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ACE

CURRENT AFFAIRS

MAY 2023





After giving top **Engineers & Doctors**,
We are all set to give **Top Bureaucrats** to our Country

IAS के अभ्यर्थी करें अपने सपने को साकार **ALLEN ACE** के साथ

IAS फाउण्डेशन कोर्स

1 वर्ष और 3 वर्ष का Pre-cum-Mains Programme

बैच प्रारम्भ **16 August**

1 वर्ष फाउंडेशन - 12:00 बजे से 2:30 बजे

3 वर्ष फाउंडेशन - 4:00 बजे से 6:30 बजे

विशेषताएं

- दिल्ली के अनुभवी शिक्षकों की टीम
- UPSC टॉपर्स द्वारा नियमित मार्गदर्शन
- परीक्षा उन्मुख सामग्री और दैनिक समाचार पत्र विश्लेषण
- प्रमाणित टेस्ट एवं मूल्यांकन व्यवस्था
- पूर्व और मुख्य दोनों के लिए रिविजन कक्षाएं और अभ्यास परीक्षाएं

IAS Foundation Course

1 Year & 3 Year Pre-cum-Mains Programme

Batch starts **16 August**

1 YEAR FOUNDATION - 12:00 PM to 2:30 PM

3 YEAR FOUNDATION - 4:00 PM to 6:30 PM

Our Features

- Expert Faculty Team from Delhi at ALLEN ACE
- Get Toppers Support in Answer Formulation
- Exam Oriented Content & Daily Newspaper Analysis
- Certified Test and Evaluation System
- Practice of Most Probable Pre & Mains Questions for UPSC

Classroom Faculties @ Our Jaipur Centre



Atyab Ali
Sub. : Geography
Ex. IAS Baba



Dr. Jayesh Khaddar
Sub. : History / LR
Ex. Vision IAS /
Subhra Ranjan IAS



Atul Garg
Sub. : Ethics
Exp. : 15+ yrs.



Dr. Kumud Ranjan
Sub. : Polity
Exp. : 15+ yrs.



Neeraj Nachiketa
Sub. : Environment /
Science & Tech.
Ex. Vision IAS / Vajiram & Ravi



Shubham Sharma
Sub. : Economy
Ex. IAS Baba /
Only IAS



Yogendra Sharma
Sub. : Science & Tech.
Ex. Byju's IAS /
Chanakya



Dr. Sanjay Yadav
Sub. : History
Ex. Unacademy



Dinesh Ahirrao
Sub. : Polity
Ex. Byju's IAS



Harsh Singh
Sub. : Current Affairs
& Ethics
Ex. Edukemy



Rabia Khan
Sub. : History
Ex. Study IQ



Karuna Nirwan
Sub. : Polity / Governance
Ex. Adda247 / unacademy



Rahul Goyal
Sub. : Current Affairs
Ex. Sleepy Classes



Soumitro Chowdhury
Sub. : Environment &
Ecology
Ex. Byju's Exam Prep.



Shubham Agarwal
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Separate Batches for English & Hindi

Classes for IAS Now in ~~Delhi~~ Jaipur



Dear Aspirant ,

It gives us immense pleasure and honour to introduce ourselves as the directors of the institution which you have trusted for more than three decades.

We are pleased to inform you that after providing quality education and edge in the field of Science for last 35 years, ALLEN is now going to help you achieve success in competitive exams, like IAS, RAS, RJS, MANAGEMENT, COMMERCE, CA & LAW .

By joining ALLEN, students get to learn that real success can only be achieved when one lives according to one's own values and that is why our talented teaching faculty not only prepare students for their academic examinations and career but also leave no stone unturned in preparing them for life in general.

ALLEN is determined to providing individual attention to students, and giving them the right direction to the best of their potential and their creativity.

Finally, it is a matter of immense pleasure and pride for us that we guide youth and see them make their dreams come true.

ALLEN

Together we will make a difference



DIRECTORS: Sitting (L to R)

Naveen Maheshwari Sir, Govind Maheshwari Sir, Rajesh Maheshwari Sir, Brajesh Maheshwari Sir

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Aviral Maheshwari Sir, Keshav Maheshwari Sir, Aman Maheshwari Sir, Anand Maheshwari Sir, Aaradhya Maheshwari Sir



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IAS

FOUNDATION COURSE

1 Year & 3 Year Programme

COURSE OVERVIEW

900+
HOURS OF
QUALITY EDUCATION

IAS 1 YEAR FOUNDATION BATCH PROGRAMME DETAILS

No. of Months-	June 2023 - May 2024 (12 Months)
52 Weeks	Total 312 Classes (6 days of GS Classes) $52 \times 6 = 312$
Number of Hours	2.5 hours per class
Total Hour	800 Hours.

Weekly Current Affairs Classes
1 Class Every Week of Current Affairs = Total 50/52 Classes of Current Affairs + Detailed Handouts

CSAT Classes
50 Classes of CSAT - 4 Months Before Prelims
(Subjects : Quantitative Aptitude + Reasoning + Reading Comprehension)

Weekly Distribution of Classes
Total 7 Classes = 3 + 3 + 1
3 Classes of one GS Subject + 3 Classes of another GS Subject + 1 Class of Current Affairs
Eg - Mon. to Wed. Geography
Thur. to Sat. History

Prelims Comprehensive Test Series
(8 NCERT Tests + 12 Advanced Tests + 8 Full Length G.S Tests + 8 CSAT Tests)

IAS 3 YEAR FOUNDATION BATCH PROGRAMME DETAILS

- Generally, the classes in 3 year FC are for 9 to 10 months for initial 2 years. And in the 3rd year of the FC mostly test series and revision classes are there.
- 1st & 2nd year of foundation course
40 weeks each \Rightarrow 80 Total weeks
- Weekly, we are planning to induct 5 classes in this courses for initial 2 years in 4 + 1 format. Hence, 4 GS classes and 1 class of current affairs will be there.
- 80 weeks \Rightarrow 5 days \Rightarrow 4 days CS = $4 \times 80 \Rightarrow$ 320 classes
- 80 weeks \Rightarrow a week class 1 day = 80 current affairs classes
- classes length will be 2.5 hours.
- 30 Special Classes by Experts.

NCERT Foundation Course – Video Lectures + NCERT Handouts

FIRST YEAR (Basics + Advanced)

- Orientation Classes.
- Current affairs weekly classes from both – Editorial Discussion, Prelims Focus Perspective.
- Regular Prelims Tests (Fortnightly).
- Basics of Answer Writing – WAR.
- Basics of Essay writing (Sentence formation, Issues Discussion, Previous year Essay module)
- CSAT Module. (Part 1)

SECOND YEAR (Basics + Advanced)

- Optional Workshop – How to Choose Your Optional Subject.
- Regular GS Classes.
- Weekly Current Affairs Classes.
- Regular Prelims Tests (Fortnightly).
- Mains Answer Writing – WAR
- Separate Optional Module
Eg.: Geography.
- CSAT Module (Part - 2)

THIRD YEAR (Revision + Test series)

- Year long comprehensive prelims test series including CSAT.
- Revision classes on high yielding topics.
- Mains answer writing skill development module.
- Separate classes & test series for mains including General English, General Hindi & Essay.
- Last 2 Year Current Affairs Revision Class.



POLITY

SEDITION LAW

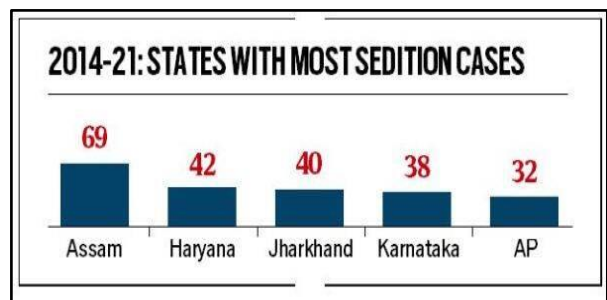
In News: Consultations on relook at sedition law at advanced stage, Centre tells SC.

- The Centre informed Supreme Court that discussions to "re-evaluate" **Section 124A** of the Indian Penal Code, pertaining to sedition, are in an advanced stage.



What is the Sedition law?

- Section 124A of IPC mentions: "Whoever, by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards, the Government established by law shall be punished with imprisonment for life."
- Sedition was included as an offence under section 124A IPC in 1890 to tackle dissent against colonial rule.
- The offence is **non-compoundable** (not allowing a compromise between the accused and the victim), **non-bailable, and cognizable** (not requiring a warrant for an arrest), and carries a maximum sentence of life imprisonment, with or without a fine.
- A person charged under this law is **barred from a government job**. They have to **live without their passport** and must produce themselves in court at all times as and when required.
- The **first known instance** of the application of the law was the **trial** of newspaper editor **Jogendra Chandra Bose in 1891**.
- Bal Gangadhar Tilak** was the first person to be **convicted** under Sedition Law.



Disposal of Cases

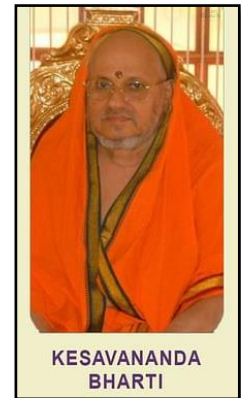
Year	Cases	Pending probe	Found false or mistaken	Shut for lack of evidence	Chargesheet filed	Pendency with police	Pendency with courts	Conviction rate
2014	47	–	–	–	–	–	–	–
2015	30	–	–	–	–	–	–	–
2016	35	86	2	6	16	72%	91%	33%
2017	51	156	5	6	27	76%	90%	17%
2018	70	190	2	15	38	71%	86%	15%
2019	93	229	8	21	40	69%	74%	3%
2020	73	230	6	10	23	82%	95%	33%
Total	399		23	58	144			

Supreme Court on Sedition

- **Kedar Nath Singh v. State of Bihar (1962):** Supreme Court **upheld the constitutionality of the sedition law**, stating it could only be applied where there is a **clear incitement to violence or public disorder**.
- **P.alavi vs state of Kerala, (1982):** Supreme Court clarified that the offence of sedition **cannot be invoked merely on the basis of criticism of the government**.
- **Shashi Tharoor v. Union of India case of (2019):** Supreme Court rejected a petition **challenging the legality of the sedition law** and deemed it essential to safeguard the nation's sovereignty and integrity.
- In May 2022, Supreme Court **temporarily suspended the sedition law**, while the Union government reconsiders the necessity of the colonial-era law.

KESAVANANDA BHARATI JUDGEMENT (1973)

- **In news-** 50 years of **Kesavananda Bharati Vs. State of Kerala** case and its legacy.
- The Kesavananda Bharati case is one of the most significant cases in Indian constitutional law, decided by the Supreme Court of India on **24 April 1973**.
- The case is named after Sri Kesavananda Bharati, the head seer at Edneer Mutt, Kasargod, Kerala, who filed a petition challenging the constitutional validity of the **Kerala Land Reforms Act, 1963**, which placed a **limit on the amount of land** that an individual could hold.
- In the Kesavananda Bharati case, the petitioner argued that the **Parliament's power to amend the Constitution was not absolute** and that there were limitations to this power.
- The petitioner (represented by **Nani Palkhiwala**) argued that the Constitution's basic structure was part of these limitations and that the Parliament could not amend this basic structure.
- The government was represented by **Attorney General of India, Niren De and lead counsel Homi Seervai**.



Background:

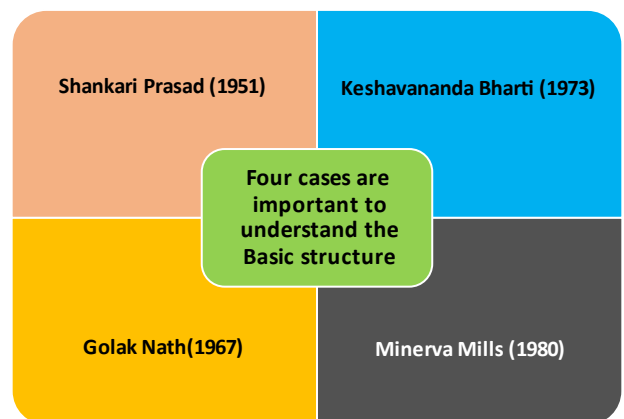
- The Constitution of India was adopted on 26 January 1950, and it established a **democratic and secular republic** with a **federal** structure.
- The Constitution provided for a **separation of powers** between the legislature, the executive, and the judiciary, and it also set out the fundamental rights of citizens, such as the right to equality, freedom of speech and expression, and the right to life and liberty.

Issue:

- The main issue in the Kesavananda Bharati case was the **scope of the power of the Parliament to amend the Constitution**.
- The question before the court was whether there were any limitations on this power, and if so, what those limitations were.

Supreme Court Judgement:

- The court introduced the concept of the **"basic structure" or "basic features"** of the Constitution.
- The court ruled that **Parliament does not have the power to change the basic structure** of the Constitution through the amending process.



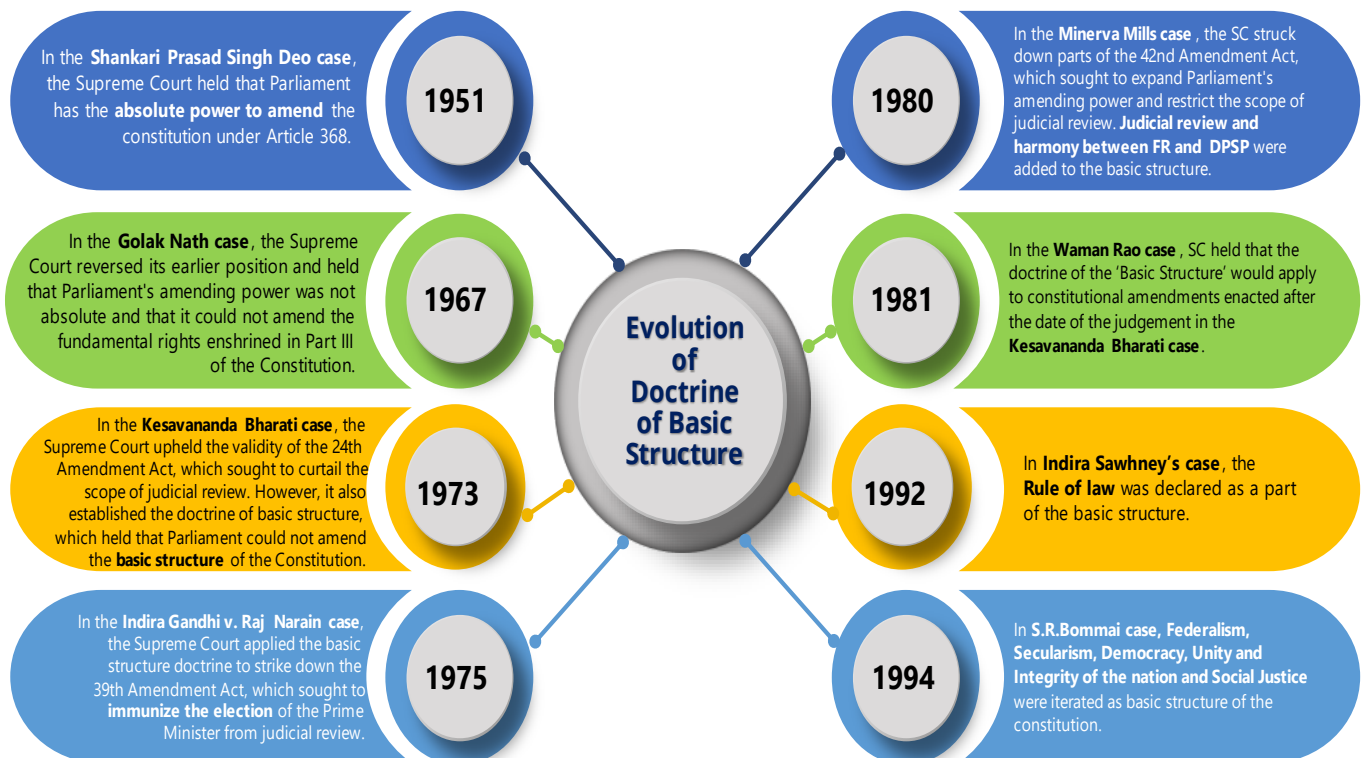
- This ruling by the Supreme Court also **overturned** its decision in the **Golak Nath case** (1967) which said that Parliament could not amend the fundamental rights.
- However, **any Fundamental Right** that is considered part of the basic structure **cannot be abolished or diminished by Parliament**.
- The court **upheld the 24th Amendment Act**, which allowed **Parliament to restrict or revoke Fundamental Rights**.

Significance of basic structure doctrine

- Protects the core principles of the Constitution
- Limits Parliament's power
- Upholds constitutional supremacy
- Guarantees judicial review

What is the Basic Structure Doctrine?

- It is a **judicial creation** that prevents misuse of parliament powers to amend the Constitution.
- It safeguards the **identity and character** of the Constitution.
- The Keshvananda Bharati case allowed parliament to modify any provision of the Constitution **except the basic structure**.
- It includes **federalism, separation of power, judicial review, rule of law, free and fair elections, secularism, and democracy**.



Conclusion:

The basic structure of Constitution doctrine propounded in the Kesavananda Bharati case acts as the first line of defence preserving India's democracy and upholding the Constitutional values which make India a leader of today's world.

73RD CONSTITUTIONAL AMENDMENT

In news: The year 2023 marks 30 years since the 73rd and 74th Amendments were added to the Indian Constitution.

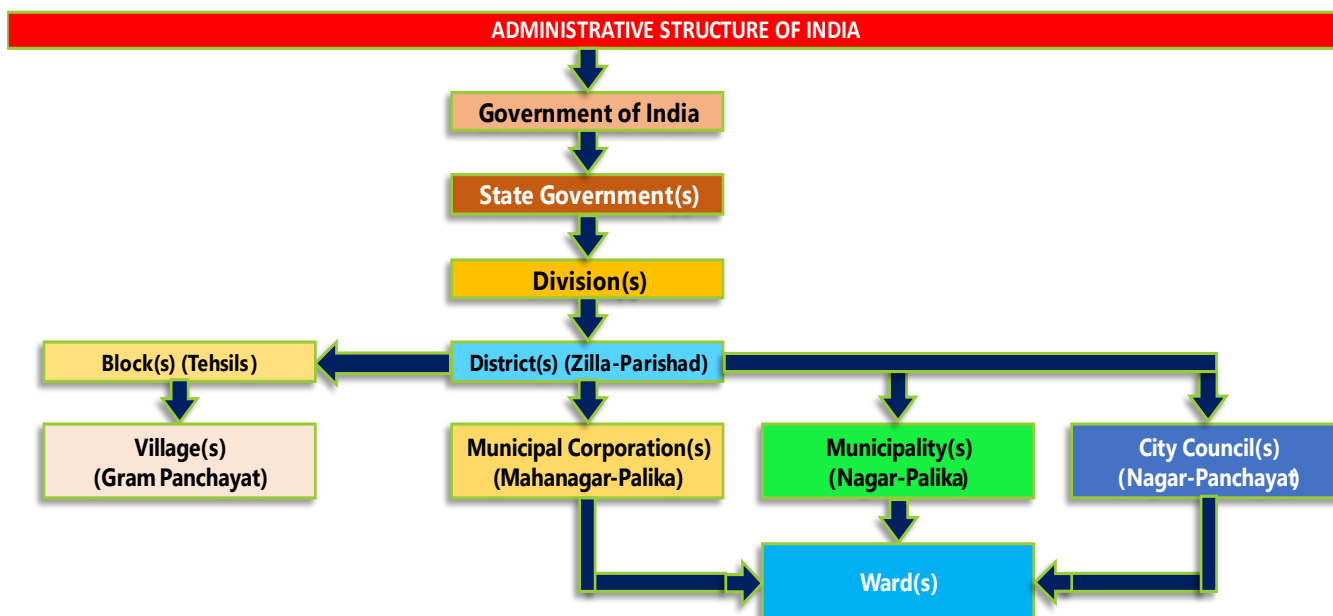
- The 73rd and 74th Constitutional Amendments (CA) granted constitutional recognition and power to the local governments in rural areas and urban local bodies or municipalities.
- **Rajasthan** state has the distinction of being a pioneer in accepting the scheme of democratic decentralization envisaging a **three-tier system of representative bodies at the village, block, and district levels**.
- The system was inaugurated on **2 October 1959** at **Nagour** in Rajasthan, far before the constitutional amendment of 1992.
- The amendment also added the **11th Schedule** to the Constitution, which lists **29 functional items** of the panchayats.

Significance of the Amendment:

This amendment implements article **40 of the DPSP** which says that the **"State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government"**.

73rd and 74th Constitutional Amendments

- The 73rd and 74th Amendment was passed by the Indian Parliament in 1992 and came into effect on **April 24, 1993 and June 1, 1993**
- They added two new parts to the constitution namely, **Part IX (The Panchayats)** and **IX-A (The Municipalities)**
- They introduced local self-governance in rural and urban areas.
- Hence, to commemorate the formal incorporation of Panchayati Raj institutions in India, April 24th is observed as **National Panchayati Raj Day**.



Major Achievements of the 73rd Amendment Act

- **Empowerment of local self-governance**
- **Inclusivity** with participation of women and marginalized sections.
- This increase in representation has had a positive impact on the **delivery of local public goods** to marginalized communities.

Challenges faced:

- Inadequate financial resources- funds
- Necessary administrative capacity- functionaries
- Instances of political interference
- State governments not devolving enough powers to local bodies

POWER DISTRIBUTION BETWEEN DELHI GOVERNMENT AND CENTRE

In News: The Supreme Court **ruled unanimously** in favour of the Delhi government on the issue of who controls the bureaucracy in the national capital.

- The Supreme Court held that the National Capital Territory of Delhi has **legislative and executive power** over **administrative services** in the National Capital, **excluding** matters relating to **public order, police and land**.
- The Lieutenant Governor **shall be bound** by the decision of the Delhi government over services, apart from public order, police and land, it held.

Background

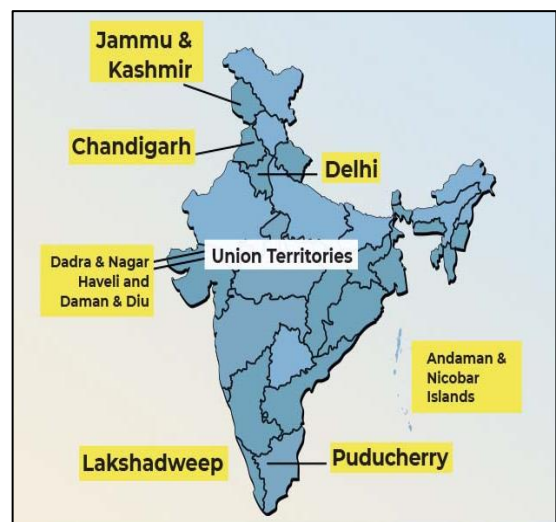
- The case questioned whether the Government of NCT of Delhi had the power to make decisions about **'services'** and whether officers like IAS, IPS, DANICS, and DANIPS, who were assigned to Delhi by the Union of India, were **under the control** of the Delhi government.
- The power distribution dispute between the Delhi government and the Centre originated in 2019 when a two-judge Bench of the Supreme Court referred the question of administrative service control to a **Constitutional Bench** for consideration.
- The Delhi government challenged the constitutionality of the **Government of National Capital Territory of Delhi (Amendment) Act 2021**, which stated that the term "government" in laws enacted by the Legislative Assembly of Delhi would imply the **Lieutenant Governor (L-G)**.
- The Centre's argument was that since **no Union Territory has authority over services**, Delhi also couldn't exercise such authority and Delhi's legislative power was limited to issues explicitly granted to other Union Territories.

What is the Constitution bench?

A constitution bench is a **bench consisting of 5 or more judges** of the Supreme Court that is set up to decide a case based on the interpretation of the Constitution. **Article 143** of the Indian Constitution defines the conditions in which a constitutional bench can be formed.

Verdict of Supreme Court

- SC held that the **Lt. Governor shall be bound** by the decision of the Delhi government over services, apart from **public order, police and land**.
- SC disagreed with the Centre's argument that the **Constitution is a federal Constitution with a strong unitary bias** as far as UTs are concerned and held that **democracy and federalism are essential features and forms the basic structure**.
- SC states that if a democratically elected government is not given the power to control the officers, then the principle of the **triple chain of accountability** will be redundant.



- According to SC, the Delhi government like other States, represents the **representative form of government** and any further expansion of the Union's power will be contrary to the Constitutional scheme.
- The court concluded that Delhi under the constitutional scheme is a **Sui Generis (or unique) model**, and is **not similar to any other Union Territory**, and presents a special constitutional status.

Triple Chain of Accountability: This principle says that in a parliamentary democracy, civil service officers are accountable to ministers; ministers are accountable to the legislature; and the legislature is accountable to the electorate. Severance of any link of this triple chain would be antithetical to parliamentary democracy.

Extent of Delhi's powers now

- Article **239AA** specifically excludes land, police and public order from the purview of the legislative powers of the Delhi government.
- Legislative and executive power over such services such as Indian administrative services, or joint card of services, which are relevant for the implementation of policies and vision of NCT of Delhi in terms of the day-to-day administration of the region, **shall live with Delhi**

Article 239 AA of the Constitution

- It states Subject to the provisions of the Constitution, the Legislative Assembly, **"shall have the power to make laws for the whole or any part of the NCT with respect to any of the matters in the State List or Concurrent List in so far as any such matter is applicable to Union territories"** except on the subjects of police, public order, and land.
- It was inserted in the Constitution by the **69th Amendment Act, of 1991**, on the recommendations of the **S Balakrishnan Committee**.
- It says the NCT of Delhi will have an **Administrator** and a **Legislative Assembly**.
- It provides that in case of a difference of opinion between L-G and his ministers on any matter, **L-G shall refer it to the President**.

How UTs are governed?

- **Part VIII (Articles 239 to 241)** of the Constitution deals with the Union Territories.
- Governed by the President through an administrator who acts as his representative.
- The judiciary in Union Territories (UTs) acts in accordance with the Constitution and laws enacted by the Parliament.

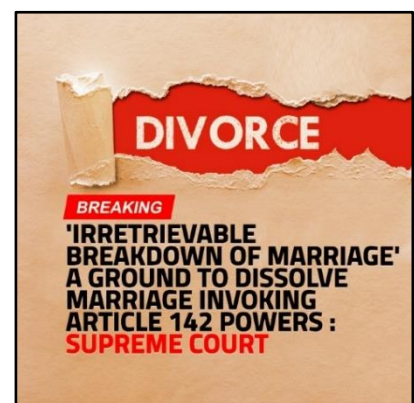
Special provision for Delhi

- The **69th Constitutional Amendment Act of 1991** granted a distinct status to Delhi, renaming it the National Capital Territory (NCT) of Delhi under Article 239AA.
- The administrator of Delhi was subsequently redesignated as the Lieutenant (Lt.) Governor.
- The amendment also established a legislative assembly and a council of **ministers specifically for Delhi**.

ARTICLE 142- COMPLETE JUSTICE

In News: Supreme court rules that it can directly grant divorce to couples under article 142.

- SC held that if a marriage is irretrievably broken and cannot be fixed, it has the power to grant a divorce directly **without sending the case to a family court**.
- The SC clarified that the authority to grant a divorce under Article 142(1) is **not a matter of right but depends on the discretion of the Supreme Court**.
- According to **Section 13-B of the Hindu Marriage Act (HMA), 1955**, if a couple files for divorce by mutual consent, they must **wait for 6-18 months** after filing the first motion before proceeding with the second motion.



About Article 142

- Article 142 of Indian Constitution states, "**The Supreme Court in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it, and any decree so passed or orders so made shall be enforceable throughout the territory of India**"
- It provides power to the Supreme Court, to do "**complete justice**" between the parties, where, at times, the law or statute may not provide a remedy.
- While the powers under Article 142 **are sweeping in nature**, SC has defined its scope and extent through its judgments over time.
- In the **Prem Chand Garg case**, the Supreme Court stated that its power under Article 142(1) to provide complete justice **must be consistent with the Constitution and cannot contradict statutory laws made by Parliament.**

Criticism of Article 142

- Article 142 has been criticized as being **arbitrary and vague**, as the term "**complete justice**" is **subjective** and can be interpreted differently in each case, which could lead to **misuse of power**, hence the court needs to put limits on its own power.
- However, in the case of '**State of Karnataka vs Umadevi**,' SC clarified that the power under article 142 is meant to provide **justice according to the law and not sympathy** and that it cannot be used to perpetuate an illegality encroaching into the legislative domain, imposing self-check on its own power.

Factors to be considered before ascertaining the 'irretrievably breakdown' of marriage:

- Period when the parties last cohabited
- Nature of allegations
- Whether attempts were made to settle disputes through courts or otherwise
- Continuous ill-treatment
- Period of separation

- In the **Bhopal gas tragedy case**, the Supreme Court invoked "**complete justice**" of Article 142(1) to order Union Carbide Corporation to **pay compensation to victims** of the disaster.
- Bhopal Gas Tragedy, 1984: it was an industrial accident where **leakage of poisonous Methyl Isocyanate (MIC) gas** led to an estimated death of 15000-20000 individuals.
- The leakage happened at Union Carbide pesticide plant at Bhopal.

Hindu Marriage Act (HMA), 1955: It is an act passed by the Indian Parliament that regulates marriage among Hindus and other religions such as Buddhists, Jains, and Sikhs. It **does not apply to Muslims, Christians, Parsis, or Jews.**

- The Act provides for both types of marriage: **solemnized marriage and registration marriage.**
- The Act allows for divorce under specific circumstances such as cruelty, adultery, desertion, conversion, unsoundness of mind, and incurable diseases.
- The Act has been amended several times, the most significant of which was in **1976**, when provisions for **divorce by mutual consent were added.**
-

CHANGES TO SCHEDULED TRIBES LIST

In News: High Court does not have power to direct changes to Scheduled Tribes List: CJI.

- In the backdrop of ongoing violence in Manipur, Supreme Court has said that **no High Court or State Government** has the power to **add, subtract or modify the Scheduled Tribes List.**

- In **State of Maharashtra versus Milind, 2000**, SC had held that the list of Scheduled Tribes specified under Article 342(1) cannot be modified, amended or altered by **State governments, courts, tribunals or any other authority**.
- **Article 342(1)**, of the Indian Constitution empower **only the President** to specify tribes or tribal communities as Scheduled Tribes through a public notification, in consultation with the **Governor(s)** of the concerned state(s). Under **Article 342(2)**, **Parliament** has the power to **include or exclude communities** from the list of Scheduled Tribes.



CENTRAL DRUGS STANDARD CONTROL ORGANISATION (CDSCO)

- **In news:** CDSCO issues alert on 48 commonly-used drugs which fail quality test
- The CDSCO has flagged 48 commonly used medicines as they failed the latest drug safety test.
- These flagged medicines include anti-diabetic, antibiotics, calcium, and cardiac drugs, iron and folic acid tablets, vitamin C, probiotics and several multivitamin tablets.



About CDSCO:

- The Central Drugs Standard Control Organization is the **Central Drug Authority** for discharging functions assigned to the Central Government under the **Drugs and Cosmetics Act, 1940**.
- The CDSCO is a national level regulatory body for **cosmetics, pharmaceuticals, and medical devices**.
- **CDSCO** serves similar function to that of FDA of the United States.

Vision: To protect and promote public health in India.

Works under: Under the control of the Directorate General of Health Services of Ministry of Health & Family Welfare.

Functions of CDSCO:

- **Testing and approval** of new drugs and clinical trials
- **Banning** of drugs and cosmetics
- License approval of **blood banks, vaccines, and medical devices**
- **Import** registration and licensing, no objection certificate for **export**
- Oversight and market surveillance through **inspectorate system**

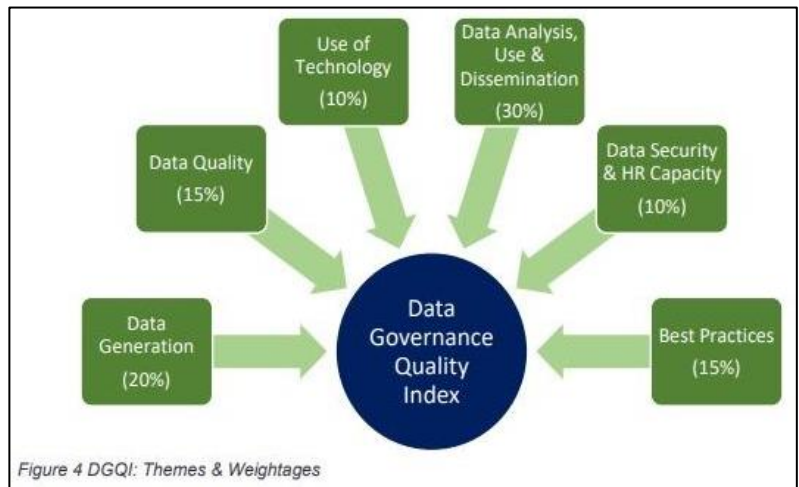
Related Points

- The regulation of manufacture, sale and distribution of drugs is primarily the concern of the state authorities.
- The central authorities are responsible for approval of new drugs, clinical trials, standards for drugs, quality of imported drugs, coordination of state drug control organisations and providing expert advice.
- CDSCO along with state regulators in jointly responsible for grant of licences of certain specialised categories of critical drugs such as blood and blood products, I.V. Fluids, Vaccine and Sera.

DATA GOVERNANCE QUALITY INDEX (DGQI)

In News: The **Ministry of Ports, Shipping and Waterways (MoPSW)** ranked 2nd amongst the 66 ministries in the **Survey Report** on **Data Governance Quality Index** assessment for **Q3 of FY 2022-2023**.

- Conducted by NITI Aayog, DGQI aims to measure the **maturity level of administrative data systems** and their **use in decision-making** around the schemes of various Ministries and Departments.
- The DGQI assessed the **MIS portals** for five schemes of MoPSW to enhance **data flow**, increase **data quality** by incorporating **emerging technologies such as AI/ ML**.
- One of the objectives of assessment for data preparedness is to **drive healthy competition** among Ministries /Departments and promote **cooperative peer learning** from best practices.
- DGQI identifies three key pillars of **data preparedness** viz, **Data Strategy, Data Systems** and **Data Outcomes**.
- It also identifies reforms to achieve **seamless data exchange** and its **synergistic use** within the ministry, while defining clear pathways to achieve these goals.



Importance of Data Governance:

- **Data-driven approach** enables policymakers to **identify trends, opportunities, and areas for improvement** accurately. With reliable data, the Ministries can **make informed decisions** that lead to better outcomes for citizens.
- **Data-driven decision-making** is **cost-effective and enhances transparency**, making it **easier to track** the progress of schemes and policies.

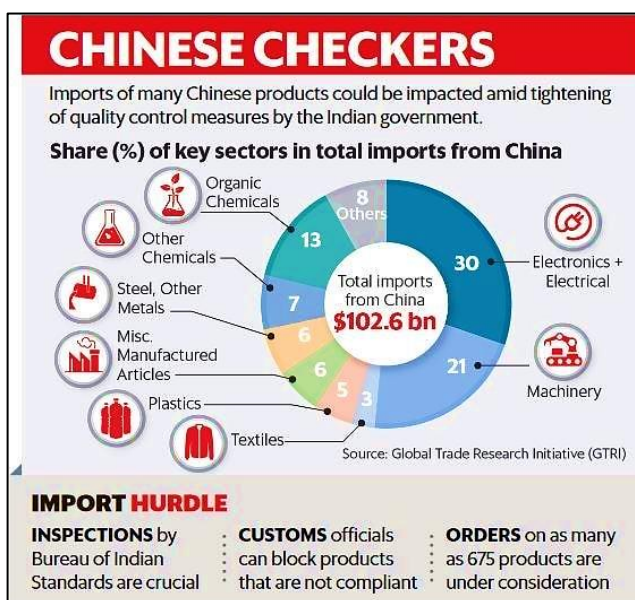


ECONOMY

QUALITY CONTROL ORDERS

In News: With an aim to ensure a quality product is delivered to the consumers, the Govt of India has proposed to bring **Quality Control Orders** for **drones and electric vehicles** and items for **mass consumption**.

- A total of **115 QCOs** covering **493 products** have been notified for **compulsory BIS certification** by the respective line Ministries/Departments of the Government of India.
- Some of the products for which QCOs have been issued are **toys, Refrigerators, pressure cookers, air conditioners, footwears, fibres cotton, polyester, geotextiles and protective textiles etc.**
- Though the government says that idea is **not to target imports** or any other business sector, **China, Canada, Japan, the UK and the EU** had also expressed concerns over the quality control orders at the WTO.
- India responded by saying that it is well within its right to **retaliate against dumping of poor-quality goods**.
- The QCOs are increasingly being used by the government to cut **dumping of subpar products** from China.
- India has been pushing for quality control measures in the wake of an **overhaul of global supply chains** since the pandemic and the **Russia-Ukraine war**.



Intention behind the QCO orders

- **Setting benchmarks for manufacturing and imports:** ensuring safety, security, and quality products for Indian consumers, which will help reduce wastage, generate jobs and reduce prices of all commodities.
- **Boost exports:** To ramp up its focus on quality to make the best of **free-trade agreements** and take advantage of **the China-plus-one strategy** adopted by the West.
- **Standardisation and convergence:** QCOs would help India have the **same quality products** as used in large **markets worldwide**, and hence importers abroad would have **confidence in Indian goods**.
- QCOs strive to provide best value to users and end consumers, thus fostering Indian product quality that is comparable to global standards and promote **"Zero-Defect-Zero Effect"** manufacturing.
- **Awareness:** QCOs help in sensitising citizens to purchase products with adherence to quality and safety norms.

• **ZED Scheme:** The Zero Defect Zero Effect (ZED) Scheme, initiated by the Ministry of MSME, aims to develop a system of zero manufacturing defects and zero effects on environment/sustainability compliances. MSMEs are provided training, quality tools and upgraded machineries for a holistic ecosystem of quality production and rated on the basis of their products.

Quality Control Orders

- **Quality Control Orders (QCOs)** are issued by various Ministries/Departments of the Government of India after having stakeholder consultation.
- **BIS** implements **Quality Control Orders (QCOs)** issued by the Government which ensure that the notified products conform to the requirements of the relevant **Indian Standard(s)** and shall bear the **Standard Mark under a Licence or Certificate of Conformity (CoC)** from BIS as per the relevant Conformity Assessment Scheme as notified in the Order.
- BIS also acts as the **Enforcement Authority** for the products specified in the QCO. QCOs are issued under **Section 16** of the **BIS Act, 2016**.
- The **date of commencement** of the QCO is mentioned in it, so that the stakeholders are well aware of the timelines for its implementation in terms of necessary **manufacturing and testing infrastructure** and **compliance** of the product to the requirements of the relevant Indian Standard.
- After the date of commencement of the QCO, **no person can manufacture, import, distribute, sell, hire, lease, store or exhibit for sale any product(s) covered under the QCO** without a Standard Mark except under a valid certification from BIS.
- QCOs are **equally applicable** to Indian manufacturers as well as foreign manufacturers. The **manufacturer in foreign country** will be required to obtain a Licence or CoC from BIS under the **Foreign Manufacturers Certification Scheme (FMCS)**.
- Any person who **contravenes the provisions of the Order** shall be punishable under the provisions of **sub-section (3) of section 29** of the **BIS Act, 2016** with imprisonment or with fine or with both.
- **Instance of products covered under QCOs:** Toys (both electric and non-electric), commercial industrial shoes, helmets for two-wheeler riders, machinery safety equipment, domestic appliances like air-conditioners, refrigerators, domestic cooker, LPG Gas stoves, safety glass (architectural building, and general use, road transport), protective clothing for industrial workers, footwear, wheel rim, drones, electric vehicles, etc.

Bureau of Indian Standards (BIS)

- BIS is the **National Standards Body of India** established under the BIS Act 2016 for the harmonious development of the activities of **Standardization, Conformity Assessment and Quality Assurance** of goods, articles, processes, systems and services.
- It works under the **Department of Consumer affairs, Ministry of Consumer Affairs, Food & Public Distribution**, Government of India.
- BIS helps in providing **safe, reliable quality goods**; minimising **health hazards** to consumers; promoting **exports and imports** substitute; control **over proliferation** of varieties etc. through **standardisation, certification and testing**.

The **BIS certification scheme** is voluntary in nature. However, for a number of products, compliance to Indian Standards is made compulsory by the Central Government under various considerations viz. **public interest, protection of human, animal or plant health, safety of environment, prevention of unfair trade practices and national security**. For such products, the Central Government directs mandatory **BIS licence/certification** through issuance of QCOs.



Recent Applications of QCOs

- A Quality Control Order was issued for **Toys**: After implementation of QCO for the toys, search and seizures were conducted by BIS. These interventions against substandard items and other govt measures led to a **67% decline in imports of substandard and unauthorized toys** from **2014-15** to **2021-22**.
- India has imposed **mandatory BIS certification** on many Chinese products for which QCOs have been issued.

- A surge in QCOs on Chinese products by the Indian government are part of efforts to reduce **imports of subpar goods, bridge widening trade deficit, and support indigenous manufacturing.**

Analysis:

- **Export promotion:**
 - Creating a brand for **Indian cotton and synthetic textile** has helped in adding value to the value chain in the textile industry (**geotextiles and protective textiles**). (Geo-textiles are used for infrastructure projects and environmental applications while protective textiles are used to protect human life from hazardous and adverse working conditions.)
 - Waiving off **quality assurance (QA) charges in defense exports** have helped in making Indian defence products more competitive in the global market.
- **Dependence:** China is **India's primary source** for a wide range of products, including pharmaceutical ingredients, chemicals, machinery, auto parts, and medical supplies. Delay in imports of approx. items from China could affect the Indian supply chain in **import dependent industries.**
- **Linkages:** India is not a big market for China (India only accounts for 3.29% out of total Chinese exports in 2022), but for India, the import **items are crucial.** Items like virgin fibre, low melt PSF fibre, and hollow conjugate fibre are used in **multiple sectors** (automobile, textiles, etc.)
- **Disruption in exports:** Only a limited part of China's imports enter the domestic market and that **most imports act as inputs for making export products.**
- **Cost of Compliance:** Chinese manufacturers are **reluctant over certification** as there is an additional cost involved in certification.
- **Shortage of inspectors and labs for testing**
- **Allegation:** Experts said that as per WTO, technical regulation implemented through QCOs should be on the grounds of **health, safety, environment, deceptive trade practice or national security** and thus, India's orders could be seen as a trade **restrictive measure.**

Upgradations for future QCOs

- **Provide time** for compliance of industries.
Eg. QCO on viscose staple fibres gave only 30 days to the industry to comply.
- Carry out **Regulatory Impact Assessment (RAI)** as a formal exercise before coming out with a technical regulation (impact on trade, availability of labs, etc.)

PROSPECTS OF INDIA'S EXPORTS

In News: Analysis by trade expert suggests that India's exports of goods and services are likely to **touch \$900 billion** in the year **2023-2024**, up from the present \$770 billion.

Export Growth Pattern

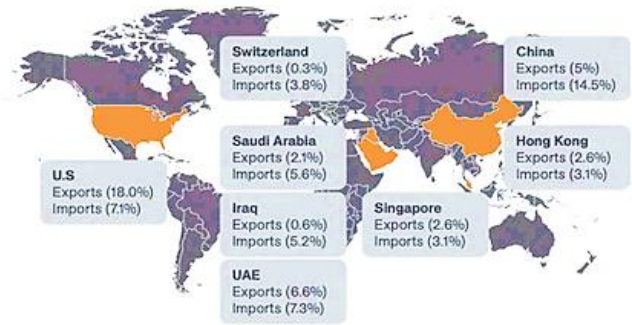
- It is estimated that merchandise exports could expand around **\$500 billion**, while services exports could touch **\$400 billion.**
- India's exports have increased by more than \$200 billion in the last two years, led by a surge in exports of **competitively priced software, mobile exports, and agricultural and petroleum products.**
- The export growth was mainly driven by **a surge in demand** for products like **petroleum, cotton yarn, textiles, chemicals, and engineering goods.**
- The current government has set an **export target of \$2 trillion by 2030**, offering benefits to boost exports of electronics, engineering, pharmaceutical, and other goods.

India's merchandise trade (USD billion)



Export - Top 10 commodities	FY22 (USD billion)	% Growth (y-o-y)
Mineral fuels, oils and products	69.6	158.5
Gems and jewelry	39.3	50.1
Nuclear reactors, boilers, machinery	25.4	34.1
Iron and steel	22.9	88.9
Organic chemicals	22.0	22.8
Vehicles other than railway or tramway	20.2	42.0
Pharmaceutical products	19.8	44.9
Electrical machinery	19.4	0.1
Cereals	12.9	27.4
Cotton	10.8	70.7

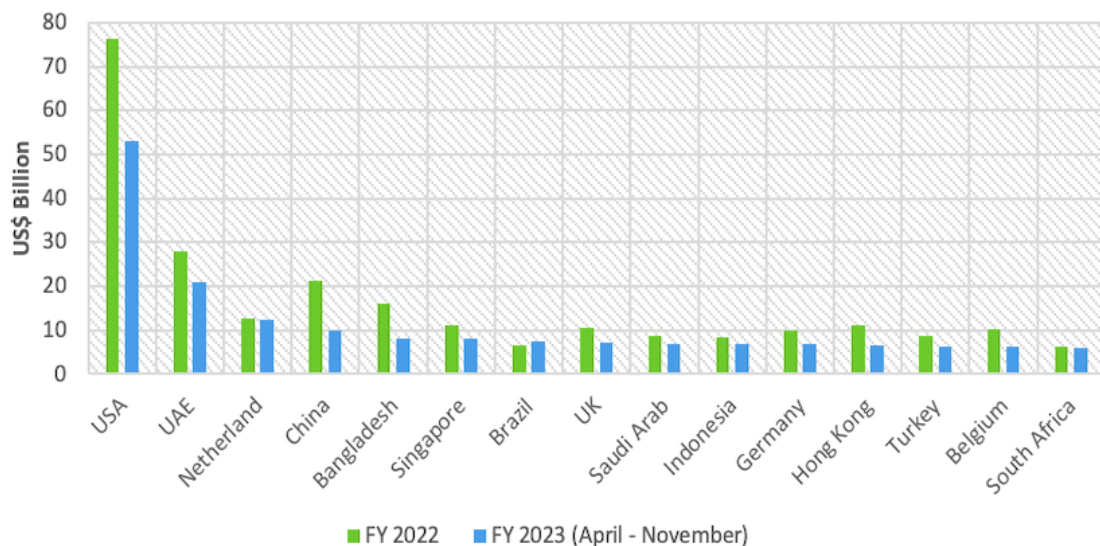
Top trading partners (FY22) (% of total imports and exports)



Significant growth across commodities; data indicates that the PLI scheme has benefitted most of the top commodity exports.

- Agriculture and pharma to remain key sectors for driving export momentum
- Export of finished or intermediate goods on the rise. India no longer an exporter of primary goods
- Roll out of District Export Hub and Initiatives such as PLI, Remission of Duties and Taxes on Export Products (RoDTEP) to augment growth

India's Top Export Destinations: FY 2022 and FY 2023 (April – November) (US\$ Billion)



Government Initiatives to support export promotion:

Export Scheme	Description
Rebate of Duties & Taxes on Exported Products (RoDTEP Scheme)	<ul style="list-style-type: none"> • The scheme seeks remission of Central, State and Local duties/taxes/levies at different stages at the Central, • State, and local level, which are incurred in the process of manufacturing and distribution of exported products but are currently not being refunded under any other duty remission scheme.

Revamped Services Exports from India Scheme (SEIS)	<ul style="list-style-type: none"> • A scheme that provides duty credit scrips (A Duty Credit Scrip is a scrip which can be used for the payment of Customs Duty) to service providers based on their net foreign exchange earnings. • The scheme has been made WTO compatible.
Champion service sectors	<ul style="list-style-type: none"> • Identification of 12 champion service sectors for promoting and diversifying services exports by pursuing specific action plans. These include information technology (IT) and information technology enabled services (ITES), tourism and hospitality services, medical value travel, transport and logistics services, accounting and finance services, audio visual services, legal services, communication services, construction and related engineering services, environmental services, financial services, and education services.
Production-Linked Incentive (PLI) Scheme to Boost Exports	<ul style="list-style-type: none"> • A scheme that provides incentives to manufacturers in 13 key sectors based on their incremental production and exports.
Duty Drawback Scheme	<ul style="list-style-type: none"> • A scheme that provides rebate of duties and taxes paid on inputs used in the manufacture of exported goods
Export Promotion Capital Goods (EPCG) Scheme	<ul style="list-style-type: none"> • A scheme that allows import of capital goods for export production at zero customs duty subject to an export obligation.
Towns of Export Excellence (TEE)	<ul style="list-style-type: none"> • A scheme that provides financial assistance to identified towns producing goods of Rs. 750 crore or more for development of export infrastructure and common facilities. Thirty-Nine (39) Towns have been recognized as Towns of Export Excellence (TEE) under the Foreign Trade Policy.
Interest Equalisation Scheme	<ul style="list-style-type: none"> • A scheme that provides pre and post shipment rupee export credit at reduced interest rates to eligible exporters.
Transport and Marketing Assistance (TMA)	<ul style="list-style-type: none"> • The scheme for specified agriculture products provides assistance for the international component of freight and marketing of agricultural produce and to promote brand recognition for Indian agricultural products in the specified overseas markets
Market Access Initiatives (MAI) scheme	<ul style="list-style-type: none"> • It is an export promotion scheme envisaged to act as a catalyst to promote India's exports on a sustained basis. The scheme is formulated on focus product-focus country approach to evolve specific market and specific product through market studies/survey.
Niryat Bandhu Scheme	<ul style="list-style-type: none"> • A scheme that provides guidance and mentoring to new and potential exporters through various outreach programs and handholding sessions.
Trade Infrastructure for Export Scheme	<ul style="list-style-type: none"> • The Scheme provides financial assistance in the form of grant-in-aid to Central/State Government owned agencies for setting up or for up-gradation of export infrastructure for the growth of exports from the States.
Districts as Export Hubs	<ul style="list-style-type: none"> • One District One Product Initiative: The ODOP initiative is aimed at targeting export promotion, manufacturing, and employment generation at the grassroots level, making the States and Districts meaningful stakeholders and • active participants in making India an export powerhouse thereby contributing to the Atma Nirbhar mission and achieving the vision of Make in India for the world and being Vocal for Local.

Other Measures for Export Growth

- **Following Measures** can enhance export growth

Improving infrastructure and logistics	Reducing transaction costs and delays
Diversifying export markets and products	Enhancing quality standards and competitiveness
Providing credit and insurance facilities	Strengthening trade diplomacy and agreements

Promotions to boost Indian Exports	Advantages of Export Growth
<ul style="list-style-type: none"> ○ Brand India: Creating a positive image and recognition of Indian products and services in the global market ○ Make in India: Encouraging domestic manufacturing and innovation for export-oriented industries ○ Digital India: Leveraging technology and e-commerce platforms to facilitate online trade and transactions ○ Skill India: Developing human capital and enhancing employability for export sectors ○ Startup India: Fostering entrepreneurship and innovation for export-oriented ventures 	<p>Exports are strongly linked with economic growth of the nation as they:</p> <ul style="list-style-type: none"> ○ Contribute to GDP growth by increasing income and demand ○ Generate foreign exchange reserves that help maintain balance of payments stability ○ Create employment opportunities and reduce poverty ○ Induce productivity gains and technological spillovers ○ Enhance competitiveness and efficiency of domestic industries

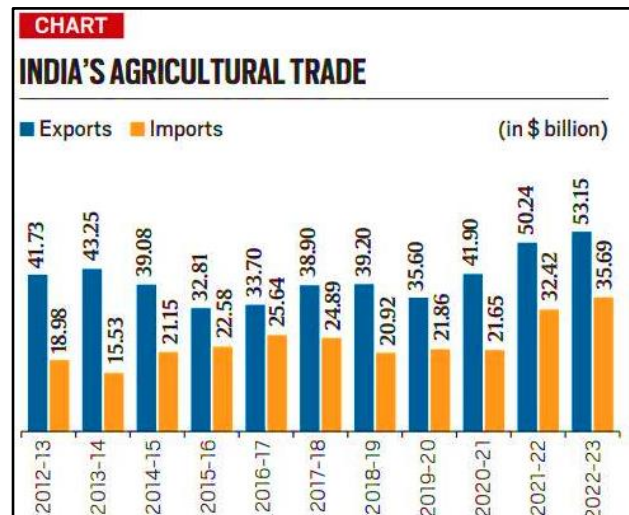
INDIA'S FARM EXPORTS

In News: Provisional data from the Department of Commerce shows **total farm exports** at **\$53.15 billion** and imports at **\$35.69 billion** during **2022-23**, surpassing their previous year's records of **\$50.24 billion** and **\$32.42 billion** respectively.

- India's **agricultural trade surplus** has marginally dipped from **\$17.82 billion** to **\$17.46 billion**.
- The surplus narrows further if one adds the import of fertilisers, which have risen from **\$14.17 billion** in 2021-22 to **\$17.21 billion** in 2022-23.

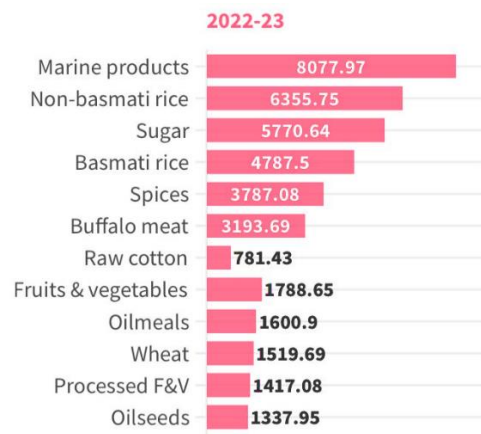
India's Agri Exports

- India's **agri exports** have been powered by **three items: Marine products, rice and sugar**.
- **Marine product exports** have grown steadily from \$5.02 billion in 2013-14 to **\$8.08 billion** in 2022-23.
- **Rice exports** have also gone up during this period, from \$7.79 billion to **\$11.14 billion**, driven by non-basmati rice.
- India's basmati rice exports are mainly to the Persian Gulf countries and, to some extent, the US and UK, while non-basmati shipments are more diversified with destinations spread across Asia and Africa, making India the **biggest rice exporter** ahead of Thailand.



- The boom in **sugar exports** has been more recent, increasing from **\$810.90 million in 2017-18** to **\$5.77 billion in 2022-23**.
- India has emerged as the **world's No. 2 sugar exporter** after **Brazil**.
- Two items whose exports had registered substantial increases, only to falter in the last few years, are **spices and buffalo meat**.
- **Spices exports** jumped from \$2.5 billion in 2013-14 to almost \$4 billion in 2020-21 but have since stagnated.
- **Buffalo meat shipments** have never regained their peak of \$4.78 billion reached in 2014-15.
- The FAO, **Food Price Index (FPI)**, a weighted average of world prices of a basket of food commodities over a base period value (2014-16=100) recovered to 102.5 points by 2020-21, and further to 133 points in 2021-22 and 139.5 points in 2022-23. It made India's agri-commodities more globally **price competitive** and exports also soared to \$41.90 billion, \$50.24 billion and \$53.15 billion during these three years.

India's Top Agricultural Export Items in Million Dollars

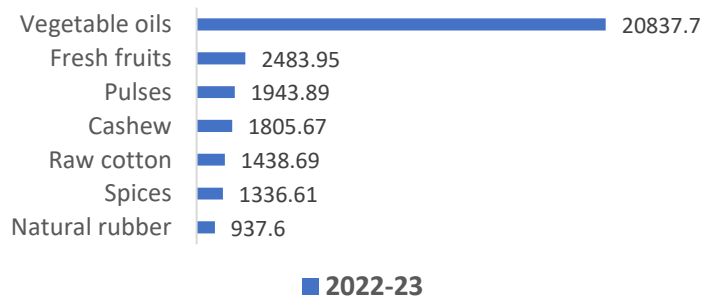


- The FAO, **Food Price Index (FFPI)** is a measure of the monthly change in international prices of a basket of food commodities.

India's Agri Imports

- India's agriculture import basket primarily constitutes of vegetable oil, fresh fruits, pulses, spices and condiments and raw cotton.
- **Vegetable oil imports** have more than **doubled** in value terms, **from \$9.67 billion to \$20.84 billion** between **2019-20** and **2022-23**.
- Imports meet roughly **60% of India's vegetable oil** requirements.
- The dependence on **imports for pulses** is hardly 10% now, with the value of imports also coming down from **\$4.24 billion in 2016-17** to **\$1.94 billion in 2022-23**.

India's Top Agricultural Import Items in Million Dollars



DIGITAL PUBLIC INFRASTRUCTURE

In News: Union minister Ashwini Vaishnaw said in a statement that SCO member states **unanimously adopted India's proposal** for **developing Digital Public Infrastructure (DPI)** as the right way for deploying digital technology.

- DPI is important from the perspective of **democratizing technology and setting common standards for interoperability** of digital systems.
- They will help to unlock the economic primitives of **identity, data, and payments** at **population scale**.
- **Example:** Aadhaar, Unified Payments Interface, DigiLocker and CoWin.

What is DPI?

Digital Public Infrastructure refers to **platforms providing digital solutions** that enable basic functions essential for public and private service delivery, i.e. **collaboration, commerce, and governance**. Eg. Payment, identification, certification, etc.

DPI supports **empowerment, inclusion, and resilience**:

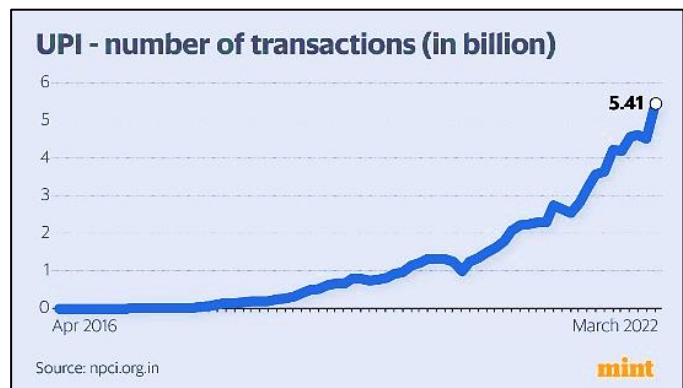
- **Identification:** securely verify oneself, provide electronic signatures and verify credentials.
- **Payments:** easily transfer money.
- **Data exchange:** seamless flows of secure data across the sectors.

Why are SCO members interested in India's DPI?

- It is **foundational and cross-cutting**.
- It complements and works together at **policy, process, and technology** levels.
- It enables sectoral applications to be easily **built 'on top'**.
- **Public benefit**.

Case of UPI

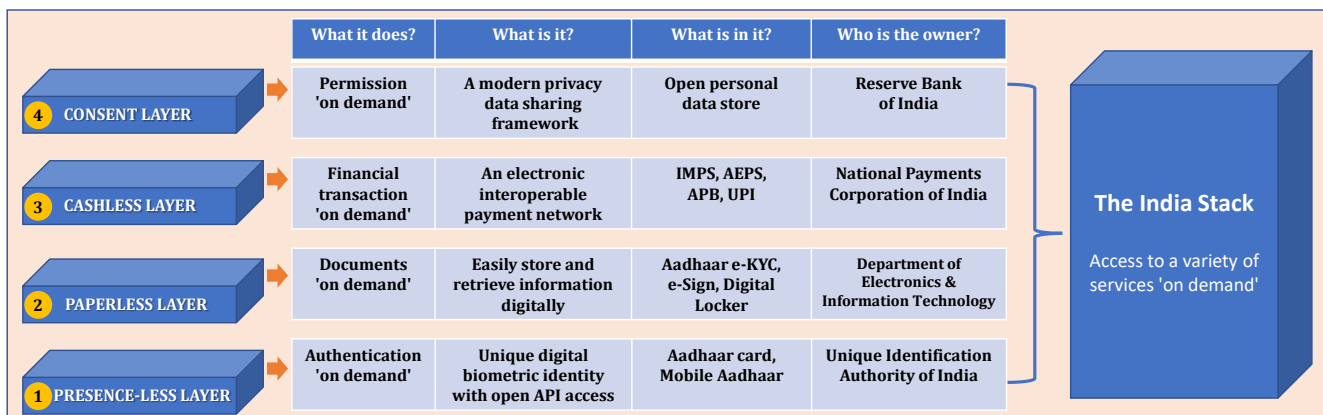
- Approximately **74 billion UPI transactions** worth ₹125.94 lakh crore were conducted in 2022, National Payments Cooperation of India data show.
- The **export of UPI** to other countries has grown significantly, with the international arm of NPCI partnering with countries such as the UK, the UAE, Singapore, Malaysia, Hong Kong, Bhutan, Nepal, etc.
- Supports: **financial inclusion, makes India cashless, faster remittances, boost to MSME, e-commerce.**



Example of Covid Vaccine Intelligence Network (CoWin)

- Using CoWin, India's Covid-19 vaccination app, 2.2 billion doses have been administered so far.

What is India Stack?



IndiaStack is a **set of APIs** that allow governments, businesses, startups and developers to **utilise digital infrastructure** to solve challenges and facilitate towards presence-less, paperless, and cashless service delivery.

OPEN NETWORK FOR DIGITAL COMMERCE

In News: ONDC will help small retailers survive the onslaught of large tech-based e-com firms: Piyush Goyal.

What is ONDC?

- ONDC is an initiative aiming at promoting **open networks** for **all** aspects of the **exchange of goods and services** over digital or electronic networks.

- As an initiative of the **Department of Promotion of Industry and Internal Trade (DPIIT)**, Ministry of Commerce, it started as a **not-for-profit company** in the year 2021 under section 8 of Companies Act, 2013, with majority stake by **private companies**.
- ONDC is **not a single platform** like Amazon or Flipkart. Instead, it's like a **gateway** that connects different e-commerce platforms where sellers can list and sell their products directly to customers without any middlemen or intermediaries.
- Thus, being developed as a **counter to the current duopoly** in the Indian e-commerce market (Amazon and Walmart-owned Flipkart), it is based on **open-sourced methodology**, using **open specifications** and **open network protocols** independent of any specific platform.
- ONDC will democratise the benefits of e-commerce like UPI democratised payment systems.

✓

WHAT IS ONDC?

- Market and Community-led initiative
- An open network
- Eliminates the need for a central intermediary
- An enabler for massive digital commerce expansion
- An enabler for broad-based innovation

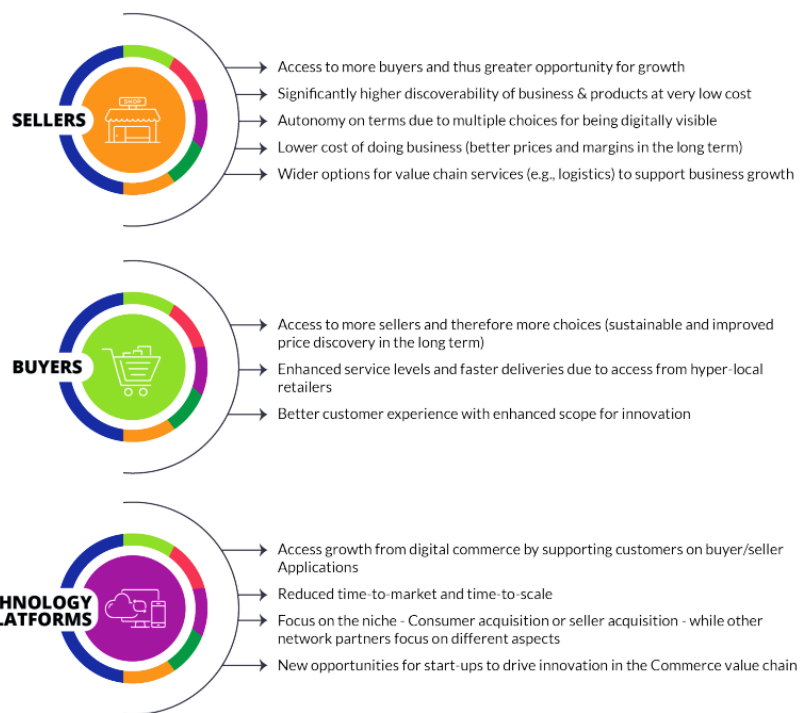
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WHAT IS ONDC NOT?

- A Government Regulatory Body
- An application or a platform
- A central intermediary
- A medium to help digitize businesses

Objectives of ONDC

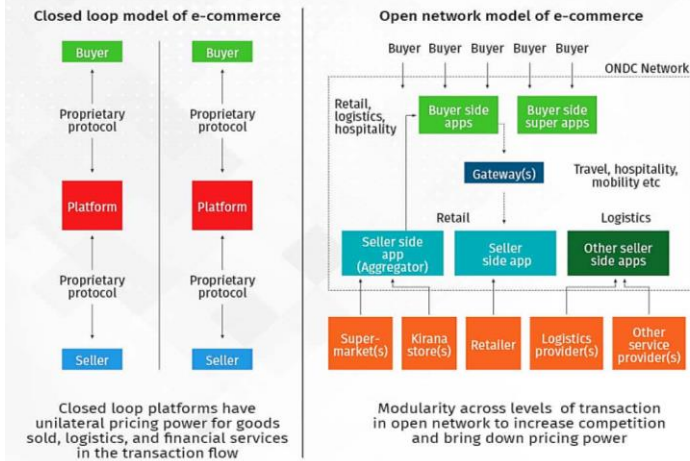
- Promote **interoperability** to create an **open, inclusive, and competitive** marketplace
- Be an **enabler with minimal public digital infrastructure**
- Be **scale efficient** and build for population-scale adoption
- Make digital commerce, **small-business friendly**
- Pave the way to **unlock innovation** for reimagining digital commerce
- Ensure **rapid digitalization** of MSMEs and consumers.



How does ONDC work?

- The ONDC platform exists as the **interface** hosting the buyers and the sellers.
- With an aim to provide **level playing field for sellers and wider choice to buyers**, it bases itself on 3 foundational pillars: **open network, public digital infrastructure and open ecosystem**.
- It is a **facilitator driven, interoperable decentralized network**, moving away from a **platform-centric monolithic model**, implemented through policies at the network level.
- It offers **small retailers** an opportunity to provide their services, and goods to buyers across the country through an e-commerce system, where buyers will be able to purchase the products, which are sold on any platform.
- It provides products and services like food delivery, groceries, home decor, cleaning essentials, and other products.

HOW INDIA'S OPEN E-COMMERCE NETWORK MODEL PLANS TO DISRUPT PLATFORM POWER



ONDC & its potential

Grow India's digital consumption to \$340 bn by 2030 with 500 mn transacting users

- Bring the next **500 mn** consumers & 100 mn sellers to trade online
- Scope to connect **80-90 mn** self-employed workers
- Get **6-7 times** more MSMEs into a diverse ecosystem
- Increase a farmer's net income by **25-35%**, enhance the agricultural ecosystem

Further inclusion in digital commerce which is only 7% of total market with **165 mn users**

Significance and challenges of ONDC

Significance	Challenges
Level playing field for small and medium enterprises	Low volume of users- sellers and buyers
Democratize e-commerce	Resistance from existing e-commerce players
Improved transparency and accountability	Entry barrier of huge investments and competition against the traditional e-commerce giants
Increased competition and consumer choice	Complex and long channel loop as against UPI, whose loop finishes with the transaction.
Cost savings and protecting consumers' interests	Return, refund, exchange and grievance redressal policy.

Conclusion:

ONDC is a **first-of-its-kind initiative globally** to pave the way for reimagining digital commerce in India and establishing a globally replicable model for digital commerce. Its success will lead to bright future for an **inclusive and accessible e-commerce ecosystem** in India.

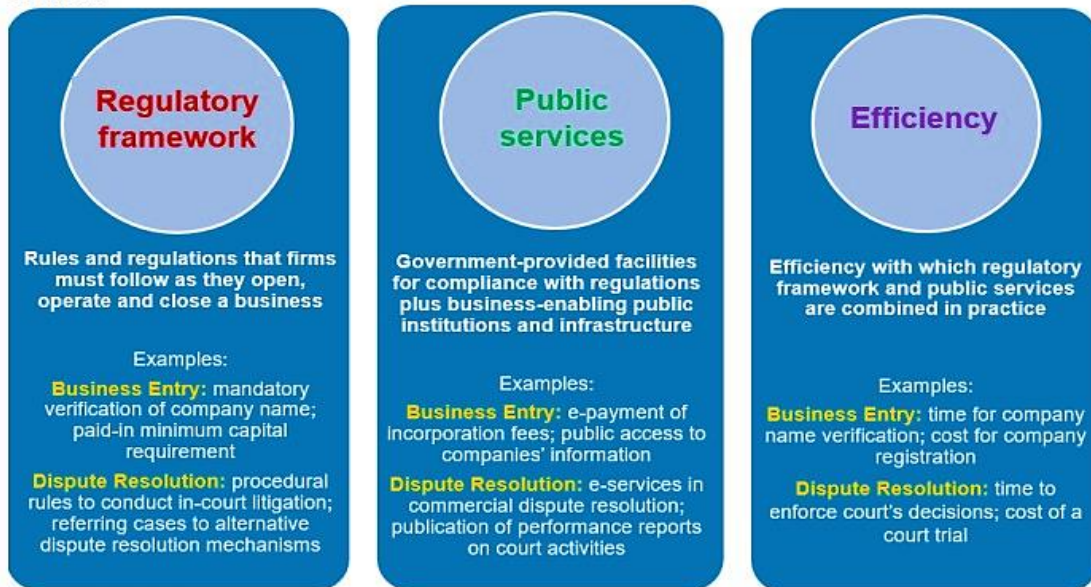
BUSINESS READY: WORLD BANK

In News: World Bank is set to launch a new edition report under a new flagship project called **Business Ready (B-READY)** to assess the business and investment climate in economies worldwide.

- B-ready will contribute to meet twin goals of the world bank group(WBG) of eliminating poverty and boosting shared prosperity.
- The new flagship project aims to help countries attract investment and boost jobs and productivity to accelerate development.
- B-Ready assesses an **economy's business environment** by focusing on the **regulatory framework** and the **provisions related to public services** directed at firms and markets as well as the **efficiency** with which regulatory framework & public services are combined in practice.
- B-ready** for the first time includes workers rights as defined by ILO.
- The report will initially cover a group of 54 economies in Asia, Latin America, Europe, the Middle East and Sub-Saharan Africa. First annual B-READY report will be published in spring 2024.
- B-READY Project** improves upon and replaces the earlier **Doing Business project**, which was discontinued due to data irregularities and methodological flaws.

- The World Bank scrapped Easing of Doing Business ranking in September 2021, after revelations of data irregularities that boosted countries ranks and favouritism towards China.

Figure I.2. BEE Measures the Regulatory Framework, Public Services, and Efficiency for Firms and Markets



Source: BEE team.

Note: BEE = Business Enabling Environment.

- B-READY focuses on **ten Topics** that are organised following the **life cycle of the firm** and its participation in the market while **opening, operating (expanding), and closing (or reorganising) a business**.

Figure I.3. BEE Topic Areas



Source: BEE team.

Note: BEE = Business Enabling Environment.

- For each topic, considerations relevant to the business environment, regarding aspects of the adoption of **digital technology, environmental sustainability, and gender are captured**.
- B-READY data and the summary report will aim to advocate for policy reform, inform specific policy advice, and provide data for development policy research.

Business Enabling Environment (BEE)

The **business environment** can be defined as the set of **conditions outside a firm's control** that have a **significant influence** on how businesses behave throughout their life cycle. This set of conditions can be very large, from macroeconomic policy to microeconomic rules.

- The **Business enabling environment (BEE)** refers to the **norms and customs, laws, regulations, policies, international trade agreements and public infrastructure** that either facilitate or hinder the movement of a product or service along its value chain.
- The BEE affects the **costs, risks, and barriers of entry for businesses**, as well as their **competitiveness, productivity, and innovation**.
- A conducive BEE can **attract private investment**, create employment opportunities, and **foster economic growth** and development.

Doing Business Project	Business Enabling Environment Project
<ul style="list-style-type: none"> Focuses on evaluating and comparing the business regulatory environment across countries, esp in small and medium business. 	<ul style="list-style-type: none"> Expands the scope to capture a broader understanding of the business environment and its impact on economic growth and development in private sector.
<ul style="list-style-type: none"> Assesses issues such as business entry, construction permits, getting electricity, employing workers, getting credit, trading across borders, paying taxes, enforcing contracts, resolving insolvency, and protecting minority investors 	<ul style="list-style-type: none"> Covers additional dimensions like environmental sustainability, gender-disaggregated data, international aspects, safety, gender equality, financial services, market competition, and business location
<ul style="list-style-type: none"> Provides insights into the quality of regulations, ease of doing business, and legal framework for businesses 	<ul style="list-style-type: none"> Includes innovations and examples related to various aspects of the business environment beyond what DB covers
<ul style="list-style-type: none"> Focuses on specific groups of firms and good practices for listed and large joint-stock companies in protecting minority investors 	<ul style="list-style-type: none"> Does not specifically address protecting minority investors as it aims to capture the business environment at large
<ul style="list-style-type: none"> Offers a narrower view of the business environment compared to BEE 	<ul style="list-style-type: none"> Offers a broader and more comprehensive view of the business environment compared to DB

Importance:

- It can help countries identify their **strengths and weaknesses** in their business and investment environment and benchmark their performance against other economies.
- It can also help countries **design and implement reforms** that can enhance their **business readiness and foster private sector development**.
- It can provide **reliable and comparable data** and indicators on various aspects of the Business Enabling Environment (BEE) that can inform economic research and specific policy advice.

Conclusion:

India had benefited from the improvements in Ease of Doing Business (EoDB) rankings as favoured business environment meant **increased investments** and optimism in consideration as **destination for future business**. Resumption of World Bank rankings will help India to **project its positive business environment** and garner support for India's economic progress.

FUTURE OF JOBS REPORT

In News: World Economic Forum has released the 4th edition of Future of Jobs Report, 2023.

- The report analyses the impact of the **Fourth Industrial Revolution and green and energy transitions** on the labour market.

About Future of Jobs Report

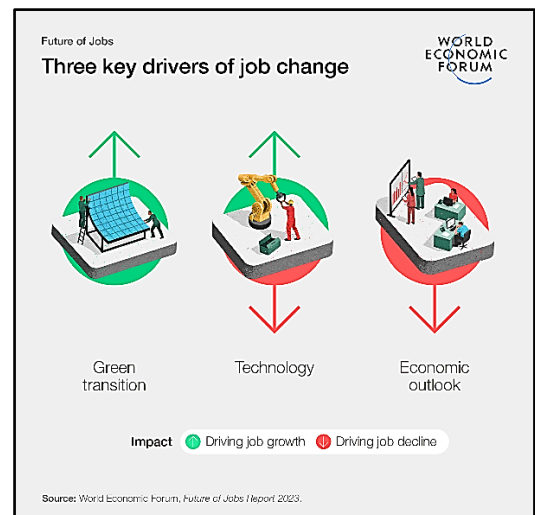
- The report predicts jobs and skills of the future, tracking the pace of change in employment scenario.
- The report has been published since 2016.

Key Findings:

- The report predicts that **more than half of all workplace tasks** will be carried out by machines by 2025.
- The report reveals that nearly **23% of jobs** may change and **44 % of workers' skills** will be disrupted (created or rendered obsolete) in the next five years.
- The report mentions that **fastest growing job roles** are being driven by **technology and digitalisation**. The four technological advances that will drive business growth are universal high-speed **mobile internet, artificial intelligence, big data analytics, and cloud technology**.
- The report identifies roles that will experience increasing demand, such as data analysts, AI specialists, **cybersecurity professionals, and e-commerce specialists**.
- The expected net job loss is driven by factors such as **sluggish economic growth, shortages in supply, increasing cost of inputs, and higher cost of living** for consumers.
- The **fastest declining roles** are also being driven by technology and digitalisation, with clerical or secretarial roles including **bank tellers, cashiers and data entry clerks** expected to decline the fastest.
- The report reveals that **green transition, ESG (Environmental, Social and Governance) standards, and localizing supply chains** are likely to have the strongest positive impact on job creation.
- The largest absolute gains in jobs will come **from education and allied agriculture** sector.
- The report also suggests the need for a comprehensive "augmentation strategy" that utilizes automation to complement and enhance human workforces' strengths.
- The report also predicts increased hiring of women, youth under 25, those with disabilities, LGBTQI+, etc. as part of their **DEI (Diversity, Equity & Inclusion) programmes**.

WORLD
ECONOMIC
FORUM

- **World Economic Forum:** A non-profit organisation for multinational companies, academic institutions and individuals.
- **HQ:** Geneva, Switzerland.
- **Founded:** 1971
- **Focus:** Economic growth and development, environmental sustainability, social inclusion, and technological innovation.



Top 10 Skills of 2023

1. Analytical Thinking	6. Technological literacy
2. Creative Thinking	7. Dependability and attention to detail
3. Resilience, flexibility, and agility	8. Empathy and active listening
4. Motivation and Self- awareness	9. Leadership and social influence
5. Curiosity and lifelong learning	10. Quality control

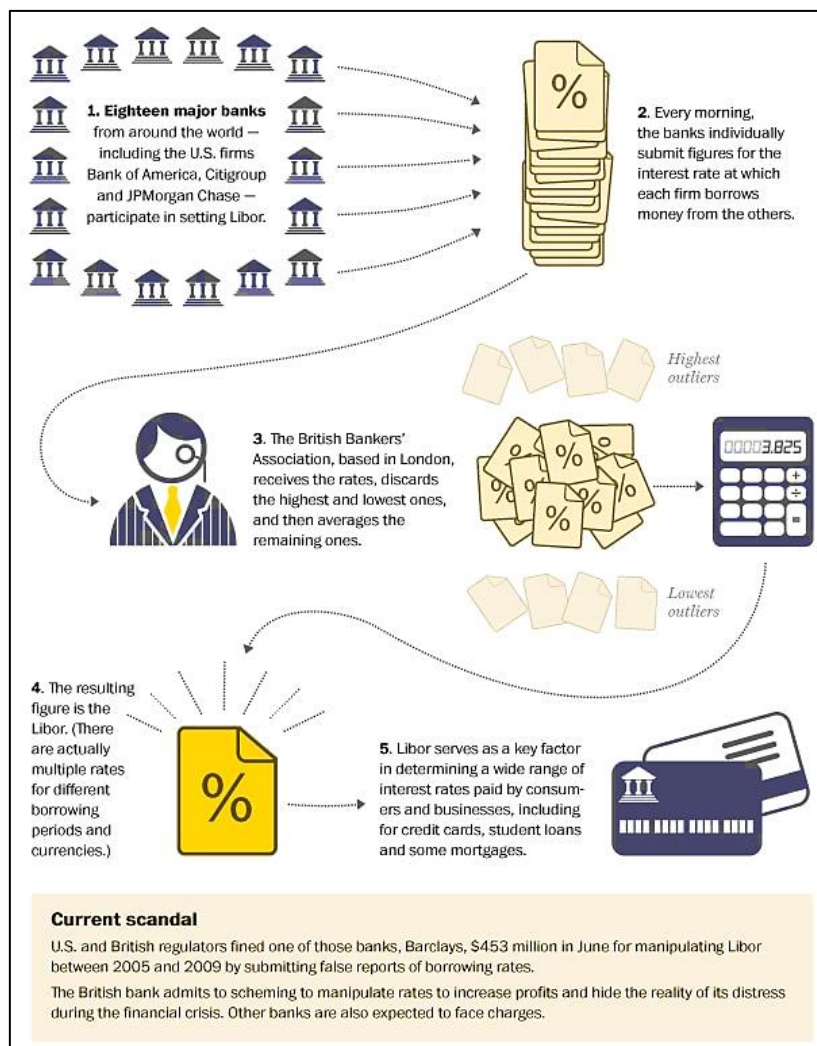
LONDON INTERBANK OFFERED RATE (LIBOR)

In News: The Reserve Bank of India (RBI) issued an advisory to banks and other RBI-regulated entities to take steps to ensure a complete transition away from the **London Interbank Offered Rate (LIBOR)** to alternative reference rates.

- Banks and private companies were using LIBOR as the **benchmark rate** for raising funds abroad. It was a key benchmark for setting the interest rates charged on **adjustable-rate loans, mortgages and corporate debt**.
- The transition from LIBOR aims to decrease dependence on a benchmark **vulnerable to manipulation** and safeguard the financial system's stability and integrity.
- New transactions are now predominantly undertaken using the **Secured Overnight Financing Rate (SOFR) and the Modified Mumbai Interbank Forward Outright Rate (MMIFOR)**.

What is LIBOR?

- The London Interbank Offered Rate (LIBOR) is the reference rate at which large banks indicate that they can borrow **short-term wholesale funds** from one another on an **unsecured basis** in the **interbank market**.
- LIBOR serves **two primary purposes** in modern markets: as a **reference rate** and as a **benchmark rate**. A reference rate is a rate that financial instruments can contract upon to establish the terms of the agreement.
- It is used as a benchmark to **settle trades in futures, options, swaps and other derivative financial instruments** in over-the-counter markets (participants engaging directly without using an exchange) and on exchanges globally.
- The London Interbank Offered Rate was used to price **adjustable-rate mortgages, asset-backed securities, municipal bonds, credit default swaps, private student loans** and other types of debt.
- LIBOR = overnight risk-free rate over the term + term premium + bank term credit risk + term liquidity risk + term risk premium**
- Libor was calculated in **five currencies: UK Pound Sterling, the Swiss Franc, the Euro, the Japanese Yen and the U.S. Dollar**.



TYPES OF FINANCIAL DERIVATIVES

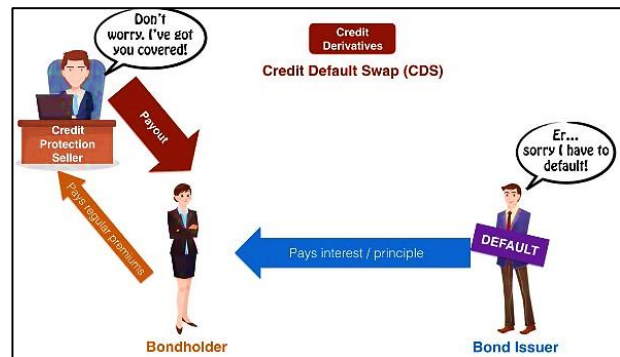


Why is RBI Moving away from LIBOR?

- LIBOR is being phased out because of the role it played in worsening the **2008 Financial Crisis**.
- The global transition from LIBOR was necessary as some large banks **manipulated the reference rate** up or down by providing false data.
- The LIBOR Scandal involved banks **colluding to manipulate a crucial benchmark interest rate**, resulting in **mispriced financial contracts** worldwide, including **mortgages, corporate fundraising, and derivative trades**.

LIBOR and the 2008 Financial Crisis

- The use of **credit default swaps (CDS)** was one of the major drivers of the 2008 financial crisis as a wide range of interrelated financial **companies insured risky mortgages** and other questionable financial products using CDS.
- Rates for CDS were set using LIBOR, and these derivative investments were used to insure against defaults on **subprime mortgages**.
- The firm American International Group (AIG) issued vast quantities of CDS on subprime mortgages and **mortgage-backed securities**, that resulted in **bankruptcy** and one of the **largest government bailouts in history**.



Credit Default Swap (CDS)

- A credit default swap (CDS) is a type of derivative which serves as a **form of insurance against the default** of an underlying borrower or debt instrument.
- In a credit default swap contract, the **buyer pays an ongoing premium** similar to the payments on an **insurance policy**. In exchange, the seller agrees to pay the security's value and interest payments if a default occurs.
- Credit default swaps can be used for **speculation, hedging**, or as a form of arbitrage.
- Credit default swaps played a role in both the 2008 Great Recession and the **2010 European Sovereign Debt Crisis**.
- In **2021**, the estimated size of the **U.S. CDS market was \$3.0 trillion**, while it was **\$33 trillion** in **2008**.

Subprime Mortgages

- "Subprime" refers to the **below-average credit score** of the individual taking out the mortgage, indicating that they might be a **credit risk**.
- The **interest rate associated** with a subprime mortgage is **usually high** to **compensate lenders** for taking the risk that the **borrower will default on the loan**.

NINJA Loan

- A **NINJA (no income, no job, and no assets)** loan is a term describing a loan extended to a borrower who may have **no ability to repay the loan**.
- A NINJA loan is extended with **no verification of a borrower's assets**.
- NINJA loans largely disappeared after the U.S. government issued new regulations to improve standard lending practices after the 2008 financial crisis.


Alternatives to LIBOR

Secured Overnight Financing Rate (SOFR): It is a broad measure of the **cost of borrowing cash overnight, collateralised by (US) treasury securities in the repo market**. It is based on the **actual market activity** and is **not dependent on a few firms** to set the rates.

- The daily Secured Overnight Financing Rate (SOFR) is based on transactions in the Treasury repurchase market, where investors offer bank overnight loans **backed by their bond assets**.

Mumbai Interbank Forward Outright Rate (MIFOR): The Mumbai Interbank Forward Offer Rate is the rate that **Indian banks use as a benchmark** for setting prices on **forward-rate agreements** and derivatives and is a **mix of the London Interbank Offered Rate and a forward premium derived from Indian forex markets**.

- The **Reserve Bank of India discontinued the use of MIFOR** following the **rate-fixing scandal** involving LIBOR, which is used as a reference rate and in its place **Adjusted and modified MIFOR (MMIFOR) rates** are published on a daily basis by Financial Benchmarks India Pvt. Ltd.



Adjustable-Rate Mortgage (ARM)
A 30-year mortgage with a three-year fixed interest rate period, then a variable rate for the remaining 27 years.

Challenges in transition

- Transitioning to a new benchmark rate is difficult, as there are trillions of dollars worth of **LIBOR-based contracts** outstanding, including the widely used three-month U.S. dollar LIBOR, which has approximately **\$200 trillion of debt** and contracts tied to it.
- Repricing contracts is a complex phenomenon as the **LIBOR represents unsecured loans**, while the **SOFR, represents loans backed by Treasury bonds** (virtually risk-free rate).
- The move to the SOFR will have the greatest impact on the derivatives market, however, it has an important role in **consumer credit products**—including some **adjustable-rate mortgages** and private student loans—as well as debt instruments such as **commercial paper**.

US FED RESERVE INTEREST RATE HIKE


In News: US interest rates raised to highest level in 16 years.

- To tame inflation, the US Federal Reserve increased its benchmark **overnight interest rate** by a smaller 25 basis points to a 16 year high of 5-5.25%.
- The overnight rate is the interest rate used by banks to **lend or borrow funds** from **each other in the overnight market**, usually set by the **central bank to manage monetary policy**, as it is the **lowest interest rate** available and is only offered to the most financially stable institutions.
- Central banks worldwide are likely to be influenced by the actions of the Fed, as they strive to maintain a balance between **growth, inflation, and currency instability**.



Why Fed Raises Interest Rate?

- The Federal Reserve raises interest rates to **control inflation** by making **borrowing more expensive**, thereby **reducing spending and slowing down the economy** and keep the US economy balanced, not too hot or cold.
- Hike in interest rates aims to maintain a **balance between economic growth and price stability** as higher interest rates attract more foreign investment and support the value of the US dollar.

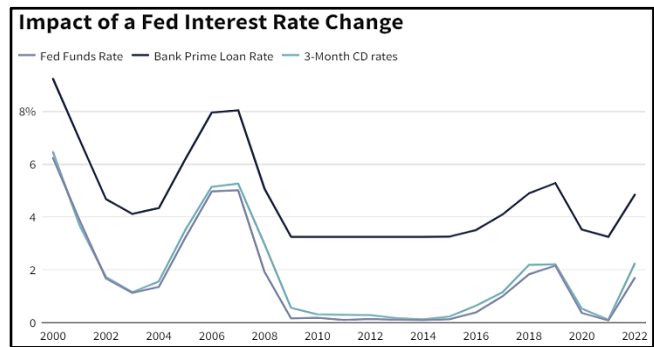



Bond Yield
The annual rate of return on a bond, expressed as a percentage of the bondholder's invested capital

Impact of Increased Interest Rate

- Interest rate directly impact the bond market, so when the fed increases rate, **the prices of bonds decline** and impacts fixed-income investor.

- An increase in the Fed's rate causes an immediate rise in the **prime rate (Bank prime Loan rate)**, the rate that banks offer to their most creditworthy customers.
- **The prime rate** is used as a basis for other types of consumer credit, and a higher prime rate means that banks will charge higher fixed- and variable-rate borrowing costs for those who are less creditworthy.
- The increase in the prime rate causes an increase in the **money market** and **certificate of deposit (CD)** rates that, in turn, would encourage consumers and businesses to save more money because they can earn a higher return on their savings.

Money Market

- The money market refers to a market where **short-term financial instruments**, such as **Treasury bills, commercial paper, certificates of deposit (CDs)**, and repurchase agreements (repos), are bought and sold.
- The money market is a way for businesses, banks, and governments to quickly borrow or lend money for a **short period of time**, typically **less than one year**.



Certificate of Deposit

- A certificate of deposit (CD) is a **money market instrument** issued by a bank to raise funds from the **secondary money market**.
- It is an **unsecured** money market instrument.

- An increase in interest rates leads to **higher borrowing costs for the US government**, which can result in an **increase in the national debt and budget deficits**.

Impact on Indian Markets

- Emerging markets, including India, may be **negatively impacted** by the Fed's ongoing rate hikes, as higher Fed interest rates can cause investors to move their funds out into US markets, which can put pressure on their currencies and stock markets and can cause **volatility in equity markets**.
- Interestingly, emerging markets have **responded positively** after the last rate hike, primarily due to an indication by the Fed that there could be **pause or possible rate cut** in the forthcoming months. This gives a sign of increased spending and availability of dollars, which would boost market sentiments.
- Increase in interest rates will **narrow spread between** US and Indian government **bond yields**, resulting in **foreign portfolio investors (FPIs)** withdrawing their investments from **Indian government securities (G-secs)**, and increment in interest rates in India by Reserve Bank of India (RBI).
- A **rise in interest rates** of dollar denominated securities can make the **US dollar stronger, leading to a decline in rupee**. In times of global risk aversion, investors tend to move their money to **safe havens like gold and US treasury instruments**, resulting in a declining rupee.
- **India's external debt**, which is primarily in US dollars, may become **more expensive to service** if the US Fed increases interest rates, as the rupee's value may decrease against the dollar, resulting in an **increase in the country's external debt burden**, ultimately affecting the economy negatively.

How can India Counter Fed Hikes?

- **Increase domestic interest rates**: The RBI can increase interest rates in India to attract foreign investment and stabilize the rupee.
- **Boost foreign exchange reserves**: India can increase its foreign exchange reserves to provide a cushion against external shocks and maintain confidence in its economy.

- **Use currency swap agreements:** India can enter into currency swap agreements with other countries to provide liquidity and stabilize the rupee.
- **Reduce dependence on crude oil:** India could reduce its dependence on crude oil by promoting the use of alternative sources of energy, such as renewable energy and ethanol.

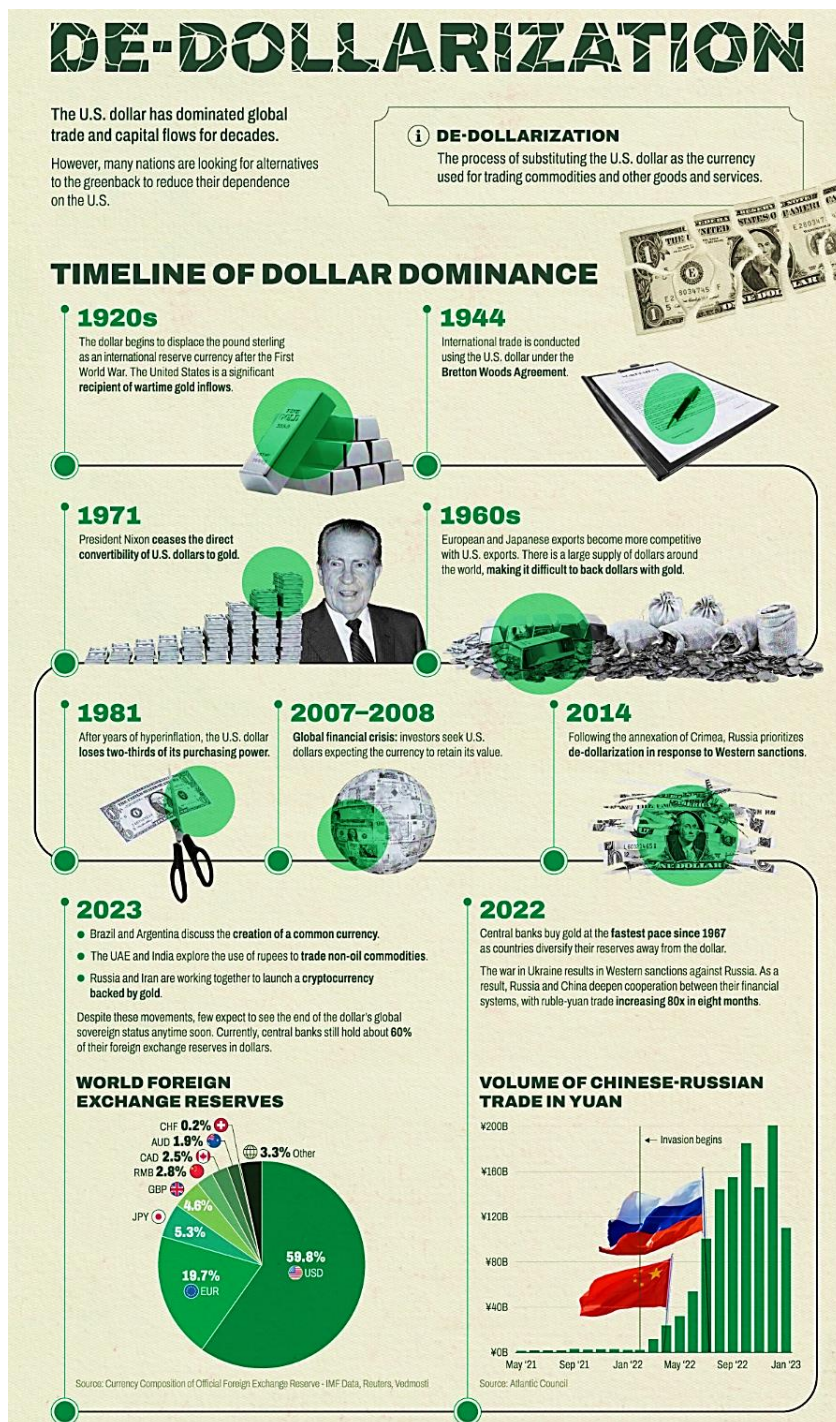
DE-DOLLARISATION

In News: India and Malaysia have reached an agreement to trade in the Indian rupee.

- Trade between India and Malaysia can now be settled in **Indian Rupee (INR)** in addition to the current modes of settlement in other currencies.
- India International Bank of Malaysia (IIBM), in Kuala Lumpur, has operationalised by opening a special **Rupee Vostro account** through its corresponding bank in India's Union Bank of India.
- The initiative is aimed at facilitating the **growth of trade** and supporting the interests of the global trading community in the Indian rupee.

What is De-Dollarisation?

- De-dollarisation refers to the **replacement of the U.S. dollar** by other currencies as the global reserve currency.
- It involves **reducing or minimizing the** reliance on the US dollar in international trade, financial transactions, and reserve holdings.
- It is not about eliminating the US dollar entirely, but rather **reducing dependence** and creating a more balanced and diversified global monetary system.
- It involves measures, such as increasing the use of local currencies in **bilateral trade agreements, currency swap arrangements, use of alternative international payment systems,** and diversifying foreign exchange reserves.



Advantages of De-Dollarisation

- It can provide countries with greater control over their monetary policy and **reduce their dependence on the US Federal Reserve** and allowing central banks to pursue policies tailored to their domestic economic needs.
- Countries can mitigate the potential impact of **economic sanctions** imposed by the United States, by **reducing reliance on the US dollar** as diversified holdings and payment systems make it difficult for sanctions to disrupt **international trade** and financial transactions.
- It can contribute to **financial stability** by reducing the risks associated with currency mismatches and **exchange rate fluctuations**.
- Pursuing alternatives to the US dollar fosters **regional cooperation, strengthens economic ties, promotes trade, and facilitates economic growth** among neighbouring countries.

Challenges of De-Dollarisation

- The foremost challenge is finding **viable alternatives to the US dollar** as the global reserve currency due to economic, political, and regulatory obstacles associated with establishing regional currencies such as the **euro and the Chinese yuan**.
- Shifting away from the dollar poses challenges in managing disruptions and minimizing adverse impacts on **existing economic relationships** due to the interdependencies and deep integration of the global economy with the United States.
- It can have varying implications for **developing economies**, which often rely heavily on **dollar-denominated debt, trade, and remittances**.

Correspondent banks are financial institutions that provide **services on behalf** of other

financial institutions, typically foreign banks. These services can include treasury management, foreign exchange transactions, international investment management, and facilitating international trade and finance. The correspondent bank charges fees to the foreign bank for these services rendered.

- **Reserve Currency:** It is a globally accepted foreign currency held in significant amounts by central banks and financial institutions as part of a country's foreign exchange reserves. It is used for global trade, investments, and paying international debts, at present US dollar holds the dominant position as the world's primary reserve currency. Commodities like gold and oil are priced in the reserve currency, so other countries have to hold it for their purchases.

Nostro Account vs. Vostro Account



Nostro

- "Our money on deposit at your bank"
- Account held by our bank in foreign currency at another bank



Vostro

- "Your money on deposit at our bank"
- Account held by a foreign bank in domestic currency at our bank

Correspondent bank services are used by foreign banks when it's not feasible for them to have their own branch in a specific country. These accounts that correspondent banks serve on behalf of foreign banks are called **vostro accounts**, which means **"your account on our books"**. The same account is referred to as a **nostro account**, meaning **"our account on your books."**

RBI'S GOLD RESERVES

In News: RBI's hoard of gold reach record levels, almost 800 tonnes.

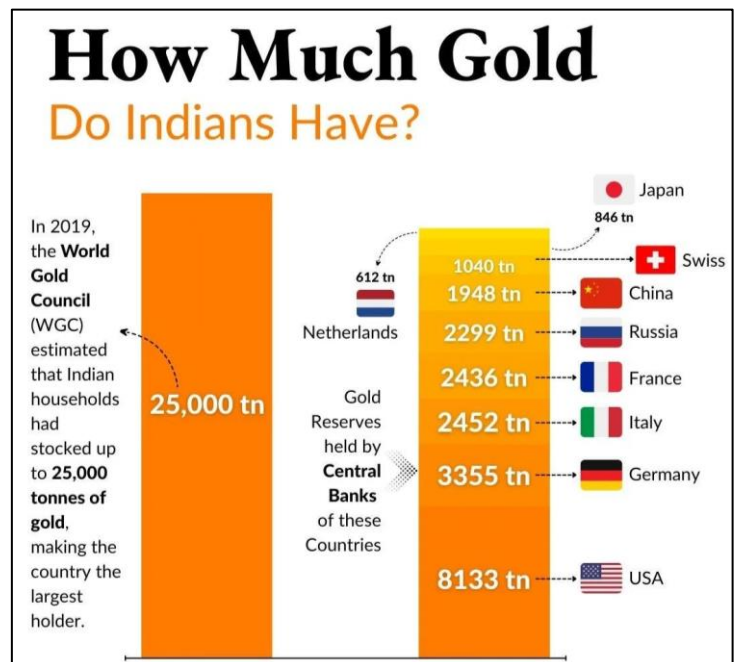
- India's gold reserves reached 794.64 (including **gold deposits** of 11.08 MT) metric tonnes in the fiscal year 2022-2023, according to the Reserve Bank of India's Half Yearly Report on **Management of Foreign Exchange Reserves** for the period of October 2022 to March 2023.

- Overall, RBI holds the **10th largest gold reserves** in the world.
- India's foreign exchange reserves comprise **gold reserves, foreign currency assets, special drawing rights (SDRs), and reserve tranche position** in the **International Monetary Fund (IMF)**.

Forex Reserves Component	Billion \$	%
1. Foreign Currency Assets	519.5	88.22%
2. Gold	45.7	7.76%
3. SDRs	18.5	3.14%
4. Reserve Position in IMF	5.2	0.88%
Total Forex Reserves	588.9	100.00%

Why is RBI hoarding the Gold?

- Diversification of Forex Reserves:** The RBI is actively engaged in diversifying its forex reserves. This diversification strategy involves **reducing dependence** on a single currency, such as the **US dollar**, and spreading investments across multiple currencies and assets. By diversifying, the RBI aims to mitigate risks and enhance the stability and returns of its forex reserves.
- Negative Interest Rate:** When the Reserve Bank of India (RBI) holds foreign currency reserves, such as dollars, it invests them in **purchasing US Government bonds**. However, due to **higher inflation** in the US, the real interest rates on these bonds can turn negative. For instance, if US bonds offer a 4% interest rate but the US inflation rate is 6%, the real interest rate becomes -2%.
- Weakening of the Dollar:** If the US dollar depreciates or weakens against other currencies, it poses a loss for the RBI. As the RBI holds dollars in its reserves, a **depreciation** in the dollar's value diminishes the value of its holdings.
- Geopolitical Uncertainty:** Factors such as conflicts, like the **Russia-Ukraine war** or **tensions with China**, create geopolitical uncertainty. These uncertainties can impact the stability of currencies and financial markets, potentially affecting the **value of foreign exchange reserves** held by the RBI.



Importance of Gold in the Economy

- Gold as a Reserve Currency:** In the 20th century, gold served as the world's reserve currency, with countries **backing their paper money** with equivalent reserves of gold.
- Safe-Haven Asset:** During periods of **economic uncertainty** or market volatility, gold is often sought after as a safe-haven asset.
- Gold's price movements tend to be **independent of traditional financial assets** such as **stocks and bonds**, providing a potential hedge against **market fluctuations**.
- Gold as Substitute for G-Sec:** Central banks can use gold as a means to sterilize the market from foreign currency influence or employ it in **open market operations**, potentially replacing government securities (G-Sec) in these operations.

Gold deposits: It refers to the act of depositing physical gold or gold-related assets with a financial institution. It allows individuals or institutions to safely store their gold holdings and potentially earn interest or other benefits (schemes like gold monetization) and can serve as secure storage, collateral for loans.

- **Gold Boosting Currency Value:** A country with a net export surplus will experience an increase in the value of its currency, especially if it exports gold or holds gold reserves.

Conclusion: The Reserve Bank of India (RBI) has been increasing its gold reserves as part of its strategy to diversify foreign exchange holdings, protect against negative interest rates, and mitigate risks from a weakening US dollar. Geopolitical uncertainties also play a role. Gold is significant in the economy as a **reserve currency, safe-haven asset, and potential currency booster**. It provides stability, acts as a hedge against market fluctuations, and can be used in central bank operations.

RBI SURPLUS TRANSFER

In News: The Reserve Bank of India's Central Board has approved the **transfer of a surplus of Rs 87,416 crore** to the Union Government for the accounting year 2022-23, marking a significant **increase of 188% compared to the previous year's transfer** of Rs 30,307 crore (lowest in a decade).

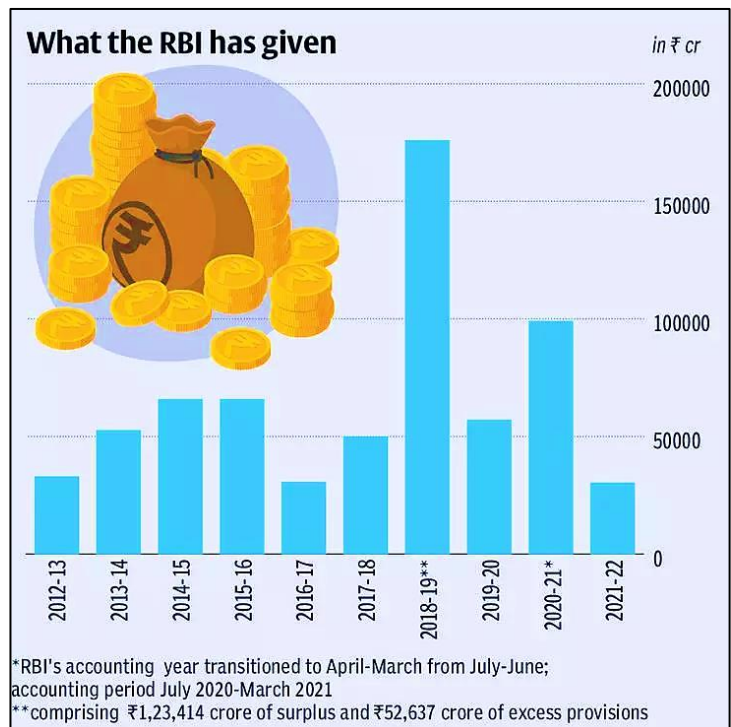
- The Surplus transfer policy of the RBI aligns with the recommendations of the **Bimal Jalan committee**, formed by the RBI.
- The Committee's recommendations were based on the consideration of the role of central banks' **financial resilience, cross-country practices, statutory provisions** and the impact of the **RBI's public policy mandate and operating environment on its balance sheet** and the risks involved.

What is RBI's Surplus?

- The surplus transfer of the Reserve Bank of India (RBI) refers to the **transfer of excess funds after meeting its operational and contingency expenses**.

Economic Capital Framework

- The **economic capital framework** provides a methodology for determining the appropriate **level of risk provisions and profit distribution** to be made under **Section 47 of the RBI Act, 1934**, under which the central bank is required to **pay the balance of its profit to the central government**.
- The Bimal Jalan Committee outlined the distinction between the two components of economic capital: **realised equity and revaluation balances**.
- The former is built of **retained earnings** and will be used for calculating future transfers from the RBI to the government, contingent on it remaining above the requirement of Contingency Risk Buffer.
- RBI to maintain the **Contingency Risk Buffer (CRB)**, which is the country's fund to handle financial stability within the range of **5.5% to 6.5%** of the RBI's balance sheet.
- The Bimal Jalan committee recommended that **realised equity** could be used **for meeting all risks/ losses** as they were primarily built up from **retained earnings**, while **revaluation balances** could be reckoned **only as risk buffers against market risks** as they represented **unrealised valuation gains** and hence **were not**



Disinvestment

“The action of an organisation or government selling or liquidating an asset or subsidiary”

Retained Earnings

The sum of a company's earnings from prior periods, after deducting any dividends paid to the company's shareholders.

distributable. So, the entire net income can be transferred to the government **only if realised equity is above its requirement.**

- Realized equity is the component of RBI's economic capital comprising its **capital, reserve fund and risk provisions.** The risk provisions comprise of:

- **Contingency Fund**, which includes provisions for unforeseen contingencies arising from depreciation of securities or monetary/exchange rate policy risks, and
- **Asset Development Fund**, which is the amount set aside for investment in subsidiaries and internal capital expenditure.
- The risk provisioning made from economic capital to cover monetary, fiscal stability, credit and operation risks is cumulatively referred to as the **Contingent Risk Buffer (CRB).**

- The Committee suggested that a distinction needs to be made between realized equity and **revaluation balances** in RBI's balance sheet, as the latter are **highly volatile.**



Revaluation Reserve

An accounting term used when a company creates a line item on its balance sheet for the purpose of maintaining a reserve account tied to certain assets.

How does RBI generate Surplus?

- The central bank's income comes from the returns **it earns on its foreign currency assets**, which could be in the form of **bonds and treasury bills** of other central banks or top-rated securities, and deposits with other central banks.
- RBI **earns interest by lending to banks for the overnight market** and by earning management commission on handling the **borrowings of state governments** and the central government.
- A significant part comes from **RBI's operations in financial markets**, when it intervenes for instance to buy or sell foreign exchange and through **Open Market operations**, when it attempts to prevent the rupee from appreciating.
- Currency and Gold Revaluation Account (CGRA)** represent the value of the gold and foreign currency that RBI holds on behalf of India, variation in this represents the changing market value of these assets through which RBI gains or loses according to market movements.
- The **Contingency Fund (CF)** is meant for meeting **unexpected contingencies** that arise from RBI's monetary policy and exchange rate operations, in both cases, RBI intervenes in the market to adjust liquidity or **prevent large fluctuations in currency value. The CGRA and CF together constitute 26% of assets.**
- RBI's total expenditure** on printing and commission forms, is only about **1/7th of its total net interest income.**
- The RBI makes money through what is called **Seigniorage.**



Open Market Operations

The Federal Reserve policy of buying and selling U.S. Treasury securities, along with other securities, on the open market in order to manage the money supply.

Seigniorage is the difference between the value of **currency/money and the cost of producing it.** It is **essentially the profit earned by the government by printing currency.** In some cases, currency production can result in a loss for the government, especially with coins, as the metal used in their production holds an intrinsic value known as the **melt value.**

Why is it called a transfer and not a dividend?

- RBI is **not a commercial organisation** like banks and other companies owned or controlled by the government to pay a dividend to the owner out of the profit generated.
- RBI was promoted as a **private shareholders' bank** in 1935, but the **government nationalised** it in January 1949, **making the sovereign the "owner".**

Conclusion:

The surplus transfer is beneficial for the government, as it will help in managing **fiscal numbers**, considering the uncertainties surrounding the **disinvestment program, international trade and deficit targets**.

GREEN DEPOSITS

In News: RBI issues framework for acceptance of green deposits by banks, NBFCs, to boost **Green Finance Ecosystem (GFS)** in India.

- Under the new framework, banks that accept green deposits will have to **disclose more information** on how they invest these deposits.
- The central bank has identified **nine sectors** in which the proceeds from these green bonds must be used and has barred these green investments in unsustainable and greenwashing projects.



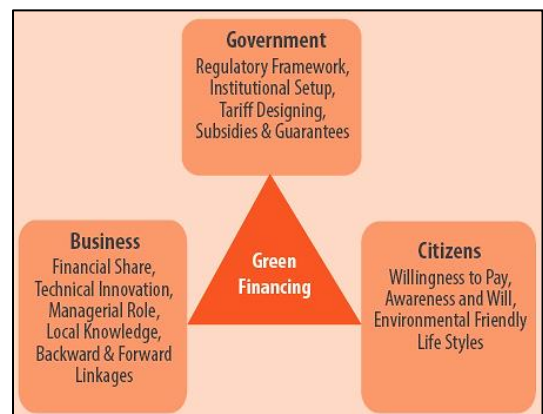
Nine sectors are- renewable energy, energy efficiency, clean transportation, climate change adaptation, sustainable water and waste management, pollution prevention and control, green buildings, sustainable management of living natural resources and land use, and terrestrial and aquatic biodiversity conservation.

What is a Green Deposit?

- It is an **interest-bearing deposit** offered by banks or financial institutions that specifically **support and promote environmentally sustainable activities** and projects for a fixed period.
- The proceeds are allocated towards renewable energy projects, energy efficiency improvements, sustainable infrastructure development, that fight climate change.

Need for this framework

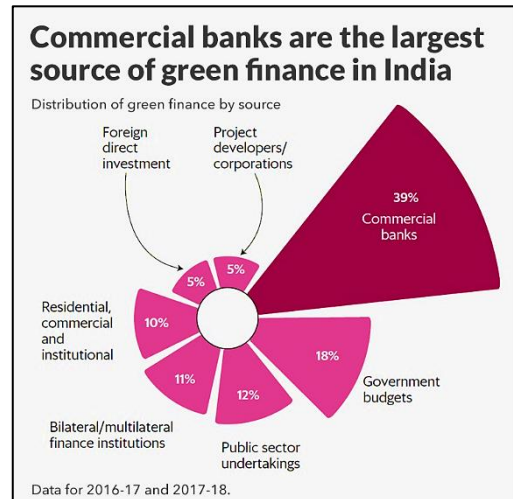
- The purpose is to **encourage Regulated Entities (REs)** to offer green deposits to customers, protect interest of the depositors, aid customers to achieve their **sustainability agenda, address greenwashing** concerns and help augment the flow of **credit to green activities/projects**.
- Climate change is one of the most critical challenges and, financing green projects to **reduce emissions globally** can play a pivotal role in mobilising and allocating resources.



About the RBI Framework

- Banks are required to **establish rules or policies**, approved by their respective Boards, to govern the investment of green deposits from customers. These rules must be **made publicly available** on the banks' websites.
- Banks have to **disclose regular information** about the green deposits received, how these deposits were **allocated** to different green projects, and the **environmental impact** of such investments.
- The allocation of funds raised through green deposits will be subject to an **independent third-party verification**.
- The Framework will be applicable to scheduled commercial banks, including small finance banks, housing finance companies, and all deposit-taking non-banking financial companies (NBFCs) but **excluding regional rural banks, local area banks and payments banks**.

- Regulated entities will offer green deposits in the form of **cumulative or non-cumulative deposits**, with varying denominations, interest rates, and tenors.
- The green deposits will be **denominated in Indian rupees only**.
- The framework **prohibits banks** from using green deposits to invest in projects **related to fossil fuels, nuclear power, tobacco**, and other restricted sectors to prevent **greenwashing**.
- The allocation of funds raised from green deposits will be based on the official **Indian green taxonomy**.



Green Finance Ecosystem:

It refers to the network of financial institutions, investors, regulators, and other stakeholders involved in promoting and facilitating investments in environmentally sustainable projects and initiatives. It includes **Financial Institutions, Investors, Green Bonds and Sustainable Debt, Green funds and Indices, Environmental, Social, and Governance (ESG) rating agencies**.

Cumulative deposits involve reinvesting the interest earned on the principal amount, leading to compounding growth over time, focusing on long-term growth. At maturity, the depositor receives the principal amount along with the accumulated interest.

Non-cumulative deposits provide fixed interest payouts at regular intervals without reinvesting the interest, offering regular income. The principal amount is returned to the depositor at maturity.

Indian green taxonomy refers to a framework or classification system developed by regulatory authorities in India to **define and categorize environmentally sustainable economic activities**. It aims to provide **clarity and consistency in identifying green or sustainable projects** and sectors, thereby **facilitating green finance and investments**. It determines which economic activities qualify as environmentally sustainable taking into account the **second order effects** of climate change mitigation and adaptation, resource conservation, pollution prevention, and biodiversity preservation. **India is yet to announce** the development of a green taxonomy, as it is essential to support the **domestic Indian green bond market**.

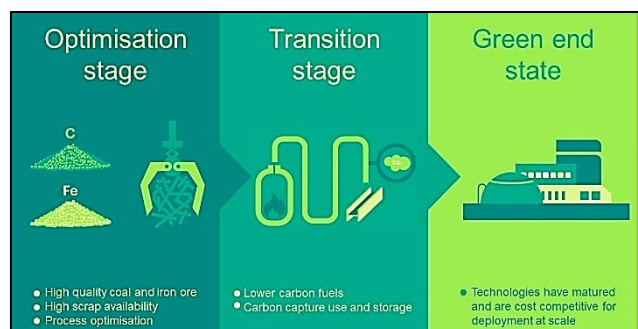
DECARBONISING STEEL SECTOR

In News: The Centre for Science and Environment (CSE) reports that India's iron and steel industry can emit less greenhouse gases and while producing more steel.

- India is currently the **world's 2nd largest steel producer** after China.
- Presently, the steel industry is responsible for **2% of the country's GDP**, and about **7-10% of its greenhouse gas emissions**.
- The steel production, presently around 250MT, is expected to double its production by 2030 and triple by 2050.

Need to Decarbonise Steel Sector

- As a signatory to the **Paris Agreement**, India has committed to reduce its carbon emissions and transitioning to a low-carbon economy. Decarbonizing the steel sector is crucial for India to meet its **Nationally determined contributions (NDCs)** and become a **Net Zero nation by 2070**.



- Forex savings of approximately \$500 billion would accrue by 2050 from reduced spending on **coking coal alone**, through an accelerated transition towards decarbonization.
- The steel companies in **Carbon Disclosure Project, 2022** have reported that **climate-related issues** like water scarcity, enhanced emission-reporting obligations and increased cost of raw materials **would cost them immensely**.
- However, the **cost of action towards decarbonization is only 21%** of the cost of inaction towards cleaner transition.
- As steel is an input to sectors like **automotive and real estate**, both the opportunities and threats around sustainable transition are **magnified**.
- The European Union (EU) is set to introduce a **Carbon Border Adjustment Mechanism (CBAM)** in 2026, imposing tariffs on carbon emissions from steel imports, **same as the carbon price paid by EU steel producers**. To remain competitive in the European market and avoid potential disadvantages from the CBAM, Indian steel producers may need to focus on reducing the emissions intensity of their steel production through the adoption of cleaner technologies and sustainable practices.

Decarbonisation refers to the process of reducing or eliminating carbon dioxide (CO₂) emissions from various sectors of the economy. It involves transitioning from high-carbon or fossil fuel-based energy sources and practices to low-carbon or carbon-neutral alternatives.

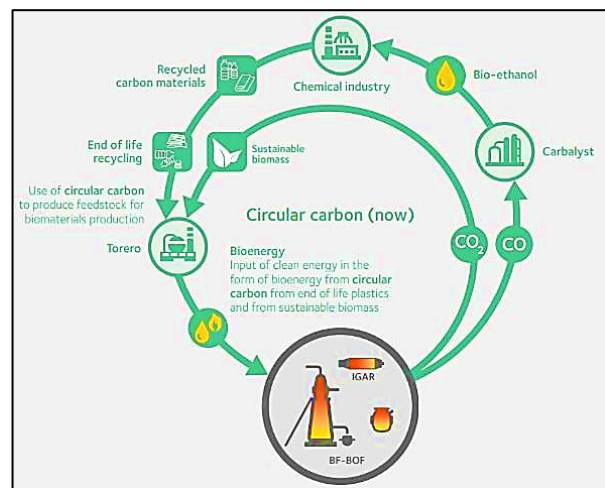
Nationally determined contributions refer to the climate actions and targets that each country voluntarily sets as part of the Paris Agreement. NDCs outline the efforts a country plans to undertake to mitigate greenhouse gas emissions, adapt to the impacts of climate change, and contribute to global climate goals. Key aspects include Emissions Reduction targets, Mitigation Actions, Finance, Technology, and Capacity-Building Support.

What steps can be taken to decarbonise the steel sector?

- **CO₂ pricing** and rapid **development of hydrogen** in the steel industry will drive low carbon steel-making. It encourages investment in hydrogen-based technology, accelerates adoption, and promotes other green technologies like **green hydrogen** and renewables-based electricity in the steel value chain.
- **Scrap-based steel-making**: It has the lowest carbon emissions of all current commercial steel-making technologies, but is dependent on price and availability of quality scrap to be economic and to achieve scale.
- The government could encourage the use of **green steel**, set up targets for **embodied carbon** in public and private construction, and in automotive uses.
- Investing in **carbon capture, utilisation and storage (CCUS)** as it is an important lever for reducing emissions, though expensive.
- India's Green Steel Mission and UK-led Industrial Deep Decarbonisation Initiative are a step in the same direction.

Challenges in Decarbonising

- There are two basic production routes: the **Blast Furnace (BF) route**, where coke is the primary fuel, and the **Direct Reduced Iron (DRI) route**, where the fuel can be coal or natural gas.
- India presently produces around **90% of crude steel through the BF and coal based DRI routes** (with an approximately equal share between the two routes). While hydrogen has the potential to fully replace coal or gas in the DRI process, it has a limited role in being able to substitute coke in the BF route.



- There is an inadequate support network for the **storage, production, and transportation of hydrogen** which has to be scaled significantly to ensure that the green hydrogen demand of approximately 8 MT by 2050 from the sector is met.

₹ 2000 NOTES

In News: The Reserve Bank of India (RBI) has decided to withdraw the Rs **2000 denomination banknotes from circulation**, but existing notes will continue to be a **legal tender**.

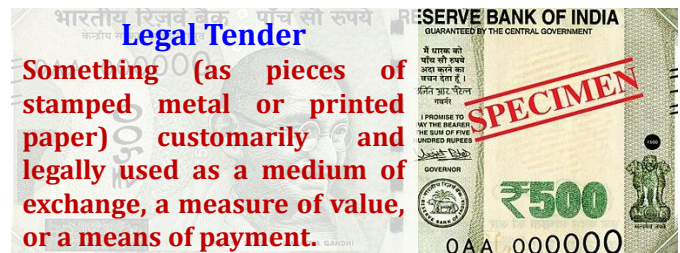
- The central bank has advised the public to deposit Rs 2000 banknotes, which were introduced after Rs 500 and Rs 1000 notes were withdrawn during the **demonetisation** exercise in 2016, into their bank accounts.
- The decision is in pursuance of the '**Clean Note Policy**' of the RBI.

Why has RBI withdrawn Rs 2000 notes?

- According to RBI, the withdrawal of the 2000 notes is a part of its **currency management operations**.
- The prime objective to introduce Rs 2000 note was to meet the **immediate currency requirement of the economy** after the legal tender of Rs 500 and Rs 1000 notes was withdrawn
- After meeting the requirement and availability of **other denominations in adequate quantities** the **printing of Rs 2000 notes was stopped** in 2018-19.
- The majority of the Rs 2000 notes are now at the end of their **estimated lifespan of 4-5 years** and is no longer commonly used for transactions.
- The RBI had previously made the decision to withdraw all banknotes **issued prior to 2005 from circulation**, as they had **fewer security features** compared to banknotes printed after 2005.

Impact on Economy

- The withdrawal of 2000 rupee notes is expected to have a **"very very marginal"** impact on the economy, as it represents only **10.8% of the total currency in circulation**.
- Improved liquidity in the banking system and inflow of deposits into banks could lead to a **drop-in short-term interest rates** as these funds get invested in **shorter-term government securities**.
- Analysts suggest that notes which are not deposited by individuals in banks could move to high-value spends such as **gold/jewellery, high-end consumer durables, and real estate.**"



Clean Note Policy: It focuses on providing the public with **good-quality currency notes** and **coins with better security features**, while **soiled notes** are withdrawn out of circulation.

Currency management involves **planning, designing, issuing, and withdrawal of currency**. Its primary objectives is to ensure the **integrity, availability, and quality maintenance of the currency**.



Money Supply
All the currency and other liquid instruments in a country's economy on the date measured.

Soiled notes are those which have become **dirty and inoperable due to slight cut**. Notes which have numbers on two ends, i.e. notes in the **denomination of Rs.10 and above** which are in two pieces, are also treated as soiled note.

The withdrawal is not likely to inflict any pain on the common citizens as **scope of digital transactions and e-commerce** has expanded significantly.

NEW GAS PRICING FORMULA

In News: The Union Cabinet has approved significant changes in the pricing regime for domestic natural gas under the ambit of the administered price mechanism (APM) on recommendations of the **Kirit Parikh Panel**.

- In India, the **government regulates** the price of natural gas produced by oil and gas companies through the **APM (administrative price mechanism) system**.
- The price of about two-thirds of India's natural gas production is determined using the modified Rangarajan formula since November 1, 2014.



Current Gas pricing in India

- The APM gas price was set based on gas pricing guidelines of 2014, and the price was set for a six-month period.
- It was determined by **volume-weighted prices at four international gas trading hubs**, namely Henry Hub, Alberta, National Balancing Point in the UK, and Russia.
- The local price of natural gas was determined based on the prices of these foreign benchmarks from the **previous year** and started applying after **a three-month delay**.
- This means that natural gas in the country was **not sold at a price determined by the market**, which means that buyers and sellers do not decide the price based on supply and demand.

New Gas Pricing

- Natural gas produced from legacy or old fields, known as **APM gas**, will now be linked to the **price of crude oil that India imports**, instead of comparing it with gas prices in surplus countries like the US, Canada, and Russia.
- The new formula sets the domestic gas price **as 10% of the monthly average** of the **Indian crude basket**.
- The gas price will be determined and notified on a **monthly basis**.
- The price will be based on crude oil prices from one month ago instead of 15 months ago.
- The change in the pricing mechanism for domestic APM gas is **not applicable to** gas production from **complex regions** such as deep water, ultra-deep water, high-temperature, and high-pressure fields.
- APM prices for gas produced by ONGC and OIL from their **nomination blocks** will have a **floor** (\$4 per mmBtu) and a **ceiling** (\$6.5 per mmBtu).
- **New wells or technology interventions** in ONGC and OIL nomination fields will receive a **20% premium** over APM prices.
- The government plans to **increase the gas price** by **USD 0.25** per million British thermal units (mBtu) annually, with the first hike taking place after 2 years from now.

Legacy or nomination fields

Nomination fields are acreages that the government **awarded to ONGC and OIL before 1999**, after which auctions became the basis of awarding oil and gas blocks.

What is the administrative price mechanism?

To **prevent hoarding, maintaining the prices** of essential goods at reasonable levels, and ensure their **easy availability**, the government fixes the prices of certain commodities. This is known as the administered price mechanism.

- The new pricing **didn't indicate towards complete deregulation** of APM by 2027, as recommended by the Parikh Panel.

Natural Gas: A naturally occurring fossil fuel composed mainly of **methane**, used for heating, cooking, and generating electricity, considered a cleaner fossil fuel with lower greenhouse gas emissions compared to coal and oil.

PNG (Piped Natural Gas): Natural gas supplied through a pipeline directly to homes and businesses, used for cooking, heating, and other domestic purposes, safer and more convenient than traditional gas cylinders.

CNG (Compressed Natural Gas): Natural gas is compressed under high pressure and stored in tanks, used as a fuel for vehicles, particularly buses, taxis, and cars, considered a cleaner and more affordable alternative to gasoline and diesel.

Indian Crude Basket: It represents a derived basket consisting of sour grades and sweet grades of crude oil in the ratio of 75.62 to 24.38. It represents the mix of crude grades processed by Indian refineries.

Benefits of Revised Gas Pricing Norms

- APM gas prices will be **linked to crude oil prices**, following **international practices**.
- It will **balance consumer and producer demands**.
- It will **address time lag**.
- The reforms aim to balance the **affordability** of domestic natural gas for gas-consuming industries and reduce prices of PNG and CNG for **households**, lowering the **fertilizer subsidy burden** and helping the **domestic power and transport sector**.
- India has been seeking to raise the **domestic gas output** and share of gas as relatively cleaner form of fuel in her energy mix from **6% at present to 15% share by 2030**.

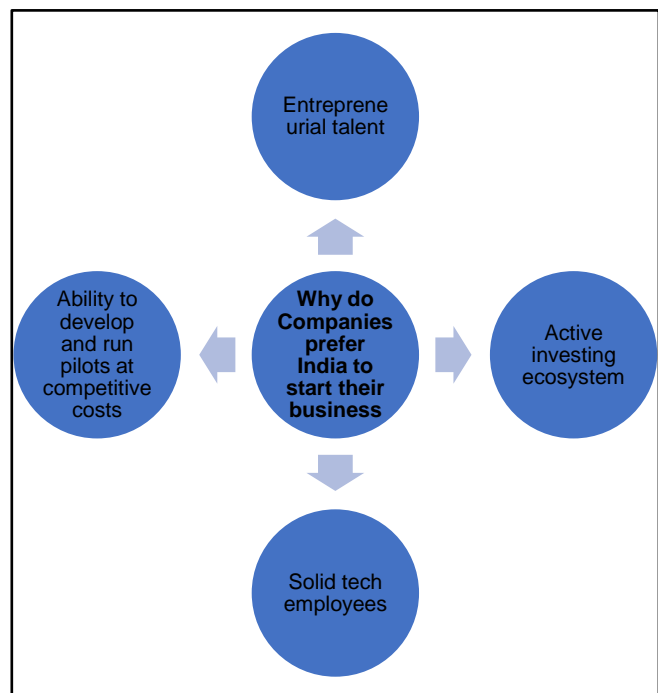
REVERSE FLIPPING

In News: Indian start-ups are looking at reverse flipping, says Economic Survey.

- Flipping is the process of transferring the **entire ownership** of an **Indian company** to an **overseas entity**, accompanied by transfer of all **intellectual property rights** and **all data owned** by the Indian company.
- Reverse flipping refers to the process of **bringing companies back to India** that had previously **shifted their ownership overseas**, to take advantage of more favourable regulations or tax structures.
- Indian startups based abroad **Razorpay (USA), Phonepe (Singapore)**, etc. are looking forward to reverse flip to India.

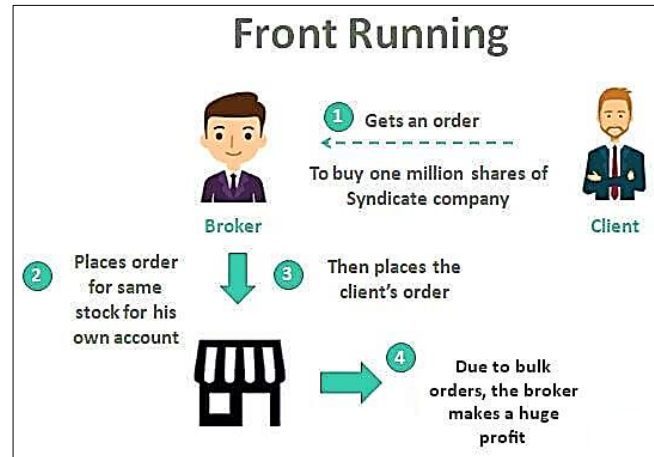
Why do Companies Flip?

- Flipping happens at the early stage of startup, driven by commercial, taxation and personal preferences of founder and investors.
- For easy access to capital from private equity and venture capital.
- Investors preference like access to incubators drive the companies to flip.
- Availability of market.



Measures to Accelerate Reverse Flipping:

- Simplifying Inter-Ministerial Board (IMB) **certification** for Start-ups
- Simplification of **taxation** of Employee Stock Options (ESOPs)
- Streamlining **Capital Flows**: India Plans to Simplify Corporate Laws and Ease Restrictions on Hybrid Securities Treatment"
- Enhancing Collaboration with Established Private Entities for State-of-the-Art Start-Up **Mentorship Platforms**.
- Exploring **Funding** and **Incubation** for Social Innovation and Impact Start-Ups.



FRONT-RUNNING

In News: The Securities and Exchange Board of India bans 21 entities in Axis Mutual Fund **Front-Running** case.

What is Front-Running?

- Frontrunning refers to the **unethical practice** of a **trader or entity** executing trades on a financial market based on **advance knowledge** of pending orders from other participants.
- It involves placing orders ahead of those known trades in order to take advantage of the **anticipated price movement**. It is **illegal** in India.
- Here, the broker or analyst **exploits non-public information** to trade securities or enter into **options/futures contracts** for personal gain, knowing that when the information becomes public, the securities' price will change in a predictable way.

Options and futures contracts are financial instruments that allow individuals or entities to speculate or hedge against the **future price movements** of underlying assets, such as commodities, currencies, or stocks.

An options contract gives the holder the right, **but not the obligation**, to buy or sell the underlying asset at a predetermined price (strike price) within a specified time period.

- A futures contract is an agreement to buy or sell the underlying asset **at a predetermined price** on a specified future date.

How Front-Running is different from Insider Trading?

Insider trading refers to a company insider who trades on **advanced knowledge of corporate activities** to engage in trading activities, such as buying or selling shares, based on **confidential information** about a company before a significant announcement is made, whereas **Front-running** involves trading based on **advanced knowledge of pending orders** in which **broker** works for the client's brokerage.

DABBA TRADING

In News: National Stock Exchange (NSE) issued a string of notices naming entities involved in the illegal practice of '**dabba trading**'.

- NSE cautioned retail investors to not subscribe (or invest) using any products offering indicative/assured/guaranteed returns in the stock market as they are prohibited by law.

What is Dabba Trading?

- Dabba trading is an **informal form** of trading conducted **outside** the **purview of stock exchanges**.

- It involves speculative bets on stock price movements **without actual ownership** of the stocks and is considered as **gambling** based on stock price fluctuations.
- Its primary purpose is to stay **outside the purview of the regulatory mechanism**, and thus, transactions are **facilitated using cash** and the mechanism is operated using **unrecognised software terminals**.
- It can also be facilitated using informal or **kaccha (rough) records, sauda (transaction) books, challans, DD receipts, cash receipts** alongside bills/contract notes as proof of trading.
- The profit and loss of dabba trading is associated with the movement of the same stock price in the **equity/commodity markets**.



Stock Market

A set of exchanges and other venues where share of publicly held companies are bought and sold.

Issues associated with Dabba Trading

- **Lack of Regulation:** Dabba trading poses a significant risk as they operate outside regulatory purview.
- There is the possibility that the broker **defaults on payments** or the entity becoming **insolvent or bankrupt**.
- This lack of regulation leaves investors **without formal safeguards** for investor protection, dispute resolution, and grievance redressal mechanisms.
- **Tax Evasion:** Dabba traders benefit from a lack of documented income or profits, allowing them to avoid taxes such as **Commodity Transaction Tax (CTT) and Securities Transaction Tax (STT)**.
- Their reliance on cash transactions also keeps them **outside** the reach of the **formal banking system**, leading to a **loss of revenue** for the government and leading to growth of **'black money' or parallel economy**.
- In case the investor loses money in dabba trading, since the ecosystem is informal, the broker could **harass the investor and use 'recovery agents'** to make up for the trade losses.
- It is recognised as an offence under **Section 23(1)** of the **Securities Contracts (Regulation) Act (SCRA), 1956** and upon conviction, can invite imprisonment for a term extending up to 10 years or a fine up to ₹25 crore, or both.

Origin of the word Dabba Trading

- Dabba Trading is also known as **Bucketing or Box Trading** in developed countries.
- Bucketing involves the illegal practice of **confirmation of an order from a client without actually executing the order** on the client's behalf.
- The broking house that engages in this activity are called **Bucket shops**.

Commodity Transaction Tax (CTT) is a tax levied on certain commodity futures contracts traded in recognized commodity exchanges. It is imposed on the buyer and seller of such contracts.

Securities Transaction Tax (STT) is levied on securities transactions such as buying or selling stocks, mutual funds, and derivatives.

CENTRAL BOARD FOR DIRECT TAXES (CBDT)

- **In news:** CBDT plans to broaden tax base by 10%.
- The government is planning to **widen the taxpayer base by 10%** to 86 million in financial year 2024.
- Central action plan includes **scrutinizing statements** on specific financial transactions of **high-value purchases, organized collection of sale-purchase data, and proper checks on tax deducted/collected at source**.
- Spending on foreign travels, designer clothes, fertility clinic services, exorbitant electricity bills will be under CBDT scanner.

- Tax base data- 2020-21
 - Population of India- 140 Cr
 - Number of people who **filed income tax returns- 6.8 Cr** (5% of India's population)
 - Number of people who **paid tax- 1.69 Cr** (1.2% of India's population)
- Reasons for low-income tax base- **large informal sector, non-taxation of agricultural income, complex tax filing procedure, low literacy towards digitization and compliance, etc.**

About CBDT:

- The CBDT is a **statutory authority** functioning under the Central Board of Revenue Act, 1963.
- It works under Department of Revenue, Ministry of Finance, Government of India.
- The officials of the Board deal with matters relating to **administration and levy and collection of direct taxes.**
- CBDT provides essential **inputs for policy and planning** of direct taxes in India.

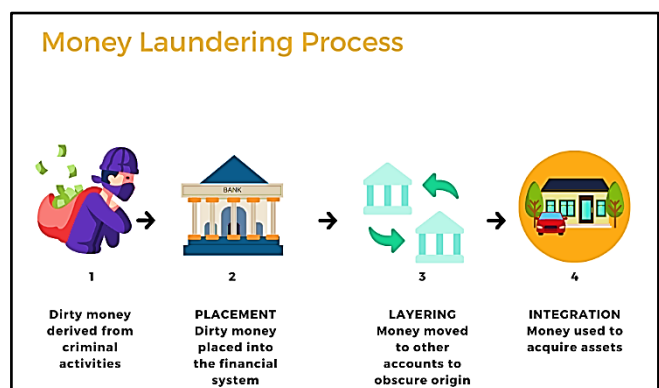
AMENDMENTS TO PMLA (PREVENTION OF MONEY LAUNDERING ACT)

In News: India's PMLA Act, 2002 has been amended to bring professionals under its ambit, if financial transactions are executed on behalf of the client.

- New changes have brought **chartered accountants (CAs), company secretaries (CS) and cost and management accountants (CMAs)** under the Prevention of Money Laundering Act (PMLA) 2002 if financial transactions are executed on behalf of a client.
- Amendment includes CAs and other professionals under the PMLA if they engage in **suspicious financial transactions, manage client assets, buy or sell property on behalf of clients, organize contributions for companies, or manage trusts and partnerships.**

Changes Being Done Under PMLA

- The Finance Ministry amended money laundering rules to incorporate more disclosures from **non-governmental organizations** by reporting entities such as **financial institutions, banks, or intermediaries.**
- It also defined "**politically exposed persons**" (PEPs) as individuals who hold **significant public roles** and are entrusted with **prominent public functions** by a foreign country, including the heads of States or Governments, senior politicians, senior government or judicial or military officers, senior executives of state-owned corporations and important political party officials.
- This amendment applies to foreign PEPs and **not domestic ones**, bringing uniformity with RBI's KYC norms.
- Changes are being made to address any loopholes before the country is assessed by the global watchdog, the **Financial Action Task Force (FATF)**, later this year.
- The FATF conducts an assessment of the implementation of anti-money laundering and counter-terrorist financing (AML/CFT) standards in India.



Financial Action Task Force

- It is an inter-governmental body that sets international standards to ensure national authorities can effectively go after illicit funds linked to drugs trafficking, illicit arms trade, cyber fraud and other serious crimes, corruption, and terrorism.
- Established in **1989**, the FATF has **39 members** at present, **Headquarter: Paris**.

Prevention of Money Laundering Act

- It is a criminal law enacted in **2002** to prevent money laundering in response to India's global commitment.
- It helps authorities to **confiscate properties linked to illegal activities**.
- The PMLA applies to **financial institutions like banks, insurance companies, mutual funds, and their intermediaries**.
- **Enforcement Directorate (ED)**, a financial investigation agency under the **Department of Revenue**, enforces PMLA.

FINANCIAL STABILITY AND DEVELOPMENT COUNCIL

In News: Ensuring financial stability is a shared responsibility, says Finance Minister at the 27th meeting of the **Financial Stability and Development Council (FSDC)**

- The FSDC discussed **early warning indicators** for India's economy and **preparedness** to deal with them in view of banking related issues in US and Europe (crisis at Silicon Valley bank and Credit Suisse).
- The meeting highlighted need to ensure **cybersecurity preparedness** of the information technology system to reduce the risk of cyber-attacks, protect **sensitive financial data**, and maintain overall system integrity as the financial sector is becoming more digitised.
- The council reviewed the progress of measures approved earlier for further development of the financial sector and to achieve inclusive economic growth with macroeconomic stability.

Financial Stability and Development Council (FSDC)

- With the mandate of **strengthening financial stability, inter-regulatory coordination and macro-regulation** of Indian economy, FSDC, as an **apex level forum**, was set up by the government in **December 2010**, after the recommendation of the Raghuram Rajan Committee.
- The **Chairman** of the Council is the **Union Finance Minister**.
- Its members include the **heads of financial sector Regulators (RBI, SEBI, PFRDA, IRDA & FMC)** Finance Secretary and/or Secretary, Department of Economic Affairs, Secretary, Department of Financial Services, and Chief Economic Adviser.
- The Council can invite experts to its meeting if required.
- The **FSDC Sub-committee** has also been set up under the chairmanship of Governor, RBI, which meets more often than FSDC.

Responsibilities

- Financial Stability
- Financial Sector Development
- Inter-Regulatory Coordination
- Financial Literacy
- Financial Inclusion
- Macro prudential supervision of the economy including the functioning of large financial conglomerates
- Coordinating India's international interface with financial sector bodies like the Financial Action Task Force (FATF), Financial Stability Board (FSB)

JNPA & LOGISTICS PERFORMANCE INDEX

In News: Jawaharlal Nehru Port Authority (JNPA), India's leading container port, has achieved a global milestone in **container cargo handling** with a remarkable **turnaround time (TAT)** of **only 22 hours (0.9 days)**, the World Bank's 2023 Logistics Performance Index (LPI) Report said.

- It is India's **biggest state-run container port by volume** handled and the second largest overall.
- JNPA credits its accomplishments to a series of measures aimed at **reducing dwell time**, such as enhancing terminal operators' **rail and road connectivity**, and implementing a **Centralised Parking Plaza (CPP)**.
- Additionally, the port has **digitized processes, streamlined berthing and unberthing procedures** for vessels, and **deployed extra tugs** to ensure seamless vessel transitions.
- The TAT of a ship refers to the time the vessel reports at the anchorage of a port to the time it sails out from the berth.

India's Position at Logistical Performance Index (LPI)

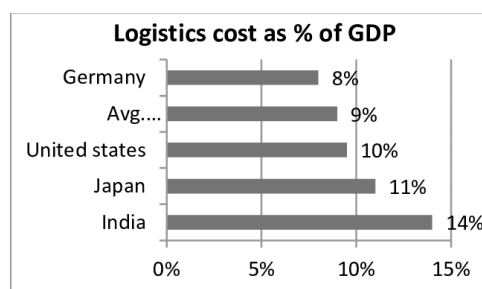
- India has jumped 6 places and ranked **38 out of 139 countries** in the 7th edition of World Bank's Logistics Performance Index 2023.
- The LPI report evaluates countries' trade logistics performance across six dimensions: **clearance process** efficiency, quality of trade and transport-related **infrastructure**, ease of **arranging** competitively priced shipments, competence and quality of **logistics services**, ability to **track** and trace consignments, and frequency of **on-time** consignee deliveries.
- Improvement in India's position at LPI 2023 has been facilitated with PM GatiShakti NMP and National Logistics Policy, 2022.

National Logistics Policy (NLP)

- Launched in 2022, the NLP centres around **upgradation and digitisation** of logistics infrastructure & services.
- Further with focus on **bringing efficiency** in services (processes, digital systems, regulatory framework) and human resources, the policy puts marked emphasis on streamlining processes for seamless coordination, and **reduction in overall logistics cost**, besides incentivizing **employment generation and skilling** of the workforce.
- NLP lays emphasis on the shift towards more **energy-efficient modes** of transportation and **greener fuels** to reduce the carbon footprint.
- The policy also focusses on adopting the usage of **multimodal transportation** and complementing it by building **multimodal logistics parks**.



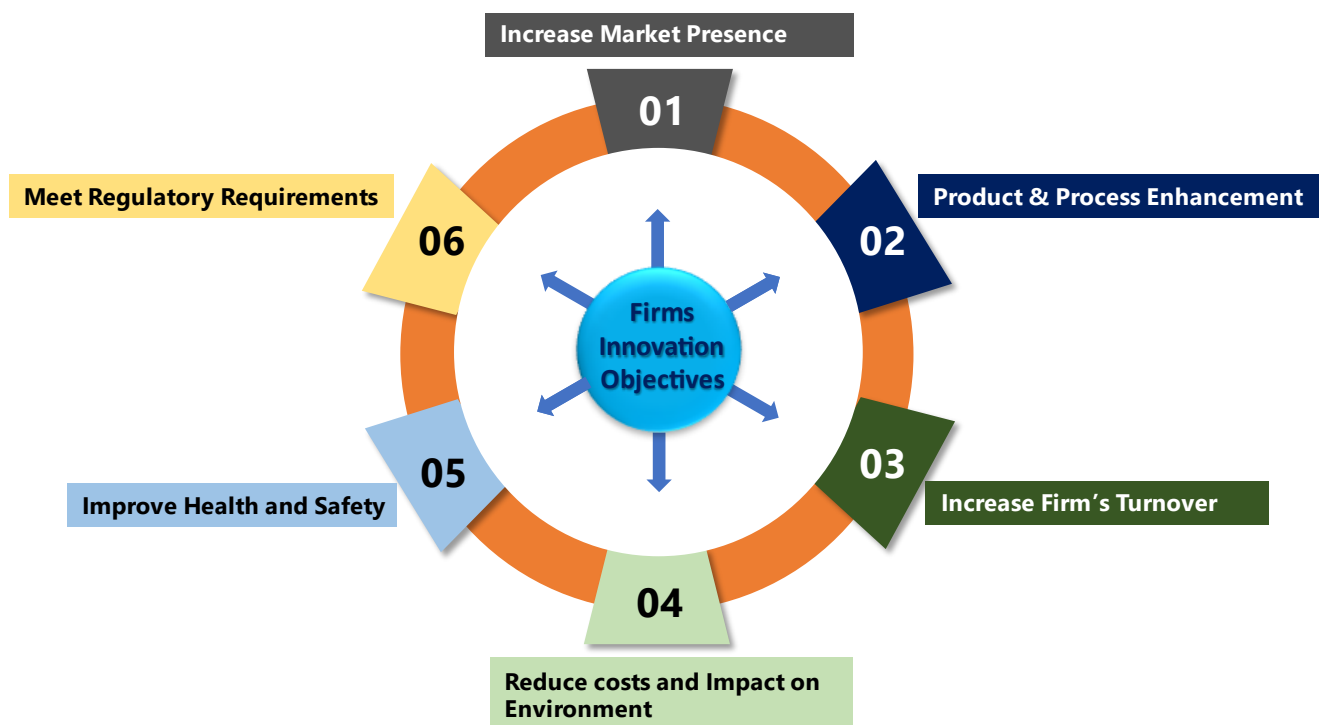
operational efficiency, bolstering landside



- **PM Gati Shakti** National Master Plan (NMP) is a **single window access to GIS based tool** which integrates existing and proposed infrastructure initiatives of different Central Ministries, to ensure **first and last-mile connectivity, for seamless movement** of people and goods.
- PM GatiShakti addresses the emerging needs of transforming the logistics landscape due to factors like **rapid urbanization, changing energy choices, e-commerce, need to develop resilient supply chains**, etc.

NATIONAL MANUFACTURING INNOVATION SURVEY (NMIS)

- **In News:** Karnataka has been ranked as the most innovative state by the National Manufacturing Innovation Survey, 2021-22.
- The National Manufacturing Innovation Survey (NMIS) 2021-22 is a joint study by the **Department of Science and Technology** (DST) and the **United Nations Industrial Development Organization** (UNIDO) to evaluate the **innovation performance of manufacturing firms** in India.
- **Karnataka**, followed by **Telangana, Tamil Nadu, Maharashtra**, and **Haryana** as have been ranked as high innovation states in India Manufacturing Innovation Index of the NMIS.
- Apart from **North-Eastern states**, low-performing states include **Jharkhand, Odisha and Andhra Pradesh**.
- The NMIS 2021-22 study was conducted as a **2-pronged survey** that examined the innovation processes, outcomes, and barriers in manufacturing firms.
- The **Firm-level survey** captured data related to types of innovations and innovative measures taken by firms, including the process of innovation, access to finance, resources, and information for innovation.
- The **Sectorial System of Innovation survey** mapped the manufacturing innovation system and its enabling role in select five key manufacturing sectors: **textiles; food & beverage; automotive; pharma; and ICT**.
- The most frequent **barriers** to innovation were the **lack of internal funds, high innovation costs, and lack of financing from external sources**.



PM MATASYA SAMPADA YOJANA (PM MSY)

In News: A new sub-scheme of **Pradhan Mantri Matsya Sampada Yojana** will be launched with a **targeted investment** of ₹6,000 crore to further enable activities of **fishermen, fish vendors, and micro and small enterprises**, improve **value chain efficiencies**, and **expand the market**, according to the Union Minister for Fisheries, Animal Husbandry and Dairying.

- The National Productivity Council (NPC), an autonomous body, will oversee implementing **innovative fishing practices** suited to different agro-climatic zones, optimizing **fish marketing systems and infrastructure** and evaluating **technological adoption** within the sector.
- At national level, an estimated **investment of ₹ 20,050 crores**, the **highest ever** in the fisheries sector, was planned for implementation of PMMSY during a period of five years from **2020-21 to 2024-25**.
- Out of this, an investment of about ₹ 12,340 crores is proposed for **beneficiary-oriented activities** in Marine, Inland fisheries and Aquaculture and about ₹ 7,710 crores investment for **fisheries infrastructure**.
- The govt also said that the country had **achieved all-time high export of 13.64 lakh tonne** valuing **Rs 57,587 crores (\$7.76 billion)**, dominated by shrimp's exports. At present, **India exports to 123 countries**.

PM Matsya Sampada Yojana

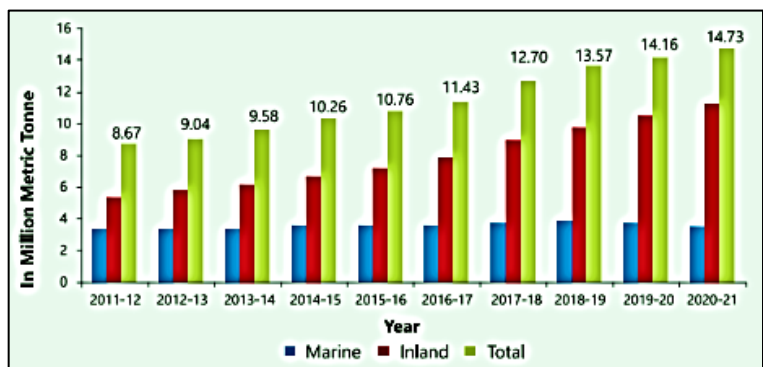
- Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme was launched to boost the **seafood industry** by enhancing the **production and productivity** of fish and other aquatic resources. The scheme also looked to improve **post-harvest management and marketing**.
- PMMSY was launched by the **Department of Fisheries, Ministry of Fisheries, Animal Husbandry, and Dairying** in the year 2020.

Update:

- The government has stated that necessary changes to PM MSY will be made to **enable traditional fishermen to buy trawlers** or other boats for **deep-sea fishing**.
- The project, jointly implemented by the Centre and the State, will equip traditional fishers to venture into the **Exclusive Economic Zone** extending 200 nautical miles beyond territorial waters.
- Instead of being dependent on the coastal sea with its depleting resources, the new vessels will enable the fishers to tap the **unexploited fishery resources** of the deep sea.
- Additional amenities including **extra storage, refrigeration facilities, and engine capacity** are also being added to the vessels.

PMMSY aims at:

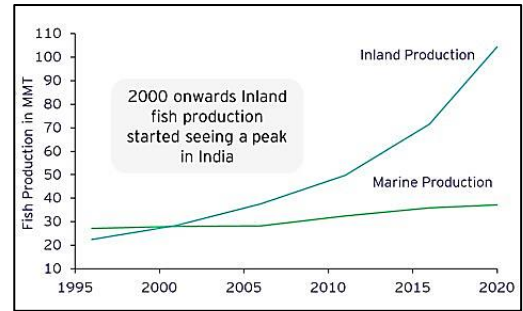
- **Enhancing fish production** by an additional 70 lakh tonne by 2024-25
- Enhancing **aquaculture productivity** to 5 tons per hectare from the current national average of 3 tons.
- Increasing contribution of fisheries sector to **agriculture GVA to 9%** by 2025
- Reducing **post-harvest losses** from 20-25% to about 10%
- Generation of additional 55 lakhs direct and indirect **gainful employment** opportunities in fisheries sector and allied activities.
- **Doubling of incomes** of fishers and fish farmers
- Increasing **fisheries export earnings** to ₹ 1,00,000 crore by 2024-25
- Augmenting domestic **fish consumption** from 5 kg to 12 kg per capita



- Focus on creating critical infrastructure such as **fishing harbours, fish landing centres, fish markets, fish feed plants, fish seed farms and fish processing units**.
- Promotion of new technologies and innovations such as **cage culture, pen culture, biofloc culture, recirculatory aquaculture systems, aquaponics** etc. for enhancing productivity and quality.

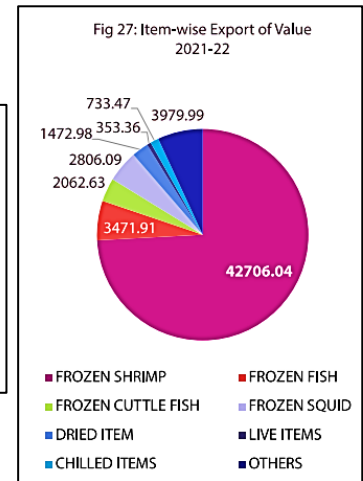
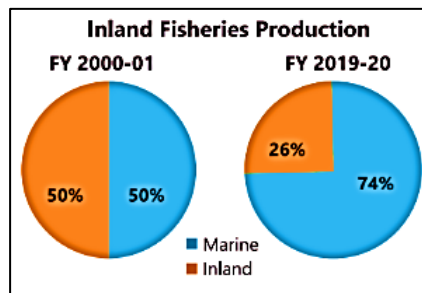
Growth in Fisheries Sector

- The **production** in fisheries sector that was 61 lakh tonnes in 2014 **has gone upto 147 lakh tonnes** in 2020.
- The ever-increasing rise in production is attributed to robust growth in **inland aquaculture** and creation of a **separate ministry** for fisheries in 2019.
- India's **aquaculture export** is a result of rising contribution through **inland fisheries**, largely led by **export of shrimps**.



Significance of Fisheries Sector:

- Nutritional attribute:** fisheries and aquaculture remain to be an important source of **affordable food and nutrition (animal protein)** to millions of people living in **hunger and malnutrition** in the country.
- Contribution to Global production:** India is the **3rd largest fish and aquaculture-producing country** and accounts for about **16% of total inland and 5% of total global marine fish production** respectively.

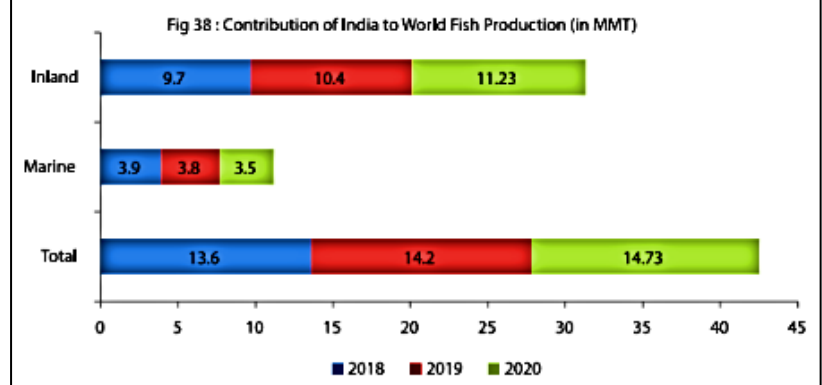
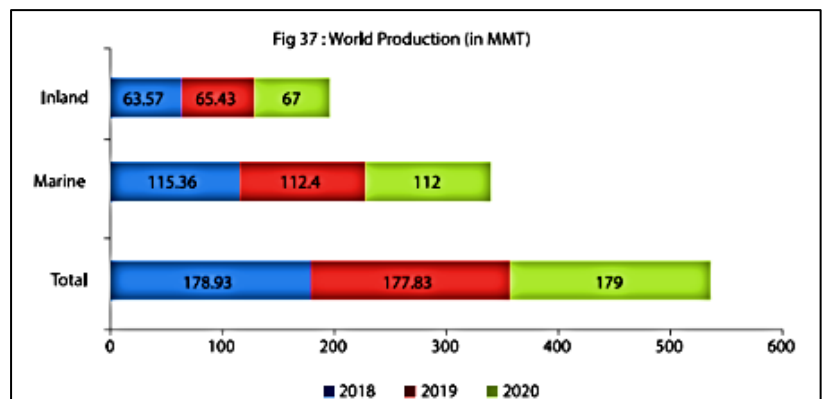


- India is at the **third place** in fisheries export, precluded by **China and Indonesia**.

- Proportion of Indian Economy:** Fisheries sector contribute **about 1.1% in India's economy and about 6.72% in agriculture sector**.

- State-wise distribution:** **Andhra Pradesh leads in inland fish production and Gujarat leads in marine fish production**. Overall, **Andhra Pradesh, West Bengal, Karnataka, Odisha and Gujarat** evolve to be the five major fish-producing states in India during 2021-22.

- Employment and export:** The fisheries sector provides livelihood to more than **2.8 crores of fishers and fish farmers** at the primary level and several more along the fisheries value chain. About **17% of agricultural exports** of India come from fish and marine products.



Strategies to unlock future prospects:

- **Traceability** of new fishing grounds
- Integrated **cluster-based approach**
- **Sea cage farming** (with support of Norway)
- **High market value** aquaculture
- **Financial assistance** through issuance of Kisan credit ID cards
- Additional infrastructure for **specific pathogen free (SPF) shrimp seed**
- Promotion of **Fish Farmer Producer Organisations (FFPOs)**
- Provisions for **Ban Period Support** to fishermen

Sagar Parikrama

- As a scheme for **direct engagement** with the fishmen community, Sagar Parikrama, was launched in 2022 with the objective of **addressing concern** of fishermen and **facilitate their economic development** by implementing various schemes of fisheries like PM MSY.
- It aims to (i) **facilitate interaction** with fishermen, coastal communities and stakeholders so as **to disseminate information** of various fisheries related schemes (ii) **demonstrating solidarity** with all fisher folk (iii) promote **responsible fisheries** (iv) **protection** of marine ecosystems.



Challenges towards fisheries development:

- **Illegal, unregulated, and unreported (IUU)** fishing (cross border illegal fishing)
- **Climate change** and the **depletion** of marine resources
- **Slowdown in exports** and sales amid the global geopolitical conditions due to the Russia-Ukraine war
- **Inflation** and increase in **feed cost**
- Opposition from **one-health concept** (white spot disease on shrimps)

Conclusion: The focus and reformed maneuvering towards fisheries sector is indicative of its importance for India's **socio-economic, external and health** sector.

ONE STATION ONE PRODUCT SCHEME

In News: With an aim to promote the government's vision of '**Vocal for Local**', the Railways Ministry launched 'One Station One Product' (OSOP) scheme across the Indian rail network.

- OSOP outlets at railway stations are allotted for **showcasing, selling, and giving high visibility and exposure** to **diverse** range of **indigenous /local** products.
- The scheme provides opportunity to railway passengers to experience the **rich heritage** of India besides creating **additional income and networking opportunity** for the **marginalised sections**.
- The product categories covered under this scheme include **handicrafts/artefacts, textiles and handlooms, traditional garments, and local agricultural produce** (including **millets**)/**processed/semi-processed foods**.
- The pilot of the scheme was started on 25.03.2022 and at present, it covers 728 railway stations.
 - **Northeast India-** Assamese Pitha, traditional Rajbongshi Dress, Jhapi, local textiles, and jute products
 - **Jammu & Kashmir-** Kashmiri Girda, Kashmiri Kahwa, and dry fruits
 - **Southern India-** cashew products, spices, Kanchipuram silk saree, Ranipet leather products, Chinnalapatti handloom sarees, Thanjavur paintings
 - **Western India-** embroidery and zari zardozi, coconut halva, locally grown fruits, processed foods, and bandhani



Images Clockwise from top left: Rajbongshi dress, Assamese Pitha, Kashmiri Girda, Thanjavur painting, Zari Zardozi, Jhapi.

PM JAN DHAN YOJANA (PMJDY)

- **In news:** Only half of Pradhan Mantri Jan Dhan Yojana insurance claims settled in two years
- The accident insurance cover for death or permanent disability is **extended to all** the **48.65 crore account holders**.


- **No premium** for accident insurance is charged from account holders.
- Originally, an accident insurance cover of ₹1 lakh was offered and later enhanced to **₹2 lakh** for new accounts opened after August 28, 2018.
- The key condition to avail the accident insurance is that the beneficiary must have performed **at least one successful transaction** (financial or non-financial) using the card **in the 90 days prior to date of accident**.

About PMJDY

- It is a scheme for financial inclusion which aims **to expand affordable access to financial services** such as **bank accounts, remittances, credit, insurance, and pensions**.
- The scheme was launched on 28 August, 2014.
- More than **50% of account holders are women**.
- As of March 2023, these 48.65 crore PMJDY bank accounts have a total deposit of ₹1,98,844.34 crore.
- But **4.03 crore** of these accounts hold **zero balance**.

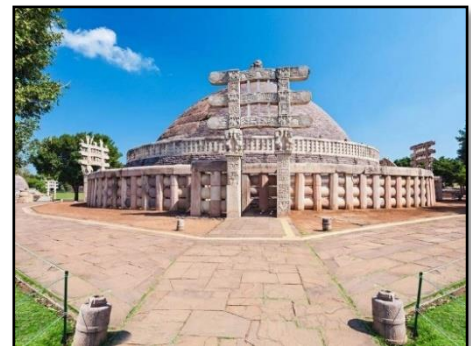
No assurances
While the Pradhan Mantri Jan Dhan Yojana bank account holders are provided the facility of accident insurance cover, only 50% of the claims made in the past two years were settled

	FY 2021-22	FY 2022-23
No. of accident claims filed	341	306
Claims settled	182	147
Claims rejected	48	10
Status unknown	111	149



SANCHI: FIRST SOLAR CITY OF INDIA

- In News:** Sanchi is set to become India's first solar city of the nation.
- Located in the Raisen district of Madhya Pradesh, it is the home to the world heritage site, the Buddhist monuments called as **Sanchi Stupas**.
 - Integration of a city with solar power is a significant step towards achieving the goal of **300 GW of solar energy** in the total plan of **500 GW of non-fossil fuel capacity by 2030**.





INTERNATIONAL RELATIONS & SECURITY

IPEF NEGOTIATIONS

In News: India's civil society organizations have warned the Indian government against joining the US-led fourteen countries **Indo-Pacific Economic Framework (IPEF) trade pillar**, with special reference to issues in **digital trade, labour, agriculture, public procurement and environment**.

India's Concerns

Digital trade:

- India wants to protect its **data sovereignty** and promote its domestic digital enterprises.
- It does not agree to free **cross-border data flows**, no tax on online services, or US standards of artificial intelligence.

Labour standards:

- India argues that commitments at the **International Labour Organization** are sufficient and that reiterating them under an FTA would make them **binding and actionable**.
- India also says that it cannot afford to have the same **stringent labour standards** as the advanced countries.

Environment standards:

- India maintains that transitioning to a **low-carbon economy** will be economically sustainable only if it **creates jobs**.
- It does not agree to a **non-derogation clause** that would prevent it from relaxing an existing domestic rule for a project of national importance.
- It also does not agree to stop **preferential treatment** to domestic suppliers in government procurement of goods. For instance, MSME procurements under **Govt e-Market place (GEM)** portal.

Agriculture:

- India does not want to allow the **import of genetically modified seeds and foods** or restrict farmers' rights to **reproduce or exchange seeds**.
- It also wants to preserve its right to **limit trade or provide subsidies** to farmers for **fertilisers, electricity, and irrigation**.

Transparency and good regulatory practices:

- India fears that this could limit its policy space and subject its domestic actions to **international scrutiny**.

Inclusivity and gender:

- India does not see the need for specific provisions on these issues under an FTA.

Indo-Pacific Economic Framework (IPEF)

- IPEF is a **US-led initiative** with an objective of negotiating rules for tackling 21st century challenges and promoting fair and resilient trade in the **Indo-Pacific region**.
- The **14 IPEF partners** are **Australia, Brunei, Fiji, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, the US and Vietnam**.
- They represent **40% of global GDP** and **28%** of global goods and services trade.

Current IPEF Members



How IPEF Negotiations Work

- Unlike normal trade deals, **IPEF has US-drafted** texts and topics for negotiation, member countries are negotiating around these.
- Hundreds of specific issues are negotiated under four pillars: **trade, supply chains, clean economy and fair economy**.

The Four pillars under IPEF

	Name	Focus
Pillar one	Trade	"Resilient, sustainable and inclusive economic growth" , which will include provisions around forced labour, environmental protection, fair competition, trade facilitation, transparency and agriculture.
Pillar two	Supply chains	Preventing future supply-chain disruptions , particularly for "critical sectors", including by identifying choke points and boosting investment in both physical and digital infrastructure.
Pillar three	Clean economy	Enhancing the use of clean energy and climate-friendly technologies to support green economic transitions and sustainable development.
Pillar four	Fair economy	Improving the "level playing field" for all market participants , including by fighting corruption, curtailing tax evasion, improving administrative transparency and enhancing the rule of law.

- The member countries have an **option to decide the pillar** in which they wish to participate.
- India has **opted out** from the **trade pillar**, while it has joined the remaining three.
- India has also expressed reservations about some proposals under the **supply chain pillar** that could violate multilateral rules and **reduce policy space**.

IPEF Objectives

- To create more conducive environments for enhancing **trade and investment linkages**, development of **resilient supply chains**, and acceleration of **sustainable development**.
- Deepen the **economic engagement** and **promote inclusive development** through enhancement in trade and investment in the region.
- Bring common tangible benefits like **capacity building, technical assistance, including sharing of expertise and best practices, investments, innovative projects**, etc.
- Making supply chain robust through **supply chain council, supply chain crisis response network and IPEF Labour Rights Advisory Board**

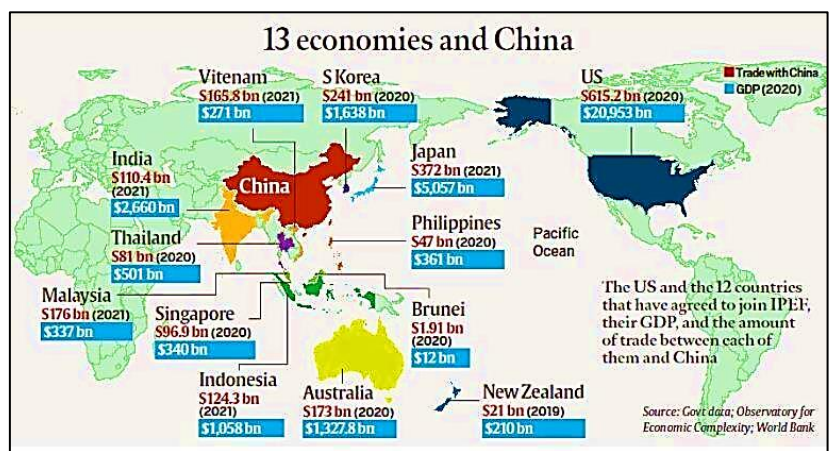


- IPEF partner countries are seeking to make **supply chains**:
 - More resilient robust and well-integrated through **crisis response measures**
 - Cooperation for mitigation of disruptions to better ensure **business continuity**
 - Improve **logistics and connectivity**
 - Promoting **investments**, particularly in critical sectors and production of key goods
 - Worker role enhancement through requisite **upskilling and reskilling**

The Indo-Pacific region is a geopolitical concept that refers to the interconnectedness of the Indian Ocean and the Pacific Ocean regions.

China's Role and Response

- China is not a member of IPEF and is widely seen as the main target of the initiative.
- IPEF is part of the **US strategy to counter China's influence** in the region and offer an **alternative model of economic cooperation**.
- China remains an integral part of the supply chains of the countries that are members of IPEF, including those now within IPEF.
- India's concerns about RCEP (Regional Comprehensive Economic Partnership) would be carried forward into IPEF as it would take time for this new grouping to create an **alternate economic system** excluding China.
- China has expressed its opposition to any exclusive or divisive arrangements that undermine **regional stability and cooperation**.



Conclusion

- US's perspective:** IPEF is a **significant economic engagement** in the **Indo-Pacific region**
- India's perspective:**
 - India has raised several concerns about the trade pillar that reflect its **developmental priorities** and **policy autonomy**.
 - India must make **domestic rules/standards fast or risk being pushed in IPEF** and in **FTA negotiations** with the EU, the UK, etc.
- China's perspective:** China's role and response to IPEF countries will have implications for the success and impact of IPEF in the region.

INDIA MERCOSUR RELATIONS

- In News:** India, Latin America in talks to expand preferential trade agreement (PTA).
- In a bid to expand the number of goods included in the agreement, India and MERCOSUR have agreed to give **tariff concessions** ranging from **10% to 100% on 450 and 452 tariff lines** respectively, according to the ministry of commerce and industry.
- India and MERCOSUR signed the **PTA in 2004**, which allowed New Delhi to forge closer economic ties with one of the world's largest trade blocs.



About MERCOSUR

- Established in 1991 as **Mercado Común del Sur (Southern Common Market)**
- The trading bloc comprises **Brazil, Argentina, Paraguay, and Uruguay** as full-time members.
- In 2020, the combined GDP of the four MERCOSUR countries was **\$1.9 trillion** with a total market of **295 million** people.

India's Trade Potential with Latin America

- India's trade with Latin America has increased from \$2 billion in 2000 to over \$50 billion in 2023.
- Key trade partners: Mexico, Brazil and Argentina.

Potential areas of cooperation:

- **Automotive sector-** India's auto industry has a large export market in Latin America.
- **Pharmaceutical industry-** Talks are underway with **Panama** to set up base of Indian pharmaceutical companies, thereby acting as a gateway to larger markets in North and South America.
- **Convention energy sector: Guyana** seeks Indian investment and expertise in developing its newly discovered oil reserves.
- **Renewable technologies** like green hydrogen are of interest to **Panama**.
- To promote mutual interests and seek better economic ties with Latin American countries, India inaugurated its **diplomatic missions in Paraguay (2022) and Dominican Republic (2023)**.

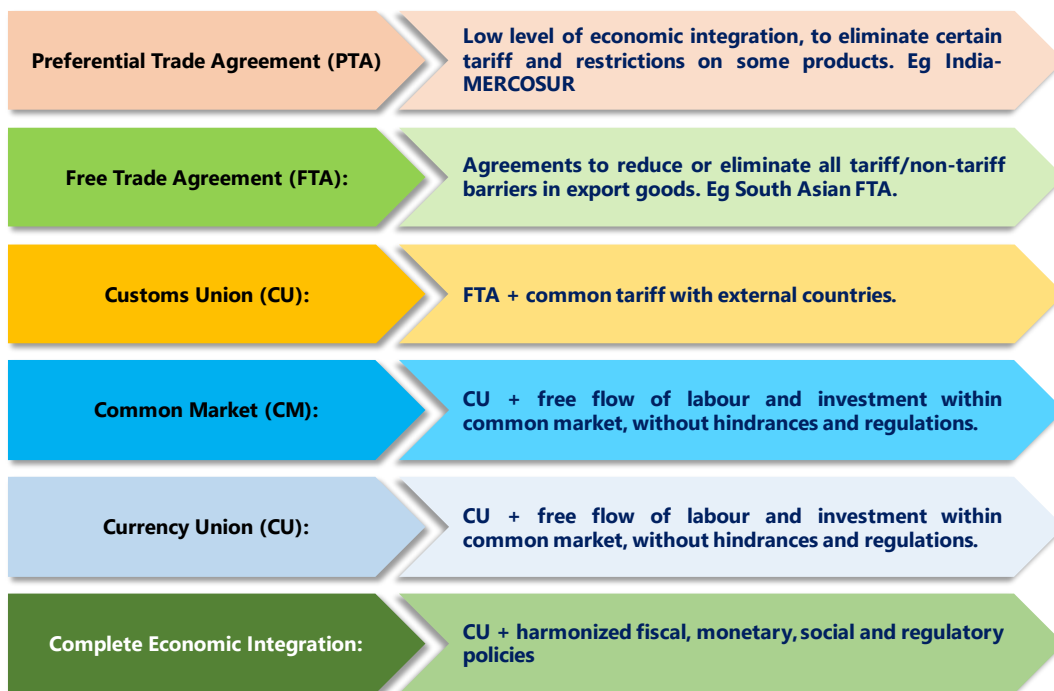


Fig: Levels of Economic Integration

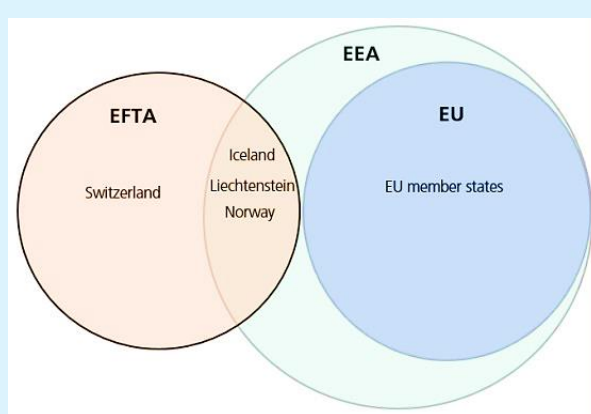
INDIA-EFTA GROUP: TRADE AND ECONOMIC PARTNERSHIP AGREEMENT (TEPA)

In News: The Indian govt and the four nations group **European Free Trade Association (EFTA)** are working towards a comprehensive **Trade and Economic Partnership Agreement (TEPA)** to boost **bilateral trade and economic partnership**.

- The agreement aims to include trade in **goods and services, agriculture, investment, government procurement, competition, intellectual property rights and technical cooperation**.
- The comprehensive deal may also include **sanitary and phytosanitary measures (SPS), technical barriers to trade (TBTs)** and dispute settlement. SPS measures and TBTs are major issues for Indian exporters as Indian rice exports had faced some cases of rejection over pesticide residue in 2021.
- Three sticking points in the trade talks – **migration issues, intellectual property rights and healthcare**.

European Free Trade Association (EFTA)

- Intergovernmental organisation for the promotion and intensification of free trade.
- Four nations – **Iceland, Liechtenstein, Norway, and Switzerland**.
- These countries are not part of the **European Union (EU)**.
- Over **14 million people** and **\$1.3 trillion trade in goods and services in 2021**. 10th in merchandise trade and eighth in services trade globally.



India EFTA trade figures

- India is the **ninth-largest** trading partner of EFTA, accounting for about **2.5%** of India's total merchandise trade in 2020-21.
- The two-way trade is **skewed in favour** of EFTA states. India's total trade with the four countries during **2021-22** was **\$27.23 billion**, with a deficit of more than **\$23.7 billion**.
- **India's key imports** from these four countries are **gold (\$20.7 billion in 2021-22)**, silver, coal, pharmaceutical products, vegetable oil, dairy machinery, medical and scientific equipment, and petroleum crude.
- **India's exports** to EFTA are **textiles, chemicals, gems, and jewellery, machinery, and pharmaceuticals**.

Analysis:

- **TEPA** could bring significant **economic benefits**, such as **integrated and resilient supply chains** and new opportunities for businesses and individuals on both sides leading to increased trade and investment flows, job creation, and economic growth.
- TEPA will significantly **reduce or eliminate customs duties** on the maximum number of goods traded between them, besides **easing norms** to promote trade in services and investments.
- Since India has been a dependable ally (amid global supply shocks, covid times, etc.), the EFTA states can **friend-shore** (source and manufacture in friendly countries) with India and boost its exports for balanced trade.



- Benefits for both sides accrue by way of **enhanced trade**, promotion of **technology** and **knowledge transfer**, facilitation of **R&D and innovation**, and encouragement of **business collaboration**.
- EFTA states are partners in India's growth story with **significant investments** of over **\$35 billion** in India, which span sectors such as machinery, electrical engineering and metals, pharmaceuticals, banking, financial services and insurance, construction, and fast-moving consumer goods.

India's special EFTA partner: Switzerland

- Switzerland is India's largest trade partner among the EFTA states. It has been the **fifth top FDI sourcing nation** after Singapore, the US, Mauritius, and the Netherlands, according to the **UNCTAD World Investment Report 2022**.
- India is Switzerland's **7th largest trading partner**.
- The bilateral trade between India & Switzerland was **US\$25 Billion** approx. during FY 2021-22, mostly in gold, which is in favour of Switzerland. Trade in services is about **US\$ 2 Billion**.
- Most of the **Swiss multinational companies** like Nestle, ABB, Novartis, Roche, UBS, and Credit Suisse etc. have their operations in India.
- Major Indian IT companies including TCS, Infosys, Tech Mahindra, etc. provide services to major Swiss pharma companies, banks and insurance firms. Indian companies in pharma and life science sectors are also present in Switzerland.

Conclusion:

A free trade agreement between India and EFTA will help enhance **two-way commerce, investment flows, job creation and economic growth**.

LAUNDROMAT COUNTRIES

In News: India leads 'Laundromat' countries buying Russian crude and selling refined oil products to Europe.

- European Countries that imposed crude oil sanctions on Russia oil are using India, and others as **'laundromats' for refined products**.
- As per a report by Finland-based Centre for Research on Energy and Clean Air (CREA), European countries being member of the **price-cap coalition**, which aims to restrict Russia's earning from **fossil fuel exports**, have significantly boosted their imports of refined oil products from **'Laundromat Countries'**.
- Indian sellers and European buyers were accused in the report of allegedly **"circumventing sanctions"** by selling crude from, Nayara Energy, a Gujarat refinery co-owned by Russia's Rosneft.
- The 2 Gujarat ports, **Sikka port** that services the Reliance-owned Jamnagar refinery, and the **Vadinar port** that ships oil products from Nayara energies are top exporting ports for the price-cap coalition and **EU is the largest importer followed by USA, UK and Japan** in the coalition.



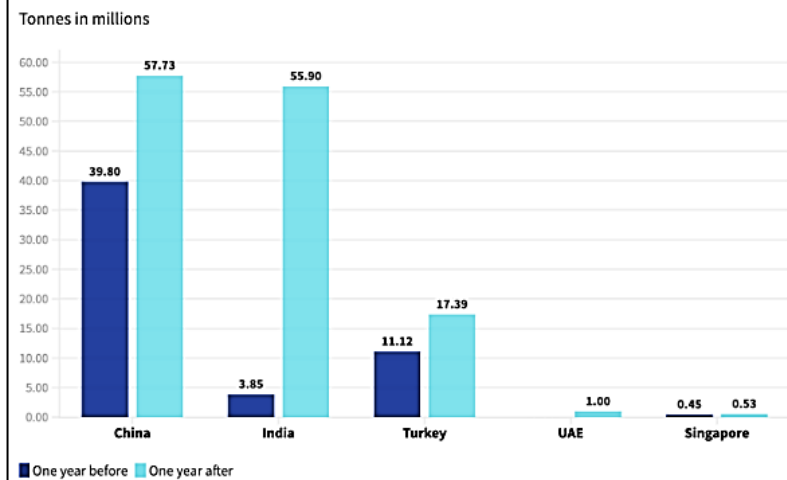
What are 'Laundromat' Countries?

- The countries that have increased purchases of Russian crude oil and **launder/clean/refine** it into **products** shipped to countries that have **sanctioned Russian oil** are called the "laundromat" countries.

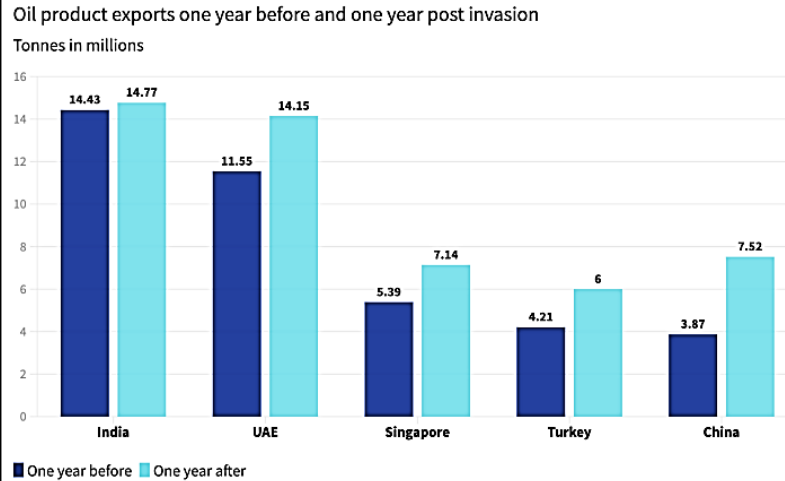
- The five countries that are identified as 'laundromats' by Western Countries are **India, China, Turkey, UAE, and Singapore**.
- The **price cap coalition** countries are responsible for the vast **majority** of the **increase** in laundromat countries' **exports of oil products** since the start of Russia's invasion.
- Laundromat countries' exports of oil products increased **80% in value terms** and **26% in volume terms** to **price cap coalition countries**, but only **rose 2% to non-price cap countries**.
- Approx 3/4th of the oil products exported from laundromat countries are insured/transported by vessels owned by price cap coalition countries is indicative of:
 - The fact that price cap coalition has a strong leverage to ratchet down the Russian oil trade in case of price cap is not followed.

Observation of the supply-demand and international price levels, which are dependent on supply of Russian crude as well.

Imports of Russian crude rise to laundromat countries since the invasion
One year before and one year post invasion



Laundromat countries' exports to price cap coalition rise one year post invasion
Oil product exports one year before and one year post invasion



Price Cap Coalition

A coalition consisting of **G7 countries, the European Union, and Australia** reached a consensus to ban the importation of Russian crude oil and petroleum products. The G7's Oil Price Cap, which sets the limit at **US\$60 per barrel for crude oil**, was implemented. The plan agreed by the G7 calls for participating countries to deny Western-dominated services including **insurance, finance, brokering and navigation** to oil cargoes priced above the cap.

WEST ASIA RAIL LINK PLAN

In News: In his visit to Saudi Arabia, the National Security Advisor (NSA) Ajit Doval discussed US rail link Plan for West Asia.

- India's NSA met his counterparts from the **US, Saudi Arabia and the United Arab Emirates** to discuss an ambitious proposal being pushed by the White House to link West Asian countries through rail.
- The envisaged plan includes a major joint infrastructure project using **Indian expertise in railway**, to connect Gulf and Arab countries via a **network of railways** that would also be **connected to India** via shipping lanes from seaports in the gulf region.
- This is potentially one of the **most significant geopolitical and geoeconomic project** and will counter rising Chinese influence in the region through belt and road infrastructure projects.

- A paper titled **'India's Arab-Mediterranean Corridor: A Paradigm Shift in Strategic Connectivity to Europe'** listed the following important points regarding the emerging trade corridor.
 - An emerging **multi-modal, commercial corridor** that could radically reconfigure trade patterns between the Indian Ocean Region, the Middle East and Europe by creating an **arc of commercial connectivity** spanning Eurasia's southern rim from **India's Arabian Sea coast to Greece's eastern Mediterranean coast.**



- **India-UAE Connectivity:** Gateway of India's Arab-Mediterranean Corridor
- **India's Food Corridor:** to enhance the Arab-Mediterranean Commercial Architecture
- **Petrochemicals Manufacturing:** Integrating India's Hydrocarbon Value Chain
- **The Innovation Corridor:** Green Energy and Innovative Technology Manufacturing Value Chains
- Indian goods shipped to the UAE's ports will be able to **reach major markets** and manufacturing centres of Europe.
- The India-to-Europe Arab-Med Corridor forms an **alternative trans-regional commercial transportation route** to the troubled Chabahar-based **International North-South Transit Corridor (INSTC).**
- Instead of Chabahar, the ports of the **UAE, India's third-largest trading partner,** would serve as the Indian Ocean connectivity node.

Significance:

- **Trade:** Such connectivity will allow for **faster movement** of goods and minimise India's **costs** in the long term. It will create an **alternative trading route** from India to Europe.
- **Economy:** The project will help India build a **brand as an infrastructure builder** in the railways sector. It will help boost India's **export of food items, value added petroleum products, and manufactured products** to West Asia and beyond, to Europe.
- **Transportation linkages:** The connectivity boost will also help **India's diaspora,** eight million citizens who live and work in the Gulf region.
-

I2U2

- The **I2U2 Group** is a grouping of **India, Israel, the United Arab Emirates, and the United States.** It is being dubbed as the emerging **West Asia Quad** by the media.
- The group's first joint statement, released on July 14, 2022, states that the countries aim to cooperate on "joint investments and new initiatives in **water, energy, transportation, space, health, and food security**".
- **Joint Projects**
 - The UAE will invest **\$2 billion** "to develop a series of **integrated food parks** across India".
 - The group also agreed to proceed with "a **hybrid renewable energy project** in India's Gujarat State consisting of 300 megawatts (MW) of **wind and solar** capacity complemented by a **battery energy storage** system".
- **India, Israel, and United Arab Emirates (UAE)** are creating an **India-Middle East Food Corridor,** by creating a resilient 21st century food supply chain that harnesses the three states' commercial and technological synergies.

WASHINGTON DECLARATION

In News: With an aim to advance the alliance over **extended nuclear deterrence plan** against the regional aggressor North Korea, South Korea signed the Washington Declaration with USA.

- The agreement between heads of state of South Korea and USA was a result of successful launch of North Korea's Hwasong-8 solid-fuel intercontinental ballistic missile (ICBM), a vital component for nuclear weapons delivery.

Washington Declaration

- An American **nuclear ballistic submarine** would be deployed in the Korean peninsula.
- South Korea would **receive intel** from the U.S. regarding nuclear advancements.
- A nuclear consultative group would be formed to formulate principles of **joint response tactics**.
- USA will strengthen South Korea's nuclear deterrence capabilities through **joint military training programs** and an annual intergovernmental simulation.
- It also mandates the **U.S. President as the sole authority** to use the nuclear arsenal of the U.S. in the event of a nuclear confrontation.
- The declaration reaffirmed the non-proliferation treaty implying that **South Korea would not venture** into the creation of its own independent nuclear capabilities and would instead focus on deterrence measures through an alliance-based approach.



Analysis

- While the existence of the agreement is based on the **security needs of South Korea**, the policy reflects big power politics where the **interests of the larger power** (USA) takes **precedence**.
- With an **erroneous presumption** that North Korea would unarm itself, USA reduced its own nuclear stockpile in North-East Asia region and pressurized South Korea to halt its nuclear development programme.
- The present state of **instability** in East Asia and North Korea's **missile tests** have created **deterrence dilemmas**, raised the risk of **broader conflict** and could involve a number of **nuclear-armed actors**.
- USA wants to **control global nuclear arms production** with an assurance that it would protect its allies by being responsible for maintaining stability in the region.

Regional response to the Washington Declaration

- Physical deployment of the arsenal by USA is being deemed as a **direct threat** by opposing actors (**North Korea, China**, etc.) and used as leverage to act aggressively.
- Various polls in South Korea indicate **nationalistic fervour** and favour building their own nuclear weapons.

SCO DEFENCE MINISTERS MEETING

In news: As the chair of Shanghai Cooperation Organization (SCO) in 2023, India hosted the SCO Defense Ministers Meeting in New Delhi.

The theme of India's Chairmanship of SCO in 2023 is '**SECURE-SCO**'.

SECURE stands for **Security, Economic cooperation, Connectivity, Unity, Respect for sovereignty and territorial integrity, and Environment**.

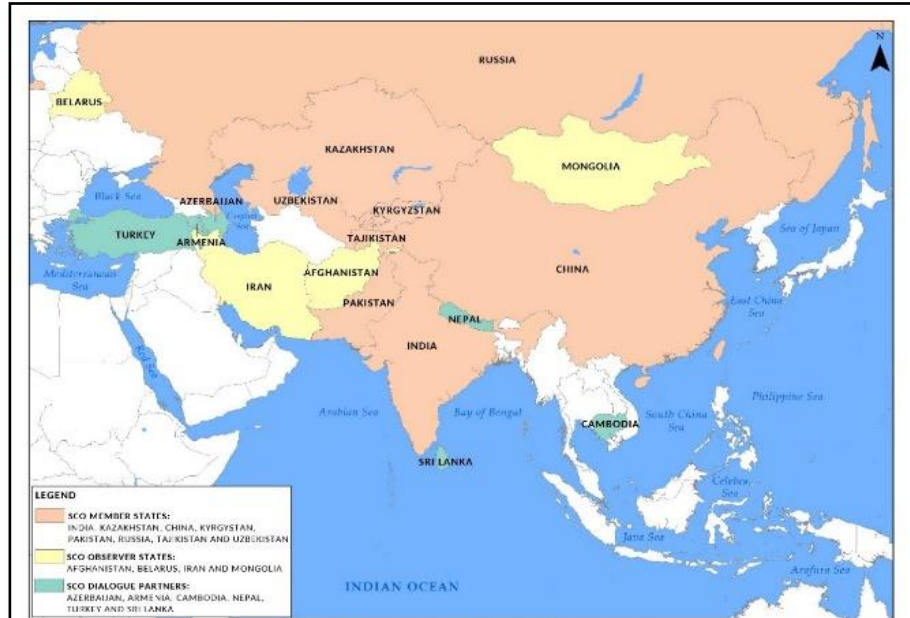
About SCO:

- **Main objectives:** strengthen and promote cooperation in political, economic, scientific, cultural and educational spheres including energy, transportation, tourism, and environmental protection; safeguarding peace and creating an equitable international political and economic order.

- SCO was established in **2001**
- **Present membership:** includes 8 countries, i.e. Kazakhstan, China, Kyrgyzstan, Pakistan, Russia, Tajikistan and Uzbekistan and India.
- Iran is set to join SCO as its 9th member during India's presidency.

India's stand at the meeting:

- India attaches special importance to SCO in promoting multilateral, political, security, economic and people-to-people **interactions** in its extended neighborhood.
- India envisions a robust framework of regional cooperation which mutually respects the **sovereignty and territorial integrity** of all member states by taking care of their legitimate interests.
- India is committed towards **defence capacity building** of SCO member states through **training and co-manufacturing and co-development** of items.
- Member countries need to ensure **food security** under an integrated plan.
- Establishing consensus on several areas of cooperation, including dealing with **terrorism**, security of **vulnerable populations, HADR** (Humanitarian Assistance and Disaster Relief), etc.
- Indicating **towards Pakistan**, India has declared that peace and prosperity cannot coexist with this menace. If a nation shelters terrorists, it not only poses a threat to others, but for itself too.
- Unified stand of all member states- **"Terrorism, in all its forms, must be condemned and eliminated."**



ASEAN-INDIA MARITIME EXERCISE (AIME-2023)

In news: The first **ASEAN-India Maritime Exercise (AIME-2023)** was held in May, 2023, with **war games** conducted in the South China Sea.

- The exercise involved nine ships and 1400 personnel from ASEAN member states and India.
- The exercise was divided into two phases: **a harbour phase** at Changi Naval Base in Singapore and **a sea phase** in the South China Sea.
- India deployed its **India's first indigenously-built guided missile destroyer INS Delhi**, indigenously-built guided missile **stealth frigate INS Satpura**, maritime patrol **aircraft P-8I** and helicopters for the exercise.
- The exercise witnessed a wide spectrum of evolutions at sea including **tactical manoeuvres, cross-deck landings by helicopters, seamanship evolutions** and other maritime operations.



- Chinese maritime militia approached an area where India & ASEAN countries were taking part in drills in the South China sea.

The Association of Southeast Asian Nations (ASEAN)

- It is a 10 member states **political and economic union** in Southeast Asia. The Member states are **Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam.**
- It was established on **8 August 1967, in Bangkok, Thailand**, with the signing of the ASEAN Declaration (Bangkok Declaration).
- The Founding Fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore and Thailand.
- ASEAN countries adopted the **ASEAN Charter** in 2008 that codified its principles, objectives, and structures and **established a legal identity** for the ASEAN organisation.
- ASEAN group countries have a combined estimated population of 668 million and generated an estimated US\$10.2 trillion GDP(PPP) in 2022.



Significance of ASEAN-India Maritime Exercise:

- The exercise aimed to **enhance collaboration, understanding and trust** among the navies of ASEAN member states & India to address common challenges related to maritime security at sea.
- The exercise demonstrated the ability of the participating navies to operate as an **integrated force** to promote peace, stability and security in the region.
- The exercise came amid increasing concerns over **China's assertiveness** in the South China Sea, where it claims sovereignty over most of the waters.

INDIAN ARMY ON PATH TO TRANSFORMATION

In News: Indian Army will observe Year 2023 as “On Path to Transformation”, to set the course for its evolution to a **future ready, technology driven, lethal and agile force.**

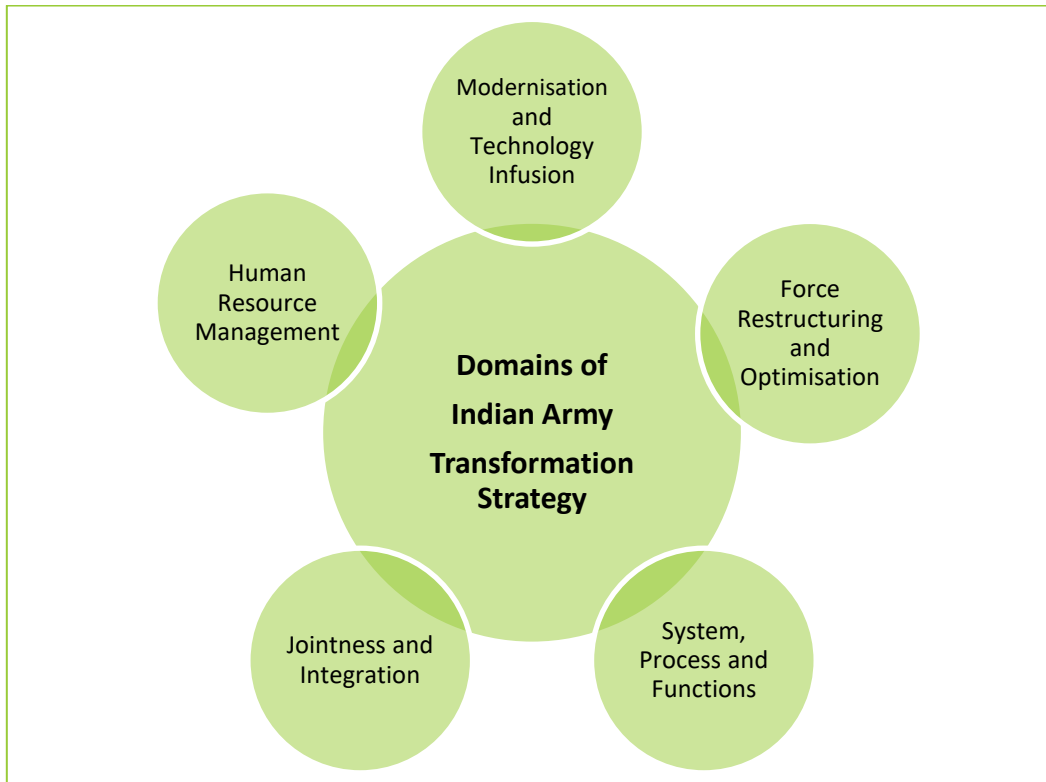
- In a bid to forward India's **defense modernisation and digitisation efforts**, it will enable **automation and integration** of various operational and managerial information systems.

Project Sanjay: A Game-Changer for the Indian Army

- **Project Sanjay** is an initiative to create a **Battlefield Surveillance System (BSS)** that will provide a **composite operational picture for situational awareness and information dominance**, aiding swifter decision-making.
- It will increase the **effectiveness and accuracy of artillery fire** by integrating with **ACCCCS**.
- Project Sanjay will leverage the **secure network** for spectrum and the **captive data centres** set up by the Army across the country.
- The BSS will integrate data from thousands of secure sensors and will also be linked with the **Artillery Combat Command Control and Communication System (ACCCCS)** to complete the grid.
- The system also integrates data on the movements of India's adversaries received from various sources across borders, including sensors, satellite, unmanned aerial vehicles, and patrols.



- The project is being executed by **Bharat Electronics Limited (BEL)** and is expected to deliver over **60 surveillance centres** for field formations by December 2025.
- It was extensively **validated** in plains, deserts, and mountainous terrains last year.



Situational Awareness Module for the Army (SAMA)

- It is a **comprehensive Information Decision Support System** that integrates inputs from all operational and managerial information systems.
- It presents a **comprehensive battlefield picture to commanders** at all levels based on authorisation and roles.
- Developed in collaboration with **BISAG-N (Bhaskaracharya Institute for Space Applications and Geoinformatics)**, it has integrated inputs from **ACCCS, BSS, e-Sitrep, and Management Information Systems Organisation (MISO)**.
- It will be operationalised in the Northern Command in June 2023.
- Another key project is the **Situational Reporting Over Enterprise-Class GIS platform**, which will enable spatial visualisation, temporal and dynamic querying and analytics for operational correspondence.
- **e-Sitrep** is an acronym for **Situational Reporting Over Enterprise-Class GIS Platform**.

AVAGAT: Army's Own Gati Shakti

- AVAGAT is a project to create a **single GIS platform** that integrates multi-domain spatial data for integrated and planned development of **critical infrastructure projects** to reduce logistics costs.
- AVAGAT will combine inputs from **operational, logistic, satellite, topographic and metrological sources** on a common platform.
- AVAGAT is expected to be fully operational by the end of the year.

Project ANUMAAN

- The Army has collaborated with **National Centre for Medium-range Weather Forecasting (NCMRWF)** to receive customised high-resolution weather forecasts for its components along the northern borders.

COMMAND CYBER OPERATIONS AND SUPPORT WINGS (CCOSW)

- **In News:** Army plans to raise CCOSW to handle cyberspace challenges.
- The Army Commanders Conference decided to set up a CCOSW which will assist the army formations in taking up **cyberspace security challenges** posed by the growing warfare capabilities of adversaries.
- Since cyberspace has emerged as an important component of military domain in **conventional and grey-zone warfare**, CCOSW will have the mandate to safeguard the networks and increase the preparedness levels against the cyber threats.
- **Gray zone** describes a set of activities that occur between peace time and war.
- Management of **niche technology warfare equipment** like **drones, UAVs**, usage of **electronic warfare**, migration towards **net-centricity**, reliance on **modern communication systems** and other **critical information infrastructure** will need to counter cyber warfare challenges.

Other major decisions taken:

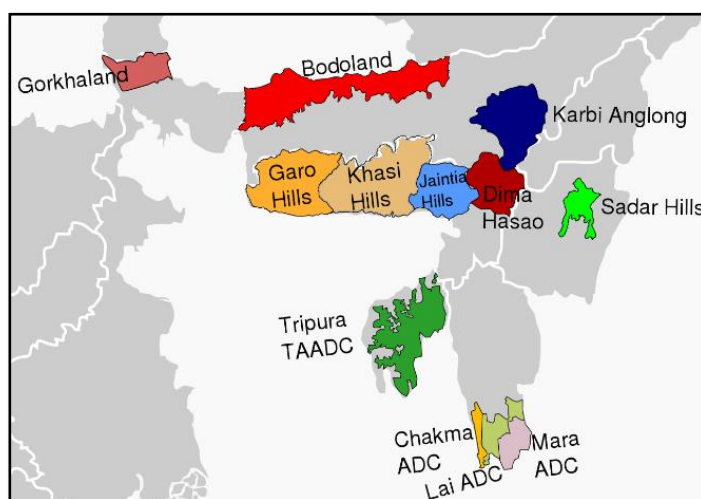
- Refinement of training procedures for **Technical Entry Scheme**
- Training of soldiers who are battle and physical casualties for Paralympic events
- Increasing the sustenance allowance to specially abled children of personnel killed in the line of duty

The Information Technology Act of 2000 defines "Critical Information Infrastructure" as a "**computer resource**, the incapacitation or destruction of which shall have **debilitating impact on national security, economy, public health or safety**". Certain identified critical information infrastructure in India include:

- Power & Energy
- Banking, Financial Services & Insurance
- Telecom
- Transport
- Government
- Strategic & Public Enterprises

DIMA HASAO INSURGENT GROUP SIGNS PEACE PACT WITH ASSAM, CENTRE

- **In News:** Representatives of Dimasa National Liberation Army (DNLA) have agreed to give up violence, surrender with arms, disband their armed organisation, and join the mainstream.
- This agreement is a major step in making **north-east India insurgency free by 2024** and puts a complete end to armed insurgency in Assam.
- Operating in the Dima Hasao district of Assam, DNLA was established in April 2019 seeking a sovereign territory for the Dimasa tribals and launched an armed insurgency to achieve its goal.
- Development activities to be pursued as a part of the agreement:
 - Setting up of **Dimasa Welfare Council** to protect, preserve and promote a social, cultural, and linguistic identity to meet political, economic, and educational aspirations
 - **Special Development Package** for all-round development of **North Cachar Hills Autonomous Council** (NCHAC) as well as Dimasa people residing in other parts of the State.



- Speedy and focused development of the Dimasa **people residing outside the jurisdiction** of NCHAC
- Commission to examine the demand for the **inclusion of additional villages** contiguous to the North Cachar Hills Autonomous Council (NCHAC) with the Council.

Previous agreements of similar nature:

- **Karbi Anglong Agreement, 2021:**
 - To ensure greater devolution of autonomy to the Karbi Anglong Autonomous Council
 - Protection of identity, language, culture, etc. of **Karbi people**
 - Pursue development **without affecting the territorial and administrative integrity** of Assam.
- **Bodo Accord, 2020:**
 - To increase the scope and power of Bodoland Territorial Council
 - Promote and protect Bodo's **social, cultural, linguistic and ethnic identities**
 - Provide legislative protection for the land rights of tribals
 - Notifying **Bodo language** as an associate official language in the State and to set up a separate directorate for **Bodo medium schools**.

OPERATION KAVERI

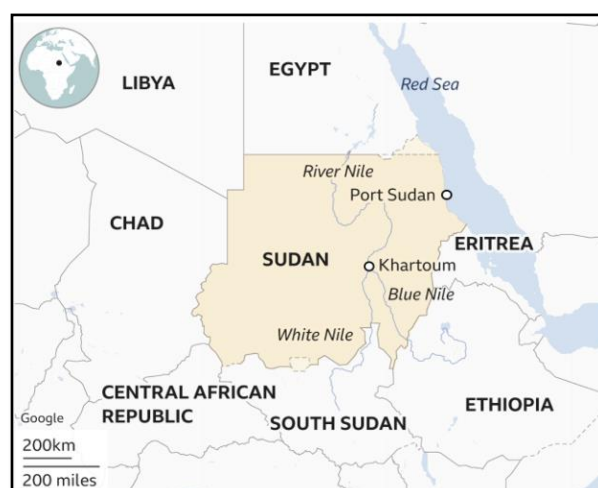
In News: Owing to the current civil war crisis in Sudan, India has launched 'Operation Kaveri' to rescue its citizens.

What is Operation Kaveri?

- It is a **coordinated effort between the Indian government and its embassy in Khartoum, Sudan** to ensure the safe return of Indian citizens stuck in Sudan.
- Two C-130 aircraft and the ship INS Sumedha (stealth offshore patrol vessel) is on standby in Jeddah.
- The operation is named after one of the major rivers in India, '**Kaveri**'.

Current crisis in Sudan

- The political unrest in Sudan descended into an all-out war after a dispute over the **Security Sector Reform (SSR)** between the **paramilitary Rapid Support Forces (RSF) and the Sudanese Armed Forces (SAF)**.
- **Security sector reform** aimed at ensuring integration and merger of RSF with SAF and enhancing improving safety by enhancing the effectiveness and accountability of security institutions controlled by civilians and operating according to human rights and the rule of law.





SCIENCE AND TECHNOLOGY

EU ARTIFICIAL INTELLIGENCE (AI) ACT

In News: Members of the European parliament reached a preliminary deal on a new draft of the European Union's ambitious Artificial Intelligence Act.

Summary:

- The draft **AI Act** defines **AI** as “**Software that is developed with one or more of the techniques that can, for a given set of human defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with**”.
- The **AI Act** would classify **AI systems** by their level of risk to ‘**human health, safety and fundamental rights**’ of a person.
- There are **four risk categories** in the Act - **Unacceptable, High, Limited, and Minimal** and impose different requirements and obligations accordingly.
- The Act would **prohibit** AI systems that pose an **unacceptable risk** such as:
 - Use of **real time facial & biometric identification** systems in public spaces
 - **System of social scoring** by governments leading to ‘unjustified & disproportionate detrimental treatment’
 - Techniques that **manipulate human behaviour**.
- The AI Act lays substantial focus on AI systems in **high risk** category which will **include biometric identification and categorisation of persons**, AI used in **health care, education, employment, law enforcement, justice delivery** systems and tools that provide access to essential private and public services (such as loan approval systems).
 - It envisages establishing an **EU-wide database** of high risk AI systems
 - High risk AI systems will be subject to strict **pre-market reviews** known as ‘**Conformity Assessments**’: algorithmic impact assessments to analyse datasets fed to AI tools, biases, how users interact with the system and overall design & monitoring of system output.
 - Mandatory **post-market monitoring** obligations include logging performance data and maintaining continuous compliance.
- AI systems in the **limited and minimal risk** category (such as spam filters, video games) are allowed to be used with few requirements like transparency obligations.

Artificial Intelligence It is the simulation of human intelligence processes by computer systems. It includes machine learning, natural language processing, computer vision, robotics, and expert systems.

- **Examples:** Virtual Assistants like Siri, Alexa etc, Face detection & recognition technology (google photos), Chatbots like Chat GPT, Search & recommendation algorithms, Self Driven cars.

Generative AI is a type of AI technology that can produce various types of content including text, imagery, audio and synthetic data.

- **Examples:** ChatGPT, Midjourney, Dall-E, GitHub-Copilot.

Vision:

- In line with the EU's 2018 **General Data Protection Regulation (GDPR)** which made it industry leader, the AI law aims to “**strengthen Europe’s position as a global hub of excellence in AI from the lab to**

the market” and ensure that AI respects EU values and principles, such as human dignity, privacy, non-discrimination & democracy.

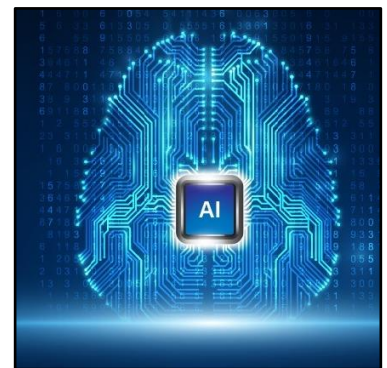
- The regulation also aims to **support innovation and competitiveness** in AI by creating a **single market for AI products and services**.

Similar Laws in Other Countries:

- **China** has issued several guidelines and standards on ethical and trustworthy AI and is developing a **national standardisation system** for AI. China has also created a registry of algorithms where developers have to **register their algorithms**, information about datasets used by them and potential security risks.
- The **US** does not have comprehensive AI Regulations & has taken a **hands-off approach**. The US administration released the blueprint for **AI Bill of Rights (AIBoR)** which outlines the harms of AI to economic and civil rights and lays down principles for mitigating them.

Why Regulate AI?

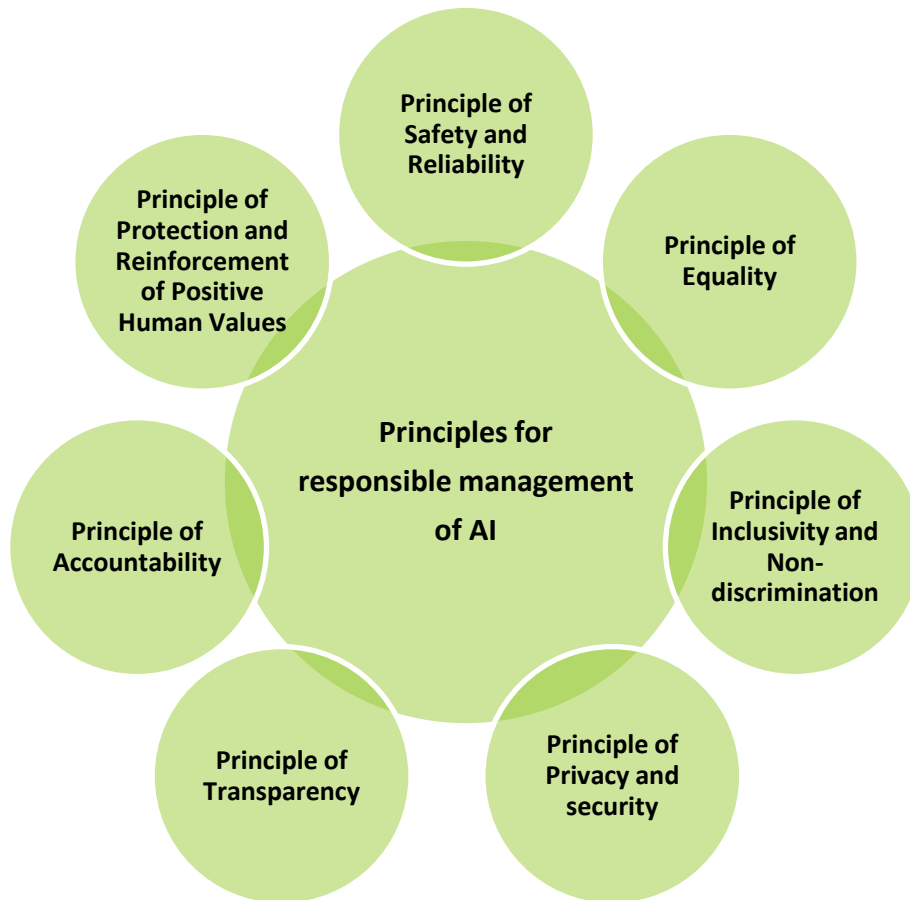
- With AI technologies becoming **omnipresent** and capable of a **wide variety of tasks**, like voice assistance, recommending music, self driven cars, detection of diseases, etc., **multiple concerns** around usage of AI have come up.
- The recent rise of **Generative AI tools and deep fake technology** like chatbots, text to text, text to image, text to video tools. For example, **ChatGPT** based on **large language models (LLM)** like **Generative pretrained transformer-3.5 and 4**, can generate human-like language response, versatile human competitive content. It also raised concern regarding **inaccurate or copyrighted material** and many other **ethical, societal & economic impact** of such powerful AI tools.
- Many **AI tools** are essentially **black boxes**, meaning even those who designed them cannot explain what goes inside them to generate particular output.
- Recently Twitter CEO Elon Musk and Apple cofounder Steve Wozniak signed an open letter asking AI labs to stop the training of powerful AI models citing potential risks to society and humanity. Also, Italy's Data Protection Authority **temporarily banned chatGPT** chatbot and launched a probe over a suspected breach of the data collection rules.



AI Regulation in India

- As mentioned in a recent response to a parliamentary question, the Government of India (GoI) sees Artificial Intelligence (AI) as a **significant and strategic area** for the country and technology sector. AI is a **kinetic enabler** of the digital economy and innovation ecosystem.
- GoI published a **draft National Strategy for Artificial Intelligence** in **June, 2018**, which outlines five focus areas for AI development and deployment: healthcare, agriculture, education, smart cities and infrastructure, and smart mobility and transportation.
- With the vision to make India a global leader in AI space and to ensure responsible and transformational use of **AI for All**, the **Ministry of Electronics and Information Technology** (MeitY) has undertaken the implementation of the **“National Program on Artificial Intelligence”**.
- India is a founding member of **Global Partnership on Artificial Intelligence (GPAI)**.
- **GPAI** is an **international and multi-stakeholder initiative** to guide the responsible development and use of AI, grounded in **human rights, inclusion, diversity, innovation, and economic growth**.
- India is also working on a data protection law and an ethical framework for AI through the upcoming **Digital Personal Data Protection Bill** and **Digital India Act**.

- **NITI Aayog** through the Paper **“Towards Responsible AI for All”** identified the following **broad principles** for **responsible management** of AI.



EU ONLINE CONTENT RULES UNDER DSA

In News: 19 big tech platforms to face stricter compliance regarding moderation of user content in EU.

- Five subsidiaries of Google’s parent Alphabet, two Meta units, two Microsoft businesses, Apple’s AppStore, Twitter, and Alibaba’s AliExpress are among the entities that the EU has identified. The rules notified under the **Digital Services Act (DSA)**, aim at overhauling the EU’s **social media and e-commerce rules**, and at tightly regulating the way big technology platforms moderate user content.
- The rules become significant as the Ministry of Electronics and Information Technology, India amended the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 to designate an **official fact checker for misinformation and ‘fake news’**, and to regulate the online real money gaming industry, which comprises apps like fantasy sports sites, rummy and poker.



Key Features of DSA

- **Fighting disinformation:** New procedures have been introduced **for faster removal** of content deemed illegal or harmful and provisions to **challenge the takedown**.

- **Increase transparency:** Bigger platforms having more than **45 million users** have been designated as **'Very Large Online Platforms'** (VLOPs) and **'Very Large Online Search Engines'** (VLOSEs).
- **Ensuring accountability:** VLOPs and VLOSEs will face scrutiny of how their **algorithms work** and will be required to conduct systemic risk analysis and reduction to drive accountability about the societal impacts of their products.
- **Compliance:** VLOPs must allow regulators to access their data to assess compliance and allow researchers to access their data to **identify systemic risks** of illegal or harmful content.
- **Empowerment of online users:** Online platforms must ensure that users can easily **identify advertisements** and understand who presents or pays for the advertisement. They must not display personalised advertising directed towards **minors or based on sensitive personal data**.

LIGO-INDIA

In News: Cabinet approves **LIGO-India, gravitational-wave detector** to be built in **Hingoli district, Maharashtra** at an estimated cost of **Rs 2,600 crore**, to be completed **by 2030**.

- LIGO is an **international network of laboratories** that detect the **ripples in spacetime** produced by cosmic events such as merger of two black holes, supernova event (explosion of stars) or the birth of the universe.
- These ripples were first postulated in Albert Einstein's General Theory of Relativity that encapsulates our current understanding of how gravitation works.
- LIGO project is India's **biggest scientific facility** and most **advanced cutting edge technology** at large scale that will join the ongoing global project to **probe the universe** by detecting and studying gravitational waves.
- LIGO-India will be the third of its kind, made to the exact specification of the twin **Laser Interferometer Gravitational-Wave Observatories (LIGO)** in Louisiana and Washington in the USA.
- LIGO-India will be built by the Department of Atomic Energy (DAE) and the Department of Science and Technology (DST), with a memorandum of understanding with the U.S. National Science Foundation and several national and international research institutions.

Gravitational Wave

A gravitational wave is an **invisible ripple** in space. Gravitational waves **travel at the speed of light**. These waves squeeze and stretch anything in their path as they pass by. They are tiny perturbations in **space-time** that ripple outwards from great disturbances like, for instance, two black holes colliding, exploding stars such as supernovas or the birth of the universe.

Gravitational waves were first predicted in **Albert Einstein's 1915 theory of gravity**. Gravitational waves **encode information** about the events that create them. Some gravitational waves are emitted from events that do not produce light.

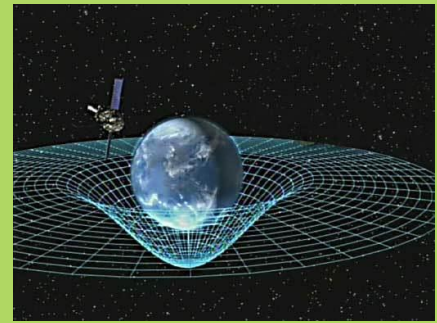
How are gravitational waves detected

When a gravitational wave passes by Earth, it squeezes and stretches space. LIGO can detect this squeezing and stretching. Each LIGO observatory has two "arms" that are each more than 2 miles (4 kilometres) long. A passing gravitational wave causes the length of the arms to change slightly. The observatory uses lasers, mirrors, and extremely sensitive instruments to detect these tiny changes.

Spacetime

- Einstein had proved that space and time were not independent entities but had to be woven together as spacetime.
- He proposed that spacetime was not just a passive backdrop to the events happening in the universe. It was not a mere transparent, inert, and static stage.
- Instead, **spacetime interacted with matter**, was influenced by it, and in turn, itself influenced events. It was like a **soft fabric that responds to a heavy object** placed on it, and curls around it.

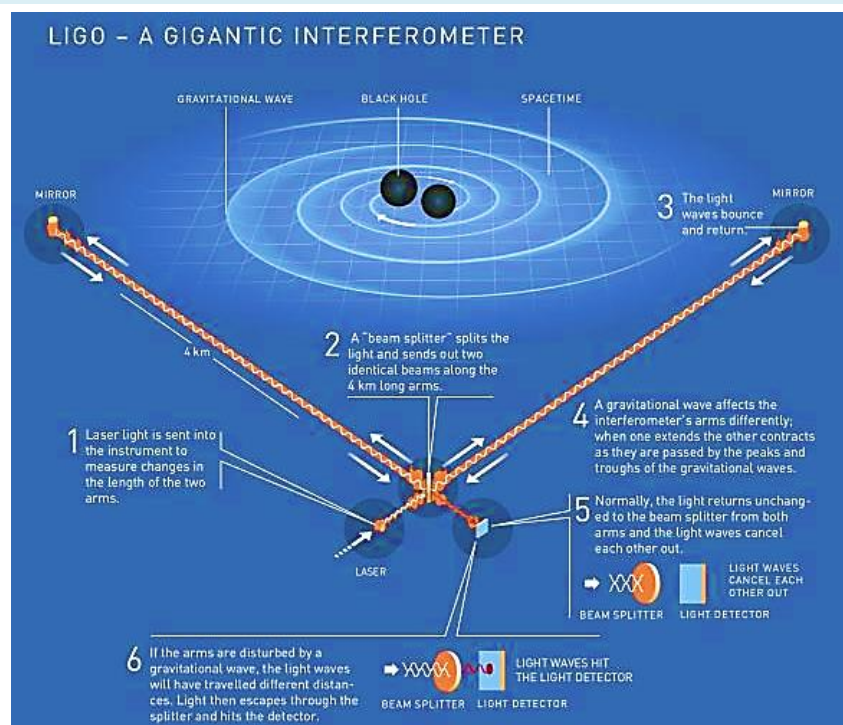
- The **curvature in spacetime** so produced was the reason other smaller bodies in the vicinity felt the **gravitational pull**. In fact, there is no force at all. Gravitation is just the curvature in spacetime. Since the spacetime itself is curved around the heavier mass, other nearby objects, moving normally in straight lines in their spacetime, find themselves going around the central mass. The heavier the mass in the centre, the steeper and bigger is the curvature in spacetime, and stronger and more extended is the gravitational field.



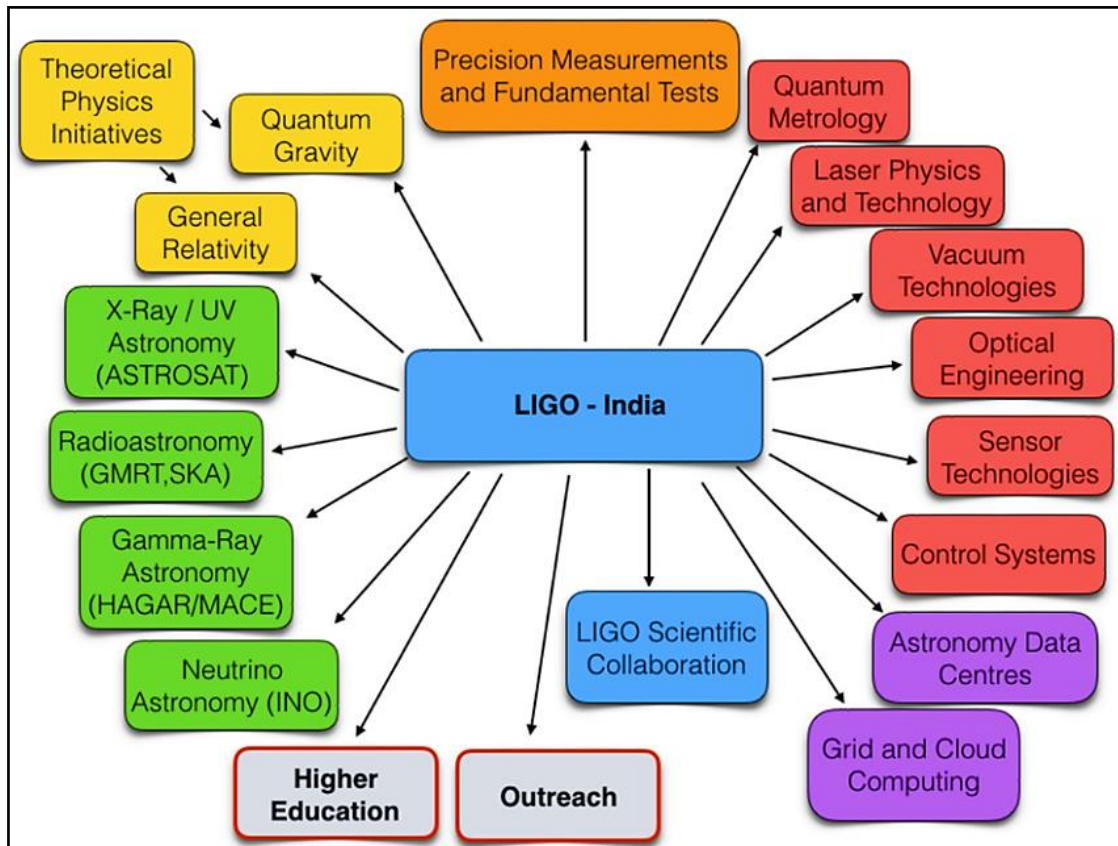
Laser Interferometer Gravitational-Wave Observatory (LIGO)

- The LIGO is an instrument that measures 4 km on each side of an L-shape. It sends laser pulses along each side and reflects them back with mirrors. It compares the time of arrival of the pulses at the corner.
- When a strong gravitational wave passes LIGO, the mirrors shift by only a few thousandths of the width of a proton, and it is only through those shifts that we detect the gravitational waves. LIGO measures this distance by a process known as **laser interferometry**.
- Light has wavelike properties, so when two beams of light overlap, they combine like waves. If the waves of the light line up, or are **in phase**, then they superpose to become **brighter**. If they are **out of phase**, they cancel out and become **dimmer**.
- LIGO starts with a beam of light that is in phase, and splits it, sending one beam along one arm of LIGO, and one along the other. The beams each bounce off a mirror 4 kilometres away, then return to combine into a single beam seen by a detector. If the distance of a mirror changes, so does the brightness of the combined light.
- The wavelength of light is on the order of a micrometer, but gravitational waves only shift the mirrors by only a trillionth of that distance. So, LIGO has each beam travel back and forth along an arm hundreds of times before they combine.
- The LIGO detects gravitational waves by observing how they change the time of arrival of the laser pulses slightly. It uses this and other data to analyse and record the gravitational waves.

- LIGO-India is intrinsically a **multidisciplinary mega-science project** in Astronomy on Indian soil that requires expertise from a variety of fields (e.g., **laser, vacuum, optics, controls systems, and quantum metrology**, etc) and provides cutting edge research opportunities.
- The physical measurements required for gravitational wave detection are arguably the **most precise and sensitive** ever made, and they involve cutting edge technologies that have many non-military applications.
- The scientific goals of the project are in the area of **astronomy and fundamental physics**. It promises



breakthrough research outcomes, development of cutting edge technology and opportunities for students and researchers.



- In 1915, Albert Einstein proposed the **General Theory of Relativity** (GR), in which gravity is described by the **distortion of the fabric of spacetime** surrounding massive cosmic objects. Einstein's theory also predicted that perturbations in this web of spacetime would produce gravitational waves (GW) that carry information about their sources.

Einstein's Theories of Relativity

- Albert Einstein, with the publication of his **Special theory of relativity in 1905** and his **theory of general relativity in 1915**, stunned the scientific world by challenging Newton's accepted theory of gravitation with these publications.
- Newton gave the theory of gravity but **couldn't explain why gravity exists**. He also couldn't integrate the **value of time** in his gravitational equation.
- In Einstein theory of gravity, the basic idea is that instead of being an invisible force that attracts objects to one another, gravity is a **curving or warping** of spacetime. The more massive an object, the more it warps the space around it.
- The Special theory showed that Newton's three laws of motion were only approximately correct, breaking down near the speed of light.
- The General theory proved that Newton's Law of Gravitation didn't hold in the presence of very strong gravitational fields.
- Astronomers in 1919 measured the **deflection of light from distant stars** as the starlight passed by our sun, proving that gravity does, in fact, distort or curve space.
- In 2015, the discovery of gravitational waves (subtle ripples in the fabric of spacetime) was another confirmation of general relativity.

Theory	Proposition
Special Theory of Relativity	<ul style="list-style-type: none"> All physical laws are the same in all frames of reference in uniform motion with respect to one another. The speed of light is a constant, regardless of the motions of the light source and the observer.
General Theory of Relativity	<ul style="list-style-type: none"> Space-time is curved: strong gravity causes distortions of time and mass, and large objects (such as stars) warp space-time around them.

Gravitational-wave astronomy

- It is an emerging branch of observational astronomy which aims to use gravitational waves to collect observational data about sources of detectable gravitational waves such as **binary star systems composed of neutron stars, and black holes**; and events such as **supernova**, and the formation of the early universe shortly after the Big Bang.
- Gravitational waves will usher in a new era in astronomy. Most of the astronomy done in the past has relied on different forms of **electromagnetic radiation (visible light, radio waves, X-rays, etc.)**, but electromagnetic waves are easily reflected and absorbed by any matter that may be between their source and us.
- The physics that went into the creation of a gravitational wave is encoded in the wave itself. To extract this information, gravitational wave detectors will act very much like radios—just as radios extract the music that is encoded on the radio waves they receive, LIGO will receive gravitational waves that will then be decoded to extract information on their physical origin.
- Gravitational wave astronomy will help explore some of the great questions in physics: **How do black holes form? Is General Relativity the correct description of gravity?** How does matter act under the extremes of temperature and pressure in neutron stars and supernovae?
- Big Bang:** A physical theory that describes how the universe expanded from an initial stage of high density and temperature. It's also called the **expanding universe hypothesis**. Big Bang explains the evolution of the observable universe from the earliest known periods through its subsequent large-scale form.
- Black holes:** Regions of space time which have gravity so strong that even light cannot escape from them. The no-escape boundary, which is unique to black holes, is called the **event horizon**.
- Supernova:** Explosion of a star that happens either when a star runs out of nuclear fuel and collapses under its own gravity, or when a white dwarf star accumulates too much matter from a companion star and explodes. A supernova can be very bright and emit more light than a billion suns. Supernovas are important for distributing elements throughout the universe and creating new stars and planets.
- Neutron Stars:** Stars which are between **10 and 25 times heavier** than our Sun end their lives in a supernova explosion, leaving behind a **collapsed core** (compact remnant) called a neutron star. Neutron stars typically weigh around 1-2 times the Sun, within a small radius of 10-15 kilometres, making them the densest objects in the Universe.
- While two LIGOs can study gravitational waves, a third observatory is required to better **triangulate** the location of a source in the sky. A more ideal setup requires four observatories to record the same wave. To this end, researchers are setting up and upgrading detectors in Italy and Japan.

Other Gravitational Wave Observatories

GEO	The German/United Kingdom collaboration 600 m detector located in Hanover, Germany.
KAGRA	The Japanese 3 km detector located in the Kamioka mine, Japan.
LISA	The NASA/ESA space-based detector.
Virgo	The Italian/French collaboration 3 km detector located outside of Pisa, Italy.

THREE PARENT BABY

In News: In an effort to prevent children from inheriting rare genetic diseases, the **fertility regulator Human Fertilisation and Embryology Authority (HFEA)** in the UK has confirmed that a baby has been **born using three people's DNA** for the first time in the UK.

- The procedure was carried out through an advanced **In Vitro Fertilisation (IVF)** technique developed and refined by the Newcastle Fertility Clinic, to prevent the child from inheriting the **mother's mitochondrial disease**.
- **In Vitro Fertilisation (IVF):** In vitro means outside the body. IVF is the joining of a woman's egg and a man's sperm in a laboratory dish, outside the body.
- Three-parent baby is a term used to describe a human offspring produced from the genetic material of one man and two women using **assisted reproductive technologies** like **IVF**.
- The main purpose of these techniques is to prevent the transmission of **mitochondrial diseases**, which are inherited disorders that affect the energy production in cells.

What is Mitochondria?

- Mitochondria are the **powerhouses of the cells**, they generate the energy, and thus are also responsible for cell function in the human body.
- They carry 37 genes of their own and are passed intact from the mother to child through the egg.
- Irrespective of a person's gender, the **offspring inherits** the mitochondrial DNA from their **mothers**, who in turn got it from their mothers and so on.
- However, there are times when a woman may be born with a **mutation in her mitochondrial DNA**. They could cause a mild or severe disorder if passed on to a child.

What is Mitochondrial Disease?

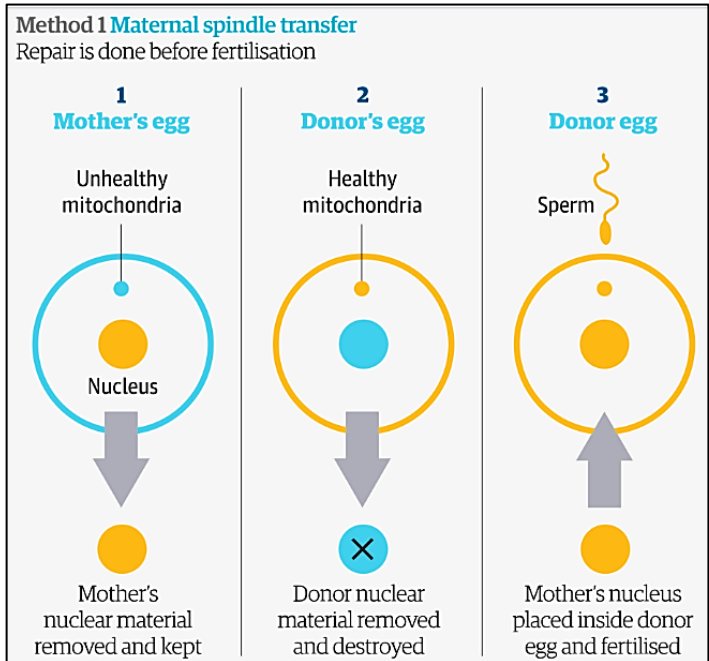
- Mitochondrial diseases are caused by mutations that affect how the mitochondria make energy for the cells. These mutations can impair the function of cells, especially **energy hungry** tissues such as the brain, nerves, muscles, kidneys, heart, and liver.
- These mutations cause **low energy production** by mitochondria, which affects the function of organs and causes symptoms like **brain damage, organ failure** and **muscle wastage**. These symptoms become more severe as the child grows older and there is no cure, only treatment.
- Mitochondrial diseases can cause serious health problems and even death such as **Leigh syndrome, a fatal neurological disorder** which harms the developing nervous system.
- Mitochondrial diseases are uncommon, affecting **one in 5000 people** by some estimates.

What is Mitochondrial Replacement Therapy (MRT)?

- **Mitochondrial replacement therapy (MRT)**, also known as **Mitochondrial Donation Treatment (MDT)**, is a technique that involves replacing or reducing the effects of mutations that occur in the DNA of mitochondria.
- Mitochondrial diseases are **only passed on by the mother to child**, so MRT aims to use healthy mitochondria from a donor egg to replace or complement the faulty mitochondria in the mother's egg.
- There are 2 methods of carrying out the therapy:

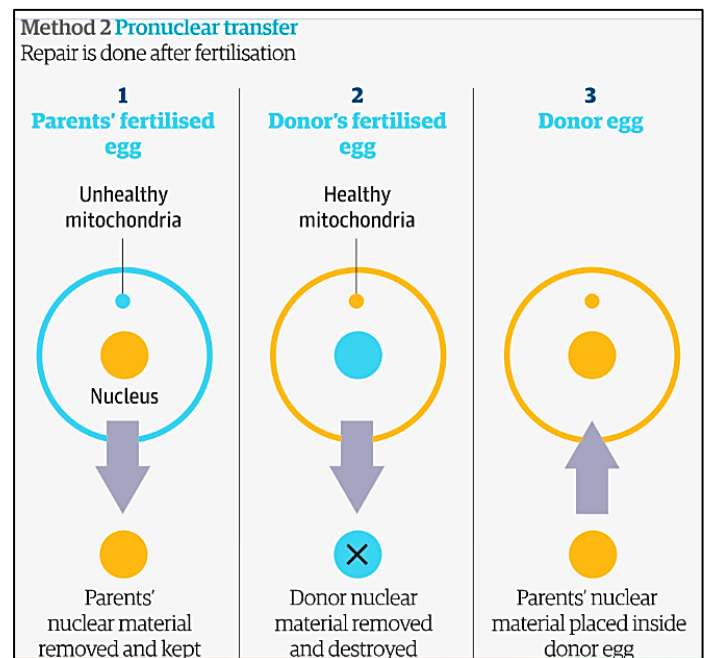
- **Maternal Spindle Transfer (MST)**

- In this method, doctors use standard In-Vitro-Fertilisation procedures to **collect eggs from the mother**.
- They take the **nucleus** from one of the eggs and **drop it into a healthy donor egg** that has had its own nucleus removed.
- The reconstituted egg contains all the normal genes from the mother, but her **faulty mitochondria are replaced** by those from the healthy donor. The egg is then fertilised with the father's sperm.
- The first three parent baby using MST was born to Jordanian parents in 2016 in Mexico by U.S fertility specialist. The baby's mother had genes responsible for Leigh syndrome and had lost two children and four miscarriages due to the disease.



- **Pronuclear Transfer**

- It is similar to MST, but both the **mother's and donor's eggs are fertilised first** with the father's sperm.
- Before the eggs divide into early stage embryos, the parents' nuclei are removed from the mother's fertilised egg and placed into the donor egg, which has had its own nuclei removed.
- The final product – the egg - which has the genetic material (DNA) from the parents, and the mitochondria from the female donor, is implanted in the uterus, and carried to full term to yield a baby who will be free from the mother's mitochondrial disease.
- The U.K. became the **first country to legalise** mitochondrial replacement therapy in 2015 and approved the use of MRT by a clinic at Newcastle University in 2016, which planned to offer the treatment to 25 women a year who were at risk of passing on mitochondrial diseases to their children.



Resulting Baby

- The resulting baby has DNA from the mother and father as usual, plus a small amount of genetic material – about 37 genes – from the donor.
- The process has led to the phrase “**three-parent babies**”, though more than **99.8%** of the DNA in the babies comes from the mother and father.

Concerns and Ethical issues around MRT

- **Reversion:** Sometimes it is possible that a small amount of the **maternal mitochondria with errors** may get passed on during the procedure. This technical risk of “reversion” where any defective mitochondria that are carried over could gain in number and still result in disease.
- **Safety:** Mitochondria are **not completely understood**, and the DNA they hold might affect people’s traits in unknown ways. Any unexpected problems caused by the procedure could affect people who are not yet born.
- **Religious perspective:** Certain religious groups like Catholic church have **opposed pronuclear transfer** method because a **fertilised egg from the mother is destroyed** in the process. Catholic ethicists have also complained that mitochondrial transfer introduces a rupture between mother and father and **dilutes parenthood**.
- **Other methods:** Many critics oppose the artificial reproduction techniques, arguing there are other ways for people to avoid passing on diseases to their children, such as **egg donation** or screening tests, and that the experimental methods have not yet been proven safe.
- **Playing with Genetics: Tweaking the genetic code** this way could be a slippery slope that eventually leads to **designer babies** for parents who not only want to avoid inherited diseases but to have taller, stronger, smarter or better-looking children.
- **Privacy concerns:** Doctors at the clinic do not release details of births from its MDT programme due to concerns that specific information could **compromise patient confidentiality**.
- **Donor’s rights:** Women who donate their mitochondria would **remain anonymous** and have **no rights** over the child. They are not involved in the child’s upbringing.

Will a change in law around MDT allow ‘designer’ babies?

- No. Human characteristics, such as eye and hair colour and other defining traits, are controlled by DNA in the cell nucleus. The procedure does not change this “nuclear” DNA. The ban on altering nuclear DNA remains in place.

Conclusion

- Three parent baby is a **novel and controversial technique**. It has **potential benefits for couples** who want to have healthy children, but also poses **ethical and regulatory challenges** for society and future generations.
- More **research and public debate** are needed to address the safety and efficacy of MRT and its social and cultural implications.

ORGAN DONATION IN INDIA

In News: India to soon release manual for organ donation and transplantation.

About the news:

- The **National Organ and Tissue Transplant Organisation (NOTTO)** as **nodal agency** is working on a manual for organ donation & transplantation.
- It will provide a **step-by-step guide** for the implementation of organ donation and transplantation programmes in hospitals, covering aspects such as infrastructure, equipment, personnel, protocols and procedures.

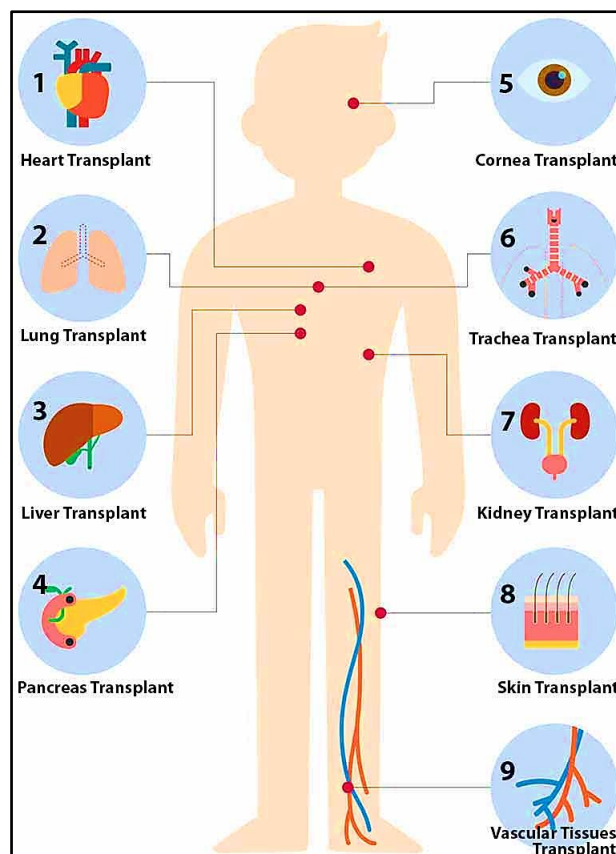
- A standard course for training **transplant coordinators** will aim to enhance their knowledge and skills on various aspects of organ donation and transplantation, such as **legal and ethical issues, donor identification and management, consent process, organ allocation and retrieval, donor registry and data management.**
- The creation of manual will help in standardizing the **transplantation ecosystem** and **utilizing more organs per deceased donor.**

National Organ and Tissue Transplant Organisation (NOTTO)

- The **NOTTO** is the **apex national body** for coordination and networking for procurement and distribution of organs and tissues.
- It also functions as the **National Registry of organ & tissue donors and recipients** to provide an efficient system for procurement and distribution of organs & tissues from deceased donors.
- It maintains **National Biomaterial Centre** as the tissue bank to fill the gap between demand and supply of various tissues that could be transplanted.
- It works under **Directorate General of Health Services, Ministry of Health & Family Welfare.**

Govt of India rules, regulations, institutions dealing with organ donations:

- **The Transplantation of Human Organs Act (THOA), 1994** regulates the removal, storage and transplantation of human organs for therapeutic purposes and prevents commercial dealings in human organs.



- The Act was amended in 2011 to include tissues such as **bone marrow, cornea, heart valves, skin,** etc.

- **The Transplantation of Human Organs and Tissues Rules (THOTR), 2014** provide detailed guidelines on various aspects of organ donation and transplantation, such as **brain death certification, donor maintenance, organ retrieval and preservation, organ allocation and distribution, transplant authorization committee, accreditation of hospitals, etc.**
 - Requirement of **2 certifications** in an interval of **6 hours** confirming the individual as brain dead, keeping the **deceased body on ventilator** for preservation of organs, etc. are mandated under these rules.

National Organ Transplant Programme (NOTP)

- The **NOTP** initiative seeks to safeguard vulnerable, underprivileged individuals from **organ trafficking** while **increasing deceased organ and tissue donation**.
- **NOTP** aims to create a system that can acquire and distribute organs in a timely manner.
- The provisions under the programme include:
 - Setting up of **State Organ and Tissue Transplant Organisations (SOTTOs)** in each State/UT.
 - Setting up of National/ Regional/State **Bio-material centres**.
 - **Financial support** for establishing new Organ Transplant/retrieval facilities and strengthening of existing Organ Transplant/retrieval facilities.
 - **Training** to transplant experts including surgeons, physicians, transplant coordinators, etc.
 - Financial support for hiring of **Transplant Coordinators** to medical colleges and trauma centres.
- Under this programme, an apex level National Organ and Tissue Transplant Organisation (NOTTO) at New Delhi and Five Regional Organ and Tissue Transplant Organizations (ROTTOs) and 15 SOTTOs have been established.

Organ donation ecosystem in India:

- India has one of the **lowest rates** of organ donation in the world.
- The demand for organs far exceeds the supply, resulting in **long waiting lists and illegal trade of organs**.
- India saw a **jump** in organ transplantation **from 5000 (2013) to 15000 (2022)** as a result in successful technology and increased demand.

India has also introduced some **policy reforms** to facilitate **lawful organ donation and transplantation**. For example, it has **removed the age limit of 65 years** for registering as a recipient of organs from deceased donors. It has also **removed the domicile requirement**, allowing patients from one state to register with hospitals from other states.

CARBON DATING

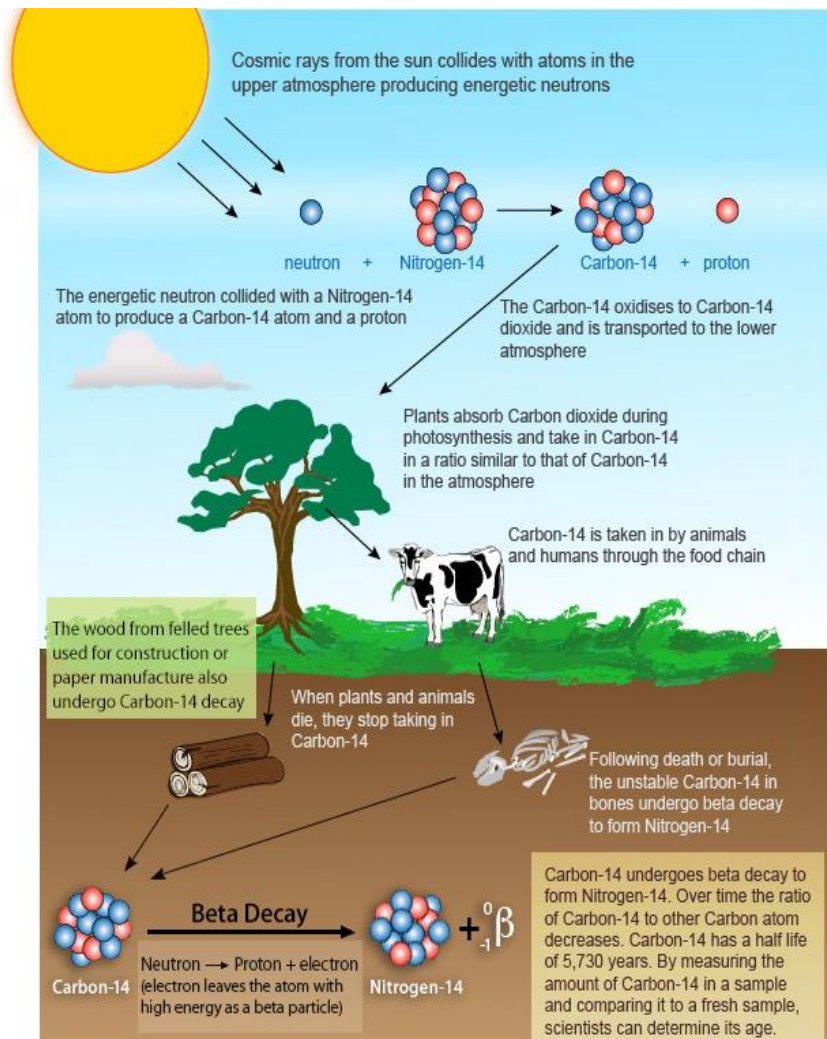
In News: Allahabad HC allows carbon dating of Gyanvapi 'Shivling'.

- The aim is to enquire and establish if a temple "Shivling" existed at that place before the mosque came up in 1669.
- Carbon dating can be performed but with a specific limitation that the structure cannot be uprooted or disrupted, as per orders of the Supreme Court.
- In a report submitted by the Archaeological Survey of India, **radiocarbon dating of rock** material is not possible as it lacks the presence of atmospheric derived C-14.
- However, since there is a possibility that the top structure could have been embedded/pasted together using some **binding material (plant product, cement, mortar, etc.)**, a small amount of binding material could be scratched to throw light at the age of the structure.

What is Carbon Dating?

- Carbon dating is a commonly used technique for determining the age of **organic materials**, based on their content of the **radioactive isotope carbon-14**.

- Carbon dating relies on the **radioactive decay** of **Carbon-14 (C-14)**, an isotope of carbon with an atomic mass of 14, which occurs at a known and constant rate.
- All living things contain carbon, including the radioactive isotope carbon-14, which is absorbed by plants during photosynthesis and animals through food.
- When an organism dies, **it stops taking** in carbon, and the carbon-14 in its body begins to decay at a known rate.
- While C-12 is stable, the radioactive C-14 reduces to one-half of itself in about **5,730 years** — known as its '**half-life**'.
- Scientists can estimate how long back the organism died by measuring the remaining carbon-14 in a sample.



Carbon dating on Non-living things

- Carbon dating has limitations and **cannot** be used to determine the age of **non-living things** like rocks, or materials that are more than 40,000-50,000 years old.
- Hence, **radiometric dating methods** that use the decay of other radioactive elements are available to estimate the age of non-living things.
- Radiometric dating methods** can estimate the age of very old objects, as they involve elements with half-lives of billions of years.
- Two commonly used radiometric dating methods for rocks are **potassium-argon dating** and **uranium-thorium-lead dating**.
- Potassium's radioactive isotope** decays into **argon**, which can provide information on the age of rocks.
- Another **Cosmogenic nuclide dating** method helps in determining how long an object has been **exposed to sunlight** by measuring the radioactive decay of certain elements and is helpful in studying entities that are **buried**.
- Carbon dating can be used indirectly in some situations, such as **dendrochronology**, **varve chronology**, and dating of sediment layers in which fossils are found.

- Dendrochronology:** science that deals with the dating and study of the annual growth increments, or tree rings, in woody trees and shrubs.
- Varve chronology:** A dating method that studies sediment layers in lakes or oceans to understand the environment and climate conditions of each year. Each layer represents one year of sedimentation and can provide valuable information.

NATIONAL TECHNOLOGY DAY

In News: National Technology Day 2023 was celebrated on 11th May.

- The day marks the **anniversary of Pokhran-II nuclear tests (code name Operation Shakti) in 1998**, which established India as a nuclear power.
- The **theme** for **National Technology Day 2023** is **'School to Startups- Igniting Young Minds to Innovate'**.
- The day is celebrated **to honour** the contribution of Indian scientists, researchers, engineers and all others involved **in the field of science and technology** for the development and security of the nation.
- To celebrate this special day, the **Technology Development Board (TDB), a statutory body** of the **Department of Science and Technology**, Government of India honours technological innovations that have helped in the national growth under the aegis of **'National Technology Award'** from the year 1999.
- The Prime Minister marking National Technology Day 2023 at New Delhi laid the foundation stone and dedicated to the nation **multiple scientific projects** worth more than **Rs 5800 crore**.

Following Projects were dedicated to nation on National Technology Day:

Project Name	Description
LIGO-India (Hingoli, Maharashtra)	<ul style="list-style-type: none">• A gravitational wave observatory that will detect gravitational waves (ripples in space-time) caused by cosmic events (for example, merger of black holes or neutron stars).
Rare Earth Permanent Magnet Plant (Visakhapatnam)	<ul style="list-style-type: none">• It will enable India to join a select group of nations with capacity to produce Rare Earth Permanent Magnets, which are used in various applications such as electric vehicles, wind turbines, medical devices etc.
National Hadron Beam Therapy Facility (Navi Mumbai)	<ul style="list-style-type: none">• It will boost the country's capacity for cancer treatment using proton and carbon ion beams, which are more precise and effective than conventional radiation therapy.
Fission Molybdenum-99 Production Facility (Mumbai)	<ul style="list-style-type: none">• A facility that will produce Molybdenum-99, a radioisotope used for advanced medical imaging and diagnosis of various diseases.
Homi Bhabha Cancer Hospital and Research Centre, Visakhapatnam and Women & Children Cancer Hospital Building, Navi Mumbai	<ul style="list-style-type: none">• These facilities will decentralise and enhance provisioning of world class cancer care in different regions of the country.

3D DIGITAL TWIN CITY

In News: With a plan to create Digital Twin of India's top 100 cities, Mumbai-based Genesys International, a geospatial solutions firm hopes to complete **20 digital twins by the end of 2024**.

- With this progress, India's **Amravati city** (capital of Andhra Pradesh) may soon join the ranks of cities like Singapore, Dubai, Auckland, Helsinki, Boston, Orlando, etc. that have built digital twins to enhance their **efficiency, coordination, and governance**.
- According to analyst predictions, over 500 urban digital twins are expected to be deployed around the world by 2025 and the technology could **save cities US\$280 billion by 2030** through more **efficient urban planning**.
- India's progress has also been made possible due to **India's new geospatial policy** (National Geospatial Policy 2022), which now allows to **collect and create content**, encourage **data sharing, data storage** within the country, regular **data updation** for accuracy and data **protection against cyberthreats**.

What is Digital Twin Ecosystem?

- A Digital Twin is a **three-dimensional (3D) virtual representation** of an object or system that deliver **real-time insights** into the **performance, operation, or profitability** of a physical object, even a city.
- The virtual replica of the product can be used to **analyze and enhance** it, reach **positive conclusions, increasing productivity and reinforcing expertise**.
- **Geographical Information Systems(GIS) technology** is a logical foundation for a digital twin.

Advantages of a Digital Twin

- **Improve complex city governance:** real estate titling and maintenance, property tax assessment, etc.
- **Better planning of urban ecosystem:** plan construction, simulate installation of mobile towers, design solar infrastructure, tourism, etc.
- **Test and evaluate performance of objects:** project, aircraft and cars, etc.
- **Traffic management:** driver assistance systems, traffic choke points, etc.
- **Disaster management and emergency response:** climate smart cities, flood management,
- **Deliver utilities:** e-commerce, gas/power services, etc.
- **Record keeping:** Building Information Management (BIM) models for cities
- **Predict and optimize future/outcome:** resource depletion, rapid urbanization, etc.



Enablers of 3D digital twin cities

- **Multiple layers of data:** aerial data and obliques, etc.
- **Survey tools:** airplanes, sensors, mobile imaging systems, street imaging vans, backpacks, and drones, etc.

GREEN CRYPTO MINING

In News: In bid to use its abundant supply of **hydropower and diversify** its economy, Bhutan is set to raise \$500M for **Green Crypto Mining** in the Himalayas.

- Envisaging investing in crypto mining as low risk for future technology, the Government of Bhutan, in collaboration with Bitdeer Technologies, plans to establish a fund to set up a 100MW mining plant.

Strategy of Bhutan

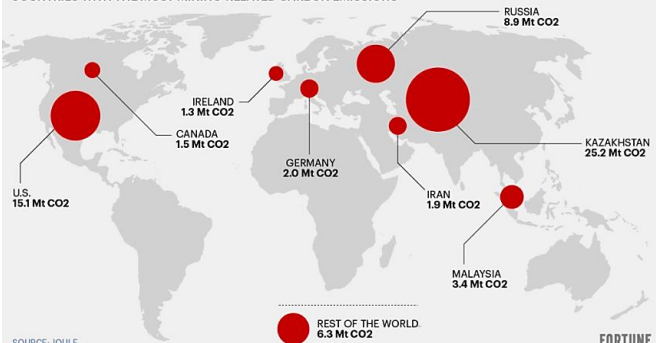
- Bhutan intends to capitalize on the **current global upswing** in cryptocurrencies, taking advantage of the **post-pandemic recovery**.
- Bhutan aims to leverage its plentiful hydroelectric power to establish **carbon-free digital mining** and explore **low volume, high-value digital assets**.
- **Green mining** aligns with Bhutan's **ecological and sustainable development goals**, supporting its agenda.

Crypto Mining:

- Cryptocurrency mining is the process by which new units of a cryptocurrency are **created or transacted** and **verified** on a **blockchain network**.
- It uses powerful computers to solve **complex mathematical problems** that validate and secure transactions on the network.

ESTIMATED CARBON FOOTPRINT OF THE BITCOIN NETWORK

COUNTRIES WITH THE MOST MINING-RELATED CARBON EMISSIONS



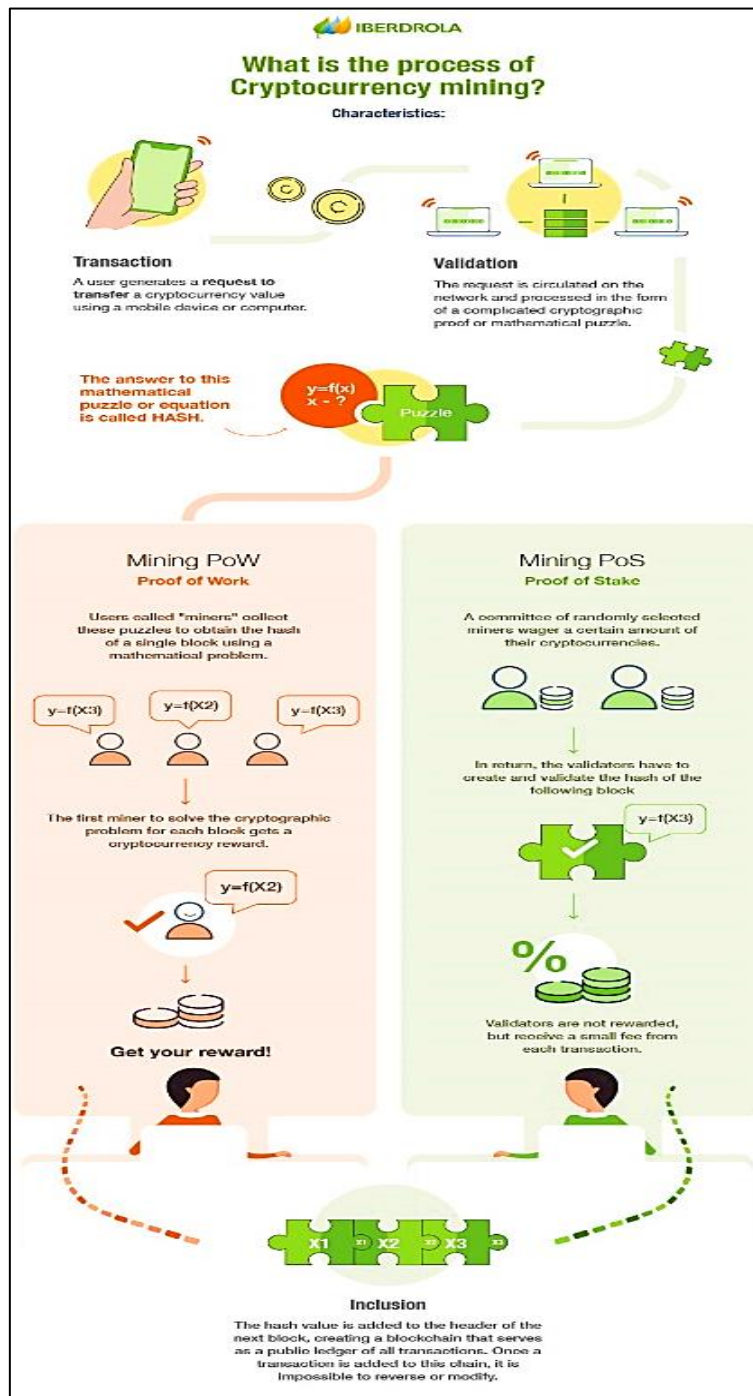
- It relies on **energy**, often sourced from fossil fuels, which contribute to **carbon emissions and climate change**.
- The **security of the Bitcoin** network relies on a process known as **Proof-of-Work (PoW)**, which requires substantial electricity consumption and advanced hardware.
- The **electricity consumption** of the **global bitcoin mining industry** is equivalent to that of a country like **The Netherlands**.

Cryptocurrency

A digital or virtual currency secured by cryptography and based on a network that is distributed across a large number of computers.

What is Green Crypto Mining?

- It refers to the practice of conducting cryptocurrency mining operations using **renewable energy sources**, such as **solar, wind, or hydroelectric** power.



- It aims to **reduce the carbon footprint** and mitigate the **environmental impact** associated with traditional crypto mining, which predominantly relies on fossil fuels.
- **Chia (XCH), Cardano (ADA), Nano (NANO), Stellar Lumens (XLM), Algorand (ALGO)** are some of the most popular green cryptocurrencies.

Way Ahead:

- Cryptocurrency mining companies can potentially utilize **carbon credits** to **offset their emissions** or adopt **greener energy sources** and **sell their own credits**, thereby contributing to a reduction in global emissions.
- Government can **supervise** and integrate **"pre-mining"** as it works in a similar way to **fiat currencies or shares**. A **central authority** distributes a set amount of the cryptocurrency, and transactions are verified by decentralized miners who may receive fees before adding them to the blockchain.

Blockchain: It is a **decentralized** and **distributed digital ledger** that records transactions across multiple computers. It serves as a **transparent and secure system** for recording and verifying various types of data, **not just financial transactions**. Each transaction is stored in a **"block,"** which is linked to previous blocks, creating a **chain of information**. The decentralized nature of blockchain ensures that **no single entity** has control over the entire network, making it resistant to tampering and fraud.

OXYGEN EXTRACTED FROM LUNAR SOIL

In news: Recently, NASA scientists at Johnson Space Center in Houston have successfully **extracted oxygen from simulated lunar soil** in a **vacuum environment**, which could pave the way for establishing a long-term presence of humans on the lunar surface, and even for the **future colonization** of the Moon.

- The image aside is an artist's impression of what a lunar base could look like.
- The ability to extract oxygen from lunar soil is crucial for providing **breathable air** for astronauts on the moon and to be used as **propellant for transportation** and venture further **space exploration**.
- During a recent test, NASA's Carbothermal Reduction Demonstration (CaRD) team conducted a test in a special spherical chamber with a 15-foot diameter called the **Dirty Thermal Vacuum Chamber**.
- The conditions inside the Vacuum Chamber were similar to those found on the Moon.
- Inside the Dirty Thermal Vacuum Chamber, the scientists used a carbothermal reactor to heat the lunar soil simulant and to extract the oxygen.
- For decades, scientists have been using the Carbothermal reduction to produce items like solar panels and steel by producing carbon monoxide or dioxide using high temperatures.
- USA's **Artemis mission** has been researching on the goal of establishing a long-term presence on the lunar surface.

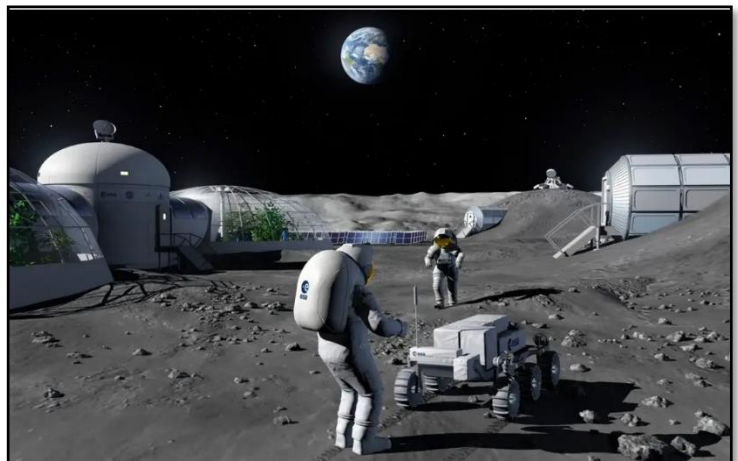


Figure: Dirty Thermal Vacuum Chamber

- Also, the **Chinese Chang'e 5 spacecraft** brought back lunar soil to research on the minerals, and catalysts (iron-rich, titanium rich substances) which could produce desirable products like oxygen and carbon dioxide.

CEIR PORTAL

In News: The Department of Telecommunications has launched a new **Central Equipment Identity Register** (CEIR) portal to combat the increasing cases of mobile phones getting stolen or being lost.

- According to the CEIR dashboard, approx. 5 lakh mobile phones have been blocked, 2.5 lakh phones have been traced, and 8,498 phones have been recovered.

Requirements to block your phone on CEIR:

- Mobile number, device information (brand, model, International Mobile Equipment Identity (IMEI) number).
- Purchase invoice and a digital copy of complaint at the nearest police station.
- Duplicate SIM card to receive SMS for verification.



What is an IMEI number?

The IMEI number is a unique 15-digit numeric identifier for a phone.

Sachar Saath Portal

CEIR and TAF COP were launched as a part of the Sanchar Saathi initiative of the Dept of Telecommunication (DoT).

CEIR lets users block or track their stolen devices, while TAF COP (**Telecom Analytics for Fraud Management and Consumer Protection**) allows them to check and disconnect fraudulent mobile connection numbers taken on their name.

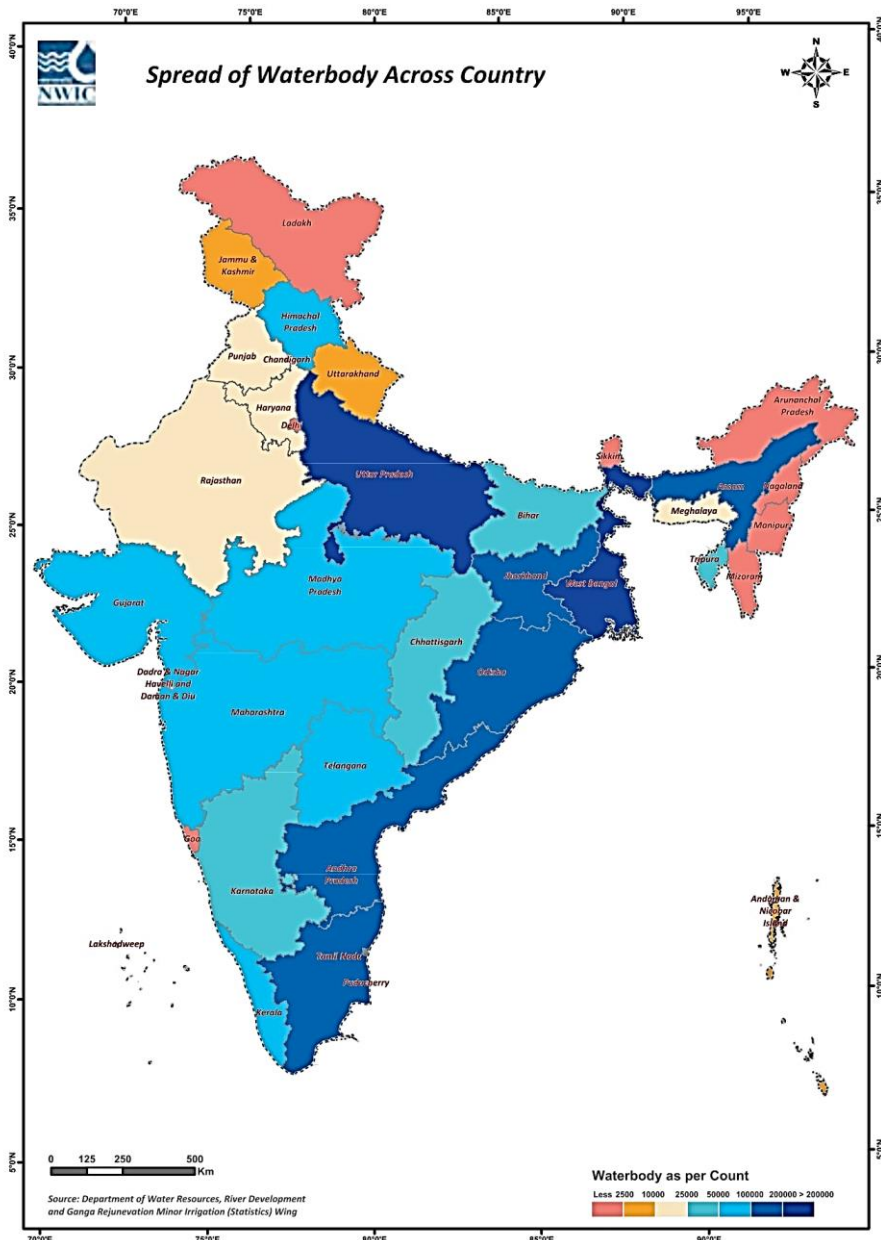


GEOGRAPHY, ENVIRONMENT & DISASTER MANAGEMENT

FIRST WATER BODIES CENSUS

In News: The **Ministry of Jal Shakti** has recently released the report of **India's first water bodies census**.

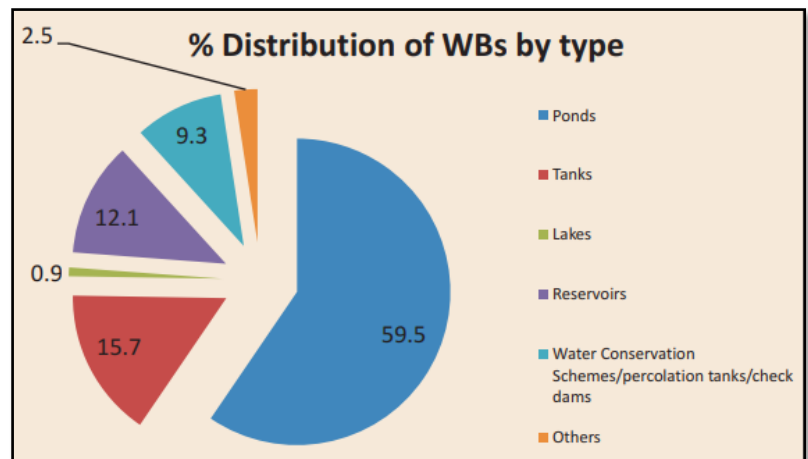
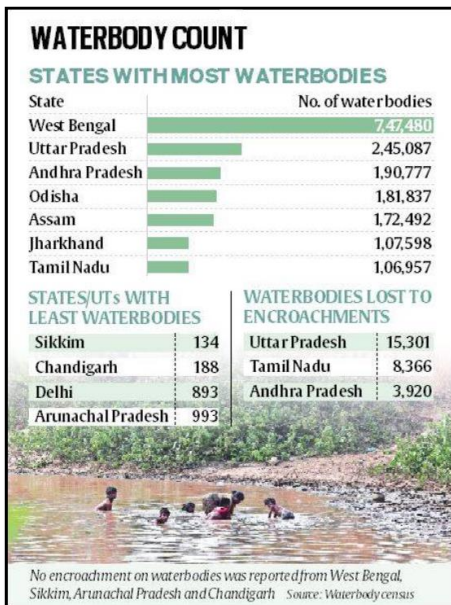
- The census, conducted in 2018-19, defines Water Bodies as **all natural or man-made** units **bounded on all sides** with some or no masonry work used for storing water for irrigation or other purposes.
- A structure where water from **ice-melt, streams, springs, rain or drainage of water** from residential or other areas is accumulated or water is stored by diversion from a stream, nala or river will also be treated as water body.



- The objective of the Census of Water Bodies is to develop a **national database** for all water bodies by collecting information on their size, condition, status of encroachments, use, storage capacity, status of filling up of storage, etc.
- The census covered all water bodies **except for** oceans and lagoons; free flowing rivers, streams, canals, which didn't have any bounded storage of water, etc.; swimming pools, water tanks created for personal/industry consumption, temporary water bodies for industrial activities and pucca open water tanks created only for cattle to drink water.

Key Findings:

- The first-ever census of water bodies in India has enumerated a total of **24,24,540 water bodies** across the country.
- **West Bengal and Sikkim** account for the highest number and least number of water bodies respectively.
- **Maharashtra** leads in implementing **water conservation schemes**.
- Maximum number of **ponds- West Bengal**
- Maximum number of **tanks- Andhra Pradesh**
- Maximum number of **lakes- Tamil Nadu**
- The census report highlights that **97.1%** of the water bodies are located in **rural areas**, with only **2.9%** in **urban areas**.



Encroachment of Water Bodies:

- **For the first time**, the census collected data on the **encroachment of waterbodies**, stating that **1.6% of all listed waterbodies** are encroached.
- The census further reveals that **95.4%** of such encroachments are in **rural areas**, while the remaining **4.6%** in **urban areas**.

Threats Faced by Water Bodies in India:

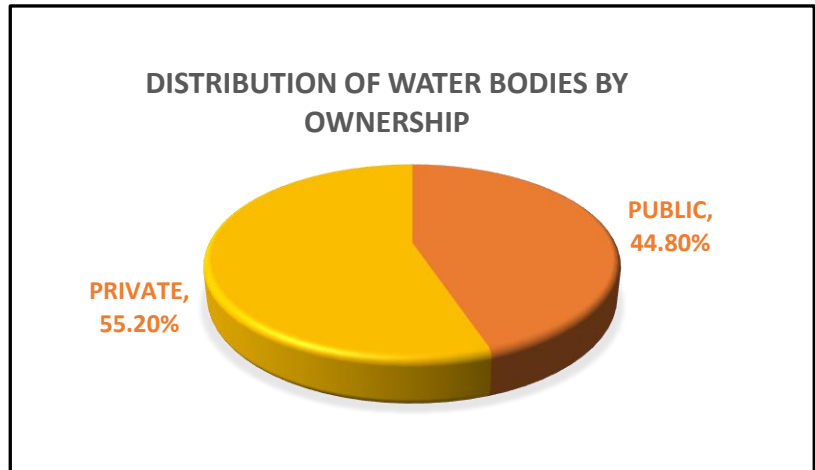
- **Encroachment:** It refers to the **unauthorized occupation** of the land around the water bodies, which can lead to their gradual reduction in size and even disappearance in some cases.
- **Pollution:** Water bodies are often subjected to various forms of pollution such as industrial **effluents**, agricultural **runoff**, sewage, and other waste materials.

- **Deforestation:** Deforestation and soil erosion can lead to the **siltation** of water bodies, reducing their depth and storage capacity.
- **Climate change:** Changes in the weather patterns and rainfall can affect the water bodies' **water levels**

Significance of Water Bodies:

- **Biodiversity:** Water bodies support a diverse range of aquatic species, including fish, amphibians, birds, and mammals, which are essential for maintaining the biodiversity of the planet.
- **Water supply:** Water bodies are a critical source of water for drinking, irrigation, and other domestic and industrial purposes.
- **Flood control:** Water bodies can act as natural reservoirs that absorb excess water during monsoons, thus minimizing the risk of floods.
- **Climate regulation:** Water bodies help regulate the climate by absorbing and releasing heat, moderating temperature extremes in the surrounding areas.
- **Tourism and recreation:** Many water bodies provide opportunities for tourism and recreational activities such as boating, fishing, and swimming, which can generate income and employment opportunities.

Conclusion: Water has been considered as the **essence of life**. Conservation of water bodies leads to sustenance of biodiversity and progress of economy as well. Thus, the mandate to **protect, preserve and restore** the water bodies lies not just with the government but also with the people and society as a whole.



NORTH SEA SUMMIT

In news: Declaration was signed by nine European countries during the **2nd North Sea summit**, with the aim of converting the **North Sea into a green power plant**.

- The declaration signed at the North Sea Summit in **Ostend, Belgium** sets ambitious targets of producing at least **120 gigawatts of offshore wind energy in the North Sea by 2030** and **300 GW by 2050**.



About the North Sea Summit:

- The **objective** of the summit is to make the North Sea the **largest green energy centre in Europe** by accelerating the deployment of **offshore winds**.

- Participating Countries- **Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Norway, and the United Kingdom.** Except for **Luxembourg**, all the participating countries share a border with the North Sea.
- The **first summit** was held in Denmark and it resulted in the signing of **Esbjerg Declaration.**

Offshore wind turbines:

- Offshore wind turbines are large wind turbines that are installed in water bodies such as **oceans or seas.**
- These turbines are designed to **generate clean and renewable electricity from the wind**
- Offshore wind turbines are generally larger and **more powerful than onshore wind turbines**, and they are often located in areas with high wind speeds and water depths.
- They are located **at least 200 nautical miles** from the shore in shallow waters (**up to 60 metres deep**).
- Electricity produced by offshore wind turbines is returned to shore through cables buried in the ocean floor.

North Sea

It is an important water body in Northern Europe, connected to Atlantic Ocean by the Strait of Dover and the English Channel.



BEYOND GROWTH 2023 CONFERENCE

In News: The **Beyond Growth 2023 Conference** was hosted by the European Parliament in Brussels.

The Growth Debate:

- The conference debated on economic growth, which is the source to interconnected **crises of climate change, biodiversity loss, resource depletion, pollution, and deepening inequalities.**
- To address these issues, a number of approaches have been proposed in the debate on growth. For instance, green and inclusive growth, post-growth and degrowth. Alternative policy frameworks have also been created, such as **Doughnut Economics** and **Sustainable Development Goals** to bring multidimensional goals into policy-making.
- **Degrowth** is a concept that advocates for a planned and equitable downscaling of production and consumption in rich nations, to achieve a **regenerative and distributive post-growth economy.**
- The EU has come up with a number of policy initiatives supporting green and inclusive growth, most recently the **European Green Deal** and the **European Pillar of Social Rights.**
- The debate on going beyond growth aims to steer policy-making towards **multiple economic, social and environmental goals** rather than treating growth as an end in itself. One of the conference's goals is to allow for discussions around economic policy indicators **beyond GDP** and shift the focus to indicators that account for **well-being instead.**

Defining growth: Economic growth refers to an increase in the size of the economy over time. It is measured through the GDP indicator, which tracks the total value of goods and services produced.

Table 1 – Positions and assumptions in the growth debate

Positions	Details of the position
Green and inclusive growth	Growth remains a central policy objective but adjustments are necessary to make it more sustainable and inclusive. Examples include environmental taxes, decarbonisation policies, changing the composition of production and consumption (e.g. shift to electric vehicles, recycling), technological progress and innovation, strategies aimed at poverty reduction, reducing inequalities and improving employment conditions. Attempts to move beyond growth are seen as politically unviable, as growth is too embedded in society's understanding of what a successful economy is and closely linked to employment levels, government tax revenues, pension systems and business interests.
Degrowth	Growth in itself is a problem, while solutions proposed under green growth are not sustainable in the long term due to limited regenerative capacities of the ecosystem and planetary boundaries. Moreover, the design of the economic system itself is seen as based on social exploitation and inequalities. A steady-state or shrinking economy is therefore considered a solution to the environmental limits and social problems. According to this view, a deeper structural reform is needed. Possible policy options include stopping the extraction and consumption of fossil fuels, limits on advertising, focus on community practices and shared use of goods, reduction of working time and universal basic income.
Post-growth	This view is also sometimes called 'beyond growth' or 'a-growth', i.e. agnostic about growth. The economy should be designed in a way that achieves environmental and social goals, whether this will be accompanied by economic growth or not. Specific rates of growth are not necessarily automatically correlated with social benefit or environmental harm, because it all depends on what is growing or shrinking (i.e. how production and consumption is organised). Possible policies include decisively addressing environmental degradation and social inequalities, improving wellbeing and ensuring economic stability.

Source: [From growth to 'beyond growth': Concepts and challenges](#), EPRS, 2023.

SATURN: THE NEW MOON KING

In News: Astronomers have discovered **62 new moons** orbiting the gaseous giant **Saturn**, bringing the total to **145**, crowning it as the solar system's "**moon king**" from Jupiter.

- Prior to this discovery, Saturn had 83 moons recognized by the **International Astronomical Union (IAU)**.
- The new **smaller and fainter moons** around Saturn were discovered using a technique called "**shift and stack**".
- The technique uses a set of images shifting at the same speed at which a moon moves through the sky to **enhance the signal** from that moon.
- Moons that are too faint to be seen in single images can reveal themselves in the resultant "**stacked image**". It allowed the astronomers to detect moons around Saturn as small as **2.5 kilometres** in diameter.
- To change these objects from "**suspected moons**" to "**confirmed moons**" of Saturn, the astronomers had to track them for several years to ensure each is actually orbiting the gas giant.



Saturn

- Saturn is the **sixth planet** from the sun and the **second-largest planet** in the solar system.
- The gas giant is made up mostly of hydrogen and helium, has rings giving it the nickname '**Ringed Planet**'.
- **Saturn's rings** are made of billions of small chunks of **ice and rock**, they are thought to be pieces of comets, asteroids, or shattered moons that broke up before they reached the planet, torn apart by Saturn's powerful gravity.
- The **yellow and gold bands** seen in Saturn's atmosphere are the result of superfast winds in the upper atmosphere, which can reach up to 1,800 km/h around its equator, combined with heat rising from the planet's interior.
- Saturn's Moon: **Titan, Enceladus, Mimas, Phoebe, Prometheus, Pandora, Hyperion etc**
- The largest moon, **Titan**, has a thick atmosphere and lakes of liquid methane and ethane. It's slightly larger than Mercury and is the **second-largest moon** in the solar system behind Jupiter's moon **Ganymede** (Earth's moon is the fifth largest).
- Stunning **aurora light shows** have been spotted on Saturn. Similar to auroras found on Earth, these ribbons of light are produced when the solar wind sweeps over the planet and reacts with Saturn's atmosphere.
- The first spacecraft to reach Saturn was **Pioneer 11 in 1979**, flying within 22,000 km of the Ringed Planet. The **Voyager spacecraft** helped astronomers discover that the planet's rings are made up of thinner ringlets.
- The **Cassini spacecraft**, a Saturn orbiter, helped identify plumes on the icy moon **Enceladus** and it carried the **ESA Huygens probe**, which plunged through Titan's atmosphere to successfully land on its surface.

International Astronomical Union (IAU)

- **Founded in 1919** with a **mission to promote and safeguard the science of astronomy** in all its aspects, including **research, communication, education and development**, through **international cooperation**.
- **IAU** gives definition of **fundamental astronomical and physical constants**; unambiguous **astronomical nomenclature** and informal discussions on the possibilities for future international large-scale facilities.
- It serves as the **international authority for assigning designations to celestial bodies** and surface features on them.
- The IAU also works to **promote research, education and public outreach activities** in astronomy for the public.

PALGHAT GAP

In News: The natural corridor in western ghats region is in news for ecological uniqueness and developmental projects.

- Also known as Palakkad gap, the Palghat gap is about 24-30 km wide with steep **Nilgiris hills** in the north and **Anamalai hills** in the south.
- It has historically been important as a **gateway into the state of Kerala** and serves as a corridor for both roads and railways that connects Coimbatore with Palakkad.
- The **Bharathapuzha river** flows through it and drains into the Arabian Sea. The vegetation in the Palghat gap is classified as **dry evergreen forest**.
- The Gap is a geological shear zone that runs from east to west.
- There are **biogeographic distinctions** in the species north and south of the palghat gap. **Elephant** populations on the Nilgiris side differ in their mitochondrial DNA from elephants in the Anamalai and the Periyar sanctuaries.

- A Study from IISC Bangalore has analysed DNA sequence divergence data in populations of the **White-bellied Shortwing**, an endemic and threatened bird. Birds found around Ooty and Baba Budan are called the **Nilgiri blue robin**; the Anamalai group differs slightly in appearance, and is called the **White-bellied blue robin**.
- The gap **affects the weather patterns** in southern India as it allows the moist monsoon winds and the tropical cyclone winds to cross the mountains, moderating temperatures and generating rainfall.
- The Palakkad Gap funnels the winds blowing from the west on to Palakkad District in Kerala, Coimbatore and Tirupur districts in Tamil Nadu making the region one of the major **wind power** generation areas.



BHOPAL: FIRST INDIAN CITY TO TRACK SDG PROGRESS

In News: Bhopal in Madhya Pradesh has become the **first city in India** to adopt the localisation of the United Nations-mandated sustainable development goals (SDG).

- MP's capital city will now have **voluntary local reviews** (VLR) demonstrate local government's capacity and commitments.
- The SDGs localisation is translating the agenda, *Transforming Our World: the 2030 Agenda for Sustainable Development* (known as **Agenda 2030**), into **local actions and impacts** that contribute to the global achievement of the SDGs.
- The UN member states report their progress towards the achievement of the SDGs through a **Voluntary National Review** (VNR) to UN's High Level Political Forum (HLPF).

Voluntary Local Review (VLR)

- These are the emerging powerful subnational reviews with the local and regional governments **that forefronts local action**. New York City became the first city to present its VLR to the HLPF in 2018.
- The cities could **choose their priority** for the VLR process, city level **indicators** for SDG targets and vision of the city.
- Challenges associated with VLR: **limited capacity, resources, and disaggregated data**.
- The VLR initiative is a step towards India's resolve under PM's ideals of **"Sabka Saath, Sabka Vikas, Sabka Vishwas, Sabka Prayaas"** and the nation's commitment to achieving the Sustainable Development Goals (SDGs) and Agenda 2030 to **Leave No One Behind and Leave No Place Behind**.
- A VLR necessarily **need not be the prerogative of a local government**. It represents people's process, and city-level stakeholder within the overarching framework of Agenda 2030.

Sustainable Development Goals (SDGs)

- The SDGs, also known as the Global Goals are a universal call to action to **end poverty, protect the planet**, and ensure that by 2030 all people enjoy **peace and prosperity**.
- They were adopted by the United Nations in 2015.



Case of VLR in Bhopal:

- **Collaboration** between the Bhopal Municipal Corporation, UN-Habitat and a collective of local stakeholders.
- **Mapped** 56 developmental projects to the SDGs across the three pillars, people, planet and prosperity.
- **Priority:** Building basic infrastructure and resilience.
- **Best practices:** solid waste management, public transportation, and open spaces per capita.
- **Improvements needed:** provisioning of adequate shelter, high levels of air pollution, city planning capacity, and even distribution and accessibility of open spaces.

ZERO SHADOW DAY

In news: Bengaluru and all places along 13 degree north latitude experienced Zero Shadow Day.

What is Zero Shadow Day?

- It is a **unique astronomical phenomenon** when Sun **does not cast a shadow** of an object at solar noon, and the sun is exactly at the **zenith position**.
- It happens twice a year, one during **Uttarayan** (apparent movement of the sun from south to north from the winter solstice to summer solstice) and the other during **Dakshinayan** (back from north to south).
- It is **restricted between the Tropic of Cancer** (23.5 N) & **Tropic of Capricorn** (23.5 S).

Why does it happen?

- Uttarayan and Dakshinayan happen because Earth's rotation axis is inclined at 23.5 degrees to the plane of its revolution around the Sun.
- Sun's apparent location moves from 23.5 degrees North to 23.5 degrees South of the Equator and back, and all those places where latitude equals the angle between the Sun's location and the equator on that day experience Zero shadow day.

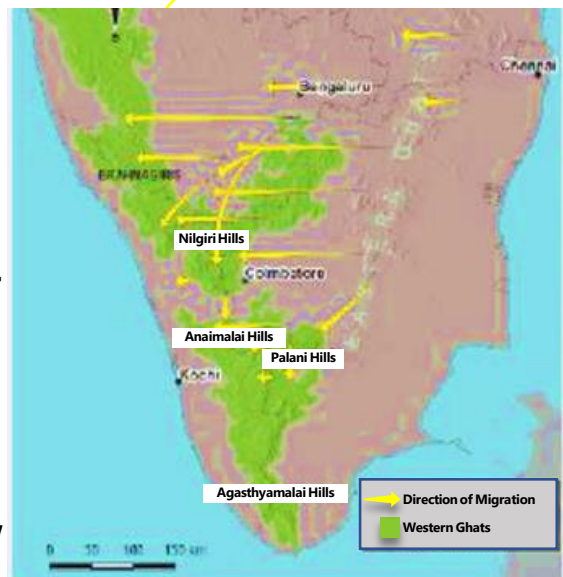
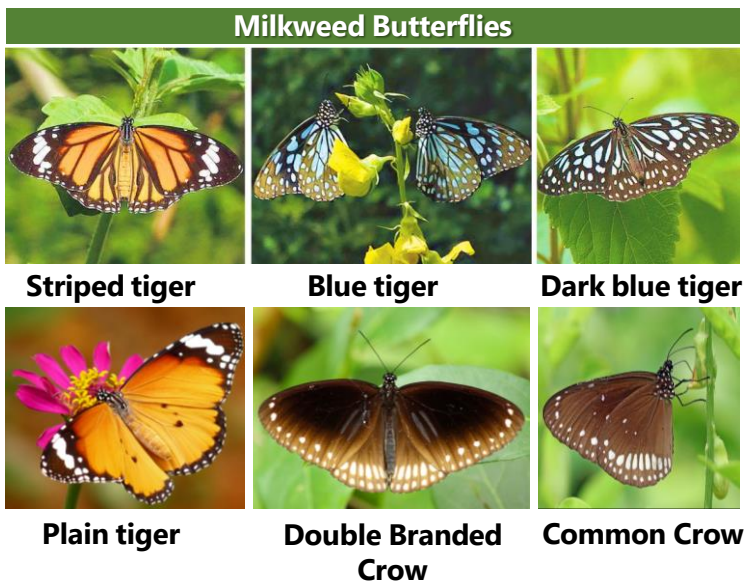


MILKWEED BUTTERFLY MIGRATION

In News: Studies on migration patterns of milkweed butterflies and their feeding habits can help protect them, say researchers.

Migration pattern:

- Milkweed butterflies migrate between the Eastern and Western Ghats in southern India, **seeking refuge from the harsh summer.**



- These butterflies begin their ecologically significant journey in October-November, with the onset of the **northeast monsoon**, from the plains to the Ghats, and in April-June, just before the advent of the **southwest monsoon**, from the Ghats to the plains.
- The pattern of migration and reverse migration are confirmed as the dominant species involved in the migration (Dark blue tiger, etc) are not found breeding in the Western Ghats.

Ecological Secret

- The migration of milkweed butterflies plays a **vital ecological role as pollinators and indicators of ecosystem health.**
- Studying their migration patterns and feeding habits can reveal the **interconnectedness of plant and animal life** and the need to protect the habitats and host plants of these butterflies along their migratory routes.

- However, their migration is threatened by ongoing changes in **land use, habitat degradation and climate warming**.
- The spread of **invasive species** like *Senna spectabilis* and *Eupatorium* plants in forests and **forest fires** are the other threats to the butterflies.

PAINTED STORK

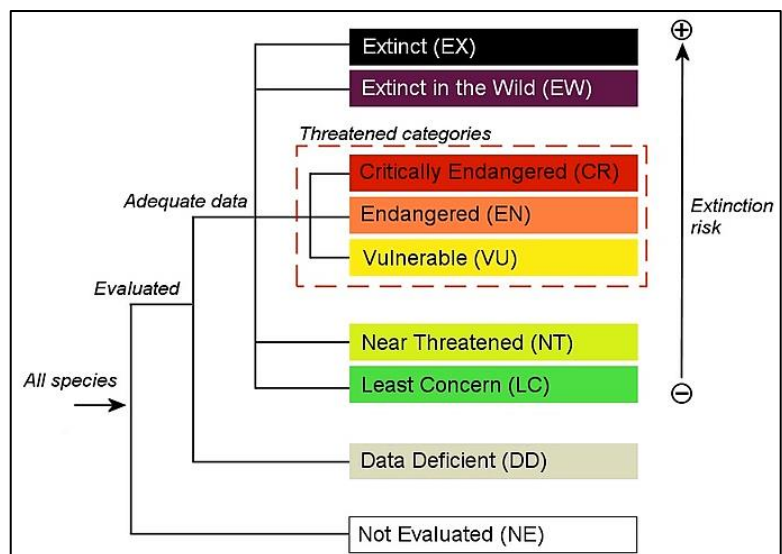
In News: One of the **largest flocks** comprising of 4,000 painted storks are breeding and nesting in two villages of Sri Sathya Sai district of **Andhra Pradesh**.

- Abundant rainfalls received in the region during **last few monsoons** have made it a favourable breeding ground for these birds.
- They make short distance movements in some parts of their range in response to changes in **weather or food availability or for breeding**.
- By May-end to June-end when the **chicks** are more than three months old, they will fly away along with adults.
- Painted storks are usually attracted to **fresh wetlands and undisturbed marshy areas** where they wade through and feed on to small fish, frogs, and snakes.
- IUCN status: **Nearly threatened**



About IUCN:

- Working towards **natural conservation** and **sustainable use of natural resources**, International Union for Conservation of Nature (IUCN) is the world's largest and most diverse environmental network membership Union of government and civil society organisations.
- It is headquartered in **Switzerland** and was created in **1948**.
- IUCN works to safeguard natural areas, develop **best practices** (green list) and **save species** from extinction (red list).
- IUCN works to tackle three of the most important challenges facing the world's ocean and polar regions: **climate change, biodiversity loss and pollution**.
- IUCN congresses have produced several key international environmental agreements including the **Convention on Biological Diversity (CBD)**, the **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**, the **World Heritage Convention**, and the **Ramsar Convention on Wetlands**.

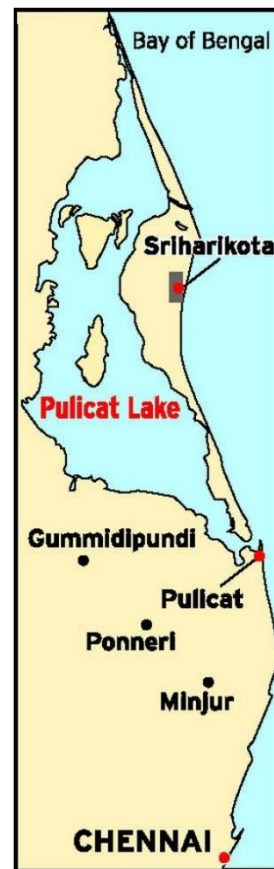


PULICAT LAKE & LESSER FLAMINGOES

In News: After a six-year absence, the lesser flamingos have migrated back to Pulicat lake.

- With respect to the Greater Flamingoes which are pale pink in colour and sighted in large number, the migrating lesser flamingo is **tall, with slender red legs and pink plumage**.
- IUCN status of Lesser Flamingo: nearly threatened

- The **overall decline in flamingo migration** is attributed to many factors.
 - **Shortage of rainfall** does not allow prawn hatchlings (food base) to grow.
 - **Fishing spot over-exploited** by commercial fishermen and subsistence-based agriculturalist.



BAOBAB TREE

In News: Recently, **Baobab tree** from Dhar district of Madhya Pradesh have been in news due to a **ban** imposed on their **translocation** by placing the trees under the Biodiversity Act, 2002.

- It means that permission to use them commercially will have to be taken from the state biodiversity board.
- The ban was preceded by a **protest by local Bhil tribal communities**, who consider the tree of **heritage and historical value**.
- **Originally native to Africa, but likely brought to this corner of Madhya Pradesh by African soldiers around 10th-17th century AD, the town of Mandu in Dhar, MP is home to around 1000 baobab trees.**
- **These species are said to survive upto 2000 years and are globally threatened.**
- For the same reason, the government of M.P. is now attempting to provide for a Geographical Indication (GI) tag for baobab trees, which are found to have **commercial (khorasani imli or the fruit of the baobab is sold), medicinal (pulp and seeds) and nutritious value (vitamin C and antioxidants).**





SOCIETY

INTERNAL COMPLAINTS COMMITTEE

In News: The oversight committee of Sports Ministry flagged the **lack of an Internal Complaints Committee (ICC)** in Wrestling Federation of India as a pressing issue, as mandated by the Prevention of Sexual Harassment (PoSH) Act, 2013.

- Reports in media suggest that majority of **national sport federation bodies** do not have a **functional ICC** during the present times, when the nation sees **influx of women's participation** in sports.

What is an ICC?

- Internal Complaints Committee (ICC) is a **designated body** to act on grievances under PoSH Act.
- It is mandated to operate at each office or branch of a **workplace that has 10 or more employees**.

Mandate & Composition:

The law suggests that the committee needs a **minimum of four members**, of which at least one shall be an external member associated with the empowerment of women/familiar with issues related to sexual harassment. The **presiding member** must be a senior level employee at the organization and **at least half** of the committee members must be **women**.

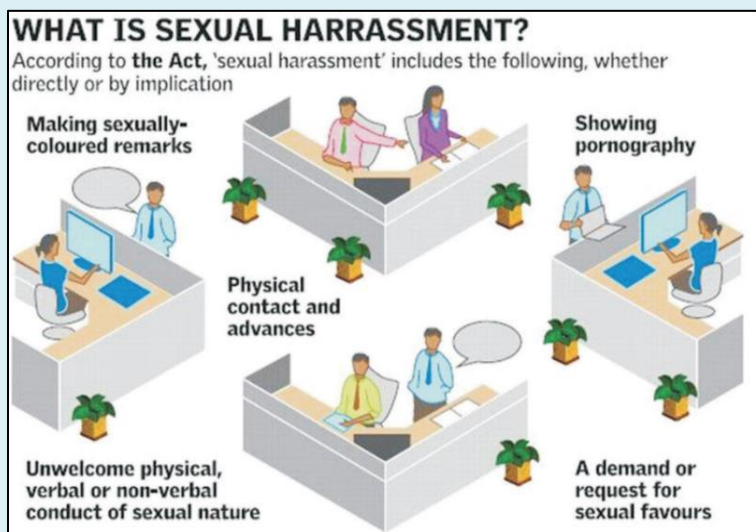
ICC has **powers of a Civil Court** in respect of summoning and examining any person on oath and requiring the discovery and production of documents.

The Act protects the **rights of all women who are working/visiting** any workplace.

Further, Delhi High Court in December, 2020 has stated in a decision that Internal Committee **cannot do Moral Policing** (no comments on personal conduct or consensual relationship)

Defining Sexual Harassment:

- Any **unwelcome social invitations** with **sexual overtones**, commonly seen as **flirting**.
- Unwelcome behaviour is considered as **illegal, demeaning, invading, one-sided and power-based**.
- PoSH Act mentions circumstances that amount to sexual harassment.
 - Promise of **preferential treatment** or **threat of detrimental treatment** in complainant's employment position.
 - **Interference** with the complainant's work or creating an **offensive or hostile work environment**.
 - **Humiliating treatment** of the complainant that is likely to affect her health or safety.



Conditions under the Act:

- Complaint must be made **within three months** from the date of the incident, with certain **exceptions**.

- The **identity** of the woman, respondent, witness, any information on the inquiry, recommendation and action taken, **should not be made public**.
- Steps should be taken to settle the matter between her and the respondent through **conciliation**, provided that **no monetary settlement** shall be made as a basis of conciliation.
- The ICC may either **forward the victim's complaint to the police**, or it can start an **inquiry** that has to be completed within 90 days.
- When the inquiry is completed, the ICC must provide a report its **findings to the employer and both the parties**.
- The **compensation** to be awarded to the victim is determined based on five aspects: suffering and emotional **distress** caused to the woman; loss in **career** opportunity; her **medical expenses**; income and **financial status** of the respondent; and the **feasibility** of such payment.

Vishakha Guidelines, 1997:

- Observing on the **Bhanwari Devi case** (Vishaka & Ors. V/S State of Rajasthan, AIR 1997 Sc 3011), the Supreme Court formulated the **Vishakha guidelines** making it mandatory for organisations, whether working in the private or public sector to establish a mechanism for **prohibition, prevention, and redressal** of sexual harassment at workplaces.
- The Supreme Court directed that workplace should establish a **Complaints Committee**, which would look into matters of sexual harassment of women at the workplace. The court made the guidelines **legally binding**.

Mandate under the PoSH Act, 2013

The **Vishakha Guidelines** by the Supreme Court received legislative backing in the form of the **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act**, commonly known as the **PoSH Act**.

It defined sexual harassment, lay down the procedures for complaint and inquiry, and the action to be taken in cases of sexual harassment.

INDIAN PRISONS

In News: In an attempt to shift the focus of incarceration from **retributive deterrence to reform and rehabilitation**, the Union government has prepared a new **Model Prisons Act**.

- Since prisons and the 'persons detained therein' are a **State subject** in India, the Home Ministry said the **Model Prisons Act, 2023** may serve as a **guiding document** for states for adoption in their jurisdiction.

Need for the change

- The present 130-year-old law and incarceration system is **prone to abuse** because it was set up **by the British to subjugate Indian political prisoners**.
- The old Act focused on keeping criminals in custody and enforcement of discipline and order in prisons.
- On the other hand, the criminal justice system in **modern nation states** is designed to give **more rights to the jail inmates** and correct the imbalance between the state and the accused.

New Model Prisons Act

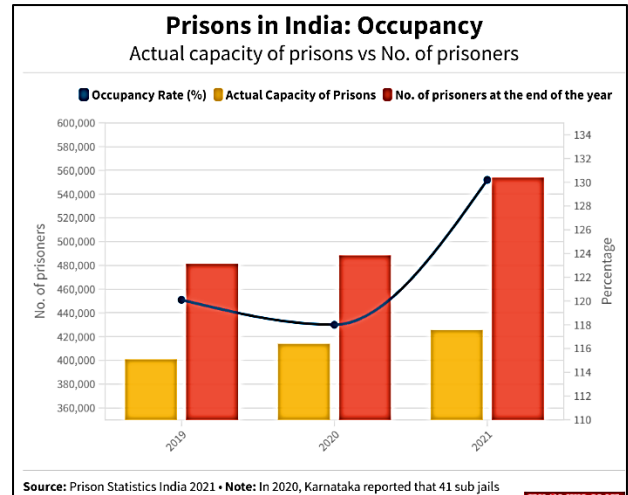
- The new Act focuses on **reformation and rehabilitation** of prisoners.
- It contains provisions for grant of **parole, furlough, and remission** to prisoners to **encourage good conduct**; providing special provisions to **women and transgender** inmates; ensuring **physical and mental well-being** of prisoners.
- It provides for **security assessment and segregation** of prisoners; individual **sentence planning; grievance redressal; prison development board**; use of **technology** in prison administration; protecting society from criminal activities of hardened criminals and habitual offenders.

Present situation of Inmates' Ecosystem:

- **Overcrowding of jails:** According to Prison Statistics of India Report 2020, over **15 states** are currently operating their prison at **over 100%** capacity. And **overall occupancy rate** in Indian prison is approx. **130%**.
 - Overcrowding results in living in **subhuman conditions** especially relating to physical space, sanitation and health. Conditions don't favour rehabilitation and end up punishing the prisoner mentally, emotionally and physically and their family as well.
- **Proportion of undertrial inmates:** The number of undertrial inmates increased by 45.8% between 2016 and 2021, according to **Prison Statistics of India Report 2020**. Of the 5.5 lakh prisoners, 4.3 lakh or **77% were undertrials in 2021**.

Following the existing provisions for bail and court directives will be able to reduce the number of undertrials and occupancy rate of prisons. If only...

- **Judicial factors leading to deprivation of basic rights:**
 - **Delay** on the part of the judiciary to **hear cases**
 - Ineffective or absence of **legal representation**
 - Usage of **denial of bail as a tool** rather than actual prosecution and conviction
 - Insensitivity and **continued detention** of accused even after granting bail
 - Shortfall in **judicial infrastructure and staff**
- **Marginalized community:** Informal reports suggest that most undertrials belong to **socially and economically deprived communities** and problems that they face today are borne out of **poverty or excessive litigation cost**. Many of the inmates are **old, destitute, infirm, mentally ill**, etc.
- **Unaware and uneducated:** Several undertrials are illiterate and live in **ignorance of law**, fundamental rights, preamble, and fundamental duties, with 30-40% of them not being serious offenders/**petty offenders**. Inability to understand the **language of the court, lack of family support** as the family is away earning daily wages contribute to worsening the plight.



There is a **natural relation** between the high number of undertrial prisoners in India and the high occupancy rate of prisons in most states.

Criminalization of **adivasis** pursuing their **customary practices** (marriage Vs POCSO Act, 2012) or provision of **community forest rights** (against implementation of forest laws), hangover of deep-seated prejudices and laws like the **Habitual Offenders Act** against denotified tribes (Example: Pardhis)

Women are often **abandoned** by their families once they land up as a jail inmate.

Supreme Court leading the Waves of Change:

- The Supreme Court in **Arnesh Kumar vs State of Bihar, 2014** had stated that the **police should ordinarily not arrest people** if the offence they are charged with has a maximum sentence of **less than or up to seven years**. (Arrest to be made only if the accused does not cooperate with police investigation.)
- In 2014, the Supreme Court ordered jails to **free all inmates who have served half their maximum term without trial**.
- In 2022, in relation to the life term convicts, the Supreme Court observed that convicts who have **completed 10 years of imprisonment** should be **released on bail** unless there are other compelling reasons.

Urgent reforms needed:

- **Court-appointed volunteers and social workers** to represent the marginalized undertrials
- Introducing **substitutes for money or property-based bail** systems in Indian courts
- Effective **dispute resolution mechanism** that would eliminate the need for additional jails
- Police and jail reforms
- Strengthening of **Lok Adalat's for minor offences** such as traffic infringements, excise offences, shoplifting, and disorderly public conduct.
- Assigning **social work and regular court visit** as precondition for bail rather than finances.
- **Budget allocation** for criminal justice system: better trained police, more court halls and staff

Concept of Open Prison Systems in India

- Open prison systems are premised on the **reformative theory** of justice and punishment, as opposed to retributive theories of punishment, and advocates in favor of **turning criminals into law abiding citizens** without confining them.
- Open prison systems offer a **more humane and equitable means** of justice delivery.

What is an open prison?

- Open prisons are jails **devoid of high walls, barbed wire fences or armed guards** to keep prisoners in check and are simply regulated spaces that have less stringent rules relative to the traditional iron-clad prisons.
- They fundamentally rely on **self-discipline** of inmates. Many open jails even allow prisoners to live in proximity with their **families** and earn their **livelihood**.
- The UN General Assembly in 2015 adopted the **Nelson Mandela Rules**, which said that open prison system can aid the rehabilitation of carefully selected prisoners, who are offenders considered at low risk of flight. They also established the prisoners' **right to employment and right to maintain contact** with the outside world.
- Countries like USA & UK have been sending prisoners to the outside world as **workers/labourers** to evaluate their **behavior** and prepare them for a **smooth transition** to a normal life.
- **All India Committee on Jail Reforms in 1980** also recommended the government to set up and develop open prisons in each state and union territory. At present, India has 150 operational open jails, in which **Rajasthan and Maharashtra** have the maximum number of such prisons.

Case of Sanganer Jail, Jaipur

- Established as an Open Jail in Jaipur in the year 1954
- Jail allows people to go out to **work, experience community living**
- **Reintegration** into the society without the fear of **stigma or vulnerability** to become **sociopath**



Issues with Open Jail

- Process of **selection of criminals** does not require it to record the reasons for exclusion of inmate name recommended for open prison, which leaves scope for ambiguity, bias and corruption.
- **Does not permit undertrial prisoners** to be considered for open jails.
- **Underutilized open jails** due to poor levels of awareness and acceptability.

- **Inmates' dependence** on the spaces and livelihood opportunities provided to them in the open jails, makes them reluctant to vacate even after completion of their term

Conclusion:

How **prison is viewed** has changed in the last few decades. The idea is to **promote reformation** of criminals and allow them to join society as law abiding citizens. Constitution of India guarantees the **fundamental right** to every citizen to live **a life with dignity** under **Article 21**. Additionally, **Article 39A** under the Directive Principles of State Policy instructs the state to **ensure effective justice delivery**.

MANIPUR VIOLENCE

In News: All Tribal Students' Union of Manipur (ATSUM) called for a 'Tribal Solidarity March', during the progress of which **violent ethnic clashes** happened at multiple locations in Manipur.

- March was organized to **protest against the Manipur High Court's recent order** to include the **Meitei community** in the list of the state's **Scheduled Tribes (ST)**.
- The Centre invoked **article 355** of the Constitution as the violence escalated.

Why are Tribal Groups Opposing this Order?

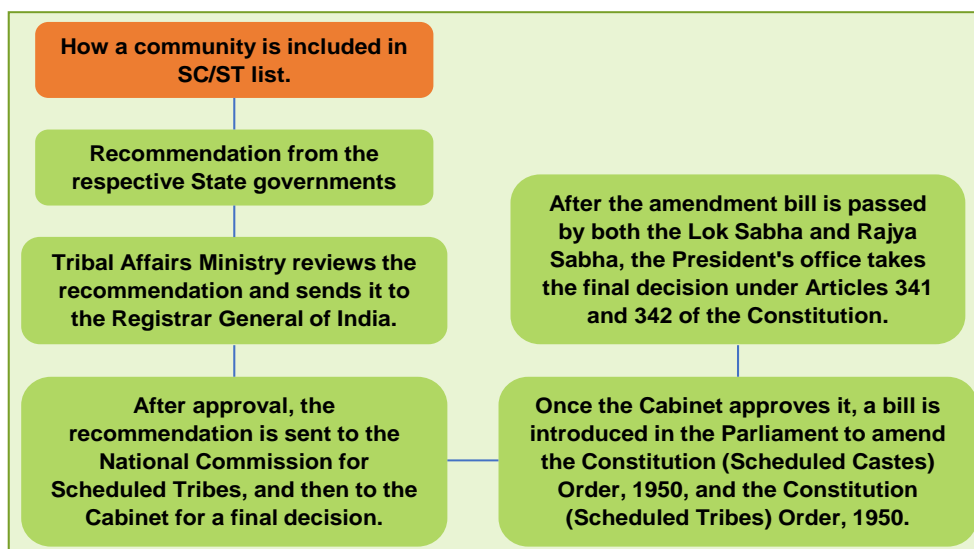
- The Meiteis have a **demographic and political advantage** over the tribal groups in Manipur, as 40 out of 60 Assembly constituencies of the state are in the valley.
- Providing ST status to the Meiteis could lead to loss of **job opportunities** and **land acquisition**.
- The **Manipuri language** of the Meiteis is already included in the Eighth Schedule of the Constitution.
- Some members of the Meitei community already have access to **benefits associated with SC, OBC, or EWS status**.
- Kukis and Nagas point out that tribal areas are 90% of state's geographical area, but the **bulk of its budget and development work** is focused on the Meitei-dominated Imphal valley.



Why Meitei Community want ST Status?

- Meitei claim that they were **acknowledged as a tribe prior to the merger of Manipur** with the Union of India in 1949 and obtaining the ST status is seen as essential for preservation of the community and the protection of their **ancestral land, culture, tradition, and language**.
- Community residing in the valley area argue that they require **constitutional protections from outsiders**, as they have been restricted from purchasing land on the hills while tribal communities are permitted to purchase land in the **"shrinking" Imphal Valley**.
- The Meitei community has been increasingly excluded from their ancestral land, leading to a **proportional decrease in their population**. Their population which was 59% of the total population of Manipur in 1951 has now been reduced to 44% as per 2011 Census data.
- The demand for Meiteis' inclusion has been actively supported by the Scheduled Tribes Demand Committee of Manipur (STDCM) since 2012.





Manipur Ethnic Composition

- The **Meitei** community is the **largest community** in Manipur. The state is also home to a total of **34 recognized tribes** broadly categorized as "Any Kuki Tribes" and "Any Naga Tribes".
- The central valley of Manipur covers about **10%** of the state's land area and is predominantly inhabited by the **Meitei and Meitei Pangals**, constituting about **64.6%** of the state's population.

The remaining **90%** of the state's landmass consists of **hills** surrounding the valley, which are home to the recognized tribes comprising about **35.4%** of the state's population.

Article 355

- It mandates Union government to **protect** every state from **external aggression and internal disturbance**, and to ensure that the government of each state is carried out in accordance with the Constitution.
- It empowers Union government to issue directions to any state in the **interest of national security and unity**.

WORLD PRESS FREEDOM INDEX 2023

In News: India's ranks **161 out of 180 countries** in the World Press Freedom Index.

- **Norway, Ireland and Denmark** occupied the top three positions.
- One party and authoritarian regimes **Vietnam, China and North Korea** (180) occupied the last three positions.
- India ranks **lower than** countries like **Somalia (141), Pakistan (150), and Afghanistan (152)**.
- Ranking is done on 2 indicators, i.e. **a tally of abuses** against journalists and a **qualitative questionnaire** answered by press freedom specialists.
- **Reporters Without Borders (RSF)** releases the World Press Freedom Index 2023.
- According to RSF, press freedom is defined as the **ability of journalists as individuals and collectives to select, produce, and disseminate news in the public interest independent of political, economic, legal, and social interference and in the absence of threats to their physical and mental safety.**



- The WPFI 2023 makes the following observations:
- The **environment for journalism** is bad in **7/10 countries**, and satisfactory only in 3/10 countries.
- Concerns of **propaganda fake news** have heightened and given the rise of artificial intelligence technology like Mid-journey.
- **Middle East and North Africa** continues to be the world's most dangerous region for Journalist.
- Acquisition of media outlets by oligarchs who maintain close ties with political leaders restricts the free flow of information in today's world.

BEST PRACTICES IN SOCIAL SECTOR

In News: NITI Aayog Releases Compendium on Best Practices in Social Sector 2023.

- **NITI Aayog** released the “**Best Practices in Social Sector: A Compendium, 2023**” today in collaboration with the **United Nations Development Programme**.
- This compendium includes **75 case studies** (to commemorate 75 years of India’s independence) cutting across 14 key social sectors. The case studies have been sourced from all States/ Union Territories and 30 Ministries and Departments of the Government of India.
- The cases identified are spread over diverse themes, including **education, health and nutrition, e-governance and digitization, agriculture, women’s empowerment, sports, and financial inclusion**, among others.



Some of the best practices highlighted

- **Centre’s UMANG app** for e-governance services
- **Delhi’s electric vehicle policy** for promoting green mobility
- **Prayatna:** Special Project for Transgenders, Ministry of Skill Development and Entrepreneurship
- A life, less ordinary: **Ganga Prahari** - Guardians of the Ganga, Ministry of Jal Shakti
- **Black Rice Initiative** in Chandauli, Uttar Pradesh
- **Academic Bank of Credits**, Ministry of Electronics and Information Technology
- **Climate resilient rice – fish farming**, in Assam
- **Dr. YSR Rythu Bharosa Kendralu** - a one-stop solution for farmers of Andhra Pradesh
- **Reducing Maternal and Newborn Deaths (ReMiND)** through mobile application in Uttar Pradesh
- **NUTRI-GARDEN INITIATIVE**, Community nutrition gardens – promoting nutrition security and dietary diversity, RAJASTHAN
- **PM SVANidhi** Financial inclusion for street vendors, Ministry of Housing and Urban Affairs
- **Kalika Chetarike** – Activity based learning in Karnataka
- **Mera Baccha Abhiyan:** An initiative to fight malnutrition through public participation, Datia, Madhya Pradesh
- **Kutumba:** Social Protection cum Entitlement Management System, Karnataka
- **Gauthan** - Multi-Activity Centres for Livelihood generation in Chhattisgarh
- **Shifting Gears** from Disaster Management to Disaster Risk Reduction in Chitrakoot District, Uttar Pradesh
- The seventy-five best practices highlight models which are **innovative, sustainable, replicable and impactful**.
- An opportunity for **peer-to-peer learning** among states, to applaud the efforts of innovations taking place in the States and utility in the potential of case studies being **replicated across** States and Union Territories.



HISTORY & CULTURE

SANGOL

In News: The Sengol, a **golden sceptre/wand** has been placed in the new Parliament building near the **Lok Sabha Speaker's podium**.

- The instatement was followed by a proper religious ceremony in which religious heads from across India participated including representatives of the **Thiruvavaduthurai Adheenam** (a Saivite math).
- Sengol comes from the **Tamil word "Semmai"** which means **righteousness**.
- It is **5 feet long** and has a **golden orb** at the top with a **carving of Nandi**, the bull that is sacred to Lord Shiva.
- The Sengol is a **historic and cultural artefact** that reflects the **ancient heritage and sovereignty** of India.
- Traditionally, the sengol has symbolised the **authority and justice** of the Chola kings during **Chola Era**, who ruled over southern India for centuries.
- Later, it was presented to India's first Prime Minister Jawaharlal Nehru on August 14, 1947, as a mark of **transfer of power** from the British to the Indian government.
- It was then placed in the Allahabad (Prayagraj) museum.
- The idea of creating a Sengol for Nehru was proposed by C. Rajagopalachari and the responsibility was entrusted to **Thiruvavaduthurai Adheenam**.
- Sengol is being criticised as a **symbol of monarchy and not democracy**, as it represents the authority and power of kings and rulers, not the people or their representatives.
- Sengol is given by math (monastic/religious institutions), which are also relics of monarchy and have no role in a democratic system.



CHAM DANCE

In News: Recently, delegates of **G20** visited the **Hemis Monastery** in Leh and witnessed the famous **Cham dance**.

- **Cham dance is a famous masked ritual dance** by Tibetan Buddhist monks who don colourful robes with long sleeves and wear masks to represent deities and demons.
- They perform slow moves to the sound of the ritual music of Tibetan instruments, cymbals, drums and trumpets of various forms.



- Most dancers wear masks, impersonating wrathful deities and their entourage.
- **Chams** are considered **a form of meditation** and an **offering to the gods**.
- The cham dance is based on incidents from the life of the 9th century Nyingma teacher **Padmasambhava** and other saints.
- **Padmasambhava**, the great scholar, **Mahasiddha** brought **Vajrayana Buddhism** to Tibet.
- Padmasambhava birth anniversary is celebrated with the **Hemis Festival** in **Ladakh**, where the cham dance is a highlight.
- The dance teaches **moral lessons** about **compassion (karuṇā)** and are held to **bring merit** to all who perceive them.
- It is said to **bring good luck** to the people viewing this dance.
- It is performed at festivals like **Losar (Tibetan New Year)** and **Tsechu (yearly spiritual festival)** in Ladakh and other Himalayan regions.

HARAPPAN BURIAL SITE: JUNA KHATIYA

In news: An **early Harappan burial site, Juna Khatiya**, located in Kachchh district in Gujarat is being excavated as **possibly the biggest known necropolis** of the Harappan era.

- The estimated number of burial pits is over 500. Khatiya archaeological site was **discovered in 2016** during a field survey conducted by the Department of Archaeology, University of Kerala.
- The cemetery, believed to be 5,000 years old, belonged to the **pre-urban phase** of the Harappan civilization.
- But since **no major habitation** have been found around this site, the puzzle with archaeologists remains unsolved- **whose bodies were these!**
- The soil in Khatiya is **acidic**, facilitating faster decomposition of bodies.
- Therefore, researchers are finding it **hard to extract DNA** from the decayed samples excavated from this site.
- The excavation of burials shows **diverse burial practices** in the form of **inhumations** and **symbolic burials** with Early Harappan Sindh Type pottery.
- The burial structures are made **of dressed sandstone** and the majority of them are rectangular in plan followed by oval or circular ones.
- The burial goods such as **pottery, stone tools, lithic debitage, stone beads, terracotta beads, shell beads and shell bangles** were unearthed from many burials.
- **Dholavira**, the UNESCO World Heritage Site **and one of the biggest metropolises** of the Harappan civilisation, also located in Kutch, is 150 kms away from Khatiya.



A necropolis is **a large, designed cemetery** with elaborate tomb monuments. The name stems from the Ancient Greek word which literally meaning “**city of the dead**”.

The term usually implies a **separate burial site** at a distance from a city, as opposed to tombs within cities, which were common in various places and periods of history.



PRACTICE QUESTIONS

PROBABLE QUESTIONS: (PRELIMS)

- Which of the following countries is not a full-time member of MERCOSUR?
(a) Brazil (b) Argentina
(c) Chile (d) Uruguay
- Which of the following statements is/are correct about the National Manufacturing Innovation Survey (NMIS) 2021-22?
(a) It is a joint study by the Department of Science and Technology (DST) and the United Nations Industrial Development Organization (UNIDO).
(b) It has compiled an India Manufacturing Innovation Index (IMI) covering 28 states and 6 UTs.
(c) It has studied the manufacturing innovation system in five selected sectors: food & beverage, textiles, automotive, pharmaceutical, and ICT.
(d) All of the above
- Consider the following statements about the Central Drugs Standard Control Organisation (CDSCO):
 - It functions under the Ministry of Chemicals and Fertilizers, Government of India.
 - CDSCO along with state regulators, is jointly responsible for grant of licences of certain specialised categories of Critical Drugs such as blood and blood products, I.V Fluids, Vaccine and Sera.
 - CDSCO is responsible for approval of new drugs, clinical trials, standards for drugs, quality of imported drugs, coordination of state drug control organisations and providing expert advice.
 - The regulation of manufacture, sale and distribution of drugs is primarily the concern of the state authorities.Which of the statements given above is/are correct?
(a) I only (b) I and II only
(c) I, II and IV only (d) II, III and IV
- Which of the following statements is incorrect about the Digital Services Act (DSA) by the European Union (EU)?
(a) It is a landmark legislation to force big Internet companies to act against disinformation and illegal and harmful content.
(b) It will end the era of self-regulation by tech companies and give practical effect to the principle that what is illegal offline, should be illegal online.
(c) It will make users liable for their unlawful behaviour.
(d) It will work in conjunction with the EU's Digital Markets Act (DMA).

5. Consider the following statements about the Command Cyber Operations and Support Wings (CCOSW):
- I. It is a proposed unit of the Indian Army to handle cyberspace challenges posed by the growing warfare capabilities of adversaries.
 - II. It will have the mandate to safeguard the networks and increase the preparedness levels against the cyber threats.
 - III. It will also manage niche technology warfare equipment like drones, UAVs, usage of electronic warfare, migration towards net-centricity, reliance on modern communication systems and other critical information infrastructure.
- Which of the statements given above is/are correct?
- (a) I only (b) I and II only
(c) II and III only (d) I, II and III
6. With reference to First Water Bodies Census, consider the following statements.
1. It defines water bodies as only those natural units that are bounded on all sides with some or no masonry work.
 2. Andhra Pradesh has the maximum number of ponds.
 3. Encroachment of water bodies is greater in rural areas than in urban areas.
- Which of the following statements is/are correct?
- (a) 1 and 2 only (b) 2 only
(c) 3 only (d) 1 and 3 only
7. Consider the following statements with respect to 2nd North Sea Summit.
1. Its objective is to make the North Sea the largest green energy centre in Europe by accelerating the deployment of onshore winds.
 2. All the participating countries share boundaries with the North Sea.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
8. Consider the following statements with respect to the Kesavananda Bharati case.
1. Supreme Court defined the term 'Basic Structure'.
 2. Federalism and Secularism were termed as basic structures in this case.
 3. It limits the Parliament's power to amend the Constitution.
- Which of the following statements is/are correct?
- (a) 1 and 2 only (b) 2 only
(c) 2 and 3 only (d) 3 only
9. With respect to the 73rd constitutional amendment act, consider the following statements.
1. It was enacted in pursuance of Article 40 of the Directive Principal of State policy.
 2. It added the 11th Schedule to the Constitution.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
10. Consider the following statements with respect to Zero Shadow Day.
1. It occurs when the Sun's declination becomes equal to the latitude of the location.
 2. It happens twice a year.
- Which of the following statements is/are correct?

- (a) 1 only
(c) Both 1 and 2
- (b) 2 only
(d) Neither 1 nor 2

- 11.** With respect to Sedition law, consider the following statements:
1. Section 124 of the IPC deals with acts of sedition.
2. It is a non-bailable offence.
3. Bal Gangadhar Tilak was the first person to be convicted under India's sedition law.
Which of the following statements are correct?
(a) 1 and 2 only
(c) 1 and 3 only
- (b) 2 and 3 only
(d) 1, 2 and 3 only
- 12.** Consider the following statements with respect to Article 142:
1. The Supreme court of India is not constrained in the exercise of its powers by laws made by the parliament.
2. The provision of 'Complete Justice' has not been mentioned in the Constitution.
Which of the following statements are correct?
(a) 1 only
(c) Both 1 and 2
- (b) 2 only
(d) Neither 1 nor 2
- 13.** With reference to inclusion in Scheduled Tribe list, consider the following statements:
1. Supreme court can add, subtract, or modify the Scheduled Tribes List, under article 142.
2. Article 342 of the Indian constitution deals with the inclusion of Scheduled tribe with respect to State or Union territory.
Which of the following statements are correct?
(a) 1 only
(c) Both 1 and 2
- (b) 2 only
(d) Neither 1 nor 2
- 14.** Indian Government Bond Yields are influenced by which of the following?
1. Actions of the United States Federal Reserve
2. Actions of the Reserve Bank of India
3. Inflation and short-term interest rates
Select the correct answer using the code given below.
(a) 1 and 2 only
(c) 3 only
- (b) 2 only
(d) 1, 2 and 3
- 15.** The state of Manipur does not share its border with which of the below mentioned states?
(a) Nagaland
(c) Mizoram
- (b) Assam
(d) Tripura
- 16.** Which project aims to create a comprehensive Battlefield Surveillance System (BSS) for the Indian Army?
(a) Project Avagat
(c) Project Sanjay
- (b) Project Anumaan
(d) Situational Awareness Module for the Army (SAMA)
- 17.** With respect to the National Organ Transplant Programme (NOTP) in India, which of the following options is not correct?
(a) Establishment of National/Regional/State Bio-material centres.
(b) Financial support for hiring of Transplant Coordinators to medical colleges and trauma centres.

- (c) Setting up of State Organ and Tissue Transplant Organisations (SOTTOs) in each State/UT.
(d) Mandatory age limit for registering as a recipient of organs from deceased donors.
18. Which countries are part of the I2U2 Group, also known as the emerging West Asia Quad?
(a) India, Saudi Arabia, Israel, and the United States
(b) India, Israel, the United Arab Emirates, and the United States
(c) India, Saudi Arabia, the United Arab Emirates, and China
(d) India, Israel, the United Arab Emirates, and China
19. Which ministry is the nodal agency of the Prayatna initiative, a livelihood and enterprise training program for transgenders in Delhi-NCR.
(a) Ministry of Skill Development and Entrepreneurship
(b) Ministry of Education
(c) Ministry of Labour and Employment (d) Ministry of Home Affairs
20. Which committee on financial sector reforms first proposed the creation of the Financial Stability and Development Council (FSDC)?
(a) Narasimham Committee (b) Bimal Jalan Committee
(c) Raghuram Rajan Committee (d) Urjit Patel Committee
21. Which of the following statements is correct about the Financial Stability and Development Council (FSDC)?
(a) It is a statutory body established by an Act of Parliament
(b) It is chaired by the Governor of Reserve Bank of India (RBI)
(c) It was recommended by the Financial Action Task Force (FATF)
(d) It monitors the functioning of large financial conglomerates.
22. With respect to Carbon dating, consider the following statements.
1. It is used to determine the absolute age of fossils.
2. It is based on the measurement of the C-12 to C-14 ratio.
Which of the following statements is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
23. Which of the following statement with respect to de-dollarisation is/are correct?
1. It refers to replacing the U.S. dollar with another currency as a global reserve currency.
2. It aims to eliminate the U.S. dollar entirely.
3. It can help in mitigating the risk of exchange rate fluctuations.
Which of the following statements is/are correct?
(a) 1 and 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 3 only
24. What are Nostro and Vostro accounts commonly used for in international banking?
(a) Nostro accounts are used by banks to hold foreign currency on behalf of their domestic clients, while Vostro accounts are used to hold domestic currency on behalf of foreign banks.
(b) Nostro accounts are used by individuals to transfer funds internationally, while Vostro accounts are used for domestic banking transactions.

- (c) Nostro accounts are used by foreign banks to hold domestic currency on behalf of the central bank, while Vostro accounts are used to hold foreign currency on behalf of local banks.
- (d) Nostro accounts are used by central banks to manage foreign exchange reserves, while Vostro accounts are used for international trade financing.

25. With respect to ONDC, consider the following statements.

1. It is an open network for all aspects of the exchange of goods and services.
2. It is a government regulatory body.
3. It is an application or a single platform like Amazon and Flipkart.

Which of the following statements is/are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 3 only
- (d) 1 only

26. Which one of the following groups of items is included in India's foreign-exchange reserves?

- (a) Foreign-currency assets, Special Drawing Rights (SDRs) and loans from foreign countries
- (b) Foreign-currency assets, gold holdings of the RBI and SDR
- (c) Foreign-currency assets, loans from the World Bank and SDRs
- (d) Foreign-currency assets, gold holdings of the RBI and loans from the World Bank

27. Which of the following institutions is implementing the B-READY project to measure the business and investment climates in different economies worldwide?

- (a) International Monetary Fund
- (b) World Trade Organization
- (c) World Bank Group
- (d) United Nations Development Programme

28. Match the following export schemes (LIST-I) with their short descriptions (LIST-II):

List I	List II
A. Market Access Initiatives (MAI) scheme	1. A scheme that allows import of capital goods for export production at zero customs duty subject to an export obligation.
B. Service Exports from India Scheme (SEIS)	2. A scheme formulated on 'focus product-focus country' approach to evolve specific market and specific product through market studies/survey.
C. Export Promotion Capital Goods (EPCG) Scheme	3. A scheme that provides assistance for the international component of freight and marketing of agricultural produce to specified overseas markets.
D. Transport and Marketing Assistance (TMA) Scheme	4. A scheme that provides duty credit scrips to service providers based on their net foreign exchange earnings.

Choose the correct pair from given options below

- (a) A-3, B-2, C-4, D-1
- (b) A-4, B-2, C-3, D-1
- (c) A-3, B-4, C-1, D-3
- (d) A-2, B-4, C-1, D-3

3. Unified Payments Interface (UPI) is an example of Digital Public Infrastructure (DPI). Which of the statements given above is/are correct:
 (a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3
38. With reference to 'One Station One Product Scheme', consider the following statements:
 1. It will provide opportunities to railway passengers to experience the rich heritage of India.
 2. It is the flagship scheme of the Department for Promotion of Industry and Internal Trade (DPIIT).
 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
39. With reference to the logistic sector in India, consider the following statements:
 1. India's improvement in its ranking in World Bank's Logistics Performance Index 2023 is facilitated by PM GatiShakti National Master Plan(NMP) and National Logistics Policy, 2022.
 2. PM GatiShakti National Master Plan(NMP) is a GIS based tool to ensure first and last-mile connectivity, for seamless movement of people and goods.
 3. National Logistics Policy(NLP) lays emphasis on the shift towards more energy-efficient modes of transportation and greener fuels.
 Which of the statements given above is/are correct:
 (a) 1 and 2 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3
40. With reference to 'India Stack', consider the following statements:
 1. It is a set of APIs which helps govt, businesses, startups and developers to utilise digital infrastructure to solve challenges and facilitate presence-less, paperless, and cashless service delivery.
 2. It consists of only three technology layers: presence less, paperless, and cashless.
 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
41. Which of the following statements is/are correct about India's participation in the IPEF?
 1. India agreed to three pillars relating to supply chains, tax and anti-corruption, and clean energy and decarbonization.
 2. India expressed reservations about the trade pillar of IPEF, which includes provisions on environment, labour, digital trade and public procurement.
 (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
42. Which of the following is/are the reason(s) for India's concern over the trade pillar of the IPEF?
 1. The possibility of binding conditionalities linking trade to issues like environment and labour.
 2. The US standards in terms of technology, labour, and environment are deemed to be unacceptable to India.
 (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2

43. Which of the following countries is not a member of EFTA?
(a) Switzerland (b) Luxembourg
(c) Liechtenstein (d) Norway
44. What is the name of the free trade agreement that India and EFTA are negotiating?
(a) Trade and Economic Partnership Agreement (TEPA)
(b) Economic Cooperation and Trade Agreement (ECTA)
(c) Comprehensive Economic Cooperation Agreement (CECA)
(d) Comprehensive Economic Partnership Agreement (CEPA)
45. Which of the following statements about Sengol is incorrect?
(a) It is derived from the Tamil word 'semmai', meaning righteousness.
(b) It has a carving of Nandi, at the top, the bull that is sacred to Lord Shiva.
(c) It symbolises authority and justice.
(d) It was handed over to Mahatma Gandhi by Lord Mountbatten as a mark of transfer of power from the British to the Indian government.
46. Consider the following statements with respect to Credit Default Swap (CDS):
1. It is a type of derivative which serves as a form of insurance against the default of an underlying borrower or debt instrument.
2. It can be used for speculation and hedging.
3. The LIBOR interest rate is an accurate tool to determine the value of a CDS agreement.
Which of the following statements is/are correct?
(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3 only
47. Which of the following accurately describes the Secured Overnight Financing Rate (SOFR)?
(a) SOFR is an overnight interest rate index used by financial institutions to determine interest rates for consumers.
(b) It is used as an overnight benchmark for setting prices on forward-rate agreements and derivatives.
(c) SOFR is a benchmark interest rate that reflects the cost of borrowing funds overnight in the repurchase agreement (repo) market, secured by high-quality collateral.
(d) SOFR is an economic indicator that measures the growth rate of the manufacturing sector in a specific country.
48. Which of the following options best describes open market operations (OMOs)?
(a) A government program aimed at providing financial assistance to low-income households.
(b) The process of buying and selling shares of publicly traded companies.
(c) A monetary policy tool used by central banks to control the money supply in an economy.
(d) A tax incentive provided to encourage foreign direct investment.
49. Which of the following options accurately defines seigniorage?
(a) It refers to the additional revenue earned by the government or central bank through the difference between the face value of the currency and its production cost.

- (b) It is a monetary policy tool used by central banks to regulate the money supply by adjusting interest rates on loans provided to commercial banks.
- (c) It is a tax levied on the profits earned by multinational corporations to fund social welfare programs and poverty alleviation initiatives.
- (d) It is the interest earned on government bonds and securities purchased by investors to finance public infrastructure projects and development programs.

50. With reference to the Reserve Bank of India, consider the following statements:

1. It was originally promoted and set up as a Public bank.
2. RBI focuses on the Clean Note policy but does not take back soiled notes.

Which of the following statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

MAINS QUESTIONS

1. India and Latin America have immense potential to enhance their trade and economic cooperation. Discuss the opportunities and challenges in this regard, with special reference to MERCOSUR.
2. Explain the Doctrine of Basic Structure. How did the Keshvananda Bharati case establish this doctrine and what are its implications for constitutional amendments?
3. Analyse the significance of the rail connectivity project in West Asia in context of India.
4. Discuss the future prospects of employment during the present times of economic and digital disruption.
5. Discuss the benefits and challenges associated with the LIGO-India project.
6. Discuss the advantages of Open Network for Digital Commerce (ONDC) with respect to the traditional retail e-commerce market.
7. Giving various examples, discuss the ways to boost India's manufacturing industry.
8. Analyse the impact of digital public infrastructure in India's growth journey.
9. Discuss the need for prison reforms in India.
10. Analyse the significance of fishing industry in India progress.

ANSWER KEY

QUESTION	1	2	3	4	5	6	7	8	9	10
ANSWER	(c)	(d)	(d)	(c)	(d)	(c)	(d)	(d)	(c)	(c)
QUESTION	11	12	13	14	15	16	17	18	19	20
ANSWER	(b)	(a)	(b)	(d)	(d)	(c)	(d)	(b)	(a)	(c)
QUESTION	21	22	23	24	25	26	27	28	29	30
ANSWER	(d)	(b)	(b)	(a)	(d)	(b)	(c)	(d)	(c)	(c)
QUESTION	31	32	33	34	35	35	37	38	39	40
ANSWER	(c)	(d)	(a)	(c)	(b)	(c)	(b)	(a)	(d)	(a)
QUESTION	41	42	43	44	48	46	47	48	49	50
ANSWER	(c)	(c)	(b)	(a)	(d)	(a)	(c)	(c)	(a)	(d)

STUDY WITH INDIA'S BEST & EXPERIENCED FACULTIES



Atyab Ali
Sub. : Geography
Ex. IAS Baba



Dr. Jayesh Khaddar
Sub. : History / I.R
Ex. Vision IAS/
Subhra Ranjan IAS



Neeraj Nachiketa
Sub. : Environment /
Science & Tech.
Ex. Vision IAS /
Vajiram & Ravi



Shubham Sharma
Sub. : Economy
Ex. IAS Baba /
Only IAS



Yogendra Sharma
Sub. : Science & Tech.
Ex. Byju's IAS/
Chanakya



Dinesh Ahirrao
Sub. : Polity
Ex. Byju's IAS



Rabia Khan
Sub. : History
Ex. Study IQ



Soumitro Chowdhury
Sub. : Environment &
Ecology
Ex. Byju's Exam Prep.



Harsh Singh
Sub. : Current Affairs
Ex. Edukemy



Rahul Goyal
Sub. : Current Affairs
Ex. Sleepy Classes

Prelims 2024

- ✓ Practice & Learn (PAL)
- ✓ Prelim Mocks for 2024
- ✓ Exam Centric CSAT Lectures

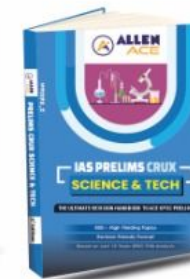
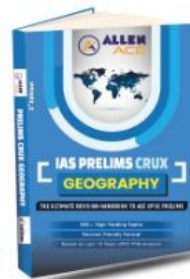
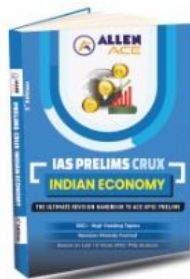
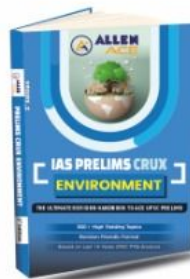
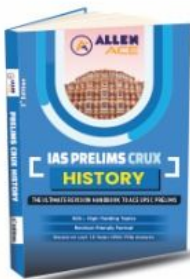
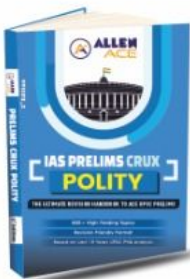
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