He is an engineer turned social worker.
- He set up a **Farmers Produce Organization (FPO)** in **Jagapur in Bastar, Chattisgarh**.
 - Bastar district is known to be a centre of Naxalite activities.
- The **initial membership of the FPO was 337; now, it has more than 6000 members** across 4 districts.
- The FPO provides agricultural extension services to farmers, helping to **build cold storage infrastructure**, connecting them to **national and international markets** for their products and enabling them to **diversify into high-value-added products and services**.
- His efforts have **changed the lives of over 6000 tribal women in Chhattisgarh**.

Indira Gandhi Peace Prize

News Excerpt:

Recently, the Indira Gandhi Prize for Peace, Disarmament, and Development for 2022 was awarded to the **Indian Medical Association (IMA) and the Trained Nurses Association of India (TNAI)** by former Vice President Shri Hamid Ansari for their remarkable service during the COVID-19 pandemic.

About Indira Gandhi Peace Prize:

- It is a prestigious annual award given since **1986**.
- It has been named after former Prime Minister Smt. Indira Gandhi, and conferred on her birth anniversary on 19 November every year by the Indira Gandhi Memorial Trust.
- It consists of a monetary award of **25 lakh along with a citation**.
- **Awarded To:**
 - The award is given to people or associations **pursuing worldwide harmony and development, guaranteeing that logical revelation is utilized** to further the scope of opportunity, improve humankind, and make a new global economic order.
- **Current award:**
 - The 2022 award acknowledged the **selfless service, dedication, and perseverance displayed by healthcare workers during the pandemic**.

Indian Medical Association (IMA)

The only representative voluntary organization of Doctors of Modern Scientific System of Medicine, which looks after the interest of doctors and the well being of the community at large.

Started in 1928 on the occasion of the 5th all India Medical Conference at Calcutta.

The National headquarters of the IMA is situated at New Delhi, and its Journal Office functions from Calcutta. "Your Health" in English and "Aap Ka Swasthya" in Hindi are published regularly.

Trained Nurses' Association of India (TNAI)

A national organization of nurse professionals at different levels, initially known as the Association of Nursing Superintendents.

Established in 1908 and registered under the Societies Registration Act XXI of 1860.

In 1910 the first conference of the Trained Nurses' Association of India was held at Banaras and the Nursing Journal of India was published for the first time.

Significance of this Award:

- Healthcare workers worked tirelessly, often neglecting their own welfare, and endured unprecedented work hours.
 - These COVID warriors stood as the primary defence against the virus, exemplifying remarkable resilience, tenacity, and compassion in adversity.
- The award represents the unparalleled commitment and sacrifices of healthcare professionals and is aligned with the principles and causes advocated by Indira Gandhi throughout her illustrious career.

Hattee community

News Excerpt:

Demand for Scheduled tribe status in the Hattee community has **regained** momentum.

About Hattee Community:

- The community resides in the Sirmaur district of **Himachal Pradesh**.
- The name 'Hattis' originated from the **practice of selling** locally grown produce, such as vegetables, crops, meat, wool, etc., at small markets called 'haat' in towns.
- The community is divided into **two clans** - Trans-Giri and Jaunsar Bawar.
 - The prominent Hattee community living in the Trans-Giri region has been demanding Scheduled Tribe (ST) status for over five years.
- The Hattis are governed by a traditional council called '**khumbli**', similar to 'khaps' in Haryana, which makes decisions related to the community.

National Unity Day

News Excerpt:

Sardar Vallabh Patel's birthday, which falls on **31 October**, is also celebrated as National Unity Day.

About National Unity Day:

- In 2014, the Government of India decided to observe the birth anniversary of Sardar Vallabhbhai Patel as the "**Rashtriya Ekta Diwas**" (National Unity Day) on 31 October every year.
- This occasion will allow us to reaffirm our nation's inherent strength and resilience to withstand the actual and potential threats to our country's unity, integrity, and security.

About Vallabhai Patel:

- Vallabhai Patel, the **deputy Prime Minister** of India, was responsible for the Home, States, and Information and Broadcasting portfolios after India gained independence.
- He tackled the complex issue of **states' integration** into the Union of India, reducing the **Princely States** from 562 to **26 administrative units** and bringing **democracy** to nearly 80 million people.
- As Minister of Home Affairs, he presided over efforts to **restore order and peace** in a country ravaged by **communal strife** and sorted out **partition** problems.
- He also **reorganized services** to form a new **Indian Administrative Service**, providing a stable administrative base for the new democracy.
- In his memory, the **Statue of Unity**, a colossal symbol of India's unity, stands tall on the banks of the **Narmada River** in **Vadodara**, Gujarat. The statue was unveiled in **2018**.

World Thrift Day

News Excerpt:

World Thrift Day was observed **worldwide on 31st October and on 30th October in India** to promote saving money and developing a sense of financial prudence.

About:

Law of Conservation:

It is a principle that states that a certain physical property (i.e., a measurable quantity) does not change over time within an isolated physical system.

- It implies that all energy is conserved, as is the total momentum. Nothing is deleted or destroyed, only conserved. All phenomena, from the subatomic world to the galaxies, follow the path of **least action**.

Principal of Least Action:

It means that a physical system between any two points in space-time evolves along a path that minimizes or maximizes the action depending on the outcome of the process.

- The basic idea is that nature has a particular purpose to fulfil and thus follows an economic path.
- The **moving water adapts to the hard rocks and soft soil** that come its way and doesn't insist on moving in a straight line. Similarly, **light bends** when moving from one medium to another by changing its velocity (refraction).
- The principle of least action is also helpful in **metaphysics and philosophy**.

CONTEMPORARY ETHICS CASE STUDY

In a highly diverse and vibrant state of our country, where divisive caste-based politics marred the local political discourse. Caste had become a dominant factor in elections, influencing voting patterns and shaping political landscapes. To understand and address this deep-rooted issue, The Election Commission decided to conduct a comprehensive survey to ascertain caste dynamics and their impact on electoral processes.

As an election official, you have been entrusted with overseeing the survey; your ethical responsibility becomes paramount. You recognize the issue's sensitive nature and understand its potential implications for individuals and communities. Your role is not just to administer the survey but also to ensure its fairness, confidentiality, and adherence to ethical principles.

The survey is designed to gather information on individuals' caste identities, providing valuable insights into the prevailing caste-based politics and its effects on the social and political fabric. The local Chief Minister (CM), who happens to be your distant relative, contacts you and asks you for the early results so that he can make a strategy for the upcoming elections. You made him aware that you are not in a position to give those data until the survey is complete.

Suddenly, you see some people are keeping an eye on you, you have started receiving threatening calls, and even your seniors have verbally asked you to oblige the request that the CM has made.



- (a) **Examine the ethical dilemma involved here.**
- (b) **What are the options available to you? Analyze each option carefully and discuss the best option in detail.**
- (c) **Do you think Caste based census should be conducted all across the country? Give justification for your argument.**




**Scientifically
Designed
Study Plan**

PRELIMS TEST SERIES

**Starting
From 10th
December
2023**

WITH ADVANCED MENTORSHIP PROGRAMME

TOTAL - 50 TESTS		
FULL LENGTH TESTES - 27 ✓ G.S. Comprehensive - 10 ✓ G.S. Sectional - 11 ✓ CSAT - 06	MINI TESTS - 23 ✓ G.S. Sectional - 14* ✓ CSAT - 09 <small>*8 out of 14 mini tests will be given as self paced tests..!</small>	Add Ons ✓ 2000+ MCQs • Daily 10 MCQs • Detailed Analysis ✓ NCERT Based Tests

Advanced Mentorship Programme includes sessions with mutiple **UPSC CSE Toppers**

9667779058, 9811293743

PHILOSOPHY OF THE MONTH

Work-Life Balance: A Must-have Conversation

A recent statement by a leading industrialist about the **call for 70-hour workweeks** among Indians has set the stage for a debate about work-life balance.

What is Work-Life Balance?

It refers to a **state of equilibrium** where a person equally distributes their time and energy to the demands of their career and personal life.

Often, work supersedes everything and work-life balance takes a seat back. But, the long-term consequences of this are not only health-related but personal and social too.

Disproportionate impact on women is one such social impact. Most women worked much more than 70 hours a week - **at both the office and their homes combined.** Prolonged office hours adversely affect them as they often bear the **primary responsibility for household and childcare duties.**



Impact of COVID-19 pandemic:

- The pandemic has also made people re-evaluate their relationship with work. It has triggered widespread concerns about the physical and psychological toll of excess workload. **Employees prefer to spend more time with families** after the Covid scare.
- Also, with the **rise of remote working, the gig economy, and other future work trends**, working hours may continue rising. Gig workers often work more than a standard workweek without a fixed schedule.

The data from the **International Labour Organisation (ILO)** point toward two significant conclusions:

- Companies that implement work-life balance policies benefit from **increased retention of current employees, improved recruitment, lower rates of absenteeism, and higher productivity.**
- It also reveals that **Indians are already among the hardest workers globally**, dedicating an average of 47.7 hours per week per employed individual as of 2023. Indian labour laws allow a 48-hour work week.



Longer work hours don't necessarily translate into higher worker productivity, as is commonly believed. There are more factors at play such as:

Thus, merely increasing working hours is not the solution to this problem of worker productivity. As we all witness a global shift towards shorter and more efficient work days due to **Artificial Intelligence, increasing working hours defies the whole point.**

Every country has its own timeline, thus it is not appropriate to compare India with Japan or Germany. They differ significantly in terms of labor force, technology, culture, and politics.

However, their experiences can be a lighthouse to us, as we tread this path.

Burnout is an actual problem in extremely work focussed cultures.





Karoshi (death from




overwork) has been a recognizable social problem in Japan since the 1970s. Thus, it becomes necessary to find your **Ikigai (Something that brings happiness and fulfillment)** to live a contented life.

So, when are you taking your next unplugged vacation?



Species In News

Species	News Excerpt	Details
Leopard Toby Puffer Fish 	Recently a " Super Rare " Leopard Toby Puffer Fish Spotted Near Australia . IUCN: Least Concern	Features: <ul style="list-style-type: none"> It is a deep-water reef species. It has both stripes on its anterior and spots along its sides, with touches of iridescent blue highlighting the eyes and tail. The Leopard Puffer needs a varied diet of meaty foods to help wear down their ever-growing teeth. It is usually found in the waters of the Philippines, Indonesia, Guam and Micronesia. This is the first time it has been spotted in Coastal Sea Marine Park of Australia.
Candolleomyces albosquamosus 	Researchers identified a new mushroom species from the Western Ghats and described it as 'Candolleomyces albosquamosus'.	Features: <ul style="list-style-type: none"> The new species has been named Candolleomyces albosquamosus - 'albosquamosus' for the white woolly scale-like structures on its pileus or cap. It has a honey-yellow cap. The 'stipe' – the stem of the mushroom is white in colour and cylindrical. New species are essential for decomposing plant litter in tropical forests contributing to nutrient cycling in the ecosystem. Its habitats include dead logs or bamboo culms in the natural forest. Western Ghats is the hotspot of the mushroom.
Paintbrush swift Butterfly (Baoris farri) 	The paintbrush swift butterfly has been sighted for the first time in Himachal Pradesh. Schedule IV of the Wildlife (Protection) Act, 1972.	Features: <ul style="list-style-type: none"> It is a butterfly species of the Hesperiidae family. Distribution: Common in northeast, central and south India, and rare in North India. Other closely related species are Blank Swift, Eight Swift and Rice Swift. Their habitat is declining due to scarcity of larval host plants, an increase in pesticide use, deforestation, and climate change.
Vairengte bent-toed gecko 	Researchers discovered a new species of gecko endemic to Mizoram, taking the number of geckos native to the state to 6, and 22 across northeast India. IUCN - 'data deficient'	Features: <ul style="list-style-type: none"> The new species has been named 'Cyrtodactylus vairengtensis' after the town Vairengte in Mizoram's Kolasib district, while the common name is 'Vairengte bent-toed gecko'. This new species is distinguished from others in the Cyrtodactylus families by the number of femoral pores. <ul style="list-style-type: none"> Femoral pores, found on the underside of lizards' hind legs and secrete a mixture of lipids and proteins, are considered to attract mates and mark territory. About Gecko species: <ul style="list-style-type: none"> Geckos are small, primarily carnivorous lizards found on all continents except Antarctica. Carphodactylidae, Diplodactylidae, Eublepharidae, Gekkonidae, Phyllodactylidae, and Sphaerodactylidae are the six families of geckos. There are 335 gecko species worldwide, 42 of which are found in India.

<p>Lysionotus Namchoomii</p> 	<p>Scientists of the Botanical Survey of India (BSI) discovered a new species of epiphytic plant <i>Lysionotus namchoomii</i> from the Pakke-Kessang district of Arunachal Pradesh.</p> <p>IUCN Status- Critically Endangered.</p>	<p>Features:</p> <ul style="list-style-type: none"> The native range of the genus Lysionotus is the Himalayas to Japan and Indo-China. 50% of the species found are endemic. Species of the genus are mostly epiphytic, lithophytic, or terrestrial evergreen erect or climbing subshrubs. The new species bears thick leaves and attractive purple flowers. The species is named in honour of the late Chau Phunkyo Namchoon, a well-known social reformer from Arunachal Pradesh's Khapti community. It is an Epiphytic plant, which are mostly found in tropical and subtropical forests. Another plant species, the Strobilanthes sunhangii (Acanthaceae) also recorded from the Pakke Kesang district, was recently added to the list of flora of India from Arunachal Pradesh. <ul style="list-style-type: none"> The plant grows in moist evergreen forests at an elevation of 1,200-1,800 metres. It is a terrestrial shrub that grows to a height of about two metres and bears beautiful white flowers.
<p>Attenborough echidna (<i>Zaglossus attenboroughi</i>)</p> 	<p>Elusive Attenborough echidna rediscovered in Indonesia.</p> <p>IUCN status: Critically Endangered CITES: Appendix II</p>	<p>Features: It is named after famed British naturalist David Attenborough and was last seen in 1961.</p> <p>About Echidnas:</p> <ul style="list-style-type: none"> There are four echidna species. Three have long beaks, with the Attenborough echidna, and the western echidna considered critically endangered. Echidnas are nocturnal and shy; they are members of the monotremes -- an egg-laying mammal (the only other member is the duck-billed platypus). They eat through toothless beaks. Found in Australia, Tasmania, and New Guinea.
<p>Sperm Whale</p> 	<p>Dominica creates the world's first marine reserve for sperm whales, safeguarding a unique population and their vital role in fighting climate change.</p> <p>IUCN Status: Vulnerable American Endangered Species Act- Endangered</p>	<p>Features:</p> <ul style="list-style-type: none"> The sperm whale (Physeter macrocephalus) is the largest of the toothed whales and the largest toothed predator. In the pre-whaling days, an estimated two million sperm whales roamed the Earth's deep waters before being hunted for oil to burn lamps and lubricate machinery. Now, some 800,000 are left. Frequently hit by ships, entangled in fishing gear and affected by agricultural runoff. Habitat: Lives in the Cyclops Mountains, nearer to the cities of Sentani and Jayapura in the Indonesian province of Papua. Role in Protecting Environment: <ul style="list-style-type: none"> Feed on deep-sea squid and fertilize surface waters with buoyant faeces. Plankton blooms, resulting from whale faeces, capture atmospheric carbon dioxide. When the blooms die, carbon sinks to the ocean depths, aiding in climate change mitigation. The marine reserve aims to conserve these "carbon heroes" and their unique cultural heritage.

Indian Red Scorpion

Novel therapeutic formulation developed for improved treatment of Indian red scorpion sting.

Features:

The Indian red scorpion (**Mesobuthus tamulus**) is one of the world's deadliest scorpions, with stings causing a potentially deadly medical emergency.

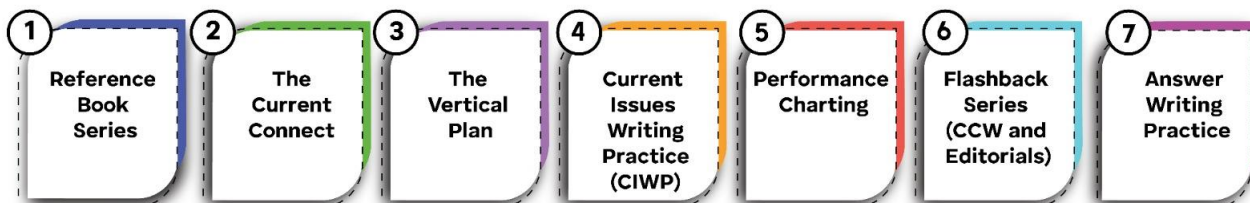
- This species is found over the Indian subcontinent, including **eastern Pakistan, Nepal, and Sri Lanka**.
- Indian red scorpions are found throughout **western Maharashtra, Saurashtra, Kerala, Andhra Pradesh, Tamil Nadu, and Karnataka** in India.
- Its stings induce the release of **catecholamine**, which leads to **pathophysiological abnormalities** in the victim.
- **Composition of Venom: 110 proteins from 13 different venom protein families.** The significant pharmacological efficacy is mostly due to non-enzymatic **Na⁺ and K⁺ ion channel** poisons with low molecular mass.

**UPSC
IAS**

FOUNDATION COURSE

KSG
 An Institute For IAS Exam...

Key features of our Foundation course



UPCOMING BATCHES

BENGALURU (Koramangala)	25 th Nov.	☎ 7619166663
INDORE (Bhawar Kuan)	27 th Nov.	☎ 9893772941
PATNA (Exhibition Road)	27 th Nov.	☎ 7463950774
DELHI (Rajender Nagar)	3 th Dec.	☎ 9811293743
JAIPUR (Tonk Road)	11 th Dec.	☎ 8290800441
BHOPAL (M.P. Nagar)	18 th Dec.	☎ 7509975361
HYDERABAD (Himayatnagar)	Admission Open	☎ 7996066663
DELHI (Vijay Nagar)	Admission Open	☎ 9717380832
KOLKATA (SALT LAKE)	Admission Open	☎ 9007709895
IMPHAL WEST (Keishamthong Hodam Leirak)	14 th Nov	☎ 9650245599
MUMBAI (Oshiwara)	14 th Nov	☎ 9871265599
SRINAGAR (BAGHAT)	14 th Nov	☎ 9871235599

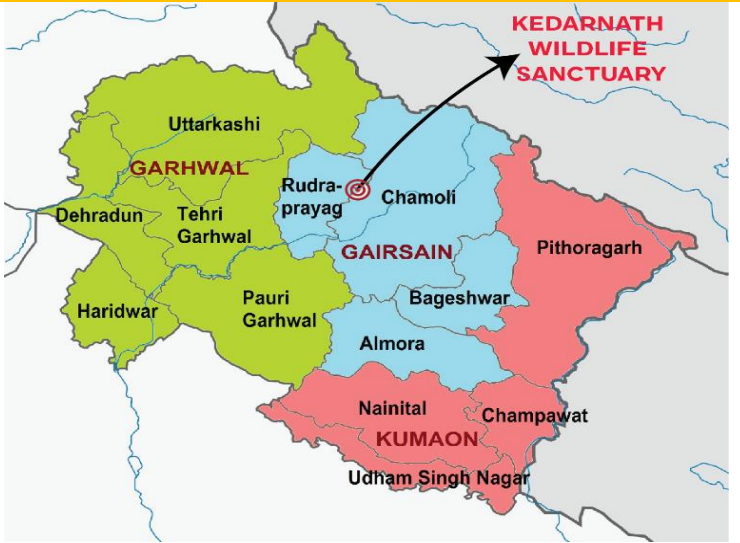
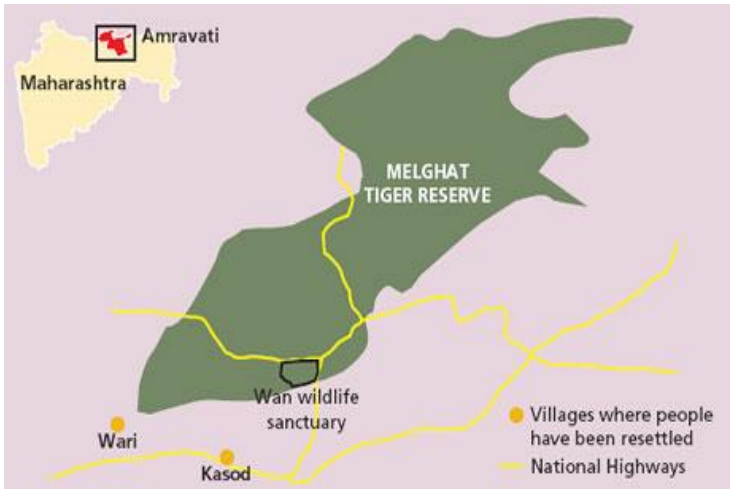

☎ 8826002521 / 9990999707

 🔍 www.ksgindia.com
www.ksgindia.com

 DELHI VN: 9717380832 & DELHI ORN: 9811293743 | JAIPUR: 8290800441 | PATNA: 7463950774 | RANCHI: 9939982007 | BHOPAL: 7509975361 |
 INDORE: 7314977441 | BENGALURU: 7619166663 | HYDERABAD: 79960 66663 | IMPHAL: 9650245599 | SRINAGAR: 98712 35599 | MUMBAI: 9871265599

MAP CONNECT

India

Protected Area	Location
<p>KEDARNATH WILDLIFE SANCTUARY</p> <ul style="list-style-type: none"> Established in the year 1972. It is the largest protected area of Uttarakhand Location: It Lies between Kedarnath in Rudraprayag and Badrinath in Chamoli. The sanctuary witnesses a large number of Hindu temples like - Kedarnath Mandir, Mandani, Madhyamaheshwar, Tungnath, Ansuya Devi, and Rudranath. It is also known to possess numerous medicinal and aromatic plant species as well as is the migration point for many endangered animals. Flora: Oak, Rhododendrons, Chir, pine etc. Fauna: Musk, deer, Himalayan Thar, Snow Leopard. 	
<p>MELGHAT TIGER RESERVE</p> <ul style="list-style-type: none"> Melghat was among the first nine tiger reserves of India to be notified in 1973 under Project Tiger. It is located in the northern part of the Amravati district of Maharashtra. The Tapti River flows through the northern part of Melghat Tiger Reserve and forms the boundary of the reserve. Vegetation: Tropical dry deciduous dominated by Teak. Flora: Teak, bamboo, Terminalia tomentosa, Emblica Officinalis etc. Fauna: Sloth bear, Indian Gaur, Sambhar deer, Leopard, Nilgais, Dhole etc. 	
<p>MHADEI WILDLIFE SANCTUARY</p> <ul style="list-style-type: none"> It lies in the Cotigao-Mhadei forest complex and is named after the Mhadei River. It forms a contiguous belt connecting the forests of Karnataka and Maharashtra. The formation of this sanctuary made Goa the only state in the country that protects the entire area of the Western Ghats that falls within the state. One of the most unusual trees found here is an evergreen variety of the Ashoka tree with peculiar saffron-coloured flowers. The Goa government will soon notify a tiger reserve in Mhadei Wildlife Sanctuary. Vegetation: Moist deciduous vegetation and some evergreen species. Flora: Evergreen variety of the Ashoka tree with peculiar saffron-coloured flowers and rare and endemic orchids. Fauna: Wild boar, Indian hare, Ruddy mongoose, Black-faced langur and Bonnet macaque. 	<p>PROTECTED AREAS IN GOA</p> 

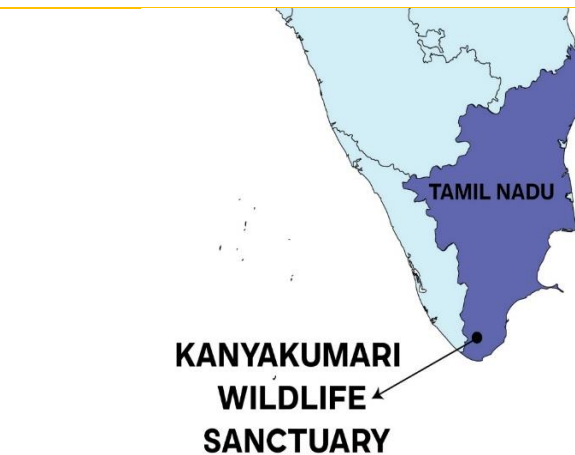
TADOBA ANDHERI NATIONAL RESERVE

- The Tadoba National Park, **was created in the year 1955.**
- It is Maharashtra's oldest and largest National Park.
- It lies in the Chandrapur district of Maharashtra state.
- The word '**Tadoba**' is **derived from the name of God "Tadoba" or "Taru,"** which is praised by local tribal people of this region and "**Andhari**" is **derived from the name of the Andhari river that flows in this area.**
- Teak is the prominent tree species in the forest.
- **Flora:** Teak, Ain, Bija, Dhauda, Salai, Tendu, Beheda, Hirda, Karaya gum, Mahua Madhuca, Bamboo, Bheria, Black Plum, and many others.
- **Fauna:** Tigers, Indian leopards, Sloth bears, Gaur, Nilgai, Dhole, Striped Hyena, Peacock, Jewel Beetles, Wolf Spiders, etc.



KANYAKUMARI WILDLIFE SANCTUARY

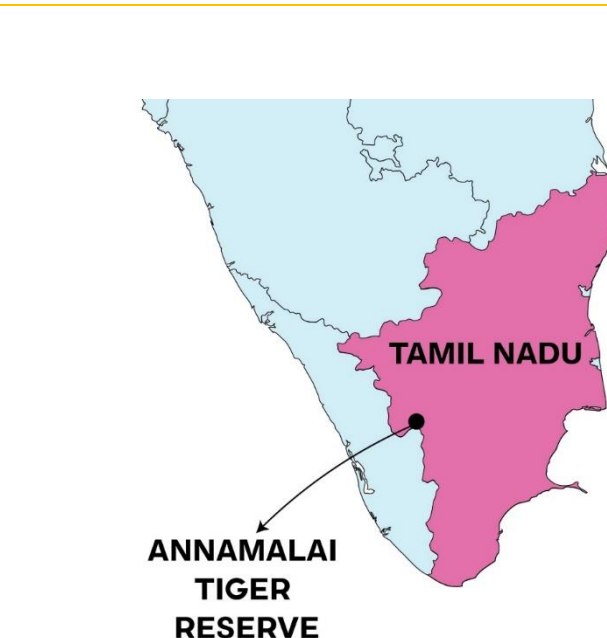
- Nestled in Tamil Nadu's Kanyakumari district, this sanctuary stands at the **convergence of the Arabian Sea, the Bay of Bengal, and the Indian Ocean.**
- The sanctuary serves as the **cradle of seven rivers** (including Pahrli and Thamirabarani).
- **Flora:** Southern thorn forests, deciduous varieties, semi-evergreen groves, and lush evergreen hill sholas adorned with grassy downs.
- **Fauna:** Indian Bison, Elephants, Nilgiri Tahr, Sambar Deer, the charismatic Lion-tailed Macaque, and reptilian wonders like the Indian Rock Python.

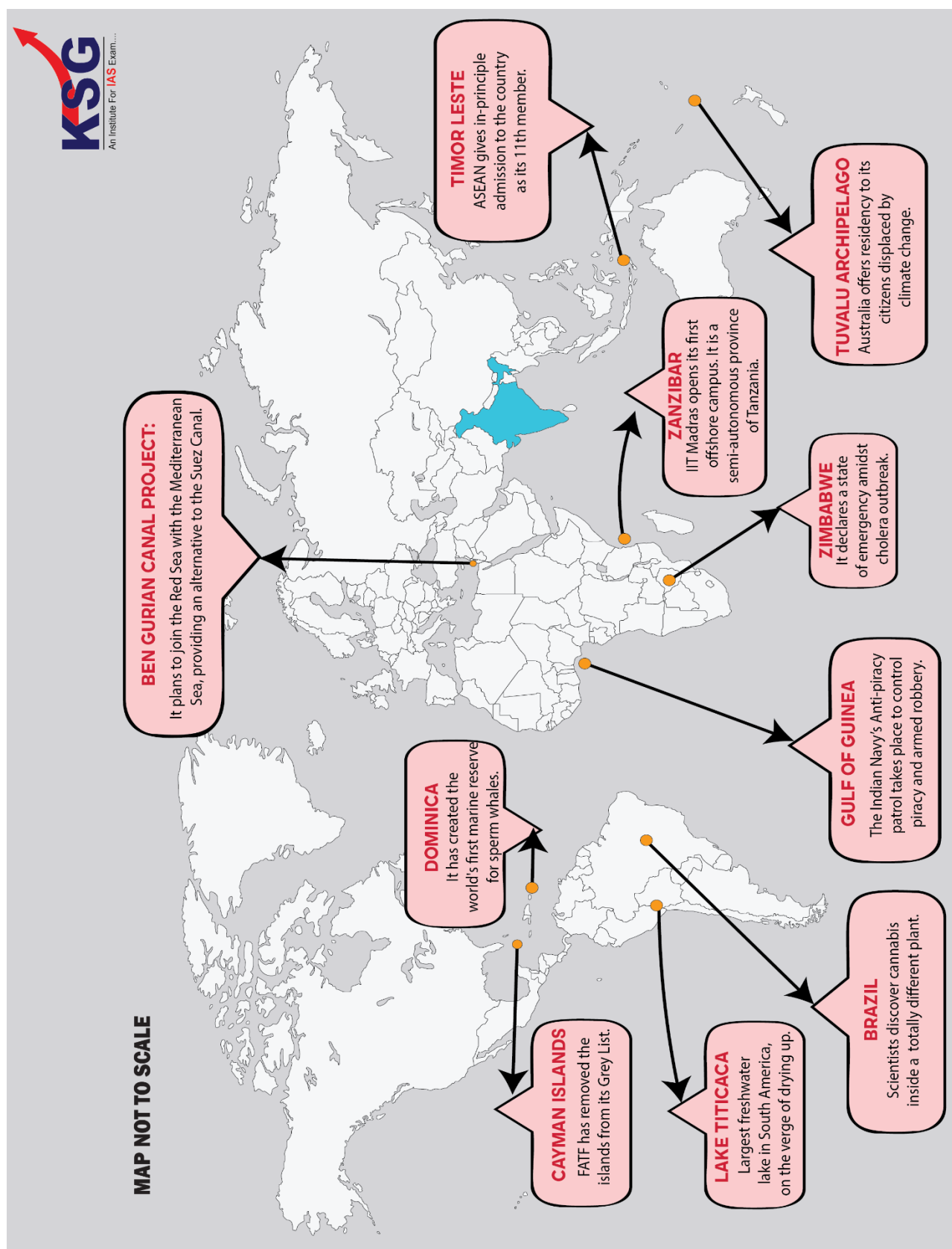


ANNAMALAI TIGER RESERVE

Anamalai Tiger Reserve was declared as a Tiger reserve in the year 2007.

- It was earlier known as Indira Gandhi Wildlife Sanctuary and National Park and as Anaimalai Wildlife Sanctuary.
- It is a protected area in the Anaimalai Hills of Pollachi and Valparai taluks of Coimbatore District and Udumalaipettai taluk in Tiruppur District, **Tamil Nadu, India.**
- Habitat: **Wet evergreen forests, semi-evergreen forests, moist deciduous, dry deciduous, dry thorn and shola forests.**
- Other unique habitats like **montane grasslands, savannah and marshy grasslands** are also present.
- **Flora:** several species of Balsam, Crotalaria, Orchids and Kurinchi.
- **Fauna:** Asiatic elephant, Sambar, Spotted deer Barking deer, Mouse deer, Gaur, Nilgiri tahr etc.
- Mudumalai and Anamalai Tiger Reserves have recently received **the global elite tag for best tiger conservation practices.**





THEMATIC ESSAYS

1. Do not look for a sanctuary in anyone except yourself.
2. In the fourth industrial revolution, it was not the big Fish that ate small Fish; it was the fast Fish that ate slow Fish.
3. Fraternity without Absorption, Union without Fusion



Mains Practice Questions:

1. **Air Pollution** has been a continuous challenge in India. Elaborate on the future steps that should make the air breathable for the people residing in urban cities.
2. The Indian Government recently inaugurated the **7th India Mobile Congress (IMC)**. Analyze the highlights of the IMC while discussing its key outcomes.
3. Discuss the scope and importance of **caste-based reservations**. Enumerate some essential case laws and Supreme Court observations about the issue.
4. **Plastic pellets** are a threat to biodiversity, and they can potentially create devastating impacts on marine biodiversity. Discuss briefly.
5. Recently, RBI has expressed concerns about the increased **risk weights on unsecured loans**. How can it act as a double-edged sword for any economy? Critically Analyse.
6. Discuss the current status of **India's Defence Indigenization** push towards Aatmanirbhar Bharat. Why is it considered important for national security, and what are the further challenges for Defence Indigenization?
7. What are the concerns for India as **Bhutan's dependence on China** is growing by the day? What measures must be taken to strengthen ties between the two countries?
8. **UAE** emerged as a crucial and significant partner for India regarding oil, energy and counter-terrorism. Critically Analyse.
9. What do you understand by **Universal Basic Income**? By discussing its impact, highlight the pros and cons of its application in a country like India.
10. Social media has transformed how individuals communicate and receive information, making it an integral part of modern life. Assess the requirements of **regulations for social media** in India.
11. The Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) have released the report **"Hunger Hotspots"**. What are the key findings of the Report? Discuss the innovative ways of fighting hunger.
12. Critically analyze the powers of the **Governor** concerning Article 200 of the Constitution.
13. **Campaign finance** refers to the funds raised to promote candidates, political parties, etc. What are the regulations in India for Electoral expenditures and funding for the elections?
14. A rail link that connects Northeast **India with Bangladesh** was inaugurated recently by the Indian Prime Minister and his Bangladesh counterpart. Analyze the importance of such connectivity projects for improving cultural and trade relations between the countries.
15. Discuss the effectiveness of the **IMF quota system**. Do you think the current work of the IMF is sufficient to address the evolving economic challenges? Give justification.

PT ORIENTED QUESTION

1. With reference to Automated Permanent Academic Account Registry (APAAR), consider the following statements:

1. It is a part of the 'One State, One Student ID' initiative of the government of Rajasthan.
2. It would serve as a gateway to Digilocker, a digital system where students can store their important documents.
3. Registration for creating APAAR ID is voluntary and not mandatory.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

2. With reference to the 'State Food Safety Index', consider the following statements:

1. It is compiled and published by the NITI Aayog.
2. 19 out of 20 large states recorded a drop in their 2023 scores from 2019.
3. SFSI 2023 scores are calculated on the basis of five parameters with different weights.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

3. Consider the following statements:

Statement- I:

A foreign company with a subsidiary in India can fund Indian political parties through electoral bonds.

Statement- II:

A citizen of India or a body incorporated in India is eligible to purchase the bond through the Electoral bond scheme brought via amendment in Income tax Act 1961.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct but Statement-II is incorrect
(d) Statement-I is incorrect but Statement-II is correct

4. As per the recommendations of this commission, the appointment of the Governor must be done by a panel that comprises the state Chief Minister, and the Governor can be removed through impeachment by the State Legislature.

Which one of the following commissions is being talked about here?

- (a) Punchhi Commission
(b) Rohini Commission
(c) Kothari Commission
(d) Shah Commission

5. Rokitansky Kuster Hauser syndrome is related to which one of the following?

- (a) Brain (b) Pancreas
(c) Eyes (d) Uterus

6. Consider the following statements:

Statement- I:

In India, QR codes have been recommended by FSSAI on food products for accessibility by visually impaired individuals.

Statement- II:

The Rights of Persons with Disabilities Act, 2016 recognises the rights and needs of individuals with disabilities.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct but Statement-II is incorrect
(d) Statement-I is incorrect but Statement-II is correct

7. Sustainable Action for Transforming Human Capital in Education (SATH-E) report has been published by which one of the following?

- (a) NITI Ayog
(b) Pratham NGO
(c) Ministry of Education
(d) UNICEF

8. Consider the following statements regarding the 'Hunger Hotspot' report 2023:

1. As per the report, food security is expected to deteriorate significantly in the Middle East and Africa only.
2. It was jointly released by the Food and Agriculture Organization of the United Nations and the World Food Programme.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

9. Consider the following statements:

1. The International Competition Network (ICN) 2023 annual conference took place in Beijing.
2. ICN consists of 140 competition agencies and is guided by its apex body Steering Group of 18 members.
3. India is not a member of this network as the competition commission of India has not joined it yet.

Which of the statements given above is/ are correct?

- (a) 1 only (b) 2 only
(c) 3 only (d) 1, 2 and 3

10. With reference to the Competition Commission of India (CCI), consider the following statements:

1. Competition Commission of India Journal on Competition Law and Policy is published by CCI.
2. It was established under the Competition Act, 2002 which replaces the Monopolies and Restrictive Trade Practices Act, 1969
3. It was established under the Ministry of Finance to promote and sustain competition in India.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

11. Consider the following countries:

- | | |
|---------------|---------------|
| 1. Russia | 2. Kazakhstan |
| 3. Belarus | 4. Armenia |
| 5. Kyrgyzstan | 6. Turkey |

How many of the following countries are members of Eurasian Economic Union?

- (a) Only three (b) Only four
(c) Only five (d) All six

12. Consider the following statements :**Statement- I:**

Certain classes of Indian public companies can be directly listed on foreign stock exchanges.

Statement- II:

Amendment to the Companies Act 2013 authorises select companies to list directly on foreign stock exchanges.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct but Statement-II is incorrect
(d) Statement-I is incorrect but Statement-II is correct

13. Consider the following statements:

1. All entities facilitating cross-border payments for import and export of goods and services come under the direct regulation of the Reserve Bank of India (RBI).
2. The RBI has prescribed net worth criteria for non-banks providing Payment Aggregator-Cross Border (PA-CB) services.

Which of the statements given above is/ are **incorrect**?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

14. With reference to the Digital Advertisement Policy, consider the following statements:

1. The new policy allows for the empanelment of five kinds of entities but does not include over the top (OTT) video on demand platforms.
2. It is valid for the next five years.
3. It replaces 2016's Policy Guidelines for Empanelment and Rate Fixation for Central Government Advertisements on Websites.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

15. With reference to the Worldwide Governance Indicators, consider the following statements:

1. The Basel Norms' Worldwide Governance Indicators provide a ranking of more than 150 countries' territories.
2. As per this, there are six dimensions of governance including Political Stability and Absence of Violence.

Which of the statements given above is/ are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

16. With reference to the Onattukara sesame, consider the following statements:

1. Onattukara sesame oil has been used for the treatment of rheumatism diseases.
2. It grows in well-drained, sandy loam soil in tropical regions of India.
3. Recently it has received the geographical indication tag.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

17. With reference to Credit Information Companies (CIC) in India, consider the following statements:

1. They are licensed by the Reserve Bank of India.

2. Non Banking Financial Companies cannot be a member of CIC.
 3. Any dispute between CIC and its members related to credit information will be arbitrated by RBI.
- How many of the above statements are correct?
- (a) Only one (b) Only two
(c) All three (d) None

18. With reference to the Comprehensive Nuclear Test Ban Treaty (CTBT), consider the following statements:

1. The Comprehensive Nuclear Test Ban Treaty (CTBT) is a lifelong treaty with unlimited duration.
 2. To exit the CTBT treaty, permission of P5 countries is needed and after that two third majority of total membership is also required.
- Which of the statements given above is/ are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

19. With reference to the 'Brazzaville Summit', consider the following statements:

1. This is a Summit of the three Basins which concluded with the declaration by the Heads of States.
 2. Participants in the summit were from countries of the three basins of the Amazon, Congo and Borneo-Mekong-Southeast Asia.
 3. The 2023 summit took place in Brazil.
- How many of the above statements are correct?
- (a) Only one (b) Only two
(c) All three (d) None

20. With reference to the Immunoadoptive Cell Therapy (ImmunoACT), consider the following statements:

1. This is a kind of therapy that makes a person's immune cell better able to attack cancer.
 2. In this therapy, T cells collected from a person's body are transferred back into the body.
 3. In this therapy, immune cells are grown in the laboratory to increase their number to fight tumour cells.
- How many of the above statements are **incorrect**?
- (a) Only one (b) Only two
(c) All three (d) None

21. Consider the following statements:

Statement-I:

Kunbi, is a community associated with artisans.

Statement-II:

Maratha community from Marathwada region who (or whose ancestors) were referred to as Kunbis in Nizam-era documents.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

22. Regarding to the Agartala-Akhaura cross-border rail link project, consider the following statements:

1. Projects have been executed through assistance from India.
2. It will provide direct access between landlocked northeastern India and the Chittagong port of Bangladesh.
3. The Central Board of Indirect Taxes and Customs declared Nischintapur railway station as a Land Customs Station.

How many of the statements given above are correct?

- (a) Only one (b) Only two
(c) All three (d) None

23. Consider the following statements:

1. A parliamentary probe is the same as a judicial probe.
2. Parliament does the investigative work through its committees which function under the Rules of the House.
3. The rules of evidence under the Evidence Act apply to a probe by a parliamentary committee.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

24. Consider the following statements:

1. Government securities are the short-term debt instruments.
2. State Development loans are issued by the Ministry of Finance.
3. Treasury bills are issued by the government of India.

How many of the above statements are correct?

- (a) Only one
(b) Two only
(c) All three
(d) None

25. Consider the following statements:**Statement-I**

The Centre for Advanced Financial Research and Learning (CAFRAL) was set up by the Reserve Bank of India.

Statement-II

The Governor of RBI is the chairman of the Governing Council of CAFRAL.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

26. With reference to the Aaina Dashboard, consider the following statements:

- 1. It has been launched by the Ministry of Women and Child Development.
 - 2. It is a voluntary initiative on the part of the Urban Local Bodies.
 - 3. It ranks the Urban Local Bodies on five broad pillars.
- How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

27. With reference to the Chikungunya Vaccine, consider the following statements:

- 1. It is primarily transmitted to people through the bite of an infected mosquito.

- 2. It cannot be transmitted to the newborn baby from their pregnant mother.
- 3. There is no vaccine available for the treatment of the disease.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

28. Consider the following pairs:

Volcano mentioned in news: **Country where it is located**

- 1. Klyuchevskoy Russia
- 2. Kilauea Japan
- 3. Yasur Vanuatu

How many of the above pairs are correctly matched?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

29. The Kra Isthmus, recently seen in news, cuts through which ASEAN country in order to bypass Malacca Strait?

- (a) Thailand
- (b) Laos
- (c) Cambodia
- (d) Indonesia

30. With reference to the Silkyara Tunnel, consider the following statements:

- 1. It is a part of the Chardhaam Project.
- 2. It is located in the state of Uttarakhand.
- 3. It is meant to be constructed between Silkyara and Barkot.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer Key

1. B	6. B	11. C	16. C	21. D	26. A
2. A	7. A	12. A	17. A	22. C	27. A
3. B	8. B	13. D	18. A	23. A	28. B
4. A	9. B	14. B	19. B	24. A	29. A
5. D	10. B	15. B	20. D	25. A	30. C