SEPTEMBER
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CURRENT CONNECT
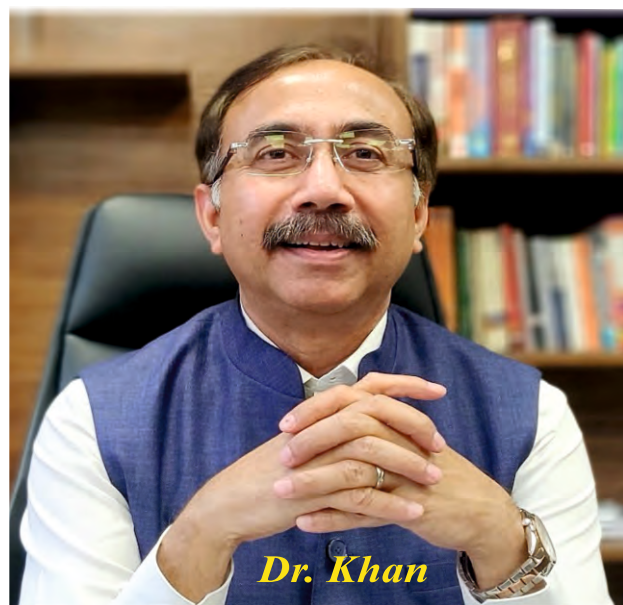
STATE OF INDIA'S BIRDS 2023

SAMUDRAYAAN MATSYA 600

WITH LOADED FEATURES

- **PHILOSOPHY OF THE MONTH** • **PT CONCATENATION** • **MAP CONNECT**
- **THEMATIC ESSAYS** • **CONTEMPORARY ETHICS CASE STUDIES**

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GS CONNECT

It gives us immense pleasure to present an innovative approach to master current affairs. Current is a passing wind and diverse issues happen at the same time. It is to an extent chaotic. Newspapers, magazines and various other sources report the chaos per se. With our experience of current affairs, we have tried to give "the current" a medium to travel. It is the syllabus of the UPSC with its components that are the medium through which the "Current is Passed" to the readers. Ever since the new syllabus of the UPSC came into existence, current has been gaining significance both at prelims as well as mains examination. This book is meant to cover current affairs and related questions arising from those events. We have not only covered the current events for their factual contents but also presented it in such a way that any question asked from that topic gets covered. Moreover, topics are also "peppered" with the relevant facts/key concepts that are related to the theme. We have also given questions for practice both, subjective and objective, so that candidates are oriented to the examination mode. It is a collection covering myriad source yet in a manageable size. To use this book, we recommend you to master the components of general studies (GS) syllabus as broken into rows and columns (provided in the beginning after preface). Each cell comprising of the portion of GS becomes the connect for the current and every news subsequently covered guides the reader to the address of the syllabus. It is logical to expect that same issue may be connected to more than one topic of the syllabus. Further, the news also has some additional vistas opened for the readers by adding a box with a title **"PEPPER IT WITH"** where we expect the students to build further around the theme.

We are also trying to reach the remotest part of the country with our spirit and zeal of "Mains Answer Writing", which has been admired by students, CSE rankholders and other scholars. Continuing in line with the effort, we have started with programs like 7 Question (7Q) Challenge, Shell Points, Stock Points, Content Enrichment Booklet etc.

When it comes to evaluation, we are altogether at a different level. We are also reaching every nook and corner with this expertise for the aspirants of CSE. Now you can write a Mains Answer and get it evaluated from our Expert Team and can get Feedback. **Drop a mail at evaluation@ksgindia.com for registering yourself in our race to perfection.** Don't wait, it's your golden chance to crack this exam and fulfill your passionate dream.

Team KSG

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GS – I	Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian history significant events, personalities, issues and the Freedom Struggle	Post independence issues, National boundary and disputes	Indian society features, issues, globalization and diversity	Women - issues and developments	Urbanization – problems and remedies	Distribution of industries and resources – India and world	Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc			
GS – II	Indian constitution- Amendments, acts and bills.	Legislative, executive and judicial processes.	Constitutional, non-constitutional, judicial, quasi-judicial, administrative and other types of bodies.	Federal structure and local bodies. Their powers and functions.	Government policies and various governance issues like transparency, accountability and – governance	Committees and schemes.	Non-government issues, self-help groups and role of civil society	Vulnerable sections of our society and social sector issues and initiatives.	International Relation-India and other countries, various Indian and international agreements, effects of other countries on India and international institutions.		
GS – III	Various measures to boost Indian economy-planning, policies, management	Government budgeting and issues related to budget.	Agriculture, animal husbandry and transport	Food security-measures to boost food security and food processing. Issues related to land- land reforms	Industries and infrastructure -their growth and investment model	Space and technology, IT space, robotics and computer	Disease, biotechnology and human welfare	Innovations, intellectual property, Awards, POI and other important aspects of S&T	Environment; government initiatives, various judgment, pollution, degradation and conservation efforts	Disaster & Disaster Management	Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity; money laundering and its prevention.
GS – IV	Ethical issues related to family society, education, Corruption etc.	Ethics in public and private administration	Issues	Related laws and rules	Governance/e - Governance	Ethics in international issues	Personalities and their teachings	Other important topics			
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POLITY & GOVERNANCE

Government calls Parliament's "Special Session"

The government has announced a "Special Session" of Parliament from September 18 to 22.

Pre-Connect:

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- The **last time** Parliament held such a **special session** was in **2017** when the government rolled out the **Goods and Services Tax**. This was the **first special session** of Parliament where a **bill was discussed**. All previous such sessions were convened to commemorate historical events.

- India does **not** have a **fixed parliamentary calendar**. By convention, Parliament meets for three sessions in a year – the **Budget Session**, **Monsoon Session**, and **Winter Session**.

About:

Special Session or Emergent Parliament Session:

- **Not mentioned in Constitution**- The Constitution does not use the term "special session". Article 85 makes it clear there is no provision for a "special" session. The term refers to sessions the government has convened for specific occasions, like commemorating parliamentary or national milestones.

> **Previous Special Sessions**:
> - 14 and 15 August 1947, to mark India's independence.
> - 8 and 9 November 1962 to discuss the incursion made by China.
> - 15 August 1972 to mark the silver jubilee of India's Independence.
> - 15 August 1997 – to mark 50 years of India's Independence.

- However, **Rule 3** of the **Rules of Procedure and Conduct of Business** in the **Lok Sabha** is derived from **Article 85**; it says that summons could be issued to Members of Parliament to attend an emergent Lok Sabha session. The corresponding rule for the **Rajya Sabha** is also **Rule 3,** with the same provision.

- The Rule states, "The Secretary-General shall issue a summons to each member specifying the date and place for a session of the House: Provided that when a session is called at short notice or emergently, the summons may not be issued to each member separately, but an announcement of the date and place of the session shall be published in the Gazette and made in the press, and members may be informed by telegram."

- Therefore, the **power to convene a session** of Parliament rests with the **government**. The decision is taken by the **Cabinet Committee on Parliamentary Affairs** and formalised by the President, in whose name MPs are summoned to meet for a session.

- For the two houses to be in session, the presiding officers should chair their proceedings. The **presiding officers** can also **direct** that the proceedings of their respective houses be **limited** and procedural devices like question hour will not be available to MPs during the session.

- **Article 352** (Proclamation of Emergency) of the Constitution does refer to a "special sitting of the House". It was added through the Constitution (44th Amendment) Act, 1978 to add safeguards to the power of proclaiming Emergency. It specifies that if a Proclamation of Emergency is issued and Parliament is not in session, then one-tenth of Lok Sabha MPs can ask the President to convene a special meeting to disapprove the Emergency.

Summoning of Parliament:

- **Article 85** of the Constitution deals with the **summoning** of Parliament's sessions and their **prorogation** and **dissolution**. It provides for the President of India to summon each House of Parliament to meet "from time to time", and mandates that two successive sessions be held within six months of each other. It is also constitutionally mandated that the President function on the aid and advice of the Prime Minister.

- Therefore, the **President summons** Parliament sessions, but the government, led by the Prime Minister, actually calls the sessions into action.

Excerpts from the Constituent Assembly:

- **Article 85**: It is based on a provision of the **Government of India Act, 1935**. This provision specified that the central legislature had to be summoned to meet **at least once a year** and that not more than 12 months could elapse between two sessions.

- **Dr. B. R. Ambedkar:** He stated that the purpose of this provision was to summon the legislature only to collect revenue and that the once-a-year meeting was designed to avoid scrutiny of the government by the legislature. His drafting of the provision **reduced the gap** between sessions to six months and specified that Parliament should meet **at least twice a year**.

Fewer house sittings:

- Over the years, there has been a **decline** in the sitting days of Parliament. During the **first two decades** of Parliament, the Lok Sabha met for an average of a little more than **120 days** a year. This has come down to approximately **70 days** in the **last decade**.

- **This year**, Parliament has met for **42 days so far**. The situation in state legislatures is much worse. **In 2022**, 28 state assemblies met for **21 days** on average.

> **PEPPER IT WITH**
> Article 85, GOI Act 1935, Cabinet Committee on Parliamentary Affairs

- One institutional **reason** given for this is the reduction in the workload of Parliament by its **Standing Committees**. However, in recent times, **frequent disruptions** and **walkouts** have been seen as the reason.

- On multiple occasions, the **conference of presiding officers** has recommended that Parliament should meet for more than **100 days**. The **National Commission to Review the Working of the Constitution,** set up in 2000, made a similar recommendation.

Right to Repair

The **Apple company,** which was against the 'Right to Repair' movement just a few years ago, became its newest supporter.

Pre-Connect:

- Earlier in 2022, the Ministry of Consumer Affairs **(MCA)** set up a **committee** chaired by **Nidhi Khare** to come up with a **Right to Repair framework**.

- The Government launched the **Right-to-Repair portal**, where manufacturers share the manual of product details with customers.

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About:

- The Right to Repair for consumer goods refers to the concept of **allowing end users**, consumers, as well as businesses to **repair devices** they own or service without any manufacturer or technical restrictions.

- The **objective** of this Right to Repair framework is to empower consumers, harmonise trade between the original equipment manufacturers and third-party buyers and sellers, reduce e-waste and create new jobs.

- The **sectors identified** for this framework include Farming equipment, Mobiles/Electronic Displays/Data Storage components, Consumer durables, and Automobile equipment.

- Under this framework, it would be **mandatory** for manufacturers to share their **product details** with customers so that they can either repair them by themselves or by third parties, rather than only depending on the original manufacturers.

- The tech companies should provide complete knowledge and access to **manuals**, **schematics**, and **software updates,** and the software license shouldn't limit the transparency of the product on sale. The parts and tools to service devices, including **diagnostic tools,** should be made available to third parties, including individuals so that the product can be repaired in case of minor glitches.

Need for Right to Repair:

- **Right to Choose**: Manufacturers retain proprietary control over spare parts, including their design, which creates a kind of monopoly on repair processes and infringes on the customer's "Right to Choose".

- **Ownership**: The rationale behind the 'Right to Repair' is that when customers buy a product, it is inherent that they must own it completely, for which the consumers should be able to repair and modify the product with ease and at a reasonable cost without being captive to the whims of manufacturers for repairs.

- **Planned Obsolescence**: Manufacturers are encouraging a culture of 'planned obsolescence'. This is a system whereby the design of any gadget is such that it lasts a particular time only, and after that particular period, it has to be mandatorily replaced. A product that cannot be repaired or falls into planned obsolescence not only becomes e-waste but also forces consumers to buy new products.

- **High costs**: There is a considerable delay in repair, and at times the products are repaired at an exorbitantly high price.

> **Mission LiFE**:
> - The idea of LiFE was introduced by the Indian Prime Minister during the 26th United Nations Climate Change Conference of the Parties (**COP26**) in **Glasgow**.
> - The idea promotes an environmentally conscious lifestyle that focuses on '**mindful and deliberate utilization'** instead of 'mindless and wasteful consumption'.
> - LiFE is a public movement, a **Jan Andolan**, to mobilize individuals to become **'pro-planet people'**. The Mission envisions replacing the prevalent 'use-and-dispose' economy—governed by mindless and destructive consumption—with a **circular economy**, which would be defined by mindful and deliberate utilization.

- **Sustainable development**: According to the United Nations Environment Programme (UNEP), if one billion people out of the global population of eight billion adopt environment-friendly behaviours in their daily lives, global carbon emissions could drop by approximately.

Challenges:

- Several companies are against the Right to Repair, as repairing holds a **significant share** of their **revenue**.
- It will lead to decreased spending on research and development **(R&D)** by the companies, as they might be reluctant to share their technologies. Also, there are concerns about **IPR violations** through **reverse engineering** (the process in which software, machines and electronic products are deconstructed to extract design information from them).
- It has implications for **data security**, as any local vendor can have access to the data of the repaired product.
- Some companies are in favour of repair done only by authorised technicians. This will defeat the right to repair's purpose, as the **third-party small repair shops** will be **left out**.
- According to a report, only **4.7%** of the **total workforce** in India had undergone **formal skill training** for repair raising a concern about the quality of repair services.

Way forward:

- Regulation- The government should consider bringing a **regulation** on the right to repair to improve the **accessibility** of manuals, product details, software and diagnostic tools.
- Building Consensus- There is a need to build consensus towards the right to repair through **awareness drives**, **advocacy campaigns** and **tech literacy programs.**
- **Skill development mission**- It should be aligned with the requirements of the right to repair keeping the main focus on the unorganised sector.
- Tools- The **manuals**, **schematics**, **diagnostic tools** and **software** should be provided to local technicians and repair shops, while the government should also **explore** concerns about the **IPR**.

Significance

Reduce the vast mountain of electrical waste **(e-waste)** piling up each year.

B**oost business** for the repair service sector and third-party small repair shops forming part of local economies.

Save consumer's money and contribute to **circular economy** objectives by improving the life span, maintenance, re-use, upgrade, recyclability, and waste handling of appliances.

Catalyse various Government programs, like **Aatmanirbhar Bharat** and Pradhan Mantri Kaushal Vikas Yojana **(PMKVY).**

Decrease **import dependency**, to help maintain **foreign exchange reserves.**.

Global Practices:

- In the **US**, the Federal Trade Commission has directed manufacturers to remedy **unfair anti-competitive practices** and asked them to ensure that **consumers can make repairs**, either themselves or by a **third-party agency**.
- Recently, the **U.K.** has also passed a law that includes all electronic appliance manufacturers to provide consumers with **spare parts** for getting the repair done either by themselves or by the **local repair shops**.
- The **European Union** passed legislation that required manufacturers to supply parts of products to professional repairmen for a time of **10 years**.

PEPPER IT WITH

Fundamental Rights, Ministry of Consumer Affairs, Nidhi Khare Committee, Mission LiFE

India, that is Bharat

The government at the Centre has decided to use Bharat instead of India in some official communication and documents. For instance, Rashtrapati Bhawan's invitation to G20 guests had the word **"The President of Bharat".**

Pre-Connect:

- **Article 1** of the Indian Constitution mentions our country as 'India, that is Bharat' is a 'Union of States'.
- In 2015, the government told the Supreme Court that the Constituent Assembly had **"deliberated extensively"** before adopting Article 1 and that "there is no change in the circumstances to consider any change in Article 1 of the Constitution of India".
- In 2020, the Supreme Court dismissed a PIL seeking to remove India from the Constitution and retain only Bharat to ensure the citizens of this country get over the colonial past. The court stated that India is already called Bharat in the Constitution itself.

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- Almost **10 countries** have undergone the process of changing their names, with Thailand, Iran, Sri Lanka, Myanmar and Turkiye being among the few.

About:

Origins of the words "Bharat", "Hindustan" and "India":

- The **Battle of Ten Kings** was fought between the **King Sudas of the Bharat** tribe and a confederacy of tribes – Puru, Yadu, Turvasa, Anu, Druhyu, Alina, Paktha, Bhalanas, Shiva and Vishnin on the bank of the river Purushni. King Sudas of the Bharat tribe emerged victorious, and it is said that the name of the country was named after his tribe.
- The word Bharat is mentioned in the **Vishnu Purana** as the region between the **northern Himalayan mountains** and the **Southern Ocean**. Several ancient texts and epics, like **Mahabharat,** also mention the name Bharat.
- According to mythology, the son of King Dushyant and Shakuntala established his dominion and kingdom in this ancient land. After him, this land came to be known as Bharat.
- The name **Hindustan** is thought to have derived from **"Hindu",** the Persian form of the Sanskrit word **"Sindhu"** (Indus). The **Achaemenids** used the term to identify the **lower Indus basin**.
- By the 16th century AD, the name "Hindustan" was used to describe the entire **Indo-Gangetic plain**.
- The **Greeks** acquired knowledge of "Hind" from the Achaemenids and **transliterated** the name as **"Indus".** By the 3rd century BC, "India" had come to be identified with the region beyond the Indus.
- From the late 18th century onwards, **British maps** began to use the name **"India",** and "Hindustan" started to lose its association with Asia.

Debate in the Constituent Assembly:

- The **first draft** moved by Dr. B.R Ambedkar in **November 1948** didn't have the name "Bharat". Though some members flagged the omission of a native name, in **September 1949,** Ambedkar moved an **amendment to draft Article 1**. The amendment proposed for India, that is Bharat, shall be the Union of the states.
- However, this sparked a passionate discussion among the members of the Constituent Assembly. **H.V Kamath** suggested **two alternatives** – **Bharat, or in the English Language India,** shall be the Union of the states, and **Hind, or in the English language India,** shall be the Union of the states. He pointed out that in many other countries, India was still known as "Hindustan", and its inhabitants were referred to as Hindus regardless of their religion.
- Seth Govind Das, Kamalapati Tripathi, Ram Sahay and Hargovind Pant joined the debate in favour of Bharat.
- In the end, a show of hands within the Constituent Assembly resulted in 38 votes in favour of Kamath's proposal and 51 against it.
- Consequently, the original wording **"India that is Bharat shall be the Union of the States" prevailed**.

Constitution and Government aspects:

- **Article 1** declares that all the various entities comprising the country will come together as one nation, preserving the territorial integrity and sovereignty of India. It acknowledges that India, that is, Bharat, shall be the "Union of States". It also recognises both "India" and "Bharat" as the legitimate names of the country.
- The English version of the **Preamble** starts with "We the people of India..." while the Hindi version uses the word "Bharat".
- Also, the IITs, IIMs, RBI, ISRO, Indian Railways, etc. all use **"India"** in their English names while **"Bharatiya"** in their Hindi names.

Procedure to change the name:

- If the government decides to make **only "Bharat"** the **official name** of the country, it will need to introduce a **bill** to **amend Article 1** of the Constitution.
- **Article 368** provides the framework for **amending the Constitution**. It allows amendments through **two distinct processes** – a **simple majority** amendment and a **special majority** amendment.

PEPPER IT WITH
Article 1, 368

- To change the name, a special majority is required. This necessitates the **approval** of **at least two-thirds** of the **members** present and voting in both Houses of Parliament.

Online Gaming – Game of chance vs. Game of skill

The government is going to impose a **28 percent tax rate** on the full-face value of bets placed on online games will be **implemented** from **October 1**.

Pre-Connect:

- The GST Council, in its 50th meeting, applied a **28% tax rate** on the full value of online gaming, casinos, and horse trading.

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- The MeitY released the **Rules for Online Gaming**. The Rules are an amendment to the **Information Technology** (Intermediary Guidelines and Digital Media Ethics Code) **Rules, 2021**. They are applied to **real-money games** and to the **free game of skills**, which includes online fantasy sports contests, e-sports, card games, etc.
- The **Online Gaming (Regulation) Bill, 2022**, aims at preserving integrity and introducing a regulatory regime for online gaming.

About:

Online Gaming:

- Online gaming encompasses games that require an internet connection for gameplay. Generally, there are **three types** of online gaming:
  - o **E-sports:** It is a form of competition using video games, particularly between professional players, individually or as teams.
  - o **Fantasy sports:** These are online prediction games where participants assemble an imaginary or virtual team of real sports players.
  - o **Casual games:** They consist of either skill-based or chance-based online games.

Gaming Sector, according to **INVEST INDIA**:

- India is the world's **largest mobile gaming market** in terms of App downloads.
- **Revenue** from Online Gaming **grew 39%** in 2022 to 1.6 billion.
- The sector is expected to grow by **20% by FY25** to reach INR 231 billion.
- India has the **largest fantasy sports market**, with a user base of 180 million.
- There are 421 million online gamers (2022) in India, expected to reach **442 million by 2023**.
- Indian gaming **raised $ 2.8 Billion** from domestic/global investors in the last 5 years. Funding increased by 380% from 2019 and 23% from 2020.
- India has produced **3 gaming unicorns**: **Game 24X7**, **Dream11** and **Mobile Premier League**.
- **100% FDI** through **automatic route** is allowed under the **Electronic System and IT & BPM** sectors.

Game of Chance	Game of Skill
- The outcome is determined by chance.	- The outcome is determined by skill.
- No particular strategy for winning.	- A particular strategy for winning can be developed and followed.
- Based on random events.	- Based on the player's skill level
- Generally banned in India, except in Sikkim, Goa and Daman Diu. Regulated in many countries.	- Generally legal in India and most countries.
- Example: Ludo, Lottery, etc.	- Sports, chess, etc.

Online Gaming vs. Online Gambling:

- The **main differentiation** between the two is the **"presence of skill".** If the activity requires "skill" it is categorized as online gaming otherwise categorized as online gaming.
- Therefore, according to the law, **gaming activity** requires **"skill"** while **gambling activity** is based on **"chance".**

Present legal framework:

- The **Public Gambling Act 1867** and the **Information Technology Act 2000** govern online gaming activities in India. Section 66 of the IT Act deals with crimes related to computers, whereas Sections 67, 67A, and 67B deal with the discretion to make laws on the subject of online gaming, as **gambling** and **betting** are mentioned in the **state list** of the constitution.
- The **Assam Game and Betting Act 1970** fails to distinguish between the game of skill and the game of chance.
- The **Sikkim Online Gaming Act of 2008** regulates the gaming industry in Sikkim. In 2018, a provision was added - to have an identity photo to get into the zones of Sikkim - prohibiting the locals from getting into the betting games. Sikkim has a **licensing regime** for games of **skill and chance**.
- In **Nagaland**, the **Prohibition of Gaming and Promotion and Regulation of Online Games of Skill Rules 2016** inspects, regulates and keeps tabs on skill-based games like sudoku, car racing, solitaire, etc. Nagaland has a **licensing authority** for online games categorised under mere **skill**.
- In 2020, **Telangana** and **Andhra Pradesh** imposed a **ban** on any online gambling or real-money gaming activities.
- **Karnataka** has recently amended its gaming laws to **restrict** its people from playing online **games of chance**, i.e., gambling, betting, and wagering.

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Judicial Interpretations:

- **Varun Gumber v. Union Territory of Chandigarh (2017):** The Punjab and Haryana High Court held that "the element of skill" is the predominant outcome of Dream 11 games, as it is a fantasy sport. Therefore, it is exempted from the Provision of Gambling Act 1867 (PGA).
- **Gurdeep Singh Sachar v. Union of India and Others (2019):** Online fantasy sports have been classified as games of skill.

Case Study: Regulating Online Gaming in South Korea:

- In 2011, **South Korea** introduced a **"shutdown law"** that prohibited children **below 16 years** of age from playing video games **from midnight till 6 a.m.** However, such restrictions could not be upheld as individuals used virtual private networks **(VPNs)** and similar methods to bypass them, putting them at risk of falling victim to even **larger threats**.
- Considering the failure of previous efforts to prohibit online gaming in its entirety, it is clear that a **total ban is not the best solution**. On the contrary, such rules may stimulate the growth of the **underground gaming industry**.

Recent developments:

- The union government is setting up a National Animation, Visual Effects, Gaming and Comic (**AVGC) Centre of Excellence** in collaboration with **IIT Bombay**. The **AVGC Task Force** set up by the government has also given recommendations to develop the gaming ecosystem in the country.
- **Karnataka** and **Telangana** have formulated dedicated **state-level AVGC policies**.
- The government has officially **recognized e-sports** as part of multi-sport events. E-sports have been played as medal events at the **Olympics** and **Asian Games**.

MeitY's Rules for Online Gaming:

- **Three-tier dispute resolution mechanism:** It has established a **Grievance redressal system** for regulating the gaming platform and setting up a **self-regulatory organisation** for registration and certification of games online.
- It defines permissible online real money games as Games where the player deposits cash or kind in the expectation of earning more cash or winnings. The online real money games should be verified with the self-regulatory bodies.
- For verification of the users - KYC (Know your customer), the online gaming intermediaries will have to verify the user before accepting the first deposits in cash or kind in any permissible online real money games.

Challenges:

Absence of regulatory oversight	Ease of doing business	Different state regulations	Social challenges	Addiction	High rate of tax
•The **Online Gaming (Regulation) Bill, 2022** is still not passed due to which the industry is unregulated, its users are vulnerable, and responsible gaming practices are not followed.	•A vast majority of gaming companies fall within the **MSME sector**. With an increase in GST liability of over 400%, a large number of **entrepreneurs** and **start-ups** would be disproportionately impacted and may go out of business.	•States have their own form of **localized regulations** which have resulted in **fragmentation** of the online gaming industry.	•Social issues like gambling addiction and associated consequences impede the chances of the gaming industry to grow.	○It is causing children to take/steal money from their parents to continue playing the game.	•The **heavy tax burden** of 28% may discourage **FDI** inflows into the sector, leading to reduced investments, limited access to international expertise, and restricted opportunities for technology transfer.

Way forward:

- **Regulatory clarity**: The **key elements** of the **governance framework** should focus on the classification of online games; identification of skill versus chance dominance by using a data-driven approach; monetary risk and/or betting aspects involved in the game; and prevention and dealing with the problem of game addiction.
- The government can **shift the subject** of betting and gambling to the **Union List** and make **umbrella legislation** to regulate the whole gaming industry.

> **PEPPER IT WITH**
> Rules for Online gaming, Public Gambling Act 1867, Centre of Excellence

- **Re-evaluate Tax Rate:** The tax rate imposed on the online gaming sector should be **reviewed** and **reduced** to a more competitive level. This can help create a favourable environment for startups and stimulate economic activity within the sector.
- **Addiction issues** can be addressed through measures such as in-game warnings, ratings based on addictive potential, and counselling services for addicted individuals. Introducing built-in fatigue systems that alert users if they play beyond a certain number of hours should be considered by gaming operators.

Bharatiya Nagarik Suraksha Sanhita (BNSS) Bill 2023

The Union Home Minister introduced the Bhartiya Nagarik Suraksha Sanhita (BNSS) Bill 2023, which seeks to **replace** the Code of Criminal Procedure 1973 (CrPC).

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Pre-Connect:

Code of Criminal Procedure 1882 introduced a uniform law for India. → 1898 CrPC replaced 1882 Cr.P.C. → On recommendation of 5th Law Commission's 41st report, 1973 Cr.P.C came into force.

- The Criminal Procedure Code (CrPC) is a **procedural law** that states how the **police machinery** is to function as far as investigation and procedure are to be followed by **courts** during investigation and trial.

About:

Need for BNSS 2023:
- The CrPC 1973 is an **archaic document** as most of its provisions are taken from the **British-era CrPC 1898**. One of the **"Panch-Pran"** announced by the Prime Minister is to eradicate all signs of colonialism in the Amrit-kaal.
- **Advancements in technology** have led to concerns about privacy, data theft and surveillance. Moreover, the CrPC needed to be aligned with **digital India**.
- The Criminal justice system had become **extra punitive**, with many small offences leading to **incarceration,** thus leading to **overcrowding** of jails and the **pendency of cases** in courts.

Along with BNSS 2023, two more bills were introduced:
- Bharatiya Nyay Sanhita Bill, 2023 and Bharatiya Sakshya Bill, 2023.
- Bharatiya Nyay Sanhita Bill, 2023 will replace the Indian Penal Code (IPC) 1860 and Bharatiya Sakshya Bill, 2023 will replace the Evidence Act, 1872.
- All three bills collectively seek to reform the Criminal Justice System.

Key Highlights of BNSS 2023:
- The trials, appeal proceedings, and recording of depositions, including those of public servants and police officers, may be held in **electronic mode,** and the statements of the accused can also be recorded through **videoconferencing**.
- Regarding **'Zero FIR'**, the Bill proposes that citizens can lodge an **FIR at any police station irrespective of jurisdiction** limit. The FIR must be transferred **within 15 days** to the police station having jurisdiction over the place of crime. It **informs victims** about the progress of the case.
- A person accused of a crime can be **tried and convicted** in his **absence**. It also has a provision for **attaching the properties** of proclaimed offenders in India and abroad.
- The **charge sheet** will have to be filed **within 90 days**, and the court can extend the time to probe the agency by another 90 days. The **judgement by the lower court** has to be delivered **30 days** after the conclusion of the trial.
- It has fresh provisions to make the **waging of war** against the government of a foreign nation at peace with India, as well as committing depredation on the territory of such a foreign State, an offence punishable with **up to seven years** in prison.
- A **magistrate** can order any person to give samples of his signature, handwriting, voice or finger impressions for investigation without being arrested.
- About **detention by police**, police to detain or remove any person resisting, refusing or ignoring, or disregarding directions given as part of preventive action.
- On the **use of handcuffs**, it said the police officer may, "Keeping in view the nature and gravity of the offence, use handcuffs while effecting the arrest of a person."

- On the **withdrawal of cases**, the bill says if a case with a punishment of over seven years is to be withdrawn, the victim will be given a chance to be heard before the process is initiated.
- It has a provision on procedures for the timeframe to file **mercy petitions** in **death sentence cases**. After being informed by jail authorities about the disposal of the petition of a convict sentenced to death, he, his legal heir or a relative can submit a mercy petition **within 30 days** to the **Governor**. If rejected, the person can petition the **President within 60 days,** and **no appeal against the order of the President** shall lie in any court.
- On the sanction to **prosecute a government official** in criminal cases, it proposes that the **decision to grant or reject** sanction to prosecute a public servant must be reached by the government **within 120 days** of receiving a request. If the government fails to do so, the sanction will be deemed to have been accorded. **No sanction** is required in cases including sexual offences, trafficking, etc.

Significance:

- The BNSS Bill has 533 sections; 160 sections of the old law have been **changed**, 9 new sections have been **added** and 9 sections have been **repealed**. Thus, it has **completely overhauled** the criminal justice system.
- The legislation adopts a **citizen-centric approach**. It has **digitized the entire process,** from FIR to case diary, case diary to charge sheet, and charge sheet to judgment, in line with the **Digital India initiative**.
- **Videography** has been made **compulsory** at the time of search and seizure, which will be part of the case; no charge sheet will be valid without such recording by the police. This will **save innocent citizens** from being implicated.
- The **trial courts** will now be bound to give notice of framing charges to the accused person **within 60 days**. The trial judge will have to give the decision **within 30 days** of the completion of the argument, and the decision will have to be made available **online within seven days**. This will not keep the decision pending for years, greatly **enhancing** the **delivery of justice**.

Committees related to Criminal Justice system:

- **Vohra Committee, 1993**: The Committee studied the problem of the criminalisation of politics and the nexus among criminals, politicians and bureaucrats in India.
- **Malimath Committee, 2003**: It recommended that the victim should be allowed to participate and be given compensation, in cases involving serious crimes.
- **The Supreme Court Directives, 2006:** SC issued directives for Police reforms in Prakash Singh case – setting up Police Complaints Authority and Police Establishments Board, fixed tenure for DGP and separate Investigation and Law and Order functions of police.
- **Madhav Menon Committee, 2007:** It recommended ensuring respect and rights at every stage of criminal justice system.
- **Ranbir Singh Committee, 2020**: It was formed to review the three codes of Criminal law – Indian Penal Code (IPC) 1860, CrPC 1973, Indian Evidence Act 1872.

Issues:

- Every law in India has an **official translation** in the **official language of the respective State**, so the need for the CrPC to be referred to in its **Hindi name** alone is **questionable**.
- A preliminary scroll through the BNSS indicates that much of the **original language is retained**. It raises a doubt whether the changes are far too few to warrant their being enacted afresh, as **deletions and amendments** may have achieved the same purpose.
- The **remand provisions** permitting police custody **beyond the current 15-day limit**, have attracted some criticism. It has also given more **power to magistrates**, raising concerns about becoming a **police state.**

Way forward:

- The bill, now referred to the **Parliamentary panel** is a step in the right direction. There should be an **inclusive consultation** involving **all stakeholders,** including the citizens of the country. The concerns should be dealt with effectively.

PEPPER IT WITH

CrPC 1898, Panch-Pran, Malimath Committee 2003.

- Now that the bill is aligned with the Digital India initiative and the Personal Data Protection Act is already in place, the parliament needs to pass the **Digital Services Bill** as early as possible to ensure consistency in the criminal justice system.
- Authorities should also look into **human rights concerns**; the bill has to align with the **rights-based approach**, which clearly defines the **rights and responsibilities** of citizens and authorities. Thereby **eliminating** any chances of its **potential misuse**.

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SOCIAL ISSUES

Measuring Hunger across India

The Global Hunger Index (GHI) 2022, ranked India 107 among 121 countries (Nigeria 103rd and Pakistan 99th).

About State Hunger Index (SHI):

- The calculation of the SHI score involves combining the normalised values of the four indicators using the techniques recommended by the GHI.
- The SHI scores range between 0 and 100, with higher scores indicating more hunger. Scores below 10 signify low hunger, 10-20 moderate, 20-30 serious, 30-40 alarming, and 50 or above extremely alarming.

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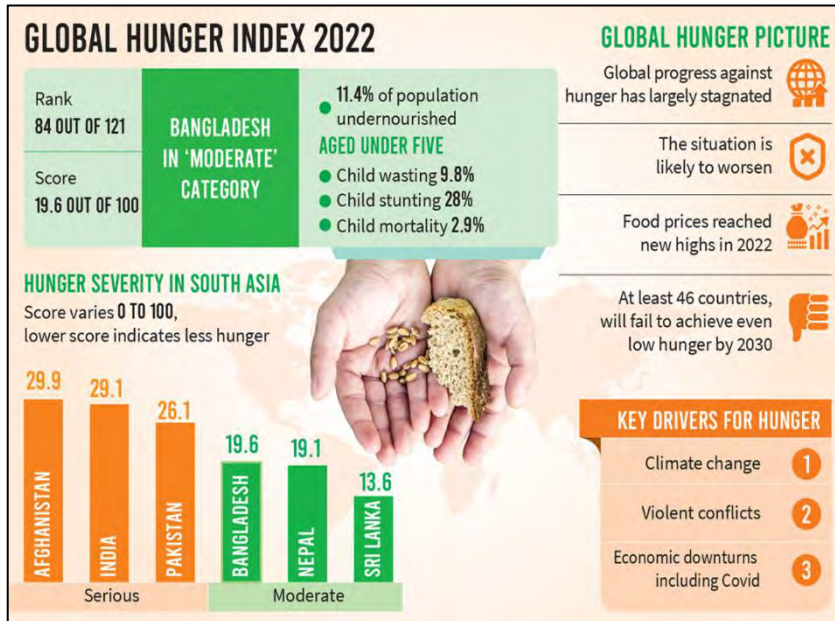
About the GHI Report:

- The GHI provides a composite measurement and tracks undernourishment and hunger at the national level across three major dimensions: *calorie undernourishment*, *child malnutrition*, and *under-five mortality*.
- It is computed using four indicators-
  - Prevalence of calorie undernourishment;
  - Stunting, wasting;
  - Mortality among children below the age of five;
  - Under-five mortality rate.
- According to the State of Food Security and Nutrition in the World Report of 2022, India is home to **224.3 million undernourished people**. Disparities are evident among States.
- By leveraging this data, GHI enables the development of an India-specific hunger index at the level of States and Union Territories.

Major observations from the report:

- States with the problem of Serious Hunger (above 20):
  - **Alarming category:** Bihar, Jharkhand, and Chhattisgarh- scored 35.
  - **Above average**: Gujarat, Uttar Pradesh, Assam, Odisha, Madhya Pradesh, Tripura, Maharashtra, and West Bengal- all scored above 29.
- **Moderate hunger category states**: Chandigarh scored 12, and Sikkim, Puducherry, and Kerala- all scored below 16. Manipur, Mizoram, Punjab, Delhi, Arunachal Pradesh, Andaman and Nicobar Islands, and Tamil Nadu also fall under this category.
- No State falls under the 'low hunger' category.
- **Punjab** led the list, with **Kerala** and **Andhra Pradesh** following closely as *top performers*.

Reasons behind low performance:

- **Undernourishment**: India's GHI score has deteriorated primarily due to the increasing prevalence of calorie undernourishment.
  - According to the **Food and Agriculture Organization (FAO)**, the proportion of calorie undernourishment in India has been escalating since 2017, reaching 16.3% in 2020.
  - **The National Sample Survey (NSS)** (2011-12) on nutritional intake has also been conducted, which offered insights into the prevalence of calorie undernourishment.
- **Child malnutrition:** India ranks unfavourably in child wasting, performing worse than many low-income African nations.
  - The **NFHS-5** indicated that one-third of children under the age of five are stunted and underweight, while every fifth child suffers from wasting.
- **Child Stunting and Mortality:** Despite India's notable progress, for example, Child stunting (low height for age) has declined from 38.7% to 35.5% between 2014 and 2022 and child mortality under 5yrs has dropped from 4.6% to 3.3% in the same comparative period, still challenges persist in addressing the disparity in food insecurity, hunger, and child malnutrition.

> **Other side of the coin?**
> - The data collected from the **government-run rural childcare centres** showed that more than 43 lakh children in the 0-5 age group were identified as obese or overweight last month, accounting for around 6% of the total children surveyed at Anganwadi centres across the country.
> - There has been a notable increase in the percentage of children under five years of age who are overweight in **NFHS-5** (2019-21) compared to NFHS-4 **(2015-16).**
> - **States with over weighted children (0-5 yrs):** *Mizoram, Arunachal Pradesh, and Jammu and Kashmir* recorded the highest percentages, followed closely by Sikkim and Tripura.
> - **States with lower weighted children (0-5 yrs**): *Madhya Pradesh, Bihar, and Andhra Pradesh* reported the lowest percentages.
> - **Causes of increase in overweighed children:**
>   - **Fast food:** A study found out the purchase of marketed snacks is increasingly influenced by children's preferences, leading them to consume fast foods and sugary drinks, accumulating empty calories that their sedentary lifestyle.
>   - **Low Income and Cost effect:** The cost of nutritious vegetables, fruits, and protein sources has become unaffordable for many low-income families.
>   - **Behavioural Issue:** Addressing childhood obesity must begin with proper parenting. Raising awareness among parents about what constitutes a balanced diet is crucial.

Initiatives by Government to tackle Hunger Issues:

- **Zero Hunger Programme**: It was started **in 2017** by the Indian Council of Agricultural Research, the Indian Council of Medical Research, the Biotechnology Industry Research Assistance Council (BIRAC) and the **M.S. Swaminathan Research Foundation** to improve agriculture, health and nutrition. This Programme aims at:
  - Decreasing child stunting for children below 2 years.
  - Making sure access to food all year round
  - Creating stable food systems
  - Increasing small farmer productivity and income
  - Eliminating food wastage.
- **National Food Security Mission (NFSM):** It was launched in **2007-08** with the aim to increase the production of rice, wheat and pulses through Expansion of area and productivity enhancement, Restoring soil fertility and productivity, Generating employment opportunities and Enhancing farm level economy.
- **SDGs (Goal 2: Zero Hunger):** The SDGs aim to end all forms of hunger and malnutrition by 2030, making sure all people– especially children–have sufficient and nutritious food all year. This involves promoting sustainable agriculture, supporting small-scale farmers and equal access to land, technology and markets. It also requires international cooperation to ensure investment in infrastructure and technology to improve agricultural productivity.

Way Forward: Identifying vulnerable population groups, and contributing to evidence to inform decision-making and effective action through the appropriate targeting and design of policies and programmes are necessary to fill the gaps. The role of local governments as fundamental actors in leveraging multilevel and multi-stakeholder mechanisms can prove effective in making healthy diets available and affordable for all.

> **PEPPER IT WITH**
> State Hunger Index, Global Hunger Index, NFHS-5, SDG-2 (Zero Hunger), nutritional security

Osteoarthritis cases: Lancet study

A new study conducted by *Lancet* led by researchers at the Institute for Health Metrics and Evaluation (IHME) in the US, as part of the Global Burden of Disease Study 2021, projected that nearly 1bn people will be living with osteoarthritis by 2050.

What is osteoarthritis?

- *'Arthritis'* literally means **joint inflammation**. Osteoarthritis is the most common form of arthritis, affecting millions of people worldwide.
- It occurs when the **protective cartilage** that cushions the ends of the bones wears down over time.
- It has been found that cases increased rapidly over the past three decades because of **3 main factors**: Ageing, Population Growth, and Obesity.

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- There **is no effective cure for osteoarthritis** as of now; hence it becomes necessary to focus on strategies of *prevention, early intervention, and making expensive, effective treatments* like joint replacements more affordable in low and middle-income countries.
- Researchers believe that **genetics, hormonal factors,** and **anatomical differences** play a major role and hence women than men are expected to continue grappling with this condition.

Indian Scenario:
- In India, **Osteoarthritis (OA)** is the **second most common** rheumatologic problem and it is the most frequent joint disease in the country with a prevalence of 22 per cent to 39 per cent.
- Around 23.46 million individuals in India had OA in *1990*; this increased to 62.35 million in 2019.
- Osteoarthritis **treatment in India is of two kinds**: Conventional medication and joint replacement and advanced medication including **stem cell therapy** (both expensive).
  - In this therapy, **Mesenchymal Stem Cells (MSCs)** possess the ability to release anti-inflammatory factors, thereby promoting healing and reducing pain

Challenges:
- **Expenditure:** Health is a state subject. The lack of strengthening of infrastructure, human resource skilling and development, health promotion and awareness programmes are the main reasons why India is performing poorly as compared to the current demands of the population.
- **Specialist doctors Shortage**: Currently, there is a shortage of trained medical professionals to address the increasing burden of OA in India.
  - According to the **Medical Council of India (MCI),** in the year 2020, there were 1.25 million registered medical doctors in India, but only 0.3 million doctors were registered as specialists, with around 20,000 orthopaedic surgeons.

Initiatives by Government:
- In 2010, the government launched **the National Programme for the Health Care for the Elderly (NPHCE).** This program aimed to provide access to appropriate preventive and curative services to the elderly through a **community-based primary healthcare model.**
- **Ayushyaman Bharat:** In early 2018, the government launched the **National Health Protection Mission** initiative that aimed to deliver comprehensive primary healthcare for non-communicable diseases that include **musculoskeletal disorders such as arthritis, joint pain, and back pain.**

Case Study:
A 62-year-old woman, in a good health state, suffered osteoarthritis for 3 years; this was accompanied by *varicose vein* and *thrombosis*. She had pain in her left knee, affecting her walking ability and preventing her from going up or down stairs. However, taking a dynamic treatment and good diet, and drinking plenty of water she recovered in just four courses of treatments.

Way Forward:
- **For Reducing Obesity**: Healthcare systems and governments have an opportunity to engage and participate in identifying vulnerable populations, addressing drivers of obesity, and developing management strategies to prevent or slow down the progression of OA.
- **Capacity building**: There is a need to build the capacity *of trained medical and paramedical professionals* to address the increasing burden of disease in the *geriatric population*, including *arthritis*.
- **Need for Policy shift**: The Burden of OA in each state of India can be designed on evidence-based decentralized health policies as recommended by the *National Health Policy* and the *NITI Aayog* Action Agenda.
- Adopting **suitable control** and **preventive community measures** to reduce modifiable risk factors is needed to reduce the current and future burden of OA in India.

Diagnosed and future projections of Arthritis
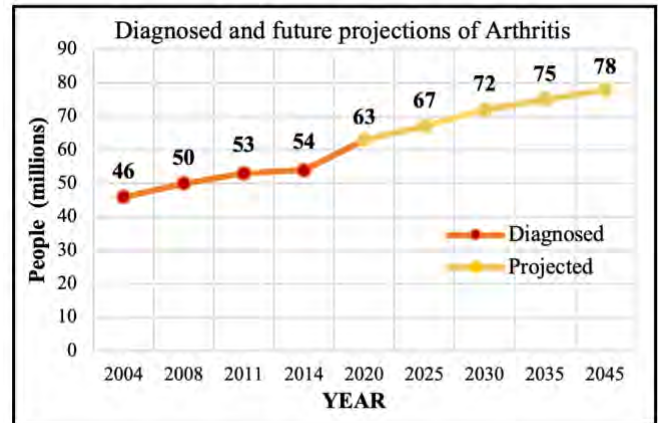
Major Observations by Report:
- **Obesity** is a major contributor to osteoarthritis. In 2020, obesity was responsible for approximately 20% of the disability of osteoarthritis.
- Osteoarthritis **increases with age**. *For Example:* For ages 70+, the condition ranked seventh among causes for years lived with disability (YLDs).
- The most common spots for osteoarthritis are **knees and hands**. By 2050, osteoarthritis of the knee will increase by 75%, and of the hand by 50%.

PEPPER IT WITH
Global Burden of Disease study 2021, Ayushman Bharat, National Health Policy

National Multi-dimensional Poverty Index

In a recent Report published by Niti Aayog, India has registered a decline in the number of "**multidimensional poor**" individuals, from 24.85 per cent in 2015-16 to 14.96 per cent in 2019-2021.

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What is the Multi-dimensional Poverty Index?

- Multidimensional Poverty Index (MPI) captures overlapping deprivations in **health**, **education** and **living standards** and other broader qualitative aspects of life, like child mortality, housing conditions, and other basic services such as water and sanitation to ascertain multidimensional poverty.

- Under the three broad indicators of health, education and living standards, Niti Aayog assigns specific dimensions – such as *nutrition* and *child adolescent mortality* under health, *years of schooling* under education, and *access to cooking fuel*, *electricity*, *bank accounts* etc. under quality of living.

- Each of these specific parameters are assigned a value to calculate what is called a '*deprivation score'*. If it is more than 0.33, only then an individual is considered as 'Multidimensional poor'.

Highlights of Multidimensional Poverty Index:

- **Head count and Intensity of Poverty:** MPI is a major contribution towards achieving SDG target 1.2 which aims to reduce poverty in all its dimensions. This indicates that India is well on course to achieve the SDG target 1.2 much ahead of 2030.

- **Disparities across Rural and Urban Areas**: The incidence of poverty fell from 32.59% to 19.28% in rural areas compared to a decline from 8.65% to 5.27% in urban areas between 2015-16 and 2019-21.

- **Performance of States/UTs:** The MPI estimates show that States/UTs have displayed notable improvements in their MPI score from 2015-16 to 2019-21 as given below:

  o **Fastest Absolute Reduction in MPI (State-wise)**: Bihar, the state with the highest MPI value in NFHS-4 (2015-16), saw the fastest reduction in MPI value in absolute terms with the proportion of multidimensional poor reducing from 51.89% to 33.76% in 2019-21. It was followed by Madhya Pradesh and Uttar Pradesh.

Snapshot of Multidimensional Poverty in India

Year	Headcount Ratio (H)	Intensity of Poverty (A)	MPI (H x A)
2019-21	14.96%	44.39%	0.066
2015-16	24.85%	47.14%	0.117

  o **Indicator-wise Comparison of Deprivations:** All the 12 indicators across the three dimensions – Health, Education and Standard of Living – saw statistically significant reductions across the two time periods. Deprivations in sanitation (reduction by 21.8 % points) and cooking fuel (reduction by 14.6 % points) fell the most during the period from 2015-16 to 2019-21. Overall, progress in nutrition, years of schooling, sanitation, and cooking fuel has been the significant contributor to the decline in MPI value though there is further scope to make improvements.

Significance of the Report:

- **Targeting vulnerable areas**: It will also enable them to track the progress of the vulnerable hotspots and pinpoint areas that require further targeted policy interventions and programmatic action.

Steep decline in
Poverty Headcount Ratio

24.85% (2015-16)
14.96% (2019-21)

135 million (13.5 crore) people exited multidimensional **poverty** between 2015-16 and 2019-21

India on track to achieve
SDG Target 1.2 (reducing multi-dimensional poverty by at least half) much ahead of 2030

All **12 indicators have shown improvement** suggesting that impact of Government interventions is increasingly visible on ground

Fastest decline in percentage of multidimensional poor in rural areas from

32.59% 2015-16
19.28% 2019-21

Reduction in the incidence of poverty in urban areas

8.65% (2015-16)
5.27% (2019-21)

The **Intensity of poverty**, which measures the average deprivation among the people living in multidimensional poverty improved from about

2015-16 47.14%
44.39% 2019-21

UP, Bihar, MP, Odisha and Rajasthan recorded steepest decline in number of **MPI poor**

Improvement in **nutrition, years of schooling, sanitation, and cooking fuel** played a significant role in reducing the MPI value

= MPI Value

- **Local Governance and Direct benefits**: The report will serve as a valuable resource for States and Union Territories to identify and amplify actions that have triggered progress since the findings of the Baseline Report, right up to the district level.
- **For Program implementation:** The Government's focus on investments in critical areas of education, nutrition, water, sanitation, cooking fuel, electricity, and housing can access this report for implementing schemes such as Swachch Bharat Mission (SBM), Jal Jeevan Mission (JJM), Poshan Abhiyan, Samagra Shiksha, Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya), etc.
- **Awareness among citizens:** The baseline report of the national MPI has been pivotal in raising awareness among state governments, academia, civil society, and citizens.

> **PEPPER IT WITH**
> NFHS 4, SDG 1.2, Swachh Bharat Mission, Saubhagya scheme

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Patient Safety Rights Charter for 2021-2030

The WHO released the first-ever Patient Safety Rights (PSR) Charter outlining the core rights of all patients in the context of the safety of healthcare in September 2023.

Patient Safety Rights Charter:

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- The Charter outlines the *core rights of all patients* in the context of safety of healthcare and provides an action plan on **Global Patient Safety Framework for 2021-2030**.
- **Aim:** It seeks **to assist governments and other stakeholders** to ensure that the voices of patients are heard and their '**Right to Safe Healthcare**' is protected.

Observations from the Charter:

- **Collective Responsibility:** Health systems must work hand-in-hand with patients, families, and communities, so that patients can be informed advocates in their own care, and every person can receive the safe, dignified, and compassionate care they deserve.
- **Purpose of seven strategic Objectives for action:**
  - To reduce the risks and to improve the safety of patient care in every part of the world.
  - To mobilize each stakeholder to do the very best they possibly can within their operating context and resource availability.
  - Designing and operating safe care processes and pathways, for example, High-technology maternity service to reduce maternal deaths from post-partum haemorrhage.
- **Principles of the Plan:**
  - Engage patients and families as partners in safe care.
  - Achieve results through collaborative working.
  - Analyze and share data to generate learning.
  - Translate evidence into actionable and measurable improvement.
  - Base policies and action on the nature of the care setting.
  - Use both scientific expertise and patient experience to improve safety.
  - Instill a safety culture in the design and delivery of healthcare.

The framework includes seven strategic objectives, which can be achieved through 35 specific strategies:

1. Make zero avoidable harm to patients a state of mind and a rule of engagement in the planning and delivery of health care everywhere
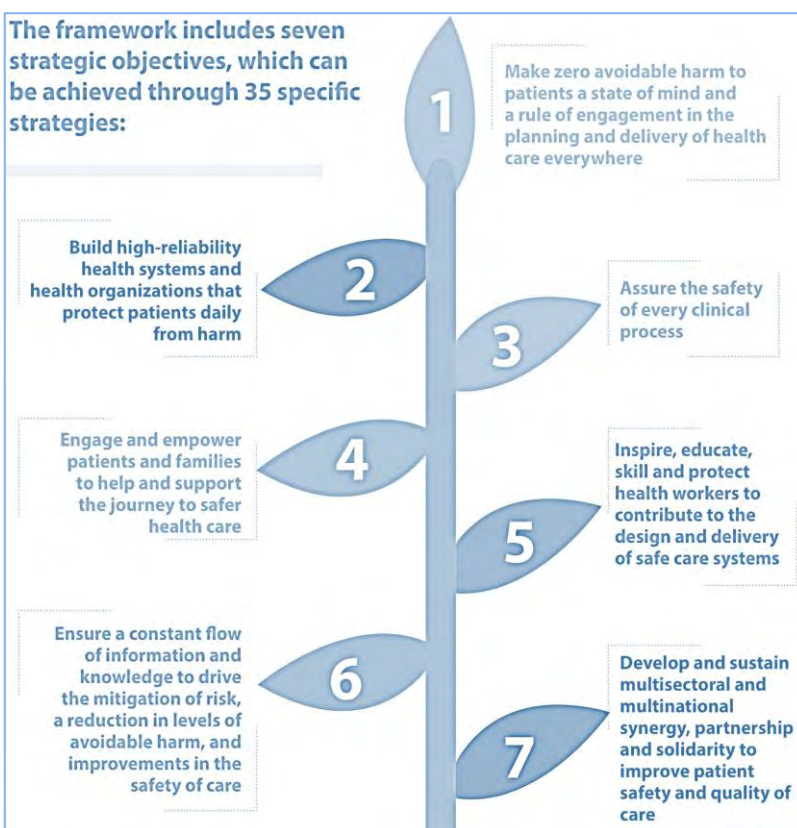2. Build high-reliability health systems and health organizations that protect patients daily from harm
3. Assure the safety of every clinical process
4. Engage and empower patients and families to help and support the journey to safer health care
5. Inspire, educate, skill and protect health workers to contribute to the design and delivery of safe care systems
6. Ensure a constant flow of information and knowledge to drive the mitigation of risk, a reduction in levels of avoidable harm, and improvements in the safety of care
7. Develop and sustain multisectoral and multinational synergy, partnership and solidarity to improve patient safety and quality of care

- **Partners in Action:**
  - To achieve the goal and strategic objectives of the **Global Patient Safety Action Plan 2021-2030**, it is important that partnerships develop at both the strategic and operational levels.
  - Collaboration in this way will add particular value to patient safety endeavours and strengthen the efforts of individual organizations.
  - **Four broad categories of partners** have been identified to support the implementation of the global action plan.
    - Governments, Healthcare facilities and services, stakeholders and WHO secretariat.
    - The action plan also envisages patients, families and communities as key partners at all levels of action.

Global Scenario:

- **Reports and Stats:** According to **Organization for Economic Co-operation and Development (OECD),** around 1 in every 10 patients is harmed in healthcare and more than 3 million deaths occur annually due to unsafe care.
  - In *low-to-middle income countries (LMIC)*, as many as 4 in 100 people (5.7 and 8.4 million) die from unsafe care.
- **Deaths due to poor service:** Some of the most common sources of patient harm are *medication errors, surgical errors, healthcare-associated infections, sepsis, diagnostic errors* and patient falls.

o Due to the poor-quality healthcare system, each year, years of life people lived with disability amounting up to 107 million, primarily among those living with mental illness and untreated diabetes.

Present Indian Scenario w.r.t. Right to Safe Healthcare:

- **Right to Life:** Article 21 imposes an obligation on the state to safeguard the right to life of every person. Preservation of human life is thus of paramount importance. The government hospitals run by the state are duty-bound to extend medical assistance for preserving human life.
- **National Accreditation Board for Hospitals (NABH**): Patients have a right to receive quality healthcare according to currently accepted standards, norms and standard guidelines as per the *National Accreditation Board for Hospitals (NABH)* or similar. They have a right to be attended to, treated and cared for with due skill, and in a professional manner in complete consonance with the principles of medical ethics.
- **The Consumer Protection Act, 1986:** Patients and caretakers have *a right to seek redressal* in case of perceived medical negligence or damage caused due to deliberate deficiency in service delivery.
- **National Clinical Establishments Council set up in Clinical Establishment Act 2010**: Patients have the right to receive education about major facts relevant to his/her condition and healthy living practices, their rights and responsibilities, and officially supported health insurance schemes relevant to the patient as per *Right to Patient Education*.
- **Clinical establishments (Central Government) Rules 2012:**
  o Patients have a right to be provided with care in an environment having requisite cleanliness, infection control measures, and safe drinking water as per **BIS/FSSAI Standards** and **sanitation facilities.**
  o The hospital management must ensure the safety of all patients in its premises including *clean premises* and provision for *infection control*.

> **PEPPER IT WITH**
> Global Patient Safety Framework, Article 21, Right to safe healthcare, Consumer Protection Act 1986

Way Forward: The Indian Government needs to invest in patient safety to positively impact health outcomes and reduce costs related to patient harm, which will eventually improve system efficiency and will also help in reassuring communities and restoring their trust in the governmental healthcare system.

Female Suicides in India

September 10 marked the observance of *World Suicide Prevention Day*, where it was observed that of female suicides, housewives had on 50% share.

Female Suicides in India:

- While more men (1,18,979) than women died by suicide in India, a deviation from the pattern was observed in those aged below 18, where the incidence of suicide was higher in females.
- According to **NCRB data**, as many as 45,026 women died by suicide in India in 2021; nearly 1 every 9 minutes.
  o Over **half of them, 23,178 females were housewives.** On average, 63 housewives died by suicide every day in India in 2021.
- **Indian women make up 36% of all global suicides** in the 15 to 39 years age group – the highest share of any nation in the world.

Causes of Female Suicide in India:

- **Family problems:**

- o **Female feticides:** More than 10 million female fetuses may have been illegally aborted in India since the 1990s and 500,000 girls were being lost annually due to female foeticide.
- o **Gender-based discrimination:** This inherent bias is still prevalent within the family and is reflected in the *health* of a girl child as well as in *education* which leads to weak capacity and results in female suicides.

Year	Female suicides	% of housewives
2021	45,026	51.5%
2020	44,498	50.3%
2019	41,493	51.5%
2018	42,391	54.1%
2017	40,852	52.5%
2016	41,997	51.3%
2015	42,088	53.0%
2014	42,521	47.4%

- **Marriage issues:**
  - o According to the *UN Women's Progress of the World's Women* report, India has one of lowest divorce rates in the world, only 1.1 % of women aged 45-49 were divorced by 2010.
  - o However, this does not necessarily mean these marriages are happy. According to the recent **NCRB** data, a higher number of those in unhappy marriages seem to be choosing death over divorce.
  - o The report also shows that the number of women who committed suicide owing to **'marriage-related issues'** was *more than that of men*.
    - ▪ **Patriarchy and Sexual Violence:** The **NFHS (2019-21)** highlights the challenging circumstances faced by married women, including *limited mobility, restricted financial autonomy, and marital control, as well as physical, sexual, and emotional abuse* at the hands of their spouses.
    - ▪ **Low Income and dependency**: Additionally, the data show that women in the lowest income bracket experience greater levels of violence and less freedom compared to those from wealthier households.
- **Uncertainty of Career:**
  - o **Exam Stress:** The high number of deaths due to failure in examinations is symptomatic of the larger problem of female student suicides. As many as 13,089 students killed themselves due to 'exam stress' in 2021 – the highest in 5 yrs.
    - o **Social insecurity:** The fear of social insecurity-poverty and unemployment are also found to be a major reason for female suicide at a young age (below 18yrs).

Educational level-wise distribution of female suicides in 2021

- **No education:** 5,774
- **Primary education (up to 5th grade):** 7,552
- **Middle education (up to 8th grade):** 8,501
- **Matriculate/ Secondary education (up to 10th grade):** 10,079
- **Intermediate/Higher secondary education (up to 12th grade):** 7,011
- **Graduate and above:** 2,070
- **Professional degrees:** 161

- **Mental Health:** NCRB has thrown light on some grim trends, fuelling concern over the mental health and social status of women in India. Irrespective of education and financial independence, women are still not as empowered as we would like to believe.

Challenges in India:

- **A Multifaceted problem**: The problem of female suicides in India is extensive and multifaceted. The data points to no clear solution to the issue – education, income, and marriage singularly do not seem to offer a protective advantage.
- **Lack of research:** According to the Lancet's study (2018) on female suicides in India, more qualitative research is required to understand the efficacy of approaches to ameliorate the problem of suicidal deaths.
  - o *For example*, if education was the solution to reduce suicide deaths in females, then South India should have a lower death rate, but it does not. Hence, we need sound and qualitative research to understand the main issue.

Can Education and generation of employment help this rising issue of Married Female suicides in India?

- **Building their mental capacity through Education and skilling:** Of the 9,426 female suicides due to illnesses, 43.25% – 4,077 – were due to mental illness. Therefore, if they are educated and trained for skill enhancement through better educational mediums at the local level, their mental capacity to handle challenges will improve atleast.
- **Making them financially independent**: 1,503 of the marriage-related suicide deaths were over dowry, while 217 were linked to divorce. Nearly 67.5% of female suicides over marital issues were below the age of 30. Therefore, if they are made financially independent through better targeted system, this number will eventually go down.

ECONOMY

Crypto Can't Be Legal Tender: IMF-FSB Paper

The International Monetary Fund and the Financial Stability Board have jointly developed a paper titled **"Policies for Crypto-Assets",** at the request of the **Indian G20 Presidency**.

About "Policies for Crypto-Assets" Paper:

- The paper sets out a roadmap towards a coordinated policy response for crypto-assets. **Central bank digital currencies (CBDCs) are not within the scope** of this paper**.**
- The paper recommends that Crypto assets **should not be granted official currency or legal tender status but it has also argued against an outright blanket ban** on crypto assets.
- Potential benefits of Crypto-assets include cheaper and faster cross-border payments, increased financial inclusion, greater portfolio diversification and operational resilience, increased transparency and traceability of transactions.

Recommendations of the paper:

- **Safeguard monetary stability:** Direct connections between crypto-assets and systemically important financial institutions have been limited but their increased adoption, can hamper monetary stability. Countries should also avoid holding crypto assets in official reserves due to the volatile nature of their value.
- **Safeguard Financial stability**: If interconnections between crypto-asset activities and the traditional financial system were to increase, the spill-over effects may impact important parts of traditional finance. They could amplify existing vulnerabilities and pose new risks to global financial stability.
- **Fiscal and Exchange Rate Risk**: Outlining the fiscal risks, the synthesis paper said that if crypto assets were granted official currency or legal tender status, government revenues could be exposed to exchange rate risk.
- **Safeguard monetary sovereignty**: An effective Monetary-Policy Framework (MPF) safeguards the monetary sovereignty of any country. The transmission of monetary policy would weaken if firms and households prefer to save and invest in crypto-assets that are not pegged to the domestic fiat currency. The borderless nature of the crypto-assets ecosystem limits the effectiveness of individual national regulation.
- **Guard against excessive capital flow volatility:** Policymakers should guard against excessive capital flow volatility by taking steps such as **clarifying the legal status of crypto assets.** The

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INTERNATIONAL MONETARY FUND:
Established in 1944.
India is a founder member.

FINANCIAL STABILITY BOARD:
Monitors and makes recommendations about the global financial system.
Decisions not legally binding.
India is a member.

What is cryptocurrency?

A cryptocurrency is a digital or virtual currency **secured by cryptography**, which makes it nearly **impossible to counterfeit or double-spend**. Its defining feature is that they are **generally not issued by any central authority**, rendering them theoretically immune to government interference or manipulation. They are by definition borderless and require international collaboration to prevent regulatory arbitrage.

India and the crypto market:

It is expected to grow at a significant Compound Annual Growth Rate (**CAGR) of over 9.2%** over the forecast period of 2023-2028.

Legality of cryptocurrencies in India:

- Neither the government nor the central bank, the Reserve Bank of India (RBI), has recognized cryptocurrencies.
- In the recent **Union Budget 2022**, the government of India announced a **30% tax on gains from cryptocurrencies and a 1% tax deducted at source**.

Implications of crypto-assets	Policy responses
Macroeconomic stability	• Safeguard monetary sovereignty & stability • Guard against excessive capital flow volatility • Address fiscal risks & adopt unambiguous tax treatment • Monitor the impact of crypto assets on IMS
Financial stability implications and regulatory issues	• Adopt FSB's high level recommendations for crypto assets & GSCs and relevant SSB standards • Consider targeted measures (if appropriate)
Other *Legal • Financial integrity • Market integrity • Environmental risks*	• Confirm legal treatment & provide clear guidance • Implement & enforce FATF standards • Address market integrity issues

Source: IMF/FSB authors

paper has cautioned that if capital flow management measures become less effective, jurisdictions may need to consider greater exchange rate flexibility, balancing the three competing objectives of the Impossible Trinity of **monetary autonomy, exchange rate stability and free capital flows.**

- **Amplified macro-financial risks for emerging and developing economies**: They may face amplified macro-financial risks from crypto assets **due to a less developed tax framework, large unbanked population, and larger cross-border transaction costs.** Thus, it is necessary to clarify the financial law application and treatment of crypto-assets, where necessary.

- **Security concerns**: The FSB and IMF have also drawn attention towards **money laundering, terrorist financing, and the proliferation of weapons of mass destruction risks** associated with virtual assets. The report has asked countries to identify and take appropriate steps to manage and mitigate those risks, including the adoption of **Financial Action Task Force (FATF)** standards.

Conclusion: The paper recognizes the complexities surrounding cryptocurrencies **and advises against outright bans** as this move can be costly as well as technically demanding to enforce. It encourages countries to recognize that the cryptocurrency space is continuously evolving and regulatory approaches in India and other countries **should strike a balance between fostering innovation and protecting consumers and the financial system**.

> **PEPPER IT WITH**
> IMF, FSB, Cryptocurrency, Financial Action task force

India's CAD Narrows Sharply

India's Current Account Deficit (CAD) **narrowed sharply** in Q4 Fiscal Year (FY) 22- 23 to $1.3 billion or 0.2% of Gross Domestic Product (GDP). A year ago, in Q4, the CAD was at $ 13.4 billion, or 1.6% of GDP.

Pre-Connect:

- The current account deficit is a key indicator of a country's external sector. When the **value of the goods and services that a country imports exceeds the value of the products it exports**, the country finds itself in a Trade Deficit (TD).

- Trade of Goods and Services is the largest component of the Current Account; thus, a Trade deficit typically leads to a Current account deficit as well.

- A study of CAD remains important as it affects the overall economic sentiments both international and domestic, people's investments as well as stock market performance.

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> **Current Account**- The exchange of goods, services and transfer payments is recorded for the current period and hence it is called current account. **Can there be a CAD, with trade surplus?** Yes, it is factually possible but highly unlikely in real world.

Why has India's CAD narrowed sharply?

- **Lower trade deficit**: As per RBI, the sequential decline in CAD was mainly due to a **moderation in the trade deficit**.

- **Robust services exports**: The services trade surplus rose due to a healthy uptick in services exports such as **IT, business, and travel services**.

- **Increase in remittances**: The RBI's data revealed that private transfer receipts, mainly representing remittances by Indians employed overseas, increased.

- **Lower outflow of Net FPI:** Net foreign portfolio investment (FPI) recorded a lower outflow as compared to the last fiscal.

- **Lower net external commercial borrowings**: Net external commercial borrowings to India recorded an inflow of $1.7 billion, as against an outflow of $2.5 billion during Q3.

Advantages of a low CAD:

- **Signals economic stability**: A lower CAD leads to an increase in positive rational expectations in the market that stems from safe and secure parking of funds. This signals the stability of the Indian Economy.

- **Improvement in sovereign credit rating**: When there is a lower deficit, it is seen as a positive sign by credit rating agencies. The lower the deficit, the more stable the macro-economic parameters of the country leading to better chances of debt repayment.

- **Reduced the cost of borrowing**: India's improved credit rating can reduce the cost of borrowing for the government and businesses. As per the theory of the discriminary rate of interest, credit-worthy businesses are charged a lower rate of interest.

- **Appreciation of the Indian Rupee**: If the CAD is low then it leads to an appreciation of the Indian rupee against other currencies. With added confidence of stability, exports increase and lead to a greater demand for the Indian rupee, leading to the appreciation of the domestic currency.

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India's Main Challenge: A High CAD

Emerging economies tend to have a higher value of CAD than their developed counterparts as they import from others more than what they export from others.

Is a high value of CAD bad?

- It depends on **how the money was financed** and **what the borrowed money is being used for.**
- If the money is majorly financed from outside, this gives more ownership to foreign holders in our capital assets with an added fear of rapid outflow of funds, leaving the domestic economy vulnerable.
- If it is being used for capital investments rather than day-to-day expenditures, then in the long run, this would lead to the creation of capital infrastructure as well as a repayment of the acquired debt as it starts the virtuous cycle of employment.

Measures taken by India to moderate its CAD

- **Boosting domestic manufacturing:** Aatmanirbhar packages, Make in India campaign, Production Linked Incentive (PLI) scheme, Mega Food Parks, National Monetization Pipeline and National Infrastructure Pipeline etc. are being used to take investments to improve manufacturing capabilities and reduce import bills.
- **Focusing on Export-Led Growth:** The government is encouraging exports by providing incentives for export-oriented industries such as RoDTEP, SEIS, and NIRVIK scheme as well as GST refunds for exporters.
- **Enhancing the competitiveness**: The competitiveness of Indian products is being enhanced through quality improvement and cost reduction with schemes such as the National Manufacturing Competitiveness Programme and Zero Defect, Zero Effect.
  - **Attracting FDI:** Promoting FDI in sectors that can help boost exports and reduce import dependency such as allowing automatic route in FDI, Ease of doing business, reducing corporate tax rates and Modified Electronic Manufacturing Clusters etc.
  - **Reducing reliance on oil imports:** Energy conservation measures, boosting the use of renewable energy such as through International Solar Alliance, Renewable Purchase Obligations as well as E-vehicles, and flexi fuel cars are steps taken in this regard.
- **Diversifying export markets:** Reduce reliance on a few major trading partners. Schemes such as Focus Market, Focus Product and using Defence Attaches in foreign missions are a step towards the same.

> **PEPPER IT WITH**
> BoP, Trade Deficit, Current Account, Make in India, RoDTEP, Zero effect zero defect

Conclusion:

Prudent economic policies and associated government interventions can help India achieve a more sustainable balance in its current account in the long run. **Moderate figures of CAD financed by stable domestic and foreign investments** would prove to be beneficial in the long run for the stability of the Indian currency as well as the Indian economy overall.

INDIA IMPOSES ANTI-DUMPING DUTY ON CHINESE STEEL

India imposed an anti-dumping duty on some Chinese steel for five years.

Details on the news:

- The move comes amid a **62% rise in steel imports from China to India** between April and July 2023, compared to the same timeframe last year. China had to beat South Korea to become the biggest steel exporter to India.
- The evidence of export price indicates that the Chinese exporters are exporting the goods to third countries at significantly dumped and injurious prices.
- Such duty on steel wheels was imposed in **2018** and now the ministry has recommended a continued imposition for **another five years**.
- As per government, there is **healthy competition in the Indian market** and continuation of the duties would **not deprive the domestic industry** of any requirements.

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Pre- Connect:

What is an Anti-dumping duty?

An anti-dumping duty is a protectionist tariff that a domestic government imposes on foreign imports that it believes are **priced below fair market value**.

> **China** is the largest **producer of steel** in the world, accounting for almost half of the world's total output. Other major steel-producing countries include Japan, India, Russia, South Korea, and the United States.
> **Top net importers of finished steel** equivalent are US, Russia, UK, Canada, France, etc.

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Other types of duty

- **Basic Customs Duty**: This duty is imposed on the value of goods at a specified rate as it is fixed on an ad-valorem basis. After being amended time and again, it is currently regulated by the **Customs Tariff Act, 1975**. The Central Government, however, holds the right to exempt specific goods from this tax.
- **Countervailing duty:** It is also known as duties, is a trade import duty imposed under World Trade Organization rules to neutralize the negative effects of subsidies
- **Protective Duty**: This duty is imposed in order to **shield the domestic industry** against the imports at rates that are recommended by the Tariff Commissioner.
- **Safeguard Duty:** As the name suggests, this duty serves as a means of safeguarding the **rise in exports**. Sometimes, if the government feels that a rise in exports can damage the existing domestic industry, it may levy this duty.

Merits of imposing Anti-dumping duties:

- **To maintain a level playing field**: These measures can help in ensuring a level playing field for **domestic producers**, ensuring that they can **compete fairly with foreign competitors.**
- **To protect the domestic industries**: Imposing anti-dumping duty protects the country's domestic businesses **against the unfair competition** created by foreign exporters by reducing the export prices against their fair price.
- **Revenue for the government**: Imposing these duties can generate revenue for the government through the **collection of duties on imported products**. This revenue can be used for various public purposes.
- **Broader trade policy**: Imposing anti-dumping duty can be part of a broader strategic trade policy aimed at **safeguarding essential industries and reducing reliance** on imports for critical materials.

Demerits of imposing Anti-Dumping duties:

- **Trade barrier:** There is a **risk** of using anti-dumping duty as a trade barrier rather than a legitimate tool for addressing unfair trade practices.
- **Inflated price**: They can lead to higher prices of particular goods in the domestic market.
- **Retaliatory measures**: It can lead to retaliatory measures by **other countries**, affecting the export opportunities for domestic industries in global markets.
- **Disrupt global supply chains**: The anti-dumping duties can disrupt global supply chains, potentially leading to **inefficiencies in production and distribution**.

WTO and anti-dumping provisions

- **Deals with the rules of trade**: The World Trade Organization (WTO) is an international organization that deals with the rules of trade between nations. The WTO also operates a set of international trade rules, including the **international regulation of anti-dumping measures.** The WTO does not intervene in the activities of companies engaged in dumping. Instead, it focuses on **how governments can—or cannot—react to the practice of dumping.**
- **Permission to act against dumping**: The WTO agreement permits governments to act against dumping "**if it causes or threatens material injury to an established industry** in the territory of a contracting party or materially retards the establishment of a domestic industry."
- This intervention must be justified in order to uphold the WTO's **commitment to free-market principles.** Anti-dumping duties have the **potential to distort the market**. In a free market, governments cannot normally determine what constitutes a fair market price for any good or service.

Conclusion:

Imposing anti-dumping duties on Chinese steel imports in India involves a careful balancing act between protecting domestic industries and avoiding potential negative consequences such as higher prices and trade tensions. Hence, the decisions should be based on a thorough analysis of the specific circumstances and after analyzing the impact on various stakeholders in the economy.

PEPPER IT WITH
WTO, Trade policy, Fiscal Policy, Countervailing Duty

CAPITAL ADEQUACY FRAMEWORK

Recently, the Finance Minister of India met the World Bank President and Asian Development Bank (ADB) chief on the sidelines of the G20 Leaders' Summit and called for **speedier implementation of capital adequacy framework** measures by Multilateral Development Banks (MDBs).

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What is Capital Adequacy?

- It refers to the **minimum amount of capital,** a bank or financial institution must **maintain to absorb losses** and continue functioning during **financial distress.**
- It is a critical concept in the banking and financial sector, as it **ensures the stability and solvency of financial institutions**, **reduces the risk of bank failures** and promotes financial stability within the broader economy.
- **The Capital Adequacy ratio (CAR)**: It is an indicator of how well a bank can meet its obligations. Also, known as the **capital-to-risk weighted assets ratio (CRAR)**, the ratio compares capital to risk-weighted assets and is watched by regulators to determine a bank's risk of failure. It's used to protect depositors and promote the stability and efficiency of financial systems around the world.

Multilateral Development Bank (MDB):

- It is an international financial institution chartered by **two or more countries** for the purpose of encouraging economic development in developing nations. Multilateral development banks consist of member nations from **developed and developing countries**.
- MDBs provide loans and grants to member nations to fund **projects that support social and economic development**, such as the building of new roads or providing clean water to communities.
- Unlike commercial banks, MDBs **do not seek to maximize profits for their shareholders**. Instead, **they prioritize development goals** such as ending extreme poverty and reducing economic inequality.
- They often **lend at low or no interest** or provide grants to fund projects in infrastructure, energy, education, environmental sustainability, and other areas that promote development.

Significance of capital adequacy for MDBs:

- **Expand lending capacity**: Adequate capital allows MDBs to expand their lending capacity and take on larger and more ambitious projects. For example, the African Development Bank's increased capital base in recent years has enabled it to scale up its lending capacity and finance more extensive projects
- **Manage risks effectively**: Capital adequacy enables MDBs to manage risks effectively.
- **Ensure their financial stability:** MDBs need to maintain sufficient capital to ensure their financial stability and credibility. For example, during the global financial crisis in 2008, the World Bank increased its capital base to maintain financial stability and continue its support for developing countries.
- **Maintaining a high credit rating**: It is crucial to maintain a high credit rating, which allows MDBs to borrow at favourable interest rates in international markets. For example, the Asian Development Bank's AAA credit rating enables it to borrow funds at lower interest rates.

How much capital is 'adequate' for an MDB?

- The financial risks posed by **MDB operations** are very **different from those of commercial banks** because of their **official standing and development mandate**, so they cannot simply apply commercial bank capital adequacy standards such as the Basel III guidelines.
- MDB finance teams and the credit rating agencies take **different approaches to MDB capital adequacy.** This makes it difficult for shareholder governments to compare across institutions and figure out **how much an MDB can prudently lend based on its capital.**
- In response, the **G20 established the independent review to evaluate MDB capital adequacy**. Based on the evidence, the review panel concluded that government shareholders, MDB management and credit rating agencies have **overestimated the financial risks facing MDBs** by underestimating their unique strengths.

Review of MDBs' Capital Adequacy Frameworks:

Independent **Review of MDB's Capital Adequacy Frameworks submitted its report to G20 finance ministers**. The expert panel submitted its independent review in 2022 under the Indonesia Presidency which is as follows:

- The MDBs should **reduce their dependence on rating agencies** and build **internal risk metrics**.
- There should be **callable capital**, which means that the shareholders should be willing to pay back the bondholders in case of negative shocks to the MDBs.
- Expand the use of **financial innovations** to diversify the risks of loans and access markets for finance.
- The credit rating agencies should refine their methodologies "to better account for the unique mission, track record and financial strength of MDBs".

G20's New Delhi Declaration:

- The New Delhi declaration **endorsed the G20 Roadmap** for Implementing the Recommendations of the G20 Independent Review of MDBs' Capital Adequacy Frameworks, which could yield additional financing of **$200 billion over the next decade**.

- It is an important step towards recognizing the need for strengthening financial capacities at MDBs to help nations deal with global challenges, apart from development challenges.

Conclusion:

Capital adequacy is important for MDBs to fulfil their missions effectively. It ensures financial stability, credibility, and the ability to support development projects that have a substantial impact on member countries. MDBs' financial strength enables them to address a wide range of development challenges and promote sustainable economic growth worldwide.

PEPPER IT WITH
Multilateral Development Bank, Capital Adequacy, Ratio, G-20 New Delhi Declaration, Monetary Policy

SELF REGULATORY ORGANISATION FOR FINTECHS

RBI Governor Das has said that **Fintech needs to evolve industry best practices, privacy and data protection norms** in sync with the laws of the land, set standards to avoid mis-selling, promote ethical business practices and transparency of pricing.

Pre-Connect:

FINTECH:

- Fintech, a combination of the terms "financial" and "technology," refers to businesses that use technology to **enhance or automate financial services and processes**.
- The term encompasses a **rapidly growing industry** that serves the interests of **both consumers and businesses** in multiple ways.
- From mobile **banking and insurance** to **cryptocurrency and investment apps**, fintech has a seemingly endless array of applications.
- The Indian fintech industry is expected to generate approximately **$200 billion in revenue by 2030,** making it a key driver of economic growth.
- As per RBI, **Self Regulatory Organization (SRO)** would provide fintech firms a platform to voice their requirements while alleviating the RBI from shouldering the entirety of regulatory responsibilities.

Self Regulatory Organization (SRO):

- A **SRO** is an entity such as a **non-governmental organization**, which has the power to create and enforce **stand-alone industry and professional regulations and standards** on its **own.**
- Effective SROs are able to provide standards and enforcement of those standards on their members. Although SROs can be privately owned, the government can still dictate their broader policies.
- India currently has several SROs operating in various segments. One notable example is the **Foreign Exchange Dealers Association of India (FEDAI).** Recently, the **Google Play Store** introduced real-money games on its platform, which have been approved by self-regulatory bodies established under new online gaming rules in India.

Functions of an SRO:

- **Two-way communication channel**: The recognised SRO will serve as a two-way communication channel between its members and the RBI.
- **Instill professional and healthy market behaviour**: It will work towards establishing minimum benchmarks and standards and help instil professional and healthy market behaviour among its members.
- **Training the staff**: SROs will impart training to the staff of its members and others and will conduct awareness programmes.
- **Uniform grievance redressal management:** It will establish a uniform grievance redressal and dispute management framework across its members.

Need for SRO:

- As per RBI, the fintechs have been resorting to **coercive tactics** to grow their business.
- Issues **around data privacy, aggressive collection tactics and building products** that are pushing regulatory boundaries have been called out by the RBI.
- The RBI governor pointed out that by laying out clear governance structures, fintechs can show their commitment towards **accountability, transparency and responsible decision-making**.

Benefits of SRO:

- **Experts in fields**: SROs are widely considered experts in their fields and so have in-depth knowledge of the markets they operate in. This is helpful to their members as they can be called in to participate in deliberations and learn more about the nuances of the industry.

- **Following standard of conduct**: Formation of SROs ensures member organisations follow a certain standard of conduct that helps **promote ethical ways of doing business**, which can lead to enhanced confidence in the ecosystem.
- **Serve as a watchdog**: They can serve as a watchdog to guard against unprofessional practices within an industry or profession.
- A self-regulatory framework can **bolster protection against systemic risks, and strengthen the global competitiveness** of the sector.
- **Common voice for fintech players**: SRO would provide a common voice for fintech players, helping them communicate and collaborate effectively with regulators and fellow industry members.
- **Avoid over-regulation**: RBI cannot govern everything, it will regulate banks and NBFCs, and through them digital lenders and fintechs. An SRO structure will help avoid over-regulation from these entities, and also **create an additional layer of supervision and communication.**

Challenges related to SRO:

- **Complex task**: One of the primary challenges lies in the complex task of striking a careful **balance between profitability and adhering to a customer-centric approach**.
- Even with self-regulatory bodies in place, enforcing regulations can be challenging. Fintech companies may **lack the incentive or resources to enforce** regulations rigorously, leading to compliance gaps.
- The rapidly evolving nature of fintech can make it difficult for self-regulatory bodies to **keep up and establish appropriate guidelines**.
- **Smaller fintech startups may struggle** with compliance costs associated with self-regulation.

Conclusion:

The RBI's proactive decision to establish a Self-Regulatory Organization (SRO) will go a long way in encouraging fintech companies to self-regulate, foster transparency, fair competition and consumer protection.

> **PEPPER IT WITH**
> RBI, NBFC, financial inclusion, Digital India, Regulatory Sandbox

Growing Tax Base in India

There has been a steady increase in both direct and indirect taxpayers in India over the past few years, leading to an increase in the overall tax base.

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- During the assessment year 2014-15, the number of **companies paying tax stood** at 7.46 lakh. By 2022-23, they had risen to 10.7 lakh — an **increase of around 43%.**
- Over the same period, the number of **individual taxpayers grew by 65 %,** rising from 5.38 crore to 8.9 crore.
- The disaggregated data shows that **small taxpayers** (those with incomes less than Rs 5 lakh) account for a sizable number of these new tax payers.
- Similar trends can be observed in the case of **indirect tax payers**. The number of active GST payers (as of June 2023) stood at 1.4 crore, up from **1.2 crore in 2019.**

Reasons for growing tax base in India:

- **Growing size of economy:** Part of this increase in the tax base is the natural consequence of the economy growing in size — **more companies are setting up shop**, more individuals are entering the labour force, and more **formal sector jobs are being created**.
- **Formalization of the economy**: The growing formalisation of the economy is likely to have played a role by making tax evasion or avoidance a **more complicated exercise**.
- **Introduction of new tracking features:** As per the government, the introduction **of new tracking features** has helped the income tax department widen the tax base.
- The introduction of **new data sources** in the **Statement of Financial Transactions (SFT),** such as dividends, interest, details of shares and mutual funds as well as information from GSTN, introduction of new TDS code, etc. have led to a 12-fold jump in reported information, with addition of information of about 3 crore persons.

Implications of growing tax base:

- **Reduce budget deficits**: It can help the government reduce budget deficits and **achieve fiscal sustainability.**

> **Tax base:** It is the total value of all of the assets, income and economic activity that can be taxed by a taxing authority, usually a government. It is used to calculate tax liabilities. The size and growth (increase or decrease) of the tax base is crucial to the planning of local, state or central government.

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- **Reduction in tax evasion:** When more people and businesses are brought into the tax net, there is **increased scrutiny and accountability**, leading to a reduction in tax evasion.
- **Higher tax collections:** A broader tax base results in higher tax collections. It helps the government **finance various public expenditures**, such as infrastructure development, healthcare, education, and social welfare program.

> **Tax-to-GDP ratio:** It is the ratio of a country's tax revenue compared to its GDP. This ratio is used as a measure of **how well the government controls a country's economic resources.** Tax-to-GDP ratio is calculated by dividing the tax revenue of a specific time period by the GDP. In India, the financial year 2021-22 marked the **highest tax-GDP ratio** of **11.7%**, with direct tax to GDP ratio at 6.1% and indirect tax to GDP ratio at 5.6%.

- **Reduced tax rates**: The government may have the options to reduce tax rates if the tax base expands. Lower tax rates can **stimulate economic growth** and **encourage compliance.**
- **Reduction of income inequality**: A broader tax base can be used to implement more **progressive taxation policies,** which can help redistribute wealth and reduce income inequality.

Suggestions to increase tax base of India:

- **Expanding the tax net**: Steps should be taken to expand the tax net to include sectors that are **currently exempt or partially exempt** from taxes, such as **agriculture income** and certain religious institutions.
- **Track and penalize tax evasion**: Strengthen **anti-money laundering laws** and measures to track and **penalize tax evasion**, including offshore tax evasion. Collaborate with international agencies to exchange information on tax evaders.
- **Reward taxpayers**: Recognize and reward taxpayers who consistently **comply with tax laws** through incentives or recognition programs.
- **Strengthening the enforcement of GST regime:** The government should take more measures on strengthening the enforcement of the GST regime by **simplifying tax compliance procedures, reducing the tax rate slabs**, and implementing **stricter penalties** for non-compliance.
- **Formalization of economy:** The government should encourage businesses in the informal sector **to formalize their operations**.
- **Promote awareness:** Awareness must be raised about tax compliance among citizens and businesses through **public campaigns**, **workshops, online resources**, etc.
- **Strengthen local governments**: Strengthen local governments' **revenue collection** mechanisms, including property taxes, fire-brigade tax, taxes on vehicles, taxes on boats, user fees, and development charges.

Conclusion: The increasing tax base in India is a **positive sign** leading to several positive outcomes, such as **higher government revenue, fiscal sustainability, and reduced tax evasion.** While the number of people filing income tax returns has grown by a compounded average growth of 3.4 % between 2019-20 and 2022-23, the number of people filing returns but who have no tax incidence has grown by 15.5 % over the same period. Filing tax returns is an annual activity that should be seen as a moral and social duty of every responsible citizen of the country.

> **PEPPER IT WITH**
> Taxation, Tax- to–GDP Ratio, Fiscal sustainability, Anti- money laundering law

CHINA SLOWS UREA EXPORTS

China has asked some fertilizer producers to **suspend urea exports** after **domestic prices jumped.** As the world's largest producer of urea, China accounts for about a **third of global supplies** of **nitrogen-based fertilizer**, which is critical to growing crops.

Implications of urea export curb by China:

- China is the world's top producer and consumer of urea and any significant decline in exports **threatens to tighten supplies and push up global prices**. Among the biggest export markets for the nation's crop nutrient are **India, South Korea, Myanmar and Australia.**
- Since in India, urea is completely controlled by the government, the industry is not worried. But a section of fertilizer companies fear that the Chinese decision may fuel a **global price rise in DAP, Muriate of Potash (MOP),** as happened during the 2021 ban.
- Unlike 2021, when there was a real supply issue of fertilizers due to the COVID pandemic, **this time both China and Russia are keen to continue exporting** and this makes a big difference.
- India imports about **30% of urea annually** and China was its second largest supplier in 2022. The Chinese curbs will raise prices and spending in India on fertilizers.

- It is expected that the supplies from **Oman, Saudi Arabia, Egypt, and Russia** can fill the gap.

Fertilizer industry in India:

- **Indian Fertilizer Market** was valued at INR 990.40 Bn. in 2022 and is expected to reach INR 1459.95 Bn by 2029, at a **CAGR of 5.7%**.
- **Types of Fertilizers**: The Indian fertilizer industry primarily **produces Nitrogen, phosphorus and potassium (NPK)**. Nitrogenous fertilizers are the most widely used, followed by phosphatic and potassic fertilizers.
- **Fertilizer Subsidy**: The Indian government provides subsidies to make fertilizers affordable for farmers. This subsidy is a significant financial burden on the government and is meant to ensure that farmers have access to fertilizers at reasonable prices.
- In May 2015, the Centre made it mandatory to coat all indigenously manufactured and imported **urea with neem oil**. This was followed by replacing 50-kg bags with 45-kg ones in March 2018, and the launch of liquid '**Nano Urea**' by the Indian Farmers' Fertiliser Cooperative (IFFCO) in June 2021.
- **Launch of Urea Gold** in mid-2023: Normal urea contains 46% of Nitrogen. **Urea Gold has 37% Nitrogen plus 17% Sulphur** and aims at two things.
  o The first is to deliver Sulphur along with Nitrogen as Indian soils are deficient in Sulphur.
  o The second is to improve the nitrogen use efficiency (NUE) of urea.

TOP IMPORTERS FROM CHINA OF UREA FROM JAN-JULY 2023

Challenges of Urea industry in India:

- **Inadequate Domestic Production**: India's domestic urea production often **falls short of the demand**, leading to a heavy reliance on imports to meet the fertilizer needs of the agriculture sector.
- **Reliance on imported raw materials**: One of the primary reasons for price volatility in the urea industry is the heavy reliance on imported raw materials, such as natural gas and naphtha, for urea production.
- **Controlled urea prices**: Historically, the Indian government has **controlled urea prices,** often keeping them artificially low to support farmers. This has **discouraged domestic production and investment in the sector**, leading to inconsistent supply and demand dynamics.
- **Issues with subsidy management:** The subsidy system has often been criticized for **inefficiencies, leakages, and overuse of urea due to its low price, leading to soil degradation** and imbalanced nutrient use.
- **Environmental problems:** Urea production is energy-intensive and contributes to **greenhouse gas emissions**. Environmental concerns and regulations related to emissions and **water pollution** pose challenges to the industry.

Suggestions:

- **Improving the logistics infrastructure**: Invest in improving the logistics infrastructure for urea imports to ensure a more reliable supply chain.
- **Adopt balanced nutrient management practices**: Encourage farmers to adopt balanced nutrient management practices by providing incentives for the use of other fertilizers and promoting awareness about soil health.
- **Alternative feedstocks for urea production:** Encourage the use of alternative feedstocks for urea production, such as coal or biomass, to reduce dependence on imported raw materials.
- **Move towards market-driven pricing**: Gradually move towards market-driven pricing for urea to incentivize domestic production and investment in the sector. This can help stabilize prices and reduce volatility in the long term.
- **Encourage investments**: Encourage investments in domestic urea production through incentives and subsidies for setting up new fertilizer plants or upgrading existing ones.
- **Enforce environmental regulations**: Strictly enforce environmental regulations to ensure that urea manufacturers adhere to emission standards and water pollution control measures.

PEPPER IT WITH
Neem-oil Coated Urea, Liquid Nano Urea, Urea Gold, Nitrogen use efficiency, NPK micronutrients

Conclusion:

To address China's urea export restrictions and global price volatility, India must diversify feedstock, deregulate prices, boost domestic production, manage subsidies and address environmental issues through a comprehensive approach.

INTERNATIONAL RELATIONS

BRICS Expansion

In the 2023 summit at Johannesburg, South Africa, the five-member BRICS invited six more countries **Iran, United Arab Emirates, Saudi Arabia, Argentina, Egypt, and Ethiopia** to join the alliance as **permanent members**. Their membership will begin in January 2024.

Pre-Connect:

- **1st BRIC summit** was held in Yekaterinburg, Russia, on 16 June **2009**. BRIC group was renamed as BRICS (Brazil, Russia, India, China, South Africa) after South Africa was accepted as a full member in 2010.
- BRICS comprise almost 41% of the world population, 25% of the world GDP and 18% share in the world trade.

Significance of the expansion:

- **Voice of Global South:** Adding these new members strengthens the group's heft as a spokesperson for the developing world.
- **Economic significance:**
  - With the additions, it will represent almost half (~46%) of the world's population and will include three of the **world's biggest oil producers, Saudi Arabia, the UAE, and Iran.**
  - BRICS share in global exports will increase from 18 % to 21 %.
- **Political significance:** The induction of 4 major Middle East players- Egypt, Iran, UAE, and Saudi Arabia will give BRICS a major boost – as these countries have been at odds with each other.
- **Strategic significance:** The addition of Third World countries furthers India's agenda of developing a multipolar world.

Impulses to join BRICS:

- **Anti-US sentiment-** all these countries are looking for a grouping that is an alternative to West-led institutions.
- **Multipolarity-** BRICS provides a platform where countries of the Global South can express their solidarity.
- The invitation to Iran, whose ties with the West are strained, has a strong China-Russia imprint.
- Saudi Arabia, traditionally a US ally, has been increasingly charting out its own course recently, and the BRICS membership is in line with that.
- Argentina, facing a trying economic crisis, will hope for financial aid from BRICS.

Challenges after expansion in BRICS' functioning:

- Tensions between Middle Eastern countries may make it difficult to develop a consensus on geo-economic and geo-political issues, especially if Saudi-Iran or Saudi-UAE fault lines grow.
- This rapid expansion could dilute the original purpose of the BRICS grouping, especially if China is seen as taking a dominant position in the grouping.
- The sanctions Iran faces might make intra-BRICS trade even more difficult to grow- both Russia and Iran are now off the SWIFT system.

India's concerns regarding expansion:

- India is uncomfortable with BRICS becoming an anti-western grouping, given its close ties with the US and other Western countries, particularly in the strategic sphere.
- The group could become more pro-China and sideline New Delhi's voice and interests.

BRICS expansion

- BRICS   - New joiners (as of Jan 2024)

Metric	Old BRICS	New BRICS
Global exports	18.28%	20.58%
GDP	25.77%	29%
Population	40.9%	46%
Oil production	20.4%	43.1%

- As the BRICS, an economic grouping, becomes more strategic and political, India may find its balancing act with the Quad, SCO and IPEF more difficult.

Conclusion:

The growth of BRICS from a grouping of rag-tag as opposed to the more elite and exclusive G7 club is a welcome development that aims to democratise global governance institutions. For India, which still aims to keep its feet in both boats, it is important to ensure that BRICS does not lose its intrinsic value as a forum for emerging economies, into a platform for anti-western statements, as the NAM once did.

PEPPER IT WITH
Johannesburg Summit, Voice of Global South, 3rd World countries, Multipolar Institutions

18TH G20 Summit in India

The G20 Leaders' Summit in 2023 under India's presidency resulted in a major success with the unanimous adoption of the **New Delhi Declaration**.

Pre-Connect

- The G20 originated in 1999 in response to the **Asian Financial Crisis** of 1997-98, initially serving as an informal platform for finance ministers and central bank governors from both developed and developing economies.

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- In 2008, following the **Global Financial Crisis**, the G20 expanded to include the heads of state of member countries.
- The G20 Presidency rotates annually under a **Troika System** involving the current, previous, and next host countries.

Key Highlights of G20 Summit, 2023:

1. **African Union (AU) as a permanent member of G20:**

G20 TURNS G21

The African Union, the 55-member bloc of African nations, is now a permanent member of the G20. The group now comprises 19 countries and two regional organisations.

- After the EU, the African Union is the second regional bloc to join the G20. This will strengthen the G-20 and also the voice of the Global South.
- The AU now has an opportunity to use its G20 permanent seat to craft a pathway for the entire world with a demand to redesign the global trade, finance, and investment architecture.

2. **Adoption of "New Delhi Leaders' Declaration": Major highlights**

- **Ukraine war:** All states must act in a manner consistent with the UN charter in its entirety. They must refrain from the threat or use of force to seek territorial acquisition against the territorial integrity and sovereignty or political independence of any state; also, the use or threat of nuclear weapons is inadmissible.

- **Food and Energy Security:** It calls on Russia and Ukraine to ensure food and energy security through immediate and unimpeded deliveries of grain, foodstuffs, and fertilisers/inputs.

- **Economies and Financial markets:**
  o To renew the G20's commitment to ensure a level playing field and fair competition by discouraging protectionism and market-distorting practices;
  o To endorse the Financial Stability Board's high-level recommendations for regulation, supervision and oversight of crypto-assets, and activities;
  o To reaffirm the 2021 exchange rate commitment made by G20 finance ministers and central bank governors;
  o To protect the vulnerable, through equitable growth and enhancing macroeconomic and financial stability.

- **Climate Change:**
  o Accelerate efforts to phase down unabated coal power;
  o Work towards facilitating low-cost financing for developing countries to support their transition to low carbon.
  o Pursue and encourage efforts to triple renewable energy capacity globally by 2030.
  o Reiterated the use of carbon pricing and non-pricing mechanisms and incentives toward carbon neutrality and net zero.
  o Noted the need for $5.8-5.9 trillion in the pre-2030 period required for developing countries, in particular for their needs to implement their emission targets.
  o Called on parties to set an ambitious, transparent, and trackable New Collective Quantified Goal of climate finance in 2024, from a floor of $100 billion a year.

- **Global Debt Vulnerabilities:** Commit to promoting resilient growth by urgently and effectively addressing debt vulnerabilities in developing countries.
- **Health:** The leaders committed to strengthening global health architecture. This will enhance resilience of health systems and development of climate-resilient and low-carbon health systems in collaboration with multilateral banks.

3. **Global Biofuels Alliance:** On the sidelines of G20, prominent countries agreed to create a Global Biofuel Alliance.
   - Its focus is on accelerated adoption of biofuels, creating new biofuels, setting globally recognized standards, identifying global best practices, and ensuring industry participation.
   - **Current members:** India, Brazil, USA, Argentina, Canada, Italy, South Africa, Bangladesh, Singapore, Mauritius, UAE.

4. **Climate action:** Leaders at the G20 Summit did not reach a consensus on the phase-out of fossil fuels, despite a UN report categorising this phase-out as "indispensable" for achieving net-zero emissions.
   - The G20 nations collectively contribute to approximately 80% of global emissions. The inability to agree on this crucial issue casts a shadow over upcoming climate discussions in November in the oil-rich UAE.

INITIATIVES BY INDIA AT THE G20.

- G20 Generic Framework for Mapping Global Value Chains (GVC) to help members identify risks and build resilience.
- Resource Efficiency and Circular Economy Industry Coalition (RECEIC).
- Green Hydrogen Innovation Centre steered by the International Solar Alliance (ISA).
- Voluntary High-Level Principles for Collaboration on Critical Minerals for Energy Transitions.
- One Future Alliance (OFA), a voluntary initiative aimed to build capacity, and provide technical assistance and adequate funding support for implementing Digital Public Infrastructure in low- and middle-income countries (LMICs).

Significance of G20:

For India:

- **Soft Power:** Through "One Earth, One Family, and One Future", India stressed the notion of unity and a shared destiny to convey the gravity of the multiple challenges facing humankind today.

> **G20, 2023 in India**
> - India hosted G20 summit for the first time in New Delhi since its inception.
> - **Theme:** "Vasudhaiva Kutumbakam" (The world is one family).
> - G20 member countries account for 80% global GDP, 75% of worldwide trade and about two-thirds of the world population.
> - **Troika of the summit:** Indonesia-India-Brazil.
> - **Invited countries:** Egypt, UAE, Singapore, Netherland, Oman, Bangladesh, Nigeria, Spain, Mauritius.

- **Voice to environmental concerns of Global South:** India worked on harmonising development with the environment, stating that "no country should have to choose between fighting poverty and fighting for our planet."
- **Middle-path resolution:** A fine balance was struck between the Russian red line and the insistence by G7 on ensuring respect for "territorial integrity and sovereignty or political independence."
- **India's urge for multilateralism:** India's policy 'mantras' of multilateralism, multipolarity and the "middle way" drove the concessions made in order to achieve consensus regarding "New Delhi Leaders' Declaration" at the G-20.
- **India's balance between technology and culture:** The Summit provided an occasion for a demonstration of India's contemporary technological advancement as well as of our heritage, culture, and traditions.
- **Economic growth and food security:** The summit would help India in the expansion of its tourism sector, increase global workplace opportunities for its youths, boost stronger food security through its millet production and consumption and deepen its commitment to biofuels.

Across world:

- **Existential crisis for G20:** It was feared that if India failed to find a consensus, the G-20 itself would fragment, possibly into the G-7 western bloc, and the BRICS bloc.
- **Power to regional organizations:** After the inclusion of regional organisations like the EU and AU in multilateral for a, it will be the turn of ASEAN and the Community of Latin American & Caribbean States (CELAC) to seek G-20 membership.
- **Boost to multilateralism:** It emphasized that UN institutions be "more responsive" to the entire membership. The need to make global governance "more representative, effective, transparent and accountable" was stated clearly.
- **Inclusive growth:** The conclusion of the India-Middle East-Europe Economic Corridor Agreement and the Global Biofuels Alliance during the Summit were significant developments.
- **Diverse and Global Development:** The main focus was on realizing SDGs, reforming international financial institutions, establishing digital public infrastructure, promoting a green development pact and encouraging women-led development.

Conclusion:

The global community has till now, successfully steered through earlier global crises, due to their collective actions. **The New Delhi Declaration 2023** reiterates G20's determination to steer the world out of its current challenges and build a safer, stronger, more resilient, inclusive and healthier future for our people and the planet.

PEPPER IT WITH

Asian Financial Crisis, Troika System, African Union, New Delhi Leaders declaration, Vasudhaiva Kutumbakam

Global Biofuels Alliance

Brazil, India and the United States, as the leading biofuel producers and consumers, will work together towards the development of a Global Biofuels Alliance along with other interested countries.

Pre-Connect:

About:

- The Global Biofuel Alliance (GBA) is an **initiative by India** as the G20 Chair.
- GBA Members constitute major producers and consumers of biofuels, such as the USA (52 per cent), Brazil (30 per cent) and India (3 per cent), contributing about 85 per cent share in production and about 81 per cent in consumption of ethanol.
- The Alliance intends to accelerate the global uptake of biofuels by facilitating technology advancements, and intensifying utilization of sustainable biofuels.
- The alliance will also act as a central repository of knowledge. GBA aims to serve as a catalytic platform, fostering global collaboration for the advancement and widespread adoption of biofuels.

Objectives of the alliance: Its focus is on accelerated adoption of biofuels, creating new biofuels, setting globally recognized standards, identifying global best practices and ensuring industry participation. The GBA has emphasised that

Biofuels

The International Energy Agency (IEA) **defines** biofuels as "liquid fuels derived from biomass and used as an alternative to fossil fuel-based fuels such as gasoline, diesel and aviation fuels."

its focus would be to develop 2G ethanol. Nineteen countries and 12 international organisations have already agreed to join the GBA.

Biofuels v/s Sustainable Biofuels:

- Experts have reiterated that biofuels are derived from crops grown specifically to produce biofuels such as sugarcane, corn or soybean and the sustainable biofuels are from agricultural waste, used cooking oil and processed animal residues like fats.
- First one is informally referred to as 1G or first-generation biofuel and the sustainable biofuel as 2G, that is second-generation biofuel.
- This distinction has now come into sharp focus as climate change accelerates, with fears of threat to food security and increased loss of forests and biodiversity due to greater land required for farming.

Factors behind renewed focus on biofuels:

- With severe disruptions to global crude oil supplies following the Ukraine conflict, several countries have been scrambling to find alternatives to the import dependence on petrol and diesel. India, for instance, imports 87% of its crude oil and it is the main reserve currency expenditure for the country.
- With transport accounting for about one-quarter of global carbon emissions, there have been renewed attempts to accelerate the decarbonising of this sector, with several countries announcing battery production and electric vehicle (EV) policies and legacy automakers entering the now thriving EV sector.
- Most biofuels today are blended with petrol or diesel at varying degrees. For instance, India blends about 10% of biofuel and the government has advanced its target to achieve 20% ethanol blending in petrol by 2025-26 from an earlier target of 2030.

Benefits of the initiative:

- It would soften the disruptions, if any to the global crude oil supply market in the future.
- It would also allow countries to reduce greenhouse gas (GHG) emissions even while stretching the life of current internal combustion engines, giving time for automakers to develop robust alternatives.
- This will help India become the voice of the global south by getting countries which are still to start their biofuels programme.
- It will provide additional opportunities to Indian industries by exporting technology and equipment.

- It will help accelerate India's existing biofuel programmes such as – PM-JIVANYojna, SATAT and GOBARdhan scheme, thereby contributing to increased farmers' income, creating jobs and overall development of the Indian biofuel eco-system.

Conclusion:

India, Brazil as well as the United States have already expanded biofuel production and use by designing long-term strategies, implementing the right investment signals, supporting innovation, ensuring supplies are secure and affordable, addressing sustainability concerns early and collaborating with the international community. **Identifying and helping develop markets with high potential for sustainable biofuel production and consumption would be the next right step towards the global energy transition.**

> **PEPPER IT WITH**
> International Energy Agency, Generations of Ethanol, Sustainable Biofuel, Ethanol blending, SATAT

India-Middle East-Europe Economic Corridor (IMEC)

On the sidelines of the recently concluded G20 summit in New Delhi, a memorandum of understanding (MoU) was signed to establish the **'India-Middle East- Europe Economic Corridor' (IMEC).**

Key provisions:

- An MoU on IMEC was signed by **India, USA, Saudi Arabia, UAE, European Union, Italy, France, and Germany**.

- The proposed IMEC will consist of railroad, ship-to-rail networks (road and sea) and road transport routes (and networks) extending across two corridors, i.e., the east corridor – connecting India to the Arabian Gulf, and the northern corridor – connecting the Arabian Gulf to Europe.
- The corridor would include ports like Haifa in Israel and Piraeus in Greece.
- It is considered as an alternative to the Belt and Road initiative of China and may also serve as a counter to China's economic influence in the Eurasian region.

Significance of the corridor:

- **Boost to export:** It would enable the transportation of goods and services from India to the UAE, Saudi Arabia, Jordan, Israel, and Europe, and back.
- **Transformative integration of Asia, Europe, and the Middle East**: The corridor would increase

efficiency (relating to transit), reduce costs, enhance economic unity, generate jobs, and lower greenhouse gas emissions.

- **Transportation of energy and fuels:** The MoU states that participants, intend to lay cables for electricity and digital connectivity, as well as pipes for clean hydrogen export along the railway route.
- **Shorter time period of transportation:** The maritime corridor between Asia and Europe currently remains rooted in the saturated Suez Canal and Mediterranean shipping routes despite them being longer and involving additional logistics costs. The IMEC corridor, in contrast, saves three to four days of transit.
- **Linkage of major ports across Asia, Middle-East and Europe:** It links major ports of western India including Jawaharlal Nehru Port (JNPT), Kochi, Kandla and Mundra with major shipping ports of the Gulf including Jebel Ali, Fujairah, Ras Al-Khair, Dammam, Duqm, and Salalah; and European ports like Piraeus, Kavala (Greece), Trieste, La Spezia (Italy), Marseille-Fos (France), Barcelona and Valencia (Spain).
- **Reduction in emissions:** The greening of this project will contribute to the global effort to lower greenhouse gas emissions.

Feasibility of the corridor: IMEC is envisioned as not one, but two corridors- the eastern and northern.

- **Eastern end of IMEC:** India, whose connectivity infrastructure has helped it become the world's fastest-growing major economy, has a massive, well-integrated railroad network, mega ports, and highways on the eastern end of IMEC.
- **Western end of IMEC:** Beyond Haifa, the sea route across the Mediterranean is also a well-charted path to Greece, Italy, France, and Spain, and well served by hinterland connectivity to Europe by rail and roads.

Geopolitical significance of the IMEC corridor:

- It can serve as an "alternative trans-regional commercial transportation route" to the troubled Chabahar-based International North-South Transit Corridor.

- For the U.S., the project could also serve to counter Beijing's influence "at a time when its traditional Arab partners, including the UAE and Saudi Arabia, are deepening ties with China, India, and other Asian powers.
- This corridor may also hint at further normalisation of ties between Israel and the countries in the Gulf.
- With Saudi Arabia being the world's top exporter of oil and UAE being West Asia's dominant finance centre, both are "seeking to project themselves as key logistics and trade hubs between east and west."

Challenges:

- **Infrastructural:** Based on the MOU, transhipment of cargo will be from ships to railways and railways to ships. This means it requires constructing missing rail links, terminals, and inland container depots (ICDs) at all major Gulf and Mediterranean ports and thereby huge capital investment.
- **Port capacities:** Haifa port shall have to augment capacity to be able to handle additional cargo that would divert to this route instead of the longer Suez Canal route.
- **Financial:** Commitment of resources from stakeholders and multinational financial institutions like the World Bank.

Way Forward:

- A working group of experts from the railway sector, ports and communications needs to develop a plan of action to address physical and non-physical barriers, design, financing, legal and other regulatory requirements.
- A comprehensive IMEC agreement with a clear time frame will help translate the commitments of the MOU into a roadmap for action.

> **PEPPER IT WITH**
> G-20, BRI, Look West- Act West Policy, Transportation Corridors

Conclusion:

As a strategic catalyst for a new way of thinking about collective growth, globalisation, and connectivity - Vasudhaiva Kutumbakam in the truest sense - this new corridor will trigger regional and global cooperation initiatives for socio-economic development across continents.

Debt Crises in Developing Countries

The persistent and damaging debt problems gripping several developing nations were the core topic during the **G20 summit**.

Pre-Connect:

- Responding to the pandemic shock in **2020**, the **G20** implemented the Debt Service Suspension Initiative **(DSSI)** in support of **low-income countries**. But it did not solve longer-term problems.
- In **2022**, the world's poorest countries had to afford $35 billion in debt-service payments, according to the World Bank. More than 40% was owed to China, now the world's largest bilateral creditor.
- In view of mounting problems, the G20 launched the **Common Framework for Debt Treatment (CF)** to reach beyond the DSSI. It is the only multilateral mechanism for forgiving and restructuring sovereign debt.
- Earlier this year, the **Global Sovereign Debt Roundtable (GSDR)** met and discussed debt sustainability and debt restructuring challenges and ways to address them. It was **co-chaired** by the **IMF**, **World Bank** and **India** (the G20 President).

Status of debt:

- **According to the International Monetary Fund (IMF)**, **21 countries** are in default or seeking restructuring. **15% of low-income countries** are already in debt distress. The number of countries facing high levels of debt has increased sharply, from only 22 to 59 between 2011 and 2022.
- **According to UNCTAD**, **81 developing countries** lost $241 billion in international reserves in 2022. The high-interest rates and soaring debt levels will add to the crushing effect on developing countries.

Public debt is growing faster in the developing world

Index: Outstanding public debt in 2010 = 100
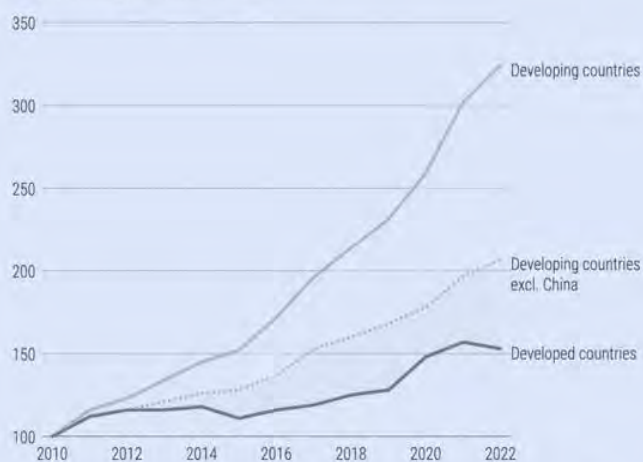
Source: UN Global Crisis Response Group calculations based on IMF World Economic Outlook (April 2023).

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- According to the report from the "Debt Relief for a Green and Inclusive Recovery" **(DRGR) Project,** the sovereign debt of emerging markets and developing economies **(EDME)** increased by 178%, from $1.4 trillion to $3.9 trillion, between 2008 and 2021. The **Global South** is staring at a **debt crisis**.

Causes of debt crises:

- **Covid-19 pandemic and cost of living crises:** Financing needs soared with countries' efforts to fend off the impact of the COVID-19 pandemic and the cost-of-living crisis.
- **Financial architecture:** An inequal international financial architecture makes developing countries' access to financing **inadequate** and **expensive**.
- **Interest rates:** Central banks are raising interest rates, leading to **capital flight** and **currency depreciation** in developing economies, as well as increasing **borrowing costs**. These factors have pushed countries such as **Ghana** and **Sri Lanka** into debt distress.
- **Climate change:** When countries' **vulnerability** to climate change goes up, so, too, do their borrowing rates. Without proper **adaptation**, countries' **exposure** to climate change's impacts increases, necessitating even more finance to address risks and damages from **floods**, **droughts**, **wildfires** and more.
- **Russia-Ukraine war:** EDMEs are seeing weakened economic growth due to **high food and energy prices** fuelled by Russia's war in Ukraine.
- **Odious debt:** It is debt that resulted from **loans** to an **illegitimate or dictatorial government** that used the money to oppress the people or for personal purposes. For example - **Cuba**, **South Africa**, **Indonesia, Argentina** and **Nicaragua**.

Implications of debt:

- Public debt can be **vital** for development. Governments use it to finance their expenditures, to protect and invest in their people. However, it can also be a **heavy burden** when public debt grows too much or too fast. This is what is happening today across the developing world.
- The weight of debt **drags down development**. Debt has been translating into a substantial burden for developing countries due to limited access to **financing**, rising **borrowing costs**, **currency devaluations** and **sluggish growth**. These factors **compromise** their ability to react to **emergencies**, tackle climate change and invest in their people and their future.

Make the system more **inclusive**, improving the real and effective participation of developing countries in the governance of the international financial architecture.

Tackling the high cost of debt and rising risk of debt distress and create a debt workout mechanism to address the slow progress of the G20 Common Framework for Debt Treatment due to creditor coordination challenges and the lack of automatic debt service suspension clauses to participating countries.

Provide greater liquidity in times of crisis expanding contingency finance, so that countries are not forced into debt as a last resort, including through the strengthened use of Special Drawing Rights, a temporary suspension of IMF surcharges, and increased quota-access windows to IMF emergency financing.
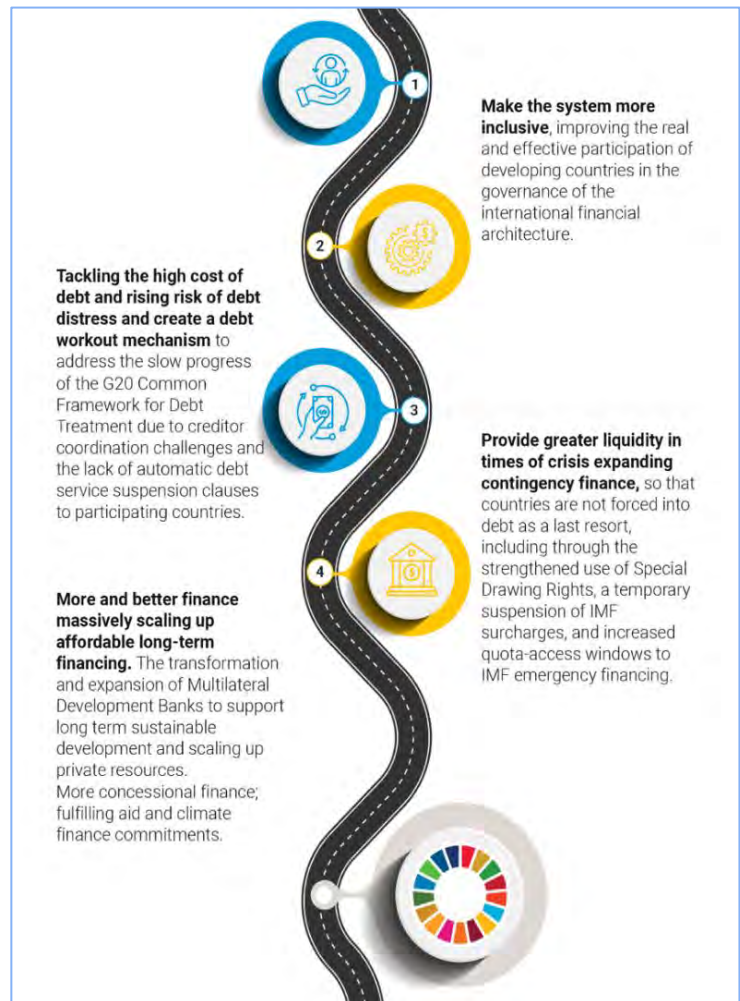
More and better finance massively scaling up affordable long-term financing. The transformation and expansion of Multilateral Development Banks to support long term sustainable development and scaling up private resources. More concessional finance; fulfilling aid and climate finance commitments.

Concerns:

- **Multi-fold increase:** Global public debt has increased more than fivefold since the year 2000, clearly **outpacing global GDP**, which tripled over the same time. In 2022, global public debt, comprising general government domestic and external debt, reached a record of USD 92 trillion. Developing countries owe almost 30% of the total, of which roughly 70% is attributable to **China**, **India** and **Brazil**.
- **Inequalities in the international financial architecture:** Borrowing from **foreign creditors** increases exposure to external shocks. Relying on **private creditors** makes credit expensive and debt restructuring complex. Delays and uncertainties increase the costs of resolving debt crises. As a result, **developing countries pay much more** for their debt than developed ones.
- **Facing impossible choices - servicing debt or serving their people**: High borrowing costs make it difficult for developing countries to fund important investments, which in turn further undermines debt sustainability and progress towards sustainable development. For example - In **Africa**, the amount spent on interest payments is higher than spending on either education or health.

Way forward:

- The **United Nations** has a road map that focuses on **three areas of action**: tackling the high **cost of debt** and rising risks of debt distress, massively scaling up affordable **long-term financing** for development, and **expanding contingency financing** to countries in need. The implementation of these actions is crucial for a more sustainable world.
- The creation of a **new special purpose fund**—the recovery and sustainability fund **(RSF)**—to be capitalized by international financial institutions **(IFIs)** and **bilateral donors**. The funds will be used to secure collateral against **new tradable bonds**—recovery and sustainability bonds (RSBs)—issued by participating indebted countries. The guarantees attached to the RSBs will provide **credit enhancement** and allow countries to issue the new bonds on terms that are more favourable than those of the current stock of private external debt.
- An independent **sovereign debt authority** that engages with creditor and debtor interests, both institutional and private, is urgently needed. At a minimum, such an authority should provide **coherent guidelines** for suspending debt payments in disaster situations, ensuring SDGs are considered in debt sustainability assessments, and providing **expert advice** to governments in need.
- Furthermore, a **public debt registry** for developing countries would allow both lenders and borrowers to **access debt data**. This would go a long way in boosting **debt transparency**, strengthening **debt management**, reducing the risk of **debt distress** and improving **access to financing.**

> **PEPPER IT WITH**
> Debt Service Suspension Initiative, IMF, Emerging Markets and developing economy, Global South

India-EU Relations

The 3rd India-EU High-Level Dialogue on Trade and Investment was held recently. Under it, three negotiations are going on – an **India-EU Free Trade Agreement**; an **Investment Protection Agreement** and a **Geographical Indications Agreement**.

Pre-Connect:

- A **cooperation agreement** signed in 1994 took the bilateral relationship beyond trade and economic cooperation. The **first India-EU Summit**, in 2000, marked a watershed in the evolution of the relationship.
- The **15th India-EU Summit**, in 2020, provided a **common road map** to guide joint action. The road map highlights engagement across **five domains**: foreign policy and security cooperation; trade and economy; sustainable modernisation partnership; global governance; and people-to-people relations.
- India is the **EU's tenth-largest trading partner** and the EU is the **India's third-largest trading partner** after the US and China. The EU accounts for **16.4%** of India's exports and about **8.3%** of imports.

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1962: India and EEC establish ties	**1994:** Cooperation Agreement between India and the EU	**2000:** First EU-India Summit in Lisbon, Portugal	**2004:** Upgrade to a Strategic Partnership during 5th EU-India Summit	**2012:** 12th EU-India Summit. followed by gap of 4 years
2021: EU-India Leader's Meeting	**2020:** 15th EU-India Summit, focusing on AI/5G, maritime security, connectivity and high level trade dialogue	**2018:** EU adopts new strategy for India, focusing more on political/security cooperation	**2016:** Resumption of regular summits with 13th EU-India Summit	

Timeline of EU- India Relations (1962-2021)
About:
Areas of cooperation:

- **Climate change:** The **India-EU Clean Energy Climate Partnership**, aimed at promoting access to and disseminating clean energy, was launched at the 2016 summit.
- **Defence:** India and the EU regularly conduct joint **military and naval exercises**, which reflect on their commitment to a free, open, inclusive and rules-based order in the **Indo-Pacific**. The first **maritime security dialogue** between the two was

held in 2021. The Information Fusion Centre for the Indian Ocean Region in New Delhi **(IFC-IOR)** has been linked up with the Maritime Security Centre for the Horn of Africa **(MSC-HOA)** established by the EU Naval Force **(NAVFOR).**

- **Science and technology:** Recently, the first ministerial meeting of the India-EU Trade and Technology Council **(TTC)** took place. Its key **focus areas** include **AI, 5G** and **cross-border data sharing**. The Science and Technology **Joint Steering Committee** focuses on areas such as healthcare, artificial intelligence, and earth sciences. In 2020, there was an **agreement** for research and development cooperation in the peaceful use of **nuclear energy**.

- **Connectivity:** The EU has a connectivity partnership with India, which builds on the EU's **"Global Gateway Strategy"** and is the EU's **response to China's BRI**. The EU-India connectivity partnership aims at boosting sustainable digital, transport and energy networks and the flow of people, goods, services, data and capital centered on mutual equity and inclusivity.

- **Strategic:** With the EU's growing interest in the **Indo-Pacific region**, particularly since its adoption of the **Indo-Pacific Strategy**, the EU and India have also continued to express their mutual commitment to a shared vision of a peaceful, prosperous, and secure Indo-Pacific through various joint initiatives and **regional security dialogues**.

EU's inclination towards India:

- **Lucrative market:** India's spectacular GDP growth rate of **6.9%** in 2022, almost double that of the **EU's 3.5%**, makes India a lucrative market as well as an attractive investment destination for the EU.

- **Post-COVID recovery:** Reports suggest top French and Italian businesses are **keen on engaging** more with India. India's rapid economic and technological **rise in turbulent times** when most countries are still struggling to come out of their economic woes is a key reason for **EU firms evincing interest**.

- **Diversification:** The EU is looking for an alternative manufacturing location to **China**. **India's neutral stand** in the rapidly emerging multi-polar world makes India a **reliable** partner. Also, with its **ease of doing business** regulations and **cheap labour**, India provides a **viable location** for the EU.

EU's significance for India:

- **Atmanirbhar Bharat:** India wants to achieve self-reliance in **manufacturing** and **defence procurement**. Leading European defence equipment manufacturers are willing to partner with Indian companies for defence projects aligned with the **'Make in India' programme**.

- **Trade and investment:** India had a **trade deficit** with the EU in **2018-19** that turned into a **trade surplus** of $13 billion during April-February **2022-23**. The India-EU FTA is likely to be more comprehensive than India's recent deals with Australia and the UAE, as it has an ambitious aim to **liberalise 94%** of the **trade in goods**.

- **People-to-people contacts:** India has a vast **diaspora** residing in the EU. It is **imperative** for India to maintain good ties with the EU so as to **protect the interests** of its diaspora.

- **Strategic:** With the **Chinese aggression** towards India, it needs to maintain and diversify its ties so as to build a **consensus against China** in the international arena.

- **Technology transfer: TTC** is formed to increase cooperation in strategic technologies, digital connectivity, clean energy, trade and investments. India can **gain immensely** from its cooperation with the EU.

Challenges:

- India's reluctance to explicitly condemn **Russia's intervention in Ukraine** and the country's increasing **economic cooperation with Russia** have been areas of disagreement. India has called out the EU's double standards on the same for the EU's purchase of gas from Russia. There is also ambiguity about the **EU's strategy** for tackling the **rise of China**.

- The **FTA** can be approved by the **European Parliament**, but the **investment protection agreements** need to be ratified not only by the EU Parliament but also by the **parliaments** of individual **member countries**. Therefore, **separate negotiations** with each state would be required and **reaching a consensus** might be an issue.

- Carbon Border Adjustment Mechanism **(CBAM):** It is a policy aimed at reducing carbon emissions, imposing a **20-35% tax** on **select imports** into the EU starting in **2026**. **Steel exports** from India will fall into this category. It has **raised concern** among the steel manufacturers.

Way forward:

- With **divergent national interests** associated with a group of 27 countries within the EU, India and the EU should not let such divergences of views overwhelm the many **areas of convergence** among them. The EU wants to be more than just a trading bloc and is seeking alliances with like-minded countries like India.

> **PEPPER IT WITH**
>
> EU, EU 27, FTA, India- EU Summit, Indo Pacific, Global Gateway Strategy

- As India continues to grow into a major global player and the EU looks for ways to protect its interests in an increasingly **interconnected world**, it is **essential** that these two states **work together** to ensure that their partnership remains a **positive force** for stability and development in the Indo-Pacific region and beyond.

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India-UK Free Trade Agreement

India-UK Free Trade Agreement (FTA) talks are in the final stages.

Pre-Connect:

- **In 2022-23**, **India-UK bilateral trade** had increased 16 percent to **US $20.36 billion**. India's **exports** were $11.4 billion, and its **imports** stood at US $8.96 billion. India attracted **$1.74 billion** in foreign direct investment **(FDI)** from the UK.

- India was the UK's **12th largest trading partner** for the four quarters till March end, accounting for **2.1 percent of total UK trade**, according to the UK's Department of Business and Trade.

- India's **principal exports** to the United Kingdom include ready-made clothes and textiles, gems and jewellery, engineering goods, petroleum and petrochemical products, transportation equipment, spices, machinery and instruments, medicines, and marine items. The **top imports** from the UK were iron and steel, cosmetics, alcoholic beverages and aluminium products.

Stages of Integration:

There are 5 stages of economic integration.

- A free trade agreement is a pact between two or more nations to reduce barriers to imports.

- FTAs cover goods, services, investment, IPR, non-tariff measures, regulatory procedures and trade facilitation.

- India now has in place 13 FTAs and six PTAs (preferential trade agreements). Negotiations are in place with many other trading partners.

Significance of the India-UK FTA:

- It is expected to facilitate the target of **doubling bilateral trade** between India and the United Kingdom by **2030**. India would also be seeking **special arrangements** for the **movement** of its **people**.

- It will provide certainty, predictability and transparency and will create a more liberal, facilitative and **competitive service sector**. There is a great potential for increasing **exports** in service sectors like IT/ITES, nursing, education, healthcare, including AYUSH and audio-visual services.

- It is expected to increase India's exports in leather, textile, jewellery and processed agri-products. India is also expected to register a **quantum jump** in the export of **marine products** through the recognition of 56 marine units of India. The Mutual Recognition Agreements **(MRAs)** on pharmaceuticals could provide additional **market access**.

- The FTA will call for the enhancement of **sectoral cooperation** by addressing market access issues and **removing trade restrictions**, which will help generate **direct and indirect employment** in both nations.

- It will contribute to **integrating value chains** and help augment mutual efforts to strengthen the **resilience of supply chains**. Thereby, it benefits small, medium and micro-enterprises **(MSME's).**

Economic Union:
Integrating national economic policies and a common currency

Common Market:
Free movements of factors of productioon

Customs Union:
Common level of trade barriers vis-a-vis non-members

Free Trade Area:
Elimination of all tariffs, quantitative restrictions and non-tariff barriers

Preferential Trade Agreements: Partial preference to trading partners

Challenges:

- Several contentious areas including standard production for **Scotch whisky** and **automobiles,** rules on **intellectual property rights**, **financial services**, mutual recognition agreements, and services are proving to be **sticking points**.

- Another area of contention revolves around **rules of origin**, where India's stringent Customs Administration of Rules of Origin **(CAROTAR)** raises concerns among trade partners.

- In the realm of services, **digital regulations** surface as a challenge, considering the increasing digitalization of economies. Addressing issues like free and trusted **cross-border data flows**, **data localization**, and transfer requirements for **source codes** and **algorithms** becomes crucial for both nations.
- The government's procurement through **MSMEs** and its support to promote **generic medicines** through intellectual property rights flexibility can emerge as a key issue during the negotiations.
- India's new model for **bilateral investment treaties**, placing the onus on foreign investors to **exhaust local remedies** before resorting to **international arbitration**, is met with resistance from developed countries.
- Discrepancies exist in the **exclusion** of specific areas from investment protection agreements, particularly in cases concerning **patents** and **compulsory licenses**.

Way forward:

- It will aid in India's ongoing economic progress by **multiplying** the **opportunities** available to it. For the UK, seeking to establish itself as a major trading power after leaving the European Union, the FTA with India presents a pivotal opportunity to secure significant **market access**.
- **Labour** and **environmental commitments** are being taken care of for the **first time** and they have to be done in a manner that is **not unfavourable** to India. **GVC** (global value chains), which were not there in other FTA's, should **benefit MSME's** by reducing trade barriers, access to technology and skills, and enhancing export competitiveness.
- This deal will serve as a **template** for all upcoming trade pacts, including those being discussed with the **EU** (European Union) and the **EFTA** (European Free Trade Association) countries, viz. Iceland, Liechtenstein, Norway and Switzerland.

Rules of Origin:
It prescribes that a minimal amount of processing should happen in the FTA country so that the final manufactured product may be referred to as goods originating in that country. Under this provision, a country that has inked an FTA with India cannot dump goods from some third country in the Indian market by just putting a label on it. It has to undertake a prescribed value addition in that product to export to India. **Rules of origin norms help contain the dumping of goods**.

PEPPER IT WITH
Stages of Economic integration, Rules of Origin, Global Value Chain

ENVIRONMENT & ECOLOGY

Birdwatch Report: 2023

India's iconic raptors are declining fast, warns State of India's Birds Report 2023. The report indicates Long-Term Trends of Species showing a 60% decline and has identified 178 species of birds that needed immediate priority for conservation (High Priority).

About the State of India's Birds Report (SoIB):

- SoIB is published by the State of India's Birds Partnership: a group of 13 government and non-government organisations. The first SoIB report was published in 2020.
- A total of 942 out of the 1358 species recorded in India (as of May 2023) are considered in SoIB. The 942 species are selected based on several criteria, including the availability of data for trends, endemic status, and the importance of India in their global range.

Important findings of the Report:

This report assesses the status of 942 bird species largely using data uploaded by birdwatchers to the online platform eBird. The assessments are based on three indices.

- **Two are indices of change in abundance:**
  - **Long-term Trend** (i.e., change over c. 30 years): Long-term Trends could be determined for 338 species. Of these 338 species, 204 have declined in the long term, 98 are stable, and 36 have increased.
  - **Current Annual Trend** (i.e., annual change over the past 8 years): This could be determined for 359 species (of which 142 are declining (64 in Rapid Decline), 189 are stable, and 28 are increasing.
- **Distribution Range Size within India:** Range Sizes of all 942 species were estimated and classified. Range Size of most species (39%) is Moderate, while that of 28% is Restricted or Very Restricted, and that of a further 33% is Large or Very Large.
- Using these three indices together with the IUCN global Red List of Threatened Species 2022 (were classified into categories of Conservation Priority for India: 178 as High Priority, 323 as Moderate Priority and 441 as Low Priority.
- **Other important findings:**
  - **Generalist birds** that can live in multiple habitat types are doing well as a group.
  - **Specialist birds** are more threatened than generalists. Grassland specialists have declined by more than 50%, indicating the importance of protecting and maintaining grassland ecosystems.
  - **Migratory species** such as long-distance migratory birds from Eurasia or the Arctic, have declined the most – by more than 50% – followed by short-distance migrants.
  - **Birds that feed on invertebrates,** including insects, are declining rapidly, which is in keeping with the worldwide trends of decrease in insect populations.
  - **Birds that feed on fruits and nectar** are doing well.

Major Threats to Birds in India:

- **Monocultures:** Commercial monocultures are known to harbour fewer bird species than natural forests within the same biome. Apart from species loss, the kinds of species that persist in plantations are often very different from those in adjoining forests.
- **Environmental Pollutants:** Heavy metals, pesticides and even veterinary drugs are on top of the list of known environmental pollutants endangering birds.
- **Forest Degradation:** Forest degradation is a well-known driver of biodiversity loss.
- **Urbanisation:** As roads and built-up areas increase in cities, the resulting loss and fragmentation of natural habitat for birds exposes them to novel stressors such as elevated pollution levels, increased temperature, etc.
- **Energy Infrastructure:** Wind turbines and power lines increasingly criss-crossing open habitats pose additional hazards for many birds.
- **Climate Change:** Higher temperatures also cause birds to alter their behaviour, making them spend less time foraging (with negative impacts on survival and reproduction) and shift their ranges to higher latitudes.

Major recommendations to conserve birds in India:

- **Species Groups:** Conservation action plans are needed for all 178 species identified as being of High Conservation Priority in this report. Such action plans would include an assessment of the adequacy of population monitoring, listing of key research gaps, identification of most likely causes of decline, and high-priority measures for mitigation.
  - Urgent conservation action is needed for the most critically threatened species in the country: Jerdon's Courser, Great Indian Bustard, White-bellied Heron, Bengal Florican, and Finn's Weaver.

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- **Habitats:** A number of ecologically important habitats have historically been neglected from a conservation perspective. These include open natural ecosystems (ONEs) like grasslands and shrub-savannahs; inland waters; key coastal habitats; and areas that provide crucial habitat at certain times of the year, like seasonally flooded wetlands.
- **Research:** Research on species, their habitats, the relationship between the two, and how humans affect these relationships is vital, and requires a supportive and enabling environment. Monitoring the state of biodiversity (including birds) is a fundamental research activity.
- **Laws and Policies:** They assist conservation of species and habitats both directly (e.g., banning or regulating environmental pollutants) and indirectly (e.g., enabling and encouraging research on status, pressures, and responses to biodiversity loss).

> **PEPPER IT WITH**
> IUCN, RED LIST, Birdlife International, OPEN natural ecosystems

Conclusion:

Birds serve as valuable indicators of the condition of our natural environment. The report provides important insights into the conservation requirements essential for safeguarding India's avian population.

Electricity (Promoting Renewable Energy through Green Energy Open Access) (2nd Amendment) Rules, 2023

The Central government amended the green energy open access rules for the second time, in which it changed the name of the regulation to Electricity (Promoting Renewable Energy Through Green Energy Open Access) (Second Amendment) Rules, 2023.

Why does India need such changes?

- **Nationally Determined Contributions (NDC):** India is aiming at cutting emissions by 45 percent in line with India's updated NDC target for 2030 and targetting **net zero target by 2070**.
- Green Energy Open Access Rules are a major step towards India going green and cutting emissions by 45 percent in line with India's **updated NDC target for 2030**. It will also help bring down power costs significantly.
- **Empowering Small Consumers**: Open access will also help to empower small consumers to access clean electricity by allowing them to aggregate their total capacity.

What are the changes in the new rules?

- The New Electricity (Promoting Renewable Energy Through Green Energy Open Access) (Second Amendment) Rules, 2023, updates the definition *of entity, and eligibility criteria for open access, and adds offshore wind projects* to the energy sources for which additional surcharge shall not be applicable.

- Under the latest rules, the government has allowed green energy open access to smaller consumers, empowering **Micro, Small, and Medium Enterprises (MSMEs), commercial consumers, and large households** to shift towards green energy.
    - The limit of the **Open Access Transaction** has been reduced *from 1 MW to 100 kW* for green energy, to enable small consumers also to purchase renewable power through open access.
- The government also extended the scheme to offer a waiver of **surcharge for electricity generated** through offshore wind by 7 years - from **2025 to 2032.**
    - In the Previous amendment, waiver of surcharge was to be offered to *only those offshore wind projects* that are commissioned up to 2025.

What are the opportunities through these changes?

- **Opportunity for updating the Energy sector**: Despite the hurdles, commercial and industrial consumers are increasingly seeking to buy electricity directly from renewable energy generators through open access for financial gains due to competitive or cheaper tariffs and decarbonization goals articulated in their *Environmental, Social, and Governance (ESG)* frameworks.
- **Opportunity for Sustainable energy:** With this amendment, virtual net metering provides a similar opportunity with huge potential to make affordable, clean electricity accessible to smaller end consumers.
- **Opportunity for distribution companies:** Distribution companies has an opportunity to generate additional revenue, which they can do by providing grid and balancing services such as power banking, energy storage, etc.
- **Boost for offshore energy:** The amendment of the rules extends the waiver of surcharge to electricity generated from offshore wind farms commissioned from 2025 to 2032. This intends to incentivize tapping the potential of the offshore wind energy sector.
  o Currently, India *does not have any installed offshore wind capacity* but plans to bid out **37 GW by 2029-30**.

What are the challenges/limitations for implementation of New Electricity Rules (2023)?

- **Charges can make costs unviable:** The government imposed several charges, including banking, transmission, wheeling, and standby charges. Further, in the amendment, the applicable standby charges threshold were increased from **10% to 25%** of the energy charges applicable to the *consumer tariff category.*
  o These charges may impact the cost of accessing green power.
- **Bottlenecks at state-level implementation:** Not all power producers and consumers using open access are connected to the central transmission lines and have to rely upon state transmission networks. In these cases, additional charges levied by states will apply, which discourage open-access users.
- **Lack of Infrastructure**: It is also observed that there would be some short-term challenges such as resistance by states and lack of requisite billing and IT infrastructure among discoms.
- **No Regular Framework**: The biggest challenge is 100 kW supplies, which is mostly supplied through low tension (LT) lines, and there is no framework as of now to give open access on LT lines even for 11 KV. So, this is impractical to implement.
  o LT supply is fault-prone, it happens that the generator generates, but consumers cannot consume, which would create practical challenges for metering, data collection, and settlement under open access policy.

Way Forward:

- **Harnessing the Power Transition and Distribution through Smart meters**: By developing digital infrastructure like smart meters to transform energy distribution via designing consumer-centric engagement strategies, country-wide deployment with constant feedback mechanism and investing in a multilevel data security system are the key infrastructure points that need to be covered.
- **Private Player participation to enhance efficacy**: By increasing private player participation *with the help of single regulatory framework* can lead to better co-ordination.
- **Need to invest**: Financial support in form of *subsidies and rebates* for smaller players can bring up the needful entities in power sector market.
- **Making Transmission of Power future ready**: the transmission sector in the value chain needs to be future ready to accommodate changing dynamics within the industry.
  o By improving infrastructure through deployment of anti-theft and anti-oxidation cables to reduce theft and technical losses, shifting toward **high-voltage direct current (HVDC)** lines for long-distance transmission can reduce energy loss.

  > **PEPPER IT WITH**
  > Electricity Amendment Rules, ESG, NDC Targets, Electricity pricing, UDAY scheme,

  o Energy independence is of growing importance to leading nations. India could fast-track its self-reliance goals by leveraging these key imperatives toward *strategy-driven reforms*.

Atlantification of the Arctic Ocean

Recently, researchers have discovered the source of the Arctic Ocean's Sea ice decline. The findings indicate that stronger declines in sea ice will occur when an atmospheric feature known as the Arctic dipole reverses itself in its recurring cycle.

Concept Formation:

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- The **Arctic Dipole** is a regional pattern of winds that can have a significant impact on the Arctic's sea ice conditions. It involves an alternate change in winds over North America and Eurasia that occurs between two phases over years to decades also referred to as the **switchgear mechanism.**
- In the **"negative" phase**, winds rotate counterclockwise over North America and clockwise over Eurasia.
- In contrast, the current **"positive" phase** has persisted since 2007 and is characterized by high pressure centred over the Canadian sector of the Arctic producing clockwise winds, and low pressure over the Siberian Arctic, with counterclockwise winds.
- The counterclockwise winds from the low-pressure region under the current positive Arctic dipole regime drive freshwater from Siberian rivers into the Canadian sector of the Arctic Ocean.
- **This westward movement of freshwater from 2007 to 2021 helped slow the overall loss of sea ice in the Arctic compared to 1992 through 2006.** The freshwater layer's depth increased, making it too thick and stable to mix with the heavier saltwater below. The thick layer of freshwater prevents the warmer saltwater from melting sea ice from the bottom.

About Atlantification of the Arctic Ocean

- **The Arctic Ocean is warming quickly—the Fram Strait is** nearly 2 degrees Celsius warmer **than it was in 1900.** But, Atlantification is about more than rising temperatures, it is a process that is reshaping the physical and chemical conditions of the Arctic Ocean. Because of the oceans' global circulation patterns, water routinely flows from the Atlantic into the Arctic.
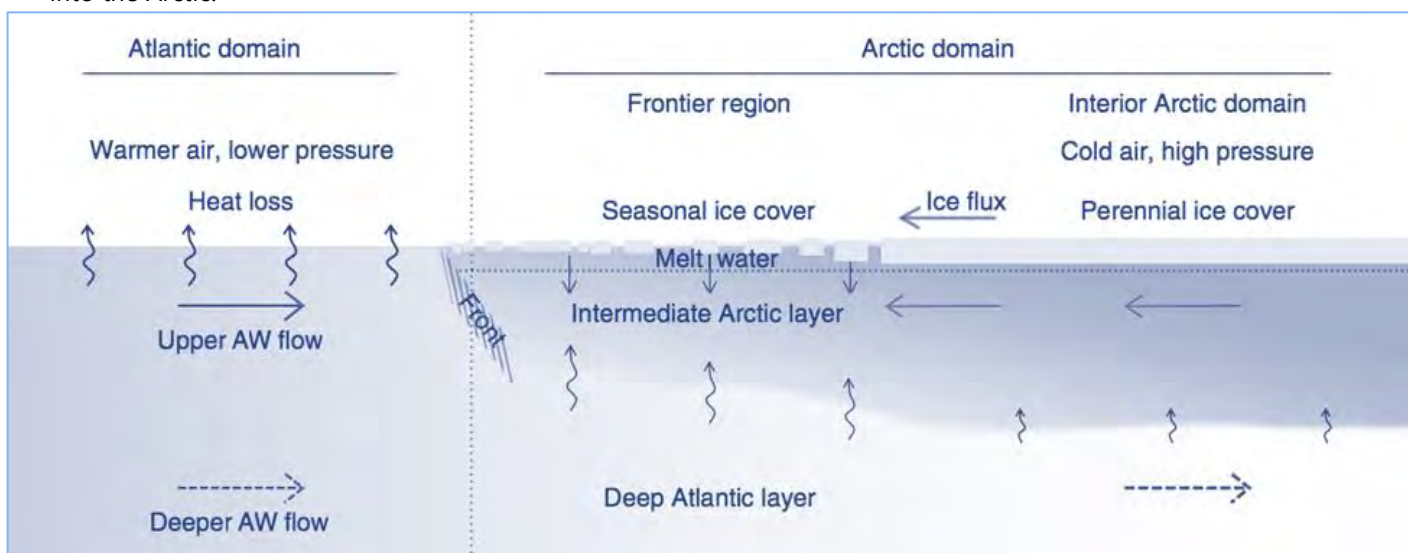
- This exchange mostly occurs in deeper water, with currents carrying warm and relatively salty Atlantic water north. This warm Atlantic water, however, doesn't mix well with the Arctic's surface water, which is relatively cool and fresh. Fresher water is less dense than saltier water, so the Arctic water tends to float on top, trapping the saltier Atlantic water deep below the ocean's surface.
- As sea ice disappears, however, the surface of the Arctic Ocean is heating up. The barrier between the layers is degrading, and Atlantic water is mixing more easily into the upper layer. This is kicking off a feedback loop, where warmer surface water melts more sea ice, further exposing the ocean's surface to sunlight, which heats the water, melts the ice, and allows Atlantic and Arctic water to blend even more. **That's Atlantification: the transformation of the Arctic Ocean from colder, fresher, and ice-capped to warmer, saltier, and increasingly ice-free.**

What drives the Atlantification of the Arctic Ocean?

- Atlantification is driven by anomalous Atlantic Water inflows and is modulated by local processes, including reduced atmospheric cooling, which amplifies warming in the southern Barents Sea; reduced freshwater input and stronger influence of ice import in the northern Barents Sea; and enhanced upper ocean mixing and air–ice–ocean coupling in the Eurasian Basin.

Tipping point
- "Tipping point" – a possibly irreversible and self-reinforcing change in the climate system.
- A key possible driver of Atlantification in the Barents Sea is the disappearance of sea ice from atop the ocean. However, once sparked, Atlantification causes further melting of sea ice, which could, in turn, lead to more Atlantification.
- This change of pattern in the Barents Sea could be viewed as a **tipping point** because it appears to be irreversible, at least on the scale of a few years.

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Implications of Atlantification of the Arctic Ocean:

1. **On marine life:** It can lead to potentially more suitable living conditions for sub-Arctic boreal species near the eastern part of the Eurasian Basin, relative to its western part.

2. **On ecosystem:** Ecosystem responses to Atlantification encompass
   - Increased production,
   - Northward expansion of boreal species (borealization),
   - An increased importance of the pelagic compartment populated by new species,
   - An increasingly connected food web and
   - A gradual reduction of the ice-associated ecosystem compartment.

3. **On Wildlife:** Atlantification could pose concerns for the unique wildlife that inhabit the Barents Sea region. It could be driving fish out of the region and further north, which could, in turn, be negatively impacting the large marine animals that depend on them for food. **A study published in 2018 found that black-legged kittiwakes – a seabird that feeds in the Barents Sea and Svalbard archipelago – have shifted their diets to incorporate more Atlantic fish species over the last decade.** The study authors wrote that the seabirds could be seen as "messengers of Atlantification".

4. **On seeding populations:** Ice acts as an environment that carries organisms from fringe parts of the Arctic to the central Arctic- having implications for the 'seeding populations' present during the growing season. **The term "seeding population" refers** to an animal or plant population that forms in one location and then is transported to another, acting to replenish numbers in the second location.

PEPPER IT WITH
Arctic Dipole, Switchgear Mechanisms, Oceans of the world, Fram strait

5. **Changes in the structure of Ocean beds** (both Arctic and Atlantic Oceans)- Atlantification of the Arctic Ocean has disturbed the bed stratification of the oceans which is the cause of concern.

Global Treaty to End Plastic Pollution

The Intergovernmental Negotiating Committee (INC) to develop an international **legally binding** instrument on plastic pollution released a zero draft on September 4, 2023, ahead of its third session in Nairobi from November 13-19.

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Pre-Connect:

- In March 2022, at the resumed fifth session of the **UN Environment Assembly** (UNEA-5.2), a historic resolution was adopted to develop an international legally binding instrument on plastic pollution, including in the marine environment.

- The resolution requested the Executive Director of the UN Environment Programme (UNEP) to convene an **Intergovernmental Negotiating Committee (INC)** to develop "the instrument," which is to be based on a comprehensive approach that addresses the full life cycle of plastic, including its production, design and disposal.

- The INC began its work during the second half of 2022, with the ambition to complete the negotiations by the end of 2024. The first session of the INC (INC-1) took place in Uruguay followed by a second session (INC-2) in Paris, France. The third session (INC-3) is now scheduled from 13 to 19 November 2023 at the UNEP Headquarters in Nairobi, Kenya.

About Plastic Pollution:

Plastic pollution occurs when plastic has gathered in an area and has **begun to negatively impact** the natural environment **creating problems** for plants, wildlife, and even the human population. Often this includes killing plant life and posing dangers to local animals.

Key Facts:

- The world produces around 400 Million Metric Tons of plastic waste every year.
- 10 Million Tons of plastic per year end up in the ocean.
- **China** is the world's largest plastic-producing country with a 32% share of global production.
- The US (42 MMT) produces more annual plastic waste than any other country.
- 50 billion plastic water bottles are sold each year in the US.
- On average, just 18% of plastic is collected for recycling.
- **India (60%) is the country with the best plastic recycling rate.**
- There are currently 5.25 trillion pieces of plastic in our oceans.

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Causes of Plastic Pollution

Circular diagram (clockwise):
- Plastic is cheap, readily available, and its use is widespread
- Due to urbanisation
- Plastic Takes Over 400 Years to Decompose
- Marine shipping and fishing industries.
- Mismanagement in disposing of Plastic and Garbage
- Unnecessary and Single-Use Plastics
- Lack of Recycling Infrastructure

Types of Plastic Wastes

TYPES OF PLASTIC WASTE
- PET: Polyethylene Terephthalate: Bottles of water and soft drinks
- HDPE: High density Polyethylene Shampoo bottles and helmets
- PVC: Polyvinyl Chloride Water pipes and plastic foil
- LDPE: Low Density Polyethylene Shpping bags and trash bags
- PP: Polypropylene Surgical tools, bumpers, clothing
- PS:Polystyrene Cassettes and CD cases
- Others: Polyactic fibres and Nylon and Fibre glass Baby Feeding Bottles

Plastic Overshoot Day

The Earth witnessed Plastic Overshoot Day on July 28, 2023.

- This marks the point in the year when the amount of plastic waste generated exceeds the global waste management capacity.
- The **Plastic Overshoot Day Report** by Swiss-based research consultancy **Earth Action** (EA) sheds light on the alarming issue of plastic pollution and its implications on the environment.
- Plastic Overshoot Day is determined based on a country's **Mismanaged Waste Index (MWI).** The gap in waste management capacity and plastic consumption is called MWI.
- **Plastic Pollution catastrophe**: According to the estimate, 68,642,999 tonnes of plastic trash will be released into the environment in 2023, signalling a serious plastic pollution catastrophe.
- 12 nations are named in the report as being in charge of 52% of the world's improperly handled plastic garbage. India is one among them.
- The three African nations with the greatest percentages of improperly handled trash are Mozambique (99.8%), Nigeria (99.44%), and Kenya (98.9%).
- **In the MWI, India comes in fourth place with 98.55% of the generated trash.**
- **Short-life Plastics:** About 37% of all plastic used each year is made of short-life plastics, such as plastic packaging and single-use plastics. Leakage into the environment is more likely to occur in these categories.

India Initiatives in Combating Plastic Pollution:

- Ban on manufacturing, selling, and using certain single-use plastic items, including plastic carry bags, starting from July 1, 2022.
- The Plastic Waste Management Amendment Rules, 2021, stipulated a higher thickness of 75 microns from Jan. 1, 2023.
- Companies are adopting sustainable packaging practices, etc.

Global and International Initiatives in Combating Plastic Pollution:

- The United Nations Environment Programme (UNEP) launched the **Tide Turners**, the world's largest youth-led movement against the plastic crisis.
- The UN launched the United Nations Convention on the Law of the Seas (**UNCLOS**).

PEPPER IT WITH

UNEP, Recycling, waste to energy program, syngas, mismanaged waste index, plastic overshoot day

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The G7 and G20 have hosted several initiatives to tackle plastic pollution:

Driest-ever August: El-Nino Impact

According to the India Meteorological Department (IMD), August has been the driest and warmest month in the entire country since 1901 because of El Nino conditions and unfavourable Madden Julian Oscillation.

Monsoon precipitation in August across the country was 162.7 mm this August compared to the 254.9 mm actual trend. Moreover, both average maximum and mean temperatures in the country were the highest since 1901.

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Concept Formation

- During normal conditions in the Pacific Ocean, trade winds blow west along the equator, taking warm water from South America towards Asia. To replace that warm water, cold water rises from the depths — a process called **upwelling**.
- El Niño and La Niña are two opposing climate patterns that break these normal conditions. This phenomenon is the **El Niño-Southern Oscillation (ENSO) cycle.**
- Episodes of El Niño and La Niña typically last nine to 12 months, but can sometimes last for years. El Niño and La Niña events occur every two to seven years, on average, but they don't occur on a regular schedule. Generally, El Niño occurs more frequently than La Niña.

Impacts Of El-Nino:

- **Droughts and Heatwaves:** El Niño is often associated with reduced rainfall in some parts of the world. This can lead to drought conditions and heatwaves in regions that are normally relatively wet. For example, during El Niño events, parts of Australia, Indonesia, and northeastern South America have experienced severe droughts and water shortages.
  - o El Nino is associated with weak monsoons and lower-than-average rainfall in India. Rainfall trends in India over 132 years suggest that severe drought and drought-like conditions have always occurred in El Nino years.

- **Floods and Heavy Rainfall:** Conversely, El Niño can bring above-average rainfall to other areas. This can result in flooding in regions that are typically dry. Some areas of the United States, particularly in the southern states, may experience increased rainfall and flooding during El Niño events.

El Niño
- A warming of the ocean surface, or above-average sea surface temperatures (SST), in the central and eastern tropical Pacific Ocean.
- Over Indonesia, rainfall tends to become reduced while rainfall increases over the tropical Pacific Ocean.
- The low-level surface winds, which normally blow from east to west along the equator ("easterly winds"), instead weaken or, in some cases, start blowing in the other direction (from west to east or "westerly winds").

La Niña
- A cooling of the ocean surface, or below-average sea surface temperatures (SST), in the central and eastern tropical Pacific Ocean.
- Over Indonesia, rainfall tends to increase while rainfall decreases over the central tropical Pacific Ocean.
- The normal easterly winds along the equator become even stronger.

- **Hurricanes and Tropical Storms:** El Niño tends to suppress the development of hurricanes in the Atlantic Ocean but can enhance tropical cyclone activity in the eastern Pacific Ocean. La Niña, is associated with more active hurricane seasons in the Atlantic.

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- **Agricultural Impacts:** The changing rainfall patterns associated with El Niño can have significant impacts on agriculture. Droughts can lead to crop failures, reduced agricultural yields, and increased food prices in affected regions. Conversely, excessive rainfall can lead to waterlogging and crop diseases.

- **Wildfires:** In some regions, particularly in Australia and Indonesia, El Niño can elevate the risk of wildfires. Drier conditions, coupled with higher temperatures, create favourable conditions for the ignition and spread of wildfires.

- **Impact on Fisheries:** A major consequence of an El Niño is the loss of commercially important species where they traditionally occur. A notable example is the movement of the market squid to cooler waters to the north, away from established fisheries in California.

- **Shift in Climate Patterns:** El Niño can disrupt established climate patterns, leading to unusual weather events. For example, it can influence the jet stream, leading to changes in weather patterns across North America and even impacting the occurrence of extreme weather events like blizzards and heavy rainfall.

- **Health Effects**: El Niño-related weather extremes, such as heatwaves and flooding, can have health consequences. Heatwaves can lead to heat-related illnesses, while floods can result in waterborne diseases and other health hazards.

- **Economic Impact:** The various impacts of El Niño including crop failures, damage to infrastructure, increased energy demands for cooling during heatwaves, and the costs associated with responding to natural disasters all contribute to economic losses.
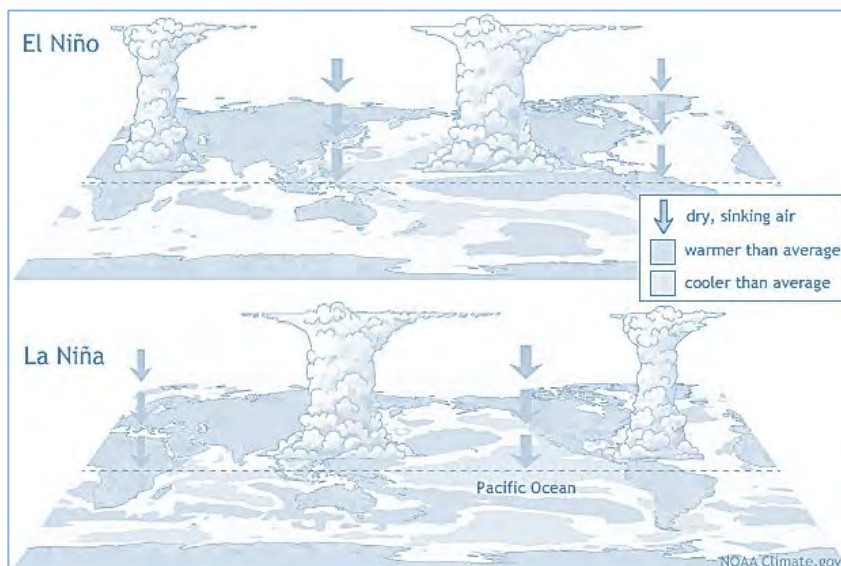
PEPPER IT WITH
IMD, Madden Jullian oscillation, ENSO cycle

Clean Tech for an Inclusive Green Future in India

Prime Minister Narendra Modi in his Independence Day address, talked about India showing the world how to combat climate change. The green economy paradigm provides an optimistic pathway to align development and environmental outcomes by enabling access to cleantech solutions for livelihoods.

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Pre-Connect

- **Green growth is one of the seven priorities (Saptarishi) of the Union Budget** 2023-24 for ushering green industrial and economic transition, environmentally friendly agriculture, sustainable energy and generating various green jobs in the country.

- The Union Budget has envisaged a number of projects and initiatives spread across various sectors and ministries viz. Green Hydrogen Mission, Energy Transition, Energy Storage Projects, Renewable Energy Evacuation, Green Credit Program, PM-PRANAM, GOBARdhan Scheme, Bhartiya Prakritik Kheti Bio-Input Resource Centres, MISHTI, Amrit Dharohar, Coastal Shipping and Vehicle Replacement.

SDG Goals related to Clean Tech:
SDG 6: Ensure availability and sustainable management of water and sanitation for all.
SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all.
SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable.
SDG 13: Take urgent action to combat climate change and its impacts.

About Clean Technology (Clean Tech):

- It refers to avoiding environmental damage at the source through the use of materials, processes, or practices to eliminate or reduce the creation of pollutants or wastes.

- This sector is projected to be the fastest-growing segment in India.

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- This sector comprises six segments, which are, namely, renewable energy, energy efficiency, green transportation, water and wastewater treatment, air quality control and solid waste management.

Advantages of Clean Tech:	Challenges of Clean Tech Development:
• Efficiency and Compatibility • Pollution-free • Low Maintenance • Limitless Supply	• Un-reliability of Renewable Sources • High Initial Installation Costs • Costly Ongoing Research and Development Costs

- **Examples:** Electric cars, solar panels, wind, wave energy, etc.

India and its Clean Tech Initiatives:

- India has achieved remarkable success in sustainable development by implementing clean technology and has become a global clean energy powerhouse.
- India, which was the third-largest emitter of greenhouse gases, advanced a scheme of converting to renewable energy with sun and wind from fossil fuels. This continuous effort has created an increase in the country's renewable energy capacity (around 80 gigawatts of installed renewable energy capacity, 2019), with a compound annual growth rate of over 20%.
- By steadily increasing India's renewable capacity, India is achieving the Paris Agreement with a significant reduction in producing carbon emissions.
- Adopting renewable energy not only brought technological advances to India, but it also impacted employment by creating around 330,000 new jobs by 2022 and more than 24 million new jobs by 2030, according to the International Labour Organization in the renewable energy sector.

Clean Tech initiatives taken in rural India:

- **Solar Dryers:** They are being used to convert surplus agricultural produce, such as tomatoes, into sun-dried products in states like Andhra Pradesh.
- **Biomass-Powered Cold Storages:** These are helping farmers in Maharashtra preserve perishable goods like lemons, resulting in higher profits.
- **Solar-Powered Silk Reeling Machines:** They have reduced labour-intensive work for thigh-reelers in Odisha, doubling their income.
- **Solar Pumps:** They are being deployed to provide reliable irrigation for agriculture, reducing the dependence on fossil fuel-based pumps.
- **Energy-Efficient Food Processing:** Initiatives like the Pradhan Mantri Formalisation of Micro food Processing Enterprises (PM-FME) scheme are supporting the adoption of energy-efficient food processing technology among micro food enterprises.
- **Solar Grain Mills:** They process grains, reducing the carbon footprint and energy costs associated with traditional mills.
- **Solar Refrigerators:** Solar refrigeration is being promoted for fishing communities under schemes like the Pradhan Mantri Matsya Sampada Yojana to reduce food spoilage and improve storage.
- **Collateral-Free Loans:** Government programs like the Pradhan Mantri MUDRA Yojana are being leveraged to provide collateral-free loans for microenterprises, enabling them to adopt cleantech solutions.

PEPPER IT WITH
SAPTRISHI, PM PRANAM, MISHTI, SDG GOALS 6,7,11,13, MUDRA Yojana

- **Financing Support:** Efforts are being made to enable large-scale financing of cleantech solutions, including training bankers to assess credit for such initiatives and providing partial guarantees to mitigate risks.
- **Multi-Actor Partnerships:** Collaborative partnerships are being formed between technology innovators, manufacturers, distributors, financiers, and market-linkage players to create a holistic ecosystem for cleantech adoption. These partnerships facilitate technology access, after-sales services, and market connections.

International Tribunal for the Law of the Sea (ITLOS) – Ocean Pollution

The UN maritime court -the International Tribunal for the Law of the Sea (ITLOS) will hear the landmark case brought by small island states seeking protection of the world's oceans from catastrophic climate change.

About the Issue

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- The International Tribunal for the Law of the Sea (ITLOS) has been tasked by 9 small island states to determine whether or not carbon dioxide emissions absorbed by the oceans qualify as pollution and, if so, what obligations nations have to avoid it.
- The move at the U.N. had been led by **Vanuatu,** one of the island nations that brought the case before the ITLOS.

- The other island states joining the ITLOS case are **the Bahamas, Niue, Palau, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines,** while another 34 state parties will participate in the court hearing.
- The purpose here was **to force the countries to implement substantive measures against climate change.**

About ITLOS

- It is an **independent judicial body** established by the 1982 United Nations Convention on the Law of the Sea (UNCLOS).
- It has jurisdiction over any dispute concerning the interpretation or application of the Convention, and over all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal.
- Disputes relating to the Convention may concern the delimitation of maritime zones, navigation, conservation and management of the living resources of the sea, protection and preservation of the marine environment and marine scientific research.

Ocean Pollution- is defined as the introduction of toxic materials such as plastic, oil, chemicals, agricultural waste, and industrial waste into the ocean waters.

**Causes of Ocean Pollution**

- **Non-point Source Pollution (Runoff):** This results from various dispersed sources such as vehicles, farms, and construction sites, leading to the accumulation of pollutants.
- **Intentional Discharge:** Manufacturing facilities globally release toxic waste, including mercury, into the ocean. Sewage and the massive influx of plastic debris, approximately 8 million metric tons annually, are significant contributors.
- **Oil Spills:** Ship-related incidents, particularly crude oil spills like the 2010 Deepwater Horizon disaster (134 million gallons spilled), have long-lasting and challenging-to-clean consequences.
- **Littering:** Wind-borne litter, including single-use plastics and Styrofoam containers, adds to ocean pollution. An estimated 1 trillion plastic bags are used worldwide each year, taking centuries to biodegrade.
- **Ocean Mining:** Deep-sea mining for minerals such as cobalt, zinc, silver, gold, and copper leads to harmful sulfide deposits and ecosystem disruptions at the ocean's depths.
- **Some facts and data related to Ocean Pollution**: Ocean pollution affects more than 817 animal species around the world, a figure that has increased by 23% in the last 5 years alone. Plastic is one of the most common causes of ocean pollution, but it's not the only thing harming our seas.

Effects of Ocean Pollution:

- Depletion of oxygen content in the water
- Effect of toxic wastes on marine animals
- Failure in the reproductive system of marine animals
- Contamination of the food chain
- Effect on human health
- Disruption to the cycle of coral reefs

Pollutants Entering the Oceans

Ways to protect Small Island Developing States (SIDS) from ocean pollution and the effects of climate change

- **Emission Reduction:** All countries must fulfill their commitments to reduce greenhouse gas emissions to combat global warming, which contributes to rising sea levels and ocean acidification. This involves transitioning to cleaner energy sources and reducing carbon emissions.
- **Marine Protected Areas (MPAs):** Establish and expand MPAs to safeguard marine ecosystems and critical habitats. MPAs support biodiversity, fish stocks, and resilient marine environments.
- **Plastic Pollution Control:** Implement measures to reduce and manage plastic pollution, which poses a significant threat to marine life. This includes reducing single-use plastics and improving waste management systems.
- **Climate-Resilient Infrastructure:** Invest in climate-proof infrastructure to protect coastal areas from erosion and rising seas. This includes building sea walls, roads, and sanitation systems that can withstand climate-related challenges.
- **Sustainable Development Projects:** Support sustainable development projects that help SIDS adapt to climate change and build resilient communities. These projects should focus on diversified economies and protect marine resources.
- **International Collaboration:** Foster international cooperation to address common challenges. This includes sharing best practices, technology transfer, and financial assistance to assist SIDS in their efforts.
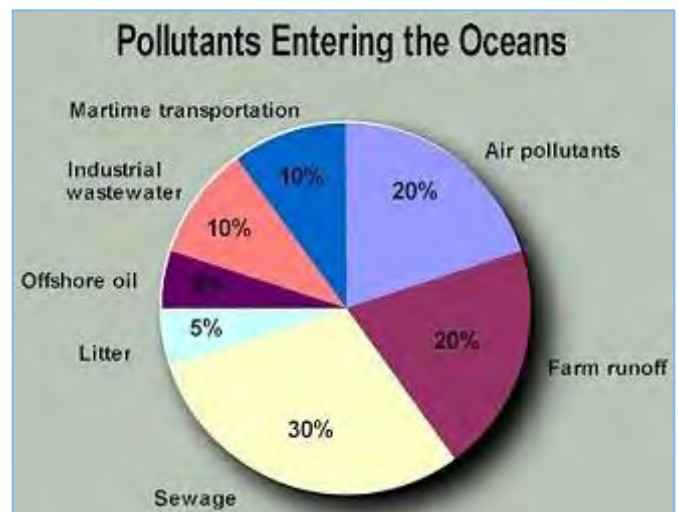
PEPPER IT WITH

UNCLOS, Runoff, oilspills, Black Ice, Marine Protected Areas

Kampala ministerial Declaration on Migration, environment and climate change (KDMECC)

A total of 48 African countries have now agreed to adopt the Kampala Ministerial Declaration on Migration, Environment and Climate Change (KDMECC) to address the nexus of human mobility and climate change in the continent.

About the issue:

- The continental expansion of the KDMECC was discussed at a three-day Conference of States that began August 23, 2023.
- It was co-hosted by the Governments of Kenya and Uganda with support from the International Organization for Migration **(IOM)** and the United Nations Framework Convention on Climate Change **(UNFCCC)**.
- It also enabled the African States to develop a common position ahead of the **Africa Climate Summit** and the Conference of Parties **(COP 28)**.

About KDMECC:

- KDMECC is a significant outcome of the Inter-Ministerial Conference on Migration, Environment, and Climate Change held in Kampala, Uganda which was originally signed and agreed upon by 15 African states. This declaration represents a collective commitment and agreement among governments from various African countries.
- The conference was organized by RCC Kampala, the International Organization for Migration (IOM), and the Ministry of Water and Environment of Uganda.
- It addresses the growing concerns related to the impact of climate change on human mobility. It highlights the environmental and climate-induced challenges that affect people and communities, particularly in Africa, and emphasizes the need for enhanced cooperation and action in response to these challenges.

What is the need for KDMECC and KDMECC- AFRICA?

- **Rising Climate-Induced Mobility:** The data reveals that there were over 7.5 million new internal disaster displacements in a single year. If unchecked, this could escalate to a staggering 105 million internal migrants within Africa alone due to climate-induced factors like desertification and extreme weather events.
- **Humanitarian and Development Concerns:** Climate-induced mobility disrupts lives and livelihoods, creating humanitarian crises and socioeconomic vulnerabilities. Addressing these issues is essential to safeguard the well-being and rights of affected populations.
- **Global Importance and Urgency:** The urgency of tackling climate-induced mobility is paramount as climate change accelerates. It's now a pressing global concern affecting regions and countries worldwide.
- **Member State Priorities:** KDMECC and KDMECC-Africa reflect the commitment of Member States to work collectively on these challenges. They offer a platform for nations to align their priorities and collaborate on practical solutions.
- **Inclusivity:** Both initiatives underscore the importance of inclusivity, ensuring that the voices of youth, women, and vulnerable groups are central. This recognizes the disproportionate impact climate-induced mobility can have on these segments of the population.
- **Sustainable Development:** KDMECC and KDMECC-Africa recognize migration's potential as a tool for sustainable development. They aim to harness migration in ways that benefit both migrants and host countries, promoting sustainable outcome

Climate Change:
Global climate change refers to the average long-term changes over the entire Earth. These include warming temperatures and changes in precipitation, as well as the effects of Earth's warming, such as:
- Rising sea levels
- Shrinking mountain glaciers
- Ice melting at a faster rate than usual in Greenland, Antarctica and the Arctic
- Changes in flower and plant blooming times.

PEPPER IT WITH
Africa, IOM, UNFCCC, Africa Climate Summit, COP 28

Methane eating Bacteria: Reducing Global Warming

According to a new study by the journal Proceedings of the National Academy of Sciences, a strain of bacteria is found that could potentially remove methane from major emission sites such as landfills, paddy fields, and oil and gas wells. Harnessing these bacteria on a large scale can keep 240 million tonnes of methane from reaching the atmosphere by 2050, as shown by the study published in.

The bacterial strain Methylotuvimicrobium buryatense 5GB1C

- **"Methylotuvimicrobium buryatense" 5GB1C**, formerly Methylomicrobium buryatense 5GB1C (1), is a **type I methanotroph** employing the ribulose monophosphate (RuMP) cycle

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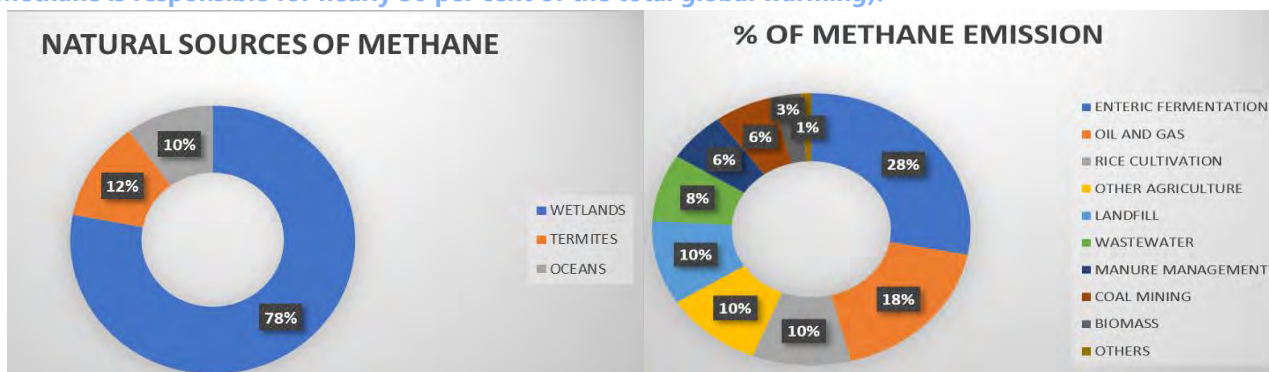
for carbon assimilation and growing only on one-carbon substrates. It has emerged as a promising candidate for industrial applications due to its fast growth, tolerance to high salinity and pH, and robust genetic tools.

- Methanotrophs are a diverse group of **gram-negative bacteria** that are related to other members of the Proteobacteria.
- These bacteria are classified into **three groups** based on the pathways used for the assimilation of formaldehyde (the major source of cell carbon) and other physiological and morphological features.
- The bacteria consume methane, which is over 85 times more potent than carbon dioxide (CO2) on a 20-year timescale. **(Methane is responsible for nearly 30 per cent of the total global warming).**

Methane (CH_4)-
- It is estimated to have a **Global Warming Potential (GWP)** of 27-30 over 100 years.
- CH_4 emitted today lasts about a decade on average, which is much less time than CO_2. But CH_4 also absorbs much more energy than CO_2. The net effect of the shorter lifetime and higher energy absorption is reflected in the GWP.
- The CH_4 GWP also accounts for some indirect effects, e.g.- CH_4 is a precursor to ozone, and ozone is itself a GHG.

NATURAL SOURCES OF METHANE

WETLANDS 78%
TERMITES 12%
OCEANS 10%

% OF METHANE EMISSION

ENTERIC FERMENTATION 28%
OIL AND GAS 18%
RICE CULTIVATION 10%
OTHER AGRICULTURE 10%
LANDFILL 10%
WASTEWATER 8%
MANURE MANAGEMENT 6%
COAL MINING 6%
BIOMASS 3%
OTHERS 1%

Features that make the bacterial strain Methylotuvimicrobium buryatense 5GB1C, a promising candidate for methane removal technology:

- **Low Methane Consumption Threshold:** This strain can consume methane at low concentrations, as low as **500 parts per million (ppm)**, which is significantly lower than the typical concentration required by other methanotrophs (5,000-10,000 ppm). It can even grow at concentrations as low as 200 ppm.
- **Efficient Growth:** The bacterial strain demonstrates robust growth and methane consumption even at low methane concentrations, making it highly effective at removing methane from the atmosphere.
- **Biomass Production:** After consuming methane, the bacteria produce biomass, which can be utilized as feed in aquaculture. This biomass generation adds economic value to the methane removal process.
- **Potential for Economic Benefit:** The study indicates that for every tonne of methane consumed, the bacteria can generate approximately 0.78 tonne of biomass with a value of roughly $1,600 per tonne, suggesting economic viability.
- **Scalability:** The strain's ability to consume methane efficiently at low concentrations makes it suitable for large-scale deployment. By using treatment units and potentially making genetic modifications, it can contribute to substantial methane reduction.

Suggestions for Improvement in Methane Removal Technology:

- **Optimize Genetic Modifications:** Further research should focus on refining genetic modifications to enhance the performance of methane-eating bacteria like Methylotuvimicrobium buryatense 5GB1C.
- **Develop Biofilters:** Design and develop efficient biofilters or vessels that contain the necessary nutrients for the growth of methane-consuming microorganisms. These biofilters can help create controlled environments that support the rapid growth and activity of methanotrophs.
- **Temperature Control:** Address the challenge of temperature control. As optimal growth temperatures for these bacteria typically range between 25-30°C, efforts should be made to control and maintain these temperatures within treatment units.
- **Field Testing:** Conduct extensive field studies to test the feasibility and effectiveness of deploying methane removal technology on a larger scale.
- **Techno-Economic Analysis:** Evaluate the techno-economics of the technology to ensure its economic feasibility. This includes assessing the costs of implementation, maintenance, and potential revenue streams from biomass production.
- Encourage collaboration between nations and international organizations
- Advocate for policy measures that incentivize the adoption of methane removal technology.
- Public Awareness

PEPPER IT WITH

Bacteria, GWP, Methanotroph, Methane Consumption Threshold, Biofilters

SCIENCE & TECHNOLOGY

Global Framework on The Expansion Of Ethical AI

The Prime Minister of India has called for a Global Framework for the expansion of "ethical" artificial intelligence (AI) tools while addressing the B20 Summit in Delhi. This reflects a shift towards formulating regulations based on a "risk-based, user harm" approach.

PRE-CONNECT:

- Telecom Regulatory of India (TRAI) has released a new consultation paper that recommended a **domestic statutory authority** to regulate AI in India following a "risk-based framework".
- NITI Aayog released a series of papers on Responsible AI for All.
- The Indian government intends to introduce the **Digital India Bill** that will replace the IT Act 2000. This bill aims to draw a clear distinction between different types of online intermediaries.
- **Microsoft** released a paper titled **"Governing AI: A Blueprint for India"**, prescribing safety and security requirements. It also offered to share its "specialised knowledge" about advanced AI models to help the government define the regulatory threshold.

APPLICATIONS OF AI:

1. **Healthcare-** AI improves disease diagnostics, enables personalized medicine, accelerates drug discovery, enhances telemedicine and integration of wearable devices and IoT-enabled health monitoring systems.
2. **Education**- AI helps in plagiarism detection, and transcription for faculty lectures, and employs chatbots for student enrolment and retention.
3. **Agriculture**- AI improves soil and crop health with weather forecasting, precision farming and predictive analytics, chatbots, and autonomous robots assisting farmers, etc. E.g.- Saagu-Baagu pilot of Telangana under AI for Agriculture Innovation (AI4AI) of WEF provides agri-tech services to farmers.
4. **Transportation**- AI applies computer vision services, such as object detection or tracking to support traffic management, delay prediction, fleet integration, automatic traffic incident detection law enforcement, etc. E.g.- iRASTE (Intelligent Solutions for Road Safety through Technology and Engineering) for road safety, Intelligence Traffic Management System (ITMS) By Delhi Police.
5. **Space**- AI can be used for spacecraft navigation, satellite imaging, mission planning, and identifying new astronomical phenomena.
6. **Cybersecurity**: AI provides crucial analysis and threat identification to reduce breach risk and improve security posture. It can also identify and prioritize risk, promptly detect malware on a network, guide incident response, and prevent intrusions.

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WHAT IS AI?

It is the intelligence demonstrated by machines, as opposed to the natural intelligence displayed by humans or animals. The term artificial intelligence was coined in 1955 by John McCarthy.

Types of AI:

Weak AI: This type encompasses systems designed to carry out one particular task such as Video games like chess and personal assistants **like Amazon's Alexa and Apple's Siri.**

Strong AI: These systems are more complex and can perform tasks resembling human-like thinking. They are programmed to handle situations that require problem-solving without human intervention such as **self-driving cars or hospital operating rooms**.

AI holds the potential to boost the national growth rate by 1.3% and add $957 bn to India's economy by 2035.

Issues with AI: The ethical concerns associated with the use of AI include privacy, system or algorithm bias, and violation of intellectual property rights. AI can also have a disruptive impact on society necessitating efforts in skilling and reskilling.
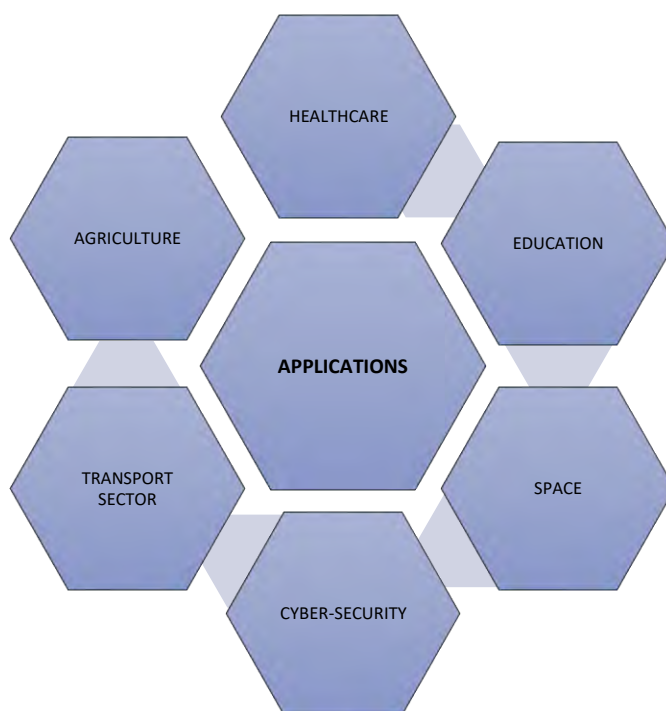
PRIVACY CONCERNS

a. According to AI Global Surveillance (AIGS) Index, AI surveillance systems that have the **potential for misuse such as racial profiling.**

b. **Deepfakes** (synthetically generated images or videos replacing a person's likeness) harm people's trust in media. E.g.-used in pornographic websites, misrepresenting political leader's speeches, etc.

AI BIAS IN DECISION-MAKING

a. AI facial recognition and surveillance systems are **biased against coloured and minority people**.

b. Amazon shut down its AI recruiting tool as it was penalizing women, and selected 60% male candidates due to historical bias in data.

MANIPULATION OF HUMAN JUDGEMENT

AI algorithms can influence human behaviour and interactions, known as surveillance capitalism.
E.g.- Cambridge Analytica data scandal where AI was used to alter voting decisions.

LACK OF TRANSPARENCY

• Many AI algorithms operate as black boxes, making it difficult to understand or predict their operations

UNEMPLOYMENT AND INEQUALITY

a. Wealth distribution challenge: AI-driven companies may increase profits by drastically **reducing their reliance on the human workforce**.

b. AI knowledge and tools may be **inaccessible to marginalised and underserved communities** in developing and under-developed countries.

c. According to Mckinsey estimates, robots **could replace around 30% of the world's current human labour by 2030**. It is more technically feasible to automate predictable activities like welding, packaging, food preparation, etc. than unpredictable ones like construction, forestry, raising outdoor animals, etc.

AI DISASTERS

a. The use of autonomous things like **self-driving cars, robots, and drones** work without human interaction, raises ethical issues related to **lack of transparency**, **liability, and responsibility**.

b. **Lethal automated weapons** independently identify and engage targets based on programmed constraints and descriptions. The **Campaign to Stop Killer Robots** warned about the AI arms race.

GENERATIVE AI-SPECIFIC CONCERNS

• **Open AI chatbots** like ChatGPT, Bard AI, etc. are substituting the traditional content writing, software development, and logistics.

a. They have issues of **accuracy and truthfulness** with the potential to spread or create incorrect or false information.

b. Also, there is **uncertainty surrounding the authorship and copyright** of content created by AI which students sometimes misuse to complete their homework and assignments.

AI laws and initiatives in India- The Ministry of Electronics and Information Technology (MeitY) is the regulatory body of AI in India.

1. **IT Act, 2020:** Section 43A and 72A are relevant in the context of AI systems, that provides compensation for data privacy breach due to negligent handling of personal information.

2. **The Digital Personal Data Protection Act, of 2023-** This act excludes publicly available personal data, raising concerns about data usage for scraping and AI development.

3. **NITI Aayog** released **the National Strategy on AI** in 2018 and drafted a document on **Responsible AI for all.**

4. **AIRAWAT-** AI Research, Analytics, and Knowledge Assimilation is an AI-based cloud computing infrastructure under the **National AI program** designed to meet India's AI requirements.

5. **INDIAai**- The National AI Portal of India, a joint venture of the MeitY, the National E-Governance Division of the Department of Electronics and Information Technology, and the National Association of Software and Service Companies prepares the nation for an AI future.

Expansion of AI is a double-edged sword. As we embrace the potential of AI, we must also understand our ethical responsibilities. It is imperative that human control over AI is maintained and a balance is kept between AI usage and effective governance.

PEPPER IT WITH

B-20, TRAI, Digital India Bill, IT Act 2020, National Strategy on AI, Data Protection Act, INDIAai

NASA'S QUESST Mission

National Aeronautics and Space Administration (NASA) is developing a supersonic aircraft, called **X-59s, as part of its QUESST mission.**

Pre-Connect:

- In 1973, fifty years ago, the US federal government **had banned all civilian supersonic flights over land.** The rule prohibits non-military aircraft from flying faster than sound so their resulting sonic booms won't startle the public below or concern them about potential property damage.
- With this in mind, NASA is exploring the possibility of designing a commercially viable and economical supersonic jet that would travel between Mach 2 and Mach 4.

About QUESST Mission: The goal is to achieve a regulatory shift in the laws that focuses on the sound an aircraft creates, instead of a speed limit.

Objective:

- It aims to collect data that could make supersonic flight over land possible, dramatically reducing travel time in the United States or anywhere in the world.
- Design and build technology that reduces the loudness of a **sonic boom** to a gentle thump to people on the ground.
- Fly the X-59 over several U.S. communities to gather data on human responses to the sound generated during supersonic flight and deliver that data set to U.S. and international regulators.

Phases: To achieve the goals of the mission, NASA has laid out QUESST in four phases -

- **Phase 1 (2018–2024): Aircraft Development**
  NASA anticipates that initial flights to prove performance and safety (also known as "envelope expansion").

- **Phase 2 (2024): Acoustic Validation**
  NASA will fly the X-59 within the supersonic test range to prove the quiet supersonic technology works as designed, aircraft performance is robust in real atmospheric conditions, and the X-59 is safe for operations in the National Airspace System.

- **Phase 3 (2025-2026): Community Response Study**
  The agency will use the X-59 to gather data on how effective the quiet technology is in terms of public acceptance. This will be done by flying over select U.S. cities beginning in 2025 and asking residents to share their response to the sound the X-59 produces.

- **Phase 4 - 2027: Final data to regulators**
  NASA will provide a complete analysis of the community response data to U.S. and international regulators for their use in considering new sound-based rules regarding quiet supersonic flight over land.

Conclusion:

NASA will use the experimental X-59 to provide data that could lead the policymakers to change the rules that ban all civilian supersonic flight over land. **New sound-based rules** regarding supersonic flight over land can be written and adopted, which would open the doors to **new commercial cargo and passenger markets to provide faster-than-sound air travel.**

GS CONNECT

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Mach Number Flow Regimes
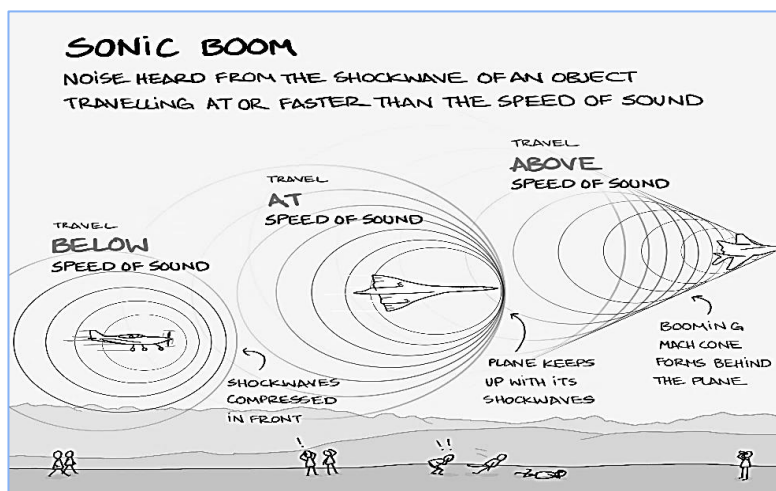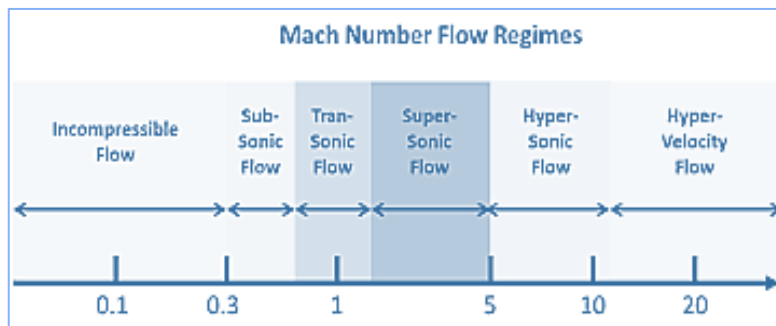
SONIC BOOM

WHAT ARE SONIC BOOMS?
A Sonic boom is a shock wave that is produced by an aircraft or other object flying at a speed equal to or exceeding the speed of sound and that is heard on the ground as a sound like a clap of thunder. When such an aircraft flies at a low altitude, the shock wave may be of sufficient intensity to cause glass breakage and other damage.

PEPPER IT WITH
NASA, Supersonic flights, Mach Number, Sonic Boom

News Media V/S ChatGPT

A group of news media organisations, including The New York Times, Reuters, CNN, and the Australian Broadcasting Corporation, recently shut off OpenAI's ability to access their content.

Pre-Connect:

Local newsrooms have been struggling owing to reduced viewers, advertising and financial crunch. This has led to the closure of many outlets.

The culprit? Digital Platforms then and Open AI, now.

While News Media and Digital Giants have already been at loggerheads with each other in the last 2 years over payment negotiations, the news media has now demanded adequate benefits for the use of its content by AI platforms.

ARTIFICIAL INTELLIGENCE:

The cycle of AI innovation:

- The use of AI to produce pieces of journalism has been in experimentation for some time. AI innovation is categorized into three waves: **automation, augmentation, and generation**.
- During the **first phase**, the focus was on automating data-driven news stories, such as financial reports, sports results, and economic indicators, using natural language generation techniques.
- **Second wave** arrived when the emphasis shifted to augmenting reporting through machine learning and natural language processing to analyse large datasets and uncover trends.
- The **third and current wave** is generative AI. It is powered by large language models capable of generating narrative text at scale. Now, we could ask a chatbot to write a longer, balanced article on a subject or an opinion piece from a particular standpoint.
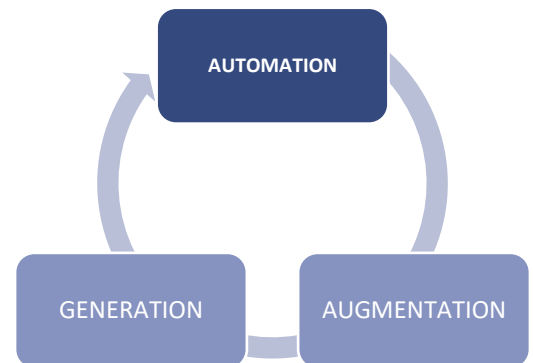
About ChatGPT:

ChatGPT is an AI conversational chatbot. Users can ask questions on just about anything, and it will respond accurately with answers, stories, and essays. It can even help programmers write software code. All of this output is generated within minutes.

Face-off between News Media and ChatGPT:

- Software products like ChatGPT are based on what AI researchers call **'large language models' (LLMs).** These models require enormous amounts of information to train their systems.
- Tech companies that work on LLMs like Google, Meta or Open AI are secretive about what kind of training data they use.
- But it is clear that online content found across the Internet, such as social media posts, news articles, Wikipedia, e-books, form a significant part of the dataset used to train ChatGPT and other similar products.
- This data is put together by scraping it off the Internet. Tech companies use **software called 'crawlers' to scan web pages,** hover up content and put it together in a dataset that can be used to train their LLMs.
- Besides ChatGPT, OpenAI makes money by selling access to its AI models for developers and enterprises directly.
- Recently, New York Times and others blocked a web crawler known as GPT bot, through which OpenAI used to scrape data. **They told OpenAI that the company can no longer use their published material and their journalism, to train their chatbots.**

Concerns of News Media companies:

- Search engines like Google or Bing also use web crawlers to index websites and present relevant results when users search for topics. The only difference is that search engines represent a mutually beneficial relationship.
- While Google profits off of the news content, it also directs a significant amount of user traffic to news websites.
- OpenAI, on the other hand, provides no benefit, monetary or otherwise, to news companies. It simply collects publicly available data and uses it for the company's own purposes.

Way forward:

- OpenAI should not infringe the copyrights or intellectual property of any news media company.
- It should focus on compensating adequately in order to access the online content for uninterrupted and mutual survival.

PEPPER IT WITH

AI innovation, Large Language Models, Open AI, crawlers

The ability of ChatGPT to produce ideas and content makes it a valuable asset for all of us. But the benefits derived should be shared with the resource providers as well.

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ADITYA – L1 MISSION

India's first solar observatory mission - **Aditya-L1** was launched by the Indian Space Research Organisation (ISRO) on September 2, 2023.

Pre-Connect

- Indian scientists have so far observed the Sun through telescopes on the ground, and relied on data from other solar missions.

- Aditya-L1 presents a unique opportunity to not only address the existing gaps but also complement with newer data to address the unsolved problems in solar physics.

Need behind the study of the Sun from space:

- Studying the Sun helps us understand more about other stars.

- Sun has various explosive phenomena. These can damage our satellites and communication systems. Studying the Sun and its effects on **the space weather** may help in providing early warnings for such events.

- Earth's atmosphere and the magnetic field act as protective shields that block out harmful radiations, such as UV light. This means studying the Sun from the Earth cannot provide a complete picture.

About Aditya – L1:

- The PSLV will initially place the Aditya L-1 in a Lower Earth Orbit. (LEO)

- Subsequently, the spacecraft's orbit around the Earth will be raised multiple times before it is put on a path to a halo orbit around the **L1 Lagrange point**.

- The spacecraft will finally be stationed in a halo orbit around the **Lagrange point 1 (L1) of the Sun-Earth system**, which is about 1.5 million km from the Earth.

- It will cover its journey to the L1 point in about four months.

Objectives of Aditya L-1 mission:

The mission's main objective is to expand our knowledge of the Sun, and how its radiation, heat, flow of particles, and magnetic fields affect us. Below is the list of objectives that the mission will embark upon:

- To study the upper atmospheric layers of the Sun called **chromosphere and corona**. While the corona is the outermost layer, the chromosphere is just below it.

- To examine **coronal mass ejections (CMEs),** which are large expulsions of plasma and magnetic fields from the Sun's corona.

- To analyse the corona's magnetic field and the driver of the **space weather**.

- To understand why the Sun's not-so-bright corona is a million degrees Celsius hot when the temperature on the surface of the Sun is just about 5,500 ° C.

- To help scientists know the reasons behind the acceleration of particles on the Sun, which leads to **the solar wind** - the constant flow of particles from the Sun.

GS CONNECT

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What is Space Weather?

- Space weather refers to changing environmental conditions in space.

- It is mainly influenced by activity on the Sun's surface.

- Solar activities such as the solar wind and Coronal Mass Ejections etc. affect the nature of space.

WHAT ARE LANGRANGE POINTS?

- There are five Lagrange points, L1 to L5, between any two orbiting celestial bodies.

- These points can act as parking spots in space where the gravitational pull of the celestial objects equals the centripetal force required to keep a satellite in orbit.

- This means satellites placed at Lagrange points do not need to expend a lot of fuel to remain in position.

- Going to Lagrange point 1 places the spacecraft at a point beyond the Moon between the Earth and the Sun.

- This offers the spacecraft an unobstructed view of the Sun even during phenomena like an eclipse.
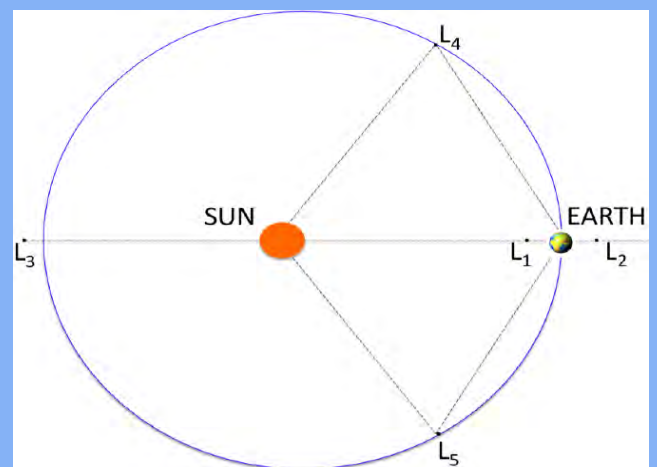
	Payloads: The spacecraft will carry seven payloads to observe solar activities for five years.	
SI. No.	Payload	Capability
1	Visible Emission Line Coronagraph (VELC)	Corona/Imaging & Spectroscopy
2	Solar Ultraviolet Imaging Telescope (SUIT)	Photosphere and Chromosphere Imaging- Narrow and Broadband
3	Solar Low Energy X-ray Spectrometer (SoLEXS)	Soft X-ray spectrometer: Sun-as-a-star observation
4	High Energy L1 Orbiting X-ray Spectrometer (HEL10S)	Hard X-ray spectrometer: Sun-as-a-star observation
5	Aditya Solar Wind Particle Experiment (ASPEX)	Solar wind/ Particle Analyzer Protons and heavier Ions with directions
6	Plasma Analyser Package for Aditya (PAPA)	Solar wind/ Particle Analyzer Electrons and heavier Ions with directions
7	Advanced Tri-axial High-Resolution Digital Magnetometers	In-situ magnetic field (Bx, By and Bz)

Space agencies of different countries exploring the Sun:

NASA (USA)	PARKER SOLAR PROBE
JAXA (JAPAN)	HINOTORI, HINODE
ESA (EUROPE)	ULYSSES, PROBA-3, SMILE
CHINA	ASO-S
NASA + ESA	THE SOLAR ORBITER

Conclusion

While landing on the Sun remains a formidable challenge due to its extreme temperatures, missions like Aditya-L1 are poised to unlock valuable insights into our star, the Sun, from their vantage point in space.

> **PEPPER IT WITH**
> Space Weather, LEO, Solar Wind Coronal Mass ejection, L1 Lagrange Point

DEEP OCEAN MISSION - 'SAMUDRAYAAN'

India's first and unique manned Deep Ocean Mission 'Samudrayaan' plans to send 3 humans to 6000m (6 km) ocean depth in a submersible, to study the deep-sea resources and biodiversity assessment while ensuring minimal disruption to the ecosystem.

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Pre-Connect

Estimated Ocean Resources: India has been allotted a site of 75,000 sq. km. in the Central Indian Ocean Basin (CIOB) by the UN International Sea Bed Authority for the exploitation of polymetallic nodules (PMN). Just by utilizing 10% of the PMN reserve available in the area, the country can meet its energy requirements for the next 100 years.

About Samudrayaan:

- Samudrayaan is a project under the Deep Ocean Mission. The Deep Ocean Mission was launched in September 2021 as the **Central Sector Scheme of the Ministry of Earth Sciences (MoES)** with the approval of the Cabinet.

- With this step India joined the **elite club of nations such as USA, Russia, Japan, France and China** in having such underwater vehicles for carrying out subsea activities.

- It will facilitate MoES in carrying out deep ocean exploration of the non-living resources such as polymetallic manganese nodules, gas hydrates, hydro-thermal sulphides, and cobalt crusts, located at a depth between 1000 and 5500 metres.

> Preliminary estimates indicate that 380 million Metric Tonnes (MMT) of Polymetallic Nodules comprising Copper, Nickel, Cobalt and Manganese are available within the allocated area. The estimated value of these metals is about US$ 110 billion. The polymetallic sulphides are expected to contain rare earth minerals including gold and silver.

> **BLUE ECONOMY POLICY:** It envisages the optimal utilization of all sectors of the maritime domain, (living, non-living resources, tourism, ocean energy, etc.) for sustainable development of coastal areas. This includes Ocean Governance, Coastal Marine Spatial Planning and Tourism Priority, Marine Fisheries, Aquaculture and Fish Processing.
> **BIO-PROSPECTING:** Exploration of biodiversity for new biological resources of social and economic value.

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MATSYA 6000

- Preliminary design of the **manned submersible MATSYA 6000** is completed and realization of the vehicle has been started with various organizations including the Indian Space Research Organisation (ISRO), Indian Institute of Tropical Meteorology (IITM) and Defence Research and Development Organisation (DRDO) roped-in to support the development.
- Sea trials of 500 metre-rated shallow water version of the manned submersible are expected to take place in the last quarter of 2022 and MATSYA 6000 will be ready for trials by the second quarter of 2024.
- MATSYA 6000 is expected to have an endurance of 12 hours of operational period and 96 hours in case of emergency.

Major objectives of the Deep Ocean Mission

- Address issues arising from long-term changes in the ocean due to climate change.
- Develop technologies for deep-sea missions of living (biodiversity) and non-living (minerals) resources.
- Develop underwater vehicles and underwater robotics.
- Provide ocean climate change advisory services.
- Identify technological innovations and conservation methods for sustainable utilization of marine bioresources.
- Develop offshore-based desalination techniques.
- Develop renewable energy generation techniques.
- Provide clean drinking water and explore the avenues of desalination of water as well as extracting minerals from the ocean belt.

Components of Deep Ocean Mission

- **Development of Technologies for Deep Sea Mining, and Manned Submersible i.e.** A manned submersible as well as an Integrated Mining System will be also developed as per the requirements to sustain 6000 m depth in the central Indian Ocean.
- **Development of Ocean Climate Change Advisory Services:** A suite of observations and models will be developed to understand and provide future projections of important climate variables on seasonal to decadal time scales under this proof-of-concept component. This component will support the **Blue Economy priority area** of coastal tourism.
- **Technological innovations for exploration and conservation of deep-sea biodiversity: Bio-prospecting** of deep-sea flora and fauna including microbes and studies on sustainable utilization of deep-sea bio-resources will be the main focus. This component will support the Blue Economy priority area of Marine Fisheries and allied services.
- **Deep Ocean Survey and Exploration:** The primary objective of this component is to explore and identify potential sites of multi-metal hydrothermal sulphide mineralization along the Indian Ocean mid-oceanic ridges. This component will additionally support the Blue Economy priority area of deep-sea exploration of ocean resources.

Budget Estimate and Allocation

- Rs 650 crore has been allocated in Union Budget 2022-23 (up from Rs. 150 crore during 2021-22) for India's Deep Ocean Mission.
- The Earth Sciences Ministry's entire budget has more than doubled to Rs 2653.51 crore in 2022-23, from Rs 1281 crore in the year 2013-14.
- The overall estimated cost of the Deep Ocean Mission is Rs. 4077 crores for a period of five years (2021 to 2026).

- **Energy and freshwater from the Ocean:** Studies and detailed engineering design for offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plant are envisaged in this proof-of-concept proposal. This component will support the Blue Economy priority area of offshore energy development.
- **Advanced Marine Station for Ocean Biology:** This component is aimed at the development of human capacity and enterprise in ocean biology and engineering. This component will translate research into industrial application. This component will support the Blue Economy priority area of Marine Biology, Blue trade and blue manufacturing.

CONCLUSION:

As India moves ahead to develop a sustainable ocean-based economic model to harness coastal resources, we need to create awareness amongst the public and user communities about the various achievements as well as services rendered by MoES.

PEPPER IT WITH
Central Indian Ocean basin (CIOB), UN International Sea Bed Authority, polymetallic nodules, bioprospecting

Private Sector in Space

Chandrayaan-3's spectacular launch underscores the gains of opening up the space sector to private players. A number of private companies have contributed to the development of ISRO's Chandrayaan-3 spacecraft which successfully landed near the south pole of the Moon.

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Pre-Connect

- The whole space programme for the private sector unfolded with the formation of the **Indian National Space Promotion and Authorisation Centre (IN-SPACe)**, as a nodal agency that functions as an autonomous agency in the Department of Space (DOS).
- The government has also formed a body that will represent startups in the space sector - the **Indian Space Association (ISpA)**. It has brought all the private entities such as **Agnikul, Astrome etc.** under one umbrella.
- **NewSpace India Ltd (NSIL)** is mandated to transfer the matured technologies developed by the ISRO to Indian industries.
- There are already more than 100 space startups in India and collectively they have raised more than $245.35 million in funding.

Impact of the successful launch of Chandrayan-3 for private space industry:

- It provided more credibility to our space programme. Investors, vendors as well as customers will begin to take Indian space technology more seriously.
- The Brain Drain of highly educated and ambitious scientists from India would reduce and thus would be highly beneficial in the long term.
- This could attract more global aerospace customers, joint ventures into India, and elevate Indian space-tech companies to a position where they can design and manufacture systems for other countries.

Space economy

- As per Space Tech Analytics, India is the **sixth-largest player** in the industry internationally having 3.6% of the world's space-tech companies (as of 2021).
- The Indian Space Industry was valued at $7 billion in 2019 and aspires to grow to $50 billion by 2024.
- As per Tracxn data, funding into the sector's start-ups (in India) nearly tripled to $67.2 million on a year-over-year basis in 2021.

Advantages of private players in space sector:

- Private players will enable the Indian space program to remain **cost competitive** within the global space market.
- Its involvement in the long term is believed to help spur **investment and expertise** as the space sector is highly **capital-intensive** and **demands high technology**.
- It would **create several jobs** in the space and allied sectors.
- Enhancing space technology would be beneficial to **bolster connectivity and combat climate-related implications** through more secure and effective means.

Provisions for private players in Indian Space Policy 2023:

- The entire gamut of space activities is now open to the private sector. Private sectors are allowed to undertake end-to-end activities in the space sector through establishment and operation of space objects, ground-based assets and related services, such as communication, remote sensing, navigation, etc.
- Satellites could be self-owned, procured or leased; communication services could be over India or outside; and remote sensing data could be disseminated in India or abroad.
- NGEs (non-governmental entities) can design and operate launch vehicles for space transportation and establish their own infrastructure.
- NGEs can now make filings with the International Telecommunication Union (ITU) and engage in commercial recovery of asteroid resources.

Challenges regarding private players in the space industry:

- ISRO, since its inception, has always aimed to work on projects that can help India become self-reliant. However, **private companies will have more profitable interests** than developing solutions that cater to the immediate socio-economic needs of the country.

- Space technology is expensive and needs heavy investment. This kind of lucrative power is available only with selected rich corporates, thus can lead to monopolisation of the sector.

- IN-SPACe's role has been defined as a government regulator, 'to provide a level-playing field' for everyone. However, in the past, this has resulted in the **governments favouring the private sector** over the public sector.

Conclusion:

Over the last 2 decades, the private sector has played an increasingly important role in other spacefaring countries within the global space economy. **Companies like SpaceX, Blue Origin, Virgin Galactic, and Arianespace have revolutionized the space sector by reducing costs and turnaround time, with innovation and advanced technology.** In India however, players within the private space industry have been limited to being vendors or suppliers to the government's space program. Thus, there is a need to enhance the participation of Non-Governmental Entities (NGEs) in the Indian space programme to boost India's market share in Global Space Ec.

> **PEPPER IT WITH**
> IN- SPACe, ISpA, NSIL, Indian Space Policy 2023

INTERNAL SECURITY

CHINA RELEASES NEW EDITION OF STANDARD MAP SHOWING ITS TERRITORIAL CLAIMS

- China has officially released the 2023 edition of its "standard map," which shows the state of **Arunachal Pradesh and the Aksai Chin region as part of its territory.**
- The map released in August shows Arunachal Pradesh which China claims as South Tibet and Aksai Chin occupied by it in the 1962 war as part of its territory.
- **Taiwan and the disputed South China Sea** are also included within the Chinese territory in the new map.
- The map also incorporates China's claims over the **nine-dash line** thus laying claim to a large part of the South China Sea. **Vietnam, the Philippines, Malaysia, and Brunei** have all claims over the South China Sea areas.
- Recently, China and India were at loggerheads after Beijing issued **stapled, instead of stamped, visas to Indian athletes** hailing from Arunachal Pradesh, who were to participate in the wushu (martial art) championship in the mainland.

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India's response to Chinese claim

- The Government of India has rejected the Chinese claims in the map **"as they have no basis".**
- India has lodged a strong protest through diplomatic channels with the Chinese side on the 2023 "**standard map"** of China that lays claim to India's territory.

India-China Border Dispute

India shares a total boundary of around **3,488 km** with China (the second largest after Bangladesh). The Sino-Indian border is generally divided into three sectors namely: **the Western sector, the Middle sector, and the Eastern sector**. 4 states (Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh) and 2 Union Territories (Jammu & Kashmir and Ladakh) share borders with China.

Western Sector

- In the western sector, India shares about **2152 km** long border between India's Jammu and Kashmir and Xinjiang Province of China. In this sector, **there is a territorial dispute over Aksai Chin.** Both countries went to war in 1962 over the disputed territory of Aksai Chin. India claims it as a part of Kashmir, while **China** claims it is a part of **Xinjiang.**

Major Territorial Disputes between India and China

Aksai Chin is administered by China but claimed by India

China labels a large portion of Arunachal Pradesh as South Tibet

Note: Map is not drawn to scale

- During the time of British rule in India, two borders between India and China were proposed: **The Johnson's Line and The McDonald Line.**
  - o Johnson's line (proposed in 1865) shows Aksai Chin in Jammu and Kashmir, i.e., under India's control, whereas the McDonald Line (proposed in 1893) places it under China's control. India considers the Johnson Line as the correct, and rightful national border with China, whereas China considers the McDonald Line as the correct border with India.
- At present, the **Line of Actual Control (LAC)** is the line separating, the Indian areas of Jammu and Kashmir from Aksai Chin. It is concurrent with the Chinese Aksai Chin claim line.

Middle sector

- In this sector, India shares about 625 km long boundary with China which runs along the watershed from **Ladakh to Nepal.** The states of Himachal Pradesh and Uttarakhand touch this border with Tibet (China) in this sector. Both sides **do not have much disagreement over the border in this area.**

Eastern Sector

- The **McMahon Line** is a demarcation line drawn by British India's colonial administration in 1914, forming the border between India's Arunachal Pradesh and Tibet (now under Chinese control).
- China disputes this boundary and claims Arunachal Pradesh as part of its territory, referring to it as "**South Tibet**." This dispute has led to occasional border tensions and remains unresolved.

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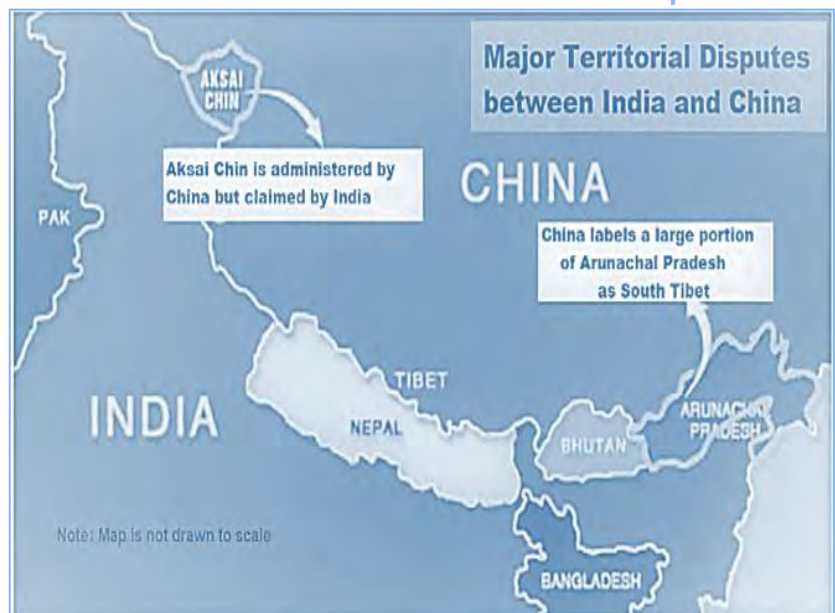
Present mechanism to resolve the border issue

- China and India have employed multiple mechanisms to address border disputes, including **Special Representatives Talks**, regular **military and diplomatic meetings**, Confidence-Building Measures, and agreements like the Border Peace and **Tranquility Agreements** (1993, 1996) and Political Parameters and Guiding Principles (2005).
- The **Working Mechanism for Consultation and Coordination (WMCC)** was established in 2012 to facilitate ongoing discussions.
- The 19th round **of the India-China Corps Commander Level Meeting** was held at the **Chushul-Moldo** border meeting point on the Indian side in August 2023.

Conclusion:

In today's era of growing geopolitical tensions, a map is no longer just a two-dimensional paper with lines, but an indicator of a country's intentions and the imagination of its frontiers. In that sense, Beijing's decision to publish a map,

> **PEPPER IT WITH**
> Aksai Chin, South China Sea, Nine dash line, Johnson line, McDonald line

though a routine annual exercise must be read closely with the Chinese moves on the LAC and maritime sphere, including military exercises, transgressions, building of permanent infrastructure and border villages. India too, must realise the importance of its map-making exercises and ensure no surprises for its diplomatic ties with neighbours.

INDIA-US DEFENCE ACCELERATION ECOSYSTEM (INDUS-X) INITIATIVE

The **US delegation** met with a team of Innovations for Defence Excellence-Defence Innovation Organization **(iDEX-DIO)**.

Pre-Connect:

- **India** registered historic growth in **defence exports** in the financial year ending March 2023. India's total defence exports were pegged at **$1.95 billion**. India has been exporting a range of defence equipment, including helicopters, naval vessels, aircraft, missiles, armoured vehicles, etc.

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- The government has set a **target** of achieving **$5 billion** in defence exports by **2025**.

About:

- **iDEX**, in partnership with the **US Department of Defence**, launched the India-US Defence Acceleration Ecosystem (INDUS-X) in early 2023.
- INDUS-X **aims** to:
  - Pave the way towards the goals in the US-India roadmap for defence industrial cooperation.
  - Capitalize on the tech-releasability outcomes that the industry anticipates from the US-India **Initiative on Critical and Emerging Technologies (iCET).**
  - Strengthen bilateral trade relationships and defence establishment linkages.
- The initiative will expand the strategic technology partnership and defence industrial cooperation between start-up ecosystems, businesses and academic institutions. It seeks to explore possibilities for co-producing jet engines, long-range artillery, and infantry vehicles.
- It has been launched as a part of the vision to build a '**Defence Innovation Bridge**' which is a part of iCET.

> **iDEX:**
> - **Aim-** Creation of an **ecosystem** to foster innovation and technology development in Defence and Aerospace by engaging industries including MSMEs, start-ups, individual innovators, Research institutes & academia.
> - It fosters innovation, in critical domains like Artificial Intelligence (AI), unmanned solutions, domain awareness, communications, space, cybersecurity etc.
> - It is funded and managed by Defence Innovation Organization **(DIO).**

Initiative on Critical and Emerging Technologies (iCET):

- It is a **framework** agreed upon by India and the US for cooperation on **critical and emerging technologies**. It was launched in January 2023.
- Key takeaways include:
  - developing new defence industrial cooperation and common standards in AI.
  - developing a roadmap to accelerate defence technological cooperation and innovation bridges to connect defence startups.
  - supporting the development of a semiconductor ecosystem.
  - strengthening cooperation on human spaceflight.
  - advancing cooperation on development in 5G and 6G.
  - adopting **OpenRAN network technology** in India.

INDUS-X - A game changer:

- **Make-in-India:** It will help India **diversify** its **defence portfolio**, and also **boost** the Make-in-India campaign. India is making efforts to reduce its reliance on defence exports and instead boost the **local manufacturing sector**.

- **Exports:** India will be in a better position to achieve the **$5 billion target** in defence exports by 2025.

- **Trade and Investment:** It will pave the way for **US companies** to **invest massively** in India and build a defence ecosystem. India has already undertaken such a defence partnership with Russia in the **BrahMos joint venture**. Now, India will look forward to **replicating the success** of the BrahMos model, this time in partnership with the US.

- **Indo-Pacific:** The initiative serves as a significant indication of the **US's commitment** to advancing policies and initiatives promoting a **free and open** Indo-Pacific region.

- **Countering China:** Recognising the **shared objective** of countering China's expanding influence, the US and India are aligning their efforts to foster a robust and cooperative relationship.

- **Less dependence on Russia:** To **pull India away** from its security dependence on Russia, the US administration has been eagerly upgrading its defence ties with India. Russia continues to be **India's biggest arms supplier**, which is a **major concern for the US** government. However, Russia's share in India's arms market has dropped significantly from 62% (2017) to 45% (2022). The **US** is India's **third-largest arms supplier** with an 11% share, below France's 29%.

Other India-US defence partnerships:

- **GE F414 Engine Co-production:** General Electric will jointly produce the F414 jet engine in India.

- **General Atomics MQ-9Bs**: India intends to procure armed MQ-9B **Sea Guardian UAVs**. The drones will increase India's intelligence, surveillance, and reconnaissance capabilities.

- **Service and repair of US Navy ships:** The US Navy has concluded a Master Ship Repair Agreement (MSRA) with L&T Shipyard in Kattupalli (Chennai) and is finalizing agreements with Mazagon Dock Limited (Mumbai) and Goa Shipyard (Goa).

> **OpenRAN technology:** The Radio Access Network (RAN) provides the critical technology to connect users, including mobile phones or enterprises, to the mobile network over radio waves. **Current RAN technology is provided as a hardware and software integrated platform.** The ambition for Open RAN is to create a multi-supplier RAN solution that allows for the separation between hardware and software with open interfaces.

- **Signing of the 4 defence foundational agreements**: Communications Compatibility and Security Agreement (COMCASA), Basic Exchange and Cooperation Agreement for Geo-Spatial Cooperation (BECA), General Security of Military Information Agreement (GSOMIA) and Logistics Exchange Memorandum of Agreement (LEMOA) have been signed by India and USA.

Conclusion:

Overall, INDUS-X provides a unique opportunity for India and the US to step up defence innovation cooperation. Enabled by the emergence of the defence and space startup ecosystem in India, the initiative is rightly positioned to complement other areas of defence as well. It can also play a key role in bridging a vital information gap. INDUS-X needs to be based on consistent interaction between the two countries.

> **PEPPER IT WITH**
> IDEX-DIO, Icet, Defence Innovation Bridge, Indo-Pacific

HISTORY & CULTURE

Megalithic dolmen site

Unique terracotta figurines in different states of preservation have been found in recent archaeological explorations conducted in the megalithic dolmen site at Mudu Konaje, near Moodbidri, in Dakshina Kannada.

About Megalithic dolmen site:

- Megalithic culture is known for its different types of burials and use of iron in India. Dolmen is one among them.
- **Features**
  - o Under a dolmen, huge **stone slabs known as orthostats** were **erected in clockwise order**, which created a square room.
  - o This square chamber was closed by another huge stone slab as a capstone.
  - o Generally, on the Eastern slab, a round or U-shaped entrance known as the port hole was created.
  - o It was **known by different names** in South India, like Kalmane, Pandavara Mane, Moriyara Mane and Moriyara Betta etc., which reveals its popularity among the common people.

Key findings in Mudu Konaje site:

- The figurines were datable to 800-700 BC.
- It was **the biggest megalithic dolmen** site, which consisted of nine dolmens on the slope of a stone hill.
- Of the eight figurines found, there are two cow bovines, one mother goddess, two peacocks, a horse, the hand of a mother goddess, and an unknown object.
- The **cow bovines** found in the dolmens help to **determine the chronology of the dolmens.**
- **Terracottas** found in the megalithic burial provide a solid ground for the **study of the Bhoota cult** or Daiva Aradhane of coastal Karnataka.
- **Cow bovine** or Cow goddess had its parallels in Malampuzha megalithic terracotta figurines of Kerala and Egypt.

Stone Age Sites
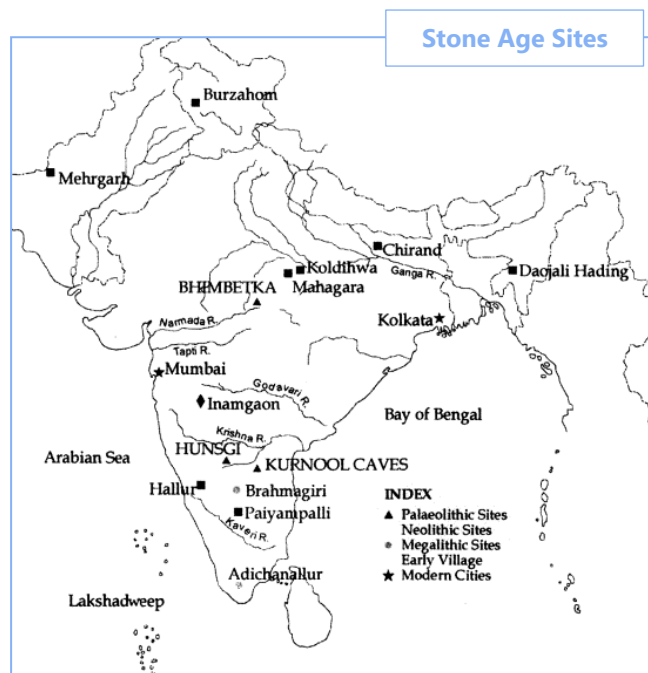
PEPPER IT WITH

Megalithic Culture, Orthostats, Port hole, Bhoota Cult

Konark Wheel

The G20 Summit in India conducted recently in the Bharat Mandapam in Delhi, had '*Konark Wheel*' as the model representing Indian Art and Architecture.

About Konark Sun Temple:

- The word '**Konark**' represents two worldly inclusions – *'Kona'* for *'the corner'* and *'Arka'* means '*the Sun' (*according to *Brahma Purana*).
- The Konark Sun Temple, a **UNESCO World Heritage Site in 1984**, is a popular destination for pilgrims.
- **Location:** It is situated in **Odisha**, some 35 km from *Puri* and 6.5 km from *Bhubaneswar*.
- **Constructed by:** *King Narasimha Deva I (Eastern Ganga Dynasty)* in the *12th century* paying tribute to the Sun God. It has a huge framework, symmetry, precision, and detailed artwork that never ceases to astound visitors.
- History behind the '**The Black Pagoda'**:
  - o According to some researchers, the Sun Temple was constructed in the sea to give the appearance of the Sun God rising from the water at dawn.
  - o Due to the perception of the **temple's roof being dark**, the European sailors called the temple **"Black Pagoda."**

"Here the language of stone surpasses the language of man"- *Rabindranath Tagore on Sun Temple at Konark.*

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- o It acted as a crucial signpost for sailors back then who were sailing the Bay of Bengal.

Artistic features of Konark Temple:

- One of the highest temples ever constructed in the nation - about 227 feet tall.
- The spectacular Jagamohana (Entrance Hall) with the sanctum sanctorum, however, is the only structure still standing today, though completely collapsed.
- The Natya Mandap, which is still standing despite being in ruins, is the other building.
- The temple was fashioned like the Sun God's chariot, which was drawn by 7 horses and had 24 exquisitely carved wheels (Konark Wheels).

About Konark Wheel/Chakra:

- Apart from its captivating beauty, historians also talk about its 'scientific precision'.
- The wheels are designed in such a way that one can gauge the time of the day by looking at the shadow cast on the spoke of the wheels by the sun.
- Not only that the carvings of the spoke and axes denote the activities that one normally does at that time of the day.
- Representing 'Kalachakra': The wheel's circular motion represents time, as well as development and ongoing change in the cosmos.
- National Significance: It represents timeless knowledge, cutting-edge civilization, and architectural brilliance, and has also been incorporated into the Indian national flag.
    - o The wheel of democracy is a representation of the democratic values' tenacity and dedication to social advancement.

Protection of Heritage by the Indian Government:

- The Konark Sun Temple is a World Heritage Site.
- It is protected under the National Framework of India by the Ancient Monuments and Archaeological Sites and Remains (AMASR) Act (1958) and its Rules (1959).
- Other state government Legislations include the Konark Development Act and the notified Council Area Act.

PEPPER IT WITH
Bharat Mandapam, UNESCO World Heritage Sites, Black Pagoda, AMASR Act 1958

Nataraja Sculpture

The 27-foot-tall Nataraja statue has been installed at the G20 summit venue to showcase India's rich history and culture.

Features of the Statue:

- It is also considered the tallest statue of **Lord Shiva's dancing form** in the world.
- The statue is an *ashtadhatu* (eight-metal alloy) piece of art, weighing about 18 tonnes.
- The **design draws inspiration from three revered Nataraja idols**:
    - o Thillai Nataraja Temple (Chidambaram)
    - o Uma Maheswarar Temple (Konerirajapuram)
    - o Brihadeeswara Temple (**UNESCO World Heritage Site**).
- All these three temples from which the **Bharat Mandapam Nataraja** statue is inspired were originally constructed by the Cholas.

Art and Architecture during Cholas:

- Cholas who at their peak around the *9th-11th centuries* AD, ruled over much of peninsular India.
- Chola art and architecture in South India was a product of a *prosperous, highly efficient empire* during the period of its greatest territorial expansion.
- **Architecture Contribution**: Among the important parts of Chola sculpture, Shaiva figures are predominant. A very fine Vaishnava and Jain images are also being observed.
    - o **Rajaraja Chola (985–1014 AD):** Under his patronage the massive **Brihadisvara temple** at Tanjavur was built.
    - o **Rajendra Chola I (1012–1044 AD):** He constructed the **monumental Brihadisvara temple** at Gangaikondacholisvaram.

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INDORE: 7314977441 | **BENGALURU:** 7619166663 | **HYDERABAD:** 79960 66663 | **IMPHAL:** 9650245599 | **SRINAGAR:** 98712 35599| **MUMBAI:** 9871265599|

- o **Rajendra Chola II (1143–1173 AD):** The splendid temple of **Airavatesvara** at Darusaram was built.
- All three temples, dedicated to **Lord Shiva**, whose impressive remains dominate the modern landscape, designated as the Great Living Chola Temples by **UNESCO**, were inscribed on the **World Heritage List in 1987**.
- **Art Contribution:**
  - o **Paintings:** Scenes from Periyapuranam are beautifully depicted in Temple Paintings.
  - o **Music:** **Nambiandar Nambi and Nathamuni** made major contributions in Music. During Cholas, almost in every temple, **Aiwar and Nayanmar hymns** were sung.
  - o **Dance:** The two classical types of dances **Bharatanatyam and Kathakali** were performed.
  - o **Drama:** Dramas like **Koothu, Rajarajeswara natakam and Rajarajavijayam** were performed.

> **PEPPER IT WITH**
> G-20, Ashtadhatu, Chola period

Ramon Magsaysay Award

This year, marked the **65th edition** and **four Asians** were given the Ramon Magsaysay Award.

About the Award:

- The **Ramon Magsaysay Award,** often called the **'Nobel Prize of Asia',** is a notable accolade that represents exceptional spirit and influential leadership.
- The award carries a certificate, a medallion bearing the likeness of the late President, and a cash prize of **USD 50,000**.
- **Criteria:** The Asian people who have shown selfless service to others and excellent contributions in their chosen fields without seeking public acknowledgement are eligible for the Award. The areas of field recognizable are:
  - o **Government Service**: To recognize outstanding service in the public interest in any branch of government, including the executive, judicial, legislative, or military;
  - o **Public Service:** To recognize outstanding service for the public good by a private citizen;
  - o **Community Leadership**: To recognize the leadership of a community toward helping the disadvantaged have fuller opportunities and a better life;
  - o **Journalism, Literature, and Creative Communication Arts:** To recognize effective writing, publishing, or photography or the use of radio, television, cinema, or the performing arts as a power for the public good;
  - o **Peace and International Understanding**: To recognize contributions to the advancement of friendship, tolerance, peace, and solidarity as the foundations for sustainable development within and across countries; and
  - o **Emergent Leadership:** To **recognize an individual, forty years of age** or younger, for outstanding work on issues of social change in his or her community, but whose leadership may not yet be broadly recognized outside of this community.

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> **PEPPER IT WITH**
> 65th edition, Nobel prize of Asia

Winners of Ramon Magsaysay Award 2023:

Awardees	Contribution	Country
Dr. Ravi Kannan R.	**Medical and healthcare**: Strong devotion to his medical profession, focusing on what medicine is truly for pro-health and people-centred treatment.	India
Korvi Rakshand	**Education:** Developing inclusive education for the underprivileged children in Bangladesh.	Bangladesh
Eugenio Lemos	**Community:** Notable contributions to how young Timorese views nature and their surroundings.	Timor-Leste
Miriam Coronel-Ferrer	**Peace building and International Understanding**: Unwavering belief in the transformative power of non-violent strategies in peace building.	Philippines

Temples that inspired the Design of the Old Indian Parliament building

The uniqueness of the Chausath Yogini temple and its circular shape is said to have inspired the design of the Indian Parliament, though there is no historical proof for this.

About Old Parliament Building - "temple of the Indian democracy":

- The current British-era structure was designed by **Sir Edwin Lutyens** and **Herbert Baker**, the architects who planned and built much of New Delhi
- Most notable in the design of the Parliament are the **144 columns**.
- Indian touches in the architecture include the use of **fountains, balconies and marble lattice** screens. The building is surrounded by **large gardens**, and the **perimeter is fenced off** by sandstone railings.

About Chausath Yogini Temple:

- The Chausath Yogini Temple in Morena district's Mitawali village, near Gwalior, is believed to have been built by **Kachchhapaghata King Devapala (1055 – 1075 AD),** i.e., it predates India's Parliament building. It stands atop an isolated hill around 100ft high.
- The central shrine of the temple is dedicated **to Lord Shiva.** There are **slab coverings** here that have perforations to drain rainwater.
- The **64 small chambers** in its interior are said to be dedicated to **64 yoginis.**
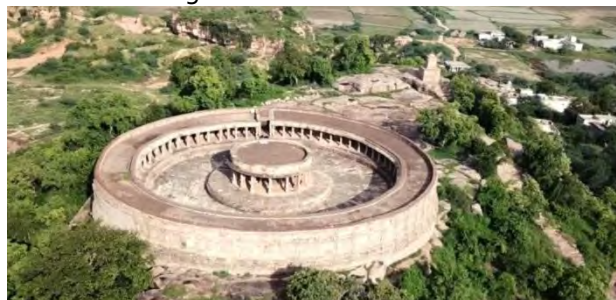
Similarities between both structures:

- They are both circular in design structure with **pillars lining their outer walls** and a **central chamber**.
- However, due to the lack of evidence, historians, and archaeologists remain skeptical.

Although there is no evidence of designs being inspired by Ancient Indian Architecture, **Vedic mantras engraved on the walls of the Indian Parliament** is a vindication that the British architects did take into account Indian art while constructing buildings.

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PEPPER IT WITH

Chausath Yogini Temple, Kachchhapaghata

Know About Kachchhapaghata:

- The Kachchhapaghatas were a Rajput dynasty that ruled between the **10th and 12th centuries**. Their territory included *north-western* parts of Central India.
- The dynasty patronized **Shaivism** and **Vaishnavism** but was also **tolerant towards Buddhism and Jainism**. Several temples were constructed during their reign in **Kadwaha**.

Ajayapala (1192–1194 AD) had the **Gangola tank** of Gwalior de-silted, as attested by an *1194 inscription.*

CONTEMPORARY ETHICS CASE STUDIES

Q. On a sunny day, a fishing boat, the 'Sea Sonora,' set sail with a group of unsuspecting tourists on board. Little did they know that their voyage would end in a devastating tragedy. Captain Santosh, the fishing boat's owner, had illicitly converted it into a tourist vessel without obtaining the necessary safety certifications. He ignored regulations in his quest for quick profits, cutting corners to save costs and maximize his gains. The misdeeds didn't stop there. Inspector Vikas Naidu, a government official responsible for ensuring safety, had been bribed by Captain Santosh to turn a blind eye to the illegal conversion.

As the Sea Sonora sailed further into the open sea, disaster struck. The boat encountered rough waters and quickly succumbed to the treacherous waves. Panic ensued as the boat capsized, plunging its passengers into the cold, unforgiving depths of the ocean. Tragically, twenty innocent lives were lost that day, their hopes and dreams extinguished by the greed and negligence of those responsible for their safety.

News of the incident spread like wildfire, sending shockwaves through the community. The families of the victims demanded answers and justice. The corrupt alliance between Captain Santosh and Inspector Vikas Naidu began to unravel as investigations were launched to determine the cause of the accident.

You have been given the task to look into the matter and come up with the root cause of the problem. You must provide guidelines and safety protocols to all the tourist boat owners who operate in your jurisdiction.

(a)   Discuss the ethical issues involved in the case.

(b)   Suggest ways to empower local communities dependent on tourism-related activity.

(c)   What standard operating procedure must be followed?

(Answer in 250 words) 20 marks

Q. In the sprawling city of Kanpur, a deep-rooted corruption network thrived, with the mafia and criminals working hand in hand with government officials to exploit the local public. Chandan Singh, a charismatic and ruthless mafia boss at the heart of this web of deceit, had carved out an empire of crime in Kanpur. With his iron grip on the city, Chandan Singh had managed to infiltrate key government agencies, ensuring that his operations went undetected and unimpeded.

Under the guise of legitimate businesses, Chandan Singh's criminal enterprises thrived, ranging from drug trafficking and extortion to illegal gambling dens and prostitution rings. He knew that to maintain his stranglehold on the city, he needed the cooperation and protection of government officials.

Enter Police Commissioner Suraj Kumar, a highly respected and influential figure within the law enforcement community. Unbeknownst to the public, Suraj Kumar had struck a Faustian bargain with Chandan Singh, exchanging his loyalty and influence for a share of the criminal empire's profits. With Suraj Kumar in his pocket, Chandan Singh's criminal activities flourished. Police raids on his operations were conveniently bungled, evidence mysteriously disappeared, and his criminal associates walked free. The local public suffered as the mafia's grip tightened, their lives torn apart by violence, drugs and fear.

One fateful day, a young and determined journalist named Rekha stumbled upon a crucial piece of evidence linking high-ranking government officials to Chandan Singh's criminal empire. She uncovered a network of bribes, kickbacks and illicit deals that reached the highest levels of power. Government officials entrusted with safeguarding the public's welfare had become willing accomplices in the mafia's schemes.

As her investigation gained momentum, Rekha's life was threatened. She faced intimidation, surveillance, and even physical attacks. The public's faith in the government began to waver as Rekha's exposes hit the front pages of newspapers. Protests erupted, demanding accountability and an end to the reign of the mafia and their government collaborators.

Under mounting pressure, an independent commission was formed under you to investigate the allegations. Since you have known Suraj Kumar from your college days when he was your junior in the same college. He has approached you and requested to let go of the investigation otherwise, his family members and relatives will be targeted by the goons.

(a)   What are the ethical issues involved here?

(b)   What are the options available to you in this situation? Critically evaluate all the options before making any decisions.

(c)   What are the permanent solutions to this problem, since mafias exist in almost every nook and corner of our country?

(Answer in 250 words) 20 marks

Q. In a government-run sports academy aimed to nurture talented young female athletes. Because of this women's sports had gained popularity in this region. However, behind the scenes, a culture of sexual exploitation had quietly emerged. Senior players and officials within the academy took advantage of their positions of power and influence to exploit vulnerable girls who aspired to make a mark in the sporting world. The exploitation ranged from verbal harassment and abuse to more severe forms of sexual misconduct. As rumours and whispers started circulating within the local community, a group of courageous girls gathered the strength to share their harrowing experiences with their parents. Shocked and outraged, the parents decided to take action and bring the perpetrators to justice.

Anand Ahuja, who is the administrator of the sports academy authority, came to know about such activity. Instead of taking strict action against the culprits, Mr. Ahuja started threatening the female athletes about losing their place in the academy and tarnishing their image as well. Mr Ahuja has a high reach at the top of government tables; therefore, he is using his power to quell the protest. However, as media organisations have picked up the story, the government has no option but to order an enquiry into the matter.

You have been appointed as the investigating officer since you have represented sports at the national level. You have good relations with Mr. Ahuja, which has helped you greatly during your preparation in the past. When Mr Ahuja came to know about you, he called you and asked you to submit the report without investigation.
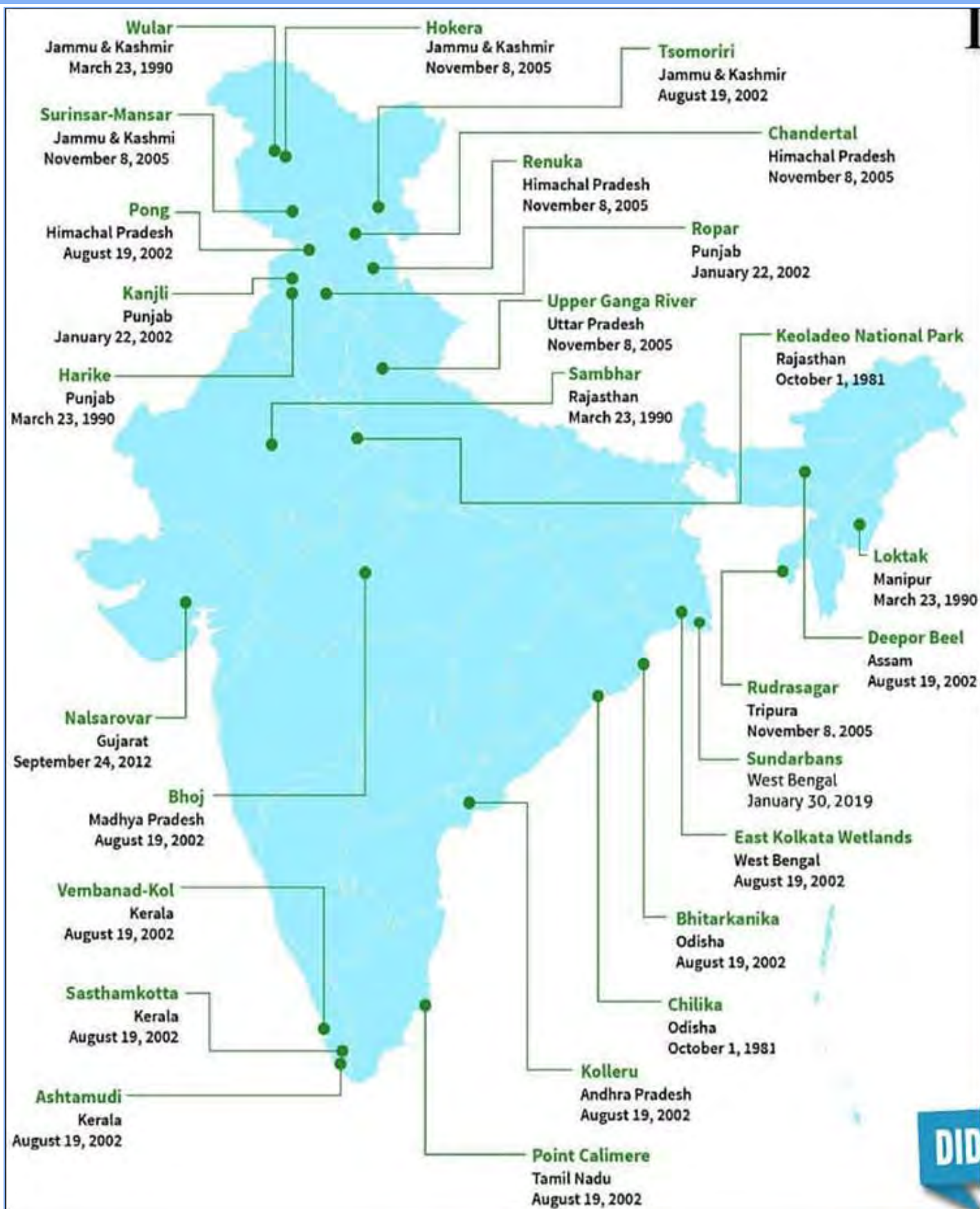
(a) Examine the ethical dilemmas involved in the case

(b) Under the given conditions, what options are available to you as an investigating officer?

(c) Do a critical analysis of the options, and choose the best option by citing reasons for it.

(Answer in 250 words) 20 marks

SCAN THIS QR FOR MODEL CONTENT

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WETLANDS IN INDIA

Wular
Jammu & Kashmir
March 23, 1990

Hokera
Jammu & Kashmir
November 8, 2005

Tsomoriri
Jammu & Kashmir
August 19, 2002

Surinsar-Mansar
Jammu & Kashmi
November 8, 2005

Chandertal
Himachal Pradesh
November 8, 2005

Renuka
Himachal Pradesh
November 8, 2005

Pong
Himachal Pradesh
August 19, 2002

Ropar
Punjab
January 22, 2002

Kanjli
Punjab
January 22, 2002

Upper Ganga River
Uttar Pradesh
November 8, 2005

Keoladeo National Park
Rajasthan
October 1, 1981

Harike
Punjab
March 23, 1990

Sambhar
Rajasthan
March 23, 1990

Loktak
Manipur
March 23, 1990

Nalsarovar
Gujarat
September 24, 2012

Deepor Beel
Assam
August 19, 2002

Rudrasagar
Tripura
November 8, 2005

Bhoj
Madhya Pradesh
August 19, 2002

Sundarbans
West Bengal
January 30, 2019

Vembanad-Kol
Kerala
August 19, 2002

East Kolkata Wetlands
West Bengal
August 19, 2002

Sasthamkotta
Kerala
August 19, 2002

Bhitarkanika
Odisha
August 19, 2002

Ashtamudi
Kerala
August 19, 2002

Chilika
Odisha
October 1, 1981

Kolleru
Andhra Pradesh
August 19, 2002

Point Calimere
Tamil Nadu
August 19, 2002

Tiger reserves in India

POLITY

Revised structure of the Central Empowered Committee (CEC)

The changing decision regarding the functioning of the CEC, a body set up by the SC to oversee cases related to environmental conservation has raised issues among environmentalists and other stakeholders.

About CEC:

- The CEC was **formed by order in 2002**, passed by the SC in a **Writ Petition** titled *T.N. Godavarman Thirumalpad vs. Union of India*.
- The Committee was converted into a **Statutory Committee** under sub-section (3) of Section 3 of the **Environment (Protection) Act, 1986** and extends to the whole of India.

Major changes made in CEC functioning:

- **Reporting Structure**: The CEC which originally reported directly to the SC, will now report to the MoEFCC, giving the Ministry more control over the CEC's functioning.
- **Nominating Members**: The MoEFCC will now nominate members to the CEC, and the SC will not be involved in the selection process.
- **Funding:** The Ministry, rather than the SC, will fund the CEC, potentially impacting the CEC's independence.
- **NGO Representation**: The previous provision of having representation of 2 NGOs has been removed. Now individuals considered "experts" can be included as members, impacting the diversity of perspectives.
- **Final Decision**: The Ministry's decisions regarding the recommendations of the CEC will be final. It must provide written reasons for its decision, on disagreement.

Powers and Functions of CEC:

- **Aim:** To monitor the implementation of the SC's orders and to place the non-compliance cases before the Court and Central Government for appropriate action, w.r.t. encroachment removals, implementation of working plans, compensatory afforestation, plantations and other conservation issues.
- To examine pending applications, reports and affidavits and place its recommendations before the Court for orders.
- To deal with applications made by any aggrieved person and report it to the Court wherever necessary and recommend any issue referred to the Committee.

Advocate-on-Record (AoR)

A Supreme Court (SC) Bench imposed a cost of ₹2,000 on an advocate-on-record (AoR) for sending a young junior to appear before the Bench without any papers.

About Advocate-on-Record (AoR):

- The concept of AoR was introduced by the SC under Article 145(1) of the Indian Constitution- the SC may, from time to time, make rules for regulating the practices and procedures in the court.
- "**Advocate on record**" is a title given to an advocate who can represent a cause or pleading before the SC.
- Only these advocates are entitled to file any matter or document before the SC. They can also file an appearance or act for a party in the SC.
- No other High Court in India has a similar provision.
- **Order IV Rule 5 of the SC Rules, 2013** lays down the following requirements:
  o The Advocate is required to be **enrolled with any State Bar Council**, have a **prior experience of at least 4 years**, undergone **training for 1 year under a senior AoR**, appear for the examination conducted by the SC, be required to have an **office in Delhi within a radius of 10 miles** from the SC house, etc.
- Once registered, an AOR is issued a unique identification number that must be used on all documents filed in the SC.

Third Phase of e-Courts Project

The Union Cabinet approved the 3rd phase of the e-Courts Projects with a budget allocation of ₹7,210 crore.

About the e-Courts Project:

- It was **conceptualised based on the "National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary – 2005" submitted by the e-Committee**, with a vision to transform the Indian Judiciary by ICT enablement of Courts.
- **e-committee** is constituted to assist the Chief Justice of India in **formulating a National Policy on the computerisation of the Indian Judiciary**.

- It is a **Pan-India Project, monitored and funded by the Department of Justice, Ministry of Law and Justic**e, for the District Courts across the country.
- The Project envisages citizen-centric service delivery, decision support systems, transparency in the accessibility of information and an affordable, accessible, cost-effective, predictable, reliable and transparent justice delivery system.
- **The Phase I** of e-Courts was concluded in 2015, in which 14,249 Court sites were computerised.
- **Under Phase II,** 18,735 District and Subordinate courts have been computerised.
- **Phase III** to be implemented over four years – will see the digitisation of entire court records, both legacy and pending cases, at an estimated cost of ₹2,038.40 crore.
- It will set up 2,500 new modern, virtual-friendly courts, establish 1150 virtual courts, and 4,400 e-Sewa Kendras in all court complexes and digitise around 3,108 crore documents.

Data in Climate Resilient Agriculture (DiCRA) Platform

The United Nations Development Programme (UNDP) and the National Bank for Agriculture and Rural Development (NABARD) have signed a Memorandum of Understanding (MoU) to co-create data-driven Digital Public Good, which includes DiCRA.

About DiCRA:

- It is a collaborative Digital Public Good providing open access to key geospatial datasets pertinent to **climate-resilient agriculture**.
- It provides intelligence on **climate resilience for 50 million hectares** of farmland across India.
- It is guided by the Digital Public Good principles of open access, open software, open code, and open APIs.
- It uses cutting-edge **data science and machine learning** to identify climate change-resilient farms and those highly vulnerable.

Advantages:

- NABARD will host and maintain the DiCRA platform and use its key geospatial datasets for policymaking, research, and development activities, with UNDP's technical support.
- This 5-year technical collaboration is envisaged to foster collective climate action and create innovative platforms and new product offerings to enhance rural economic empowerment.
- Such open data innovations can highlight best practices, optimize agriculture investments and shelter populations from risk.

Unified Portal for Agricultural Statistics (UPAg)

Recently, the Unified Portal for Agricultural Statistics (U[Ag) developed by the Ministry of Agriculture and Farmers' Welfare (DA&FW) was launched by NITI Aayog members.

About UPAg:

- This innovative platform **streamlines and enhances data management** in the agricultural domain.
- It is a crucial component of the **Digital Public Infrastructure for Agriculture** and aligns with the principles of e-governance.
- It aims to provide real-time, standardised, and verified data on agricultural commodities, facilitating data-driven decision-making for policymakers, researchers, and stakeholders.

Key Features:

- **Data Standardization-** This will make data accessible in one location eliminating the need to compile data from multiple sources.
- **Advanced Data Analytics**- It will offer insights such as production trends, trade correlations, and consumption patterns, aiding policymakers in making informed decisions.
- **Granular Production Estimates-** These will enhance the government's ability to respond to agricultural crises swiftly.
- **Commodity Profile Reports using algorithms-** This will minimise subjectivity and provide users with comprehensive insights.
- **Plug and Play:** Users can use the portal's data to prepare their reports, promoting data-driven decision-making.

Digital birth certificates

A government notification stated all reported births and deaths in the country will be digitally registered on the Centre's portal from October 1.

About Digital birth certificates:

* The **Registration of Births and Deaths (Amendment) Act, 2023** paves the way for digital birth certificates.
* It will be a **single document** to be used for **admission to educational institutions**, applications for driving licences, government jobs, passports or Aadhaar, voter enrolment, and registration of marriage, among others.
* The centralised database will also update the National Population Register (NPR), ration cards, property registration and electoral rolls.
* It will be **compulsory for States to register births and deaths** on the Centre's Civil Registration System (CRS) portal and share it with the Registrar General of India (RGI).

National Population Register:

* It is a **register containing details of persons** usually residing in a village or rural area or town or ward or demarcated area within a ward in a town or urban area.
* It was first prepared in 2010 and updated in 2015 under Sub-rule (4) of Rule 3 of the Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003, **framed under the Citizenship Act, 1955.**
* To incorporate the changes due to birth, death and migration, the NPR would be updated along with the House listing and Housing Operations of the forthcoming Census.
* Objective- To **create a comprehensive database of usual residents** in the country.
* No document will be collected during this exercise.

ECONOMY

Incremental Cash Reserve Ratio (ICRR)

The RBI has asked banks to maintain an ICRR of 10% on the increase in their deposits.

About ICRR:

* RBI has the option to impose ICRR, in addition to the CRR, in periods of excess liquidity in the system.
* RBI has stated in its monetary policy that from August 12, 2023, all scheduled banks should maintain an additional cash reserve ratio amounting to 10% of the increase in their Net Demand and Time Liabilities (NDTL) between May 19, 2023, and July 28, 2023.
* This means that banks will now have to park more liquid cash with the RBI.
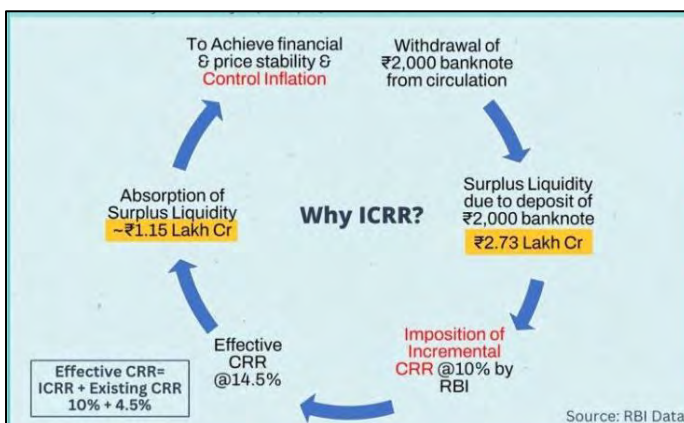
Cash Reserve Ratio

* Banks are required to maintain liquid cash amounting to a certain proportion of their NDTL with the RBI.
* This tool is used to control the liquidity in the economy and also act as a buffer in periods of bank stress.
* Banks are currently required to maintain 4.5 % of their NDTL as CRR with the RBI.

Impact of this activity by RBI:

* **Targeting Inflation:** Through sucking out the liquidity in the market, banks will have lesser money to lend. It will eventually bring down demand for goods and services, thus *bringing down prices*.
* **Interest rates in the Market:** *Short-term interest rates* can move higher as the supply of funds in the economy gets tight.
  * o The introduction of ICRR, even temporarily, will impound the resources of banks and have an upward impact on market rates.
  * o While there will still be surpluses in the market, the concept of impounding resources will exert upward pressure on sentiment and hence interest rates.
* **Balancing the liquidity:** Hiking the CRR would have had monetary policy connotations, so the temporary increase is aimed to be a non-disruptive way of dealing with the issue of excess liquidity in the system *after the recent demonetization*.

How ICRR will be discontinued?

- Based on an assessment of the situation and liquidity conditions, the ICRR would be released in stages so that system liquidity will not be subjected to sudden shocks and money markets function in an orderly manner.
- However, all Scheduled Banks will have to maintain a 10% incremental cash reserve ratio (ICRR).

Financial Inclusion (FI) Index

The Financial Inclusion (FI) Index of the RBI stood at 60.1% for the financial year ending in March 2023, as compared to 56.4% in March 2022, due to improvements in Usage and Quality dimensions.

About the Financial Inclusion Index

- FI-Index was launched in 2021 to track the process of ensuring access to financial services, and timely and adequate credit for vulnerable groups such as weaker sections and low-income groups at an affordable cost.
- It is a comprehensive index, incorporating details of **banking, investment, insurance, postal, as well as the pension** sector in consultation with government and respective sector regulators.
- It was created to **capture the extent of financial inclusion** across the country.
- The index captures information on various aspects of financial inclusion in a single value ranging **between 0 and 100,** where 0 represents complete financial exclusion and 100 indicates full financial inclusion.

Dividend Distribution Tax (DDT)

The Chennai bench of the Income Tax Appellate Tribunal (ITAT) recently ruled against Cognizant Technology Solutions India, stating that the company is liable to pay Dividend Distribution Tax (DDT) on a buyback of shares worth Rs 19,000 crore under a scheme of arrangement.

About Dividend Distribution Tax (DDT):

- It was a tax imposed by the Indian government on **companies that distributed dividends to their shareholders.**
- It was introduced to tax the dividend income received by shareholders indirectly through the company rather than taxing the dividend income at the individual level.
- **DDT has been repealed** and abolished under the Finance Act 2020.
- Indian corporations are no longer obligated to pay DDT on dividends paid to shareholders. Instead, **shareholders will be forced to pay tax on dividends based on their tax bracket.**

What is a dividend?

- Return given by a company to its shareholders out of the profits earned in a particular year.
- Can be issued in various forms, such as cash payment, stocks, etc.
- Decided by its board of directors, and requires the shareholders' approval.
- Not obligatory for a company to pay.

Dividend Yield:

- Measure of the annual dividend income an investor can expect to receive from an investment in a particular stock.
- Helps investors assess the income potential of a stock.
- Calculated by dividing the annual dividend per share by the stock's current market price.

- E.g.- if a shareholder is in the 30% tax bracket, the dividend received will be subject to 30% tax.
- The dividend income is taxed in the hands of the shareholders **only if the dividend is distributed on or after 01-04-2020.**

Global Finance Central Banker Report Card 2023

RBI Governor Shaktikanta Das has been rated **'A+'** in the Global Finance Central Banker Report Cards 2023.

About Global Finance Central Banker Report Card:

- It is an annual publication by **Global Finance since 1994** which grades the performance of central bank governors in **101 significant countries**, territories, and regions, encompassing entities such as the European Union, the Eastern Caribbean Central Bank, the Bank of Central African States and the Central Bank of West African States.
- The other Bank Governors who earned an 'A+' grade in the Global Finance Central Banker Report Cards 2023 are Thomas J. Jordan (**Switzerland)** and Nguyen Thi Hong (**Vietnam).**

Inflows in Gold ETF hit a 16-month high

Gold exchange-traded funds (ETFs) attracted Rs 1,028 crore in August, making it the **highest inflow in 16 months**, amid continued hikes in interest rates in the US, which led to a slowing down in growth rate there.

What are ETFs and why are they beneficial?
- They are passive investment instruments that are based on gold prices and invest in gold bullion.
- They combine **the flexibility of stock investments and the simplicity of gold investments.**
- Gold ETFs are seen as a safe investment option with excellent liquidity and are easy to trade on the stock market.

Composition Scheme of GST

To lower the burden of complying with various Goods and Services Tax (GST) law provisions, a separate scheme under GST called the **'Composition Scheme Under GST'** was introduced by the government.

About the scheme:
- The composition scheme under GST requires businesses **to file GST returns on a quarterly and annual basis.** This is different from the monthly mandatory GST return filing.
- It offers the benefit of paying **a fixed percentage of their turnover as a tax** instead of the regular GST rates applicable to various goods and services.
- Individuals selling goods and having annual turnover up to Rs 1.5 crore (Rs 75 lakh for special category States) in a financial year can opt for a composition scheme under GST. In the case of service providers (other than restaurants), this turnover threshold limit is fixed at Rs 50 lakh. For restaurants, the turnover threshold limit is Rs 1.5 crore.
- However, **not every GST-registered person can opt for this scheme.**

Mera Bill Mera Adhikaar campaign

The Government of India, in association with State Governments, is launching an **'Invoice Incentive Scheme'** by the name 'Mera Bill Mera Adhikaar' to encourage customers to ask for invoices/bills for all purchases.

About the scheme:
- This Scheme is built on a foundation of incentives and awareness campaigns, with a multi-pronged approach towards transforming consumer behaviour and fostering accountability among sellers.
- It aims to bring a cultural and behavioural change in the general public to 'Ask for a Bill' as their right and entitlement.
- By facilitating consumers in obtaining and recording their bills, the government is actively involving citizens in **combating tax evasion** and promoting honest business practices.

Windfall tax

Recently, the Government hiked the windfall tax on crude oil.
- As the name suggests, "windfall" refers to **a dramatic and unanticipated increase in profits**. On the other hand, "tax" implies an imposition levied on this dramatic income growth.
- The government imposes this tax when they notice a **sudden rise in an industry's revenue**. For instance, the recent Russia-Ukraine war benefitted oil and gas industries with a sudden rise in their profit. So, the government imposed a windfall tax on these industries.
- These profits cannot be attributed to something the company was actively involved in, like its **business expansion or strategy**. Hence, when industries experience massive growth in their income **due to external incidents** that they are not responsible for, a Windfall Tax is levied on their earnings.

One-hour trade settlement

SEBI now says it will bring in a **one-hour settlement of trades.**

Trade settlement
- Settlement is a two-way process that involves the transfer of funds and securities on the settlement date. A trade settlement is said to be **complete once purchased securities** of a listed company are delivered to the buyer and the seller gets the money.
- **The current cycle of T+1** means trade-related settlements **happen within a day or 24 hours** of the actual transactions.
- The migration to the T+1 cycle came into effect in January 2023.
- India became the **2nd country in the world** to start the T+1 settlement cycle in top-listed securities after China, bringing in operational efficiency, faster fund remittances, share delivery, and ease for stock market participants.
- The technology for implementation of one-hour trade settlement exists but for instantaneous trade settlement, the system needs some additional technology development, which may take more time. Thus, SEBI expects the instantaneous trade settlement to be launched by the end of 2024.

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Gresham's law

The law came into play during the economic crisis in Sri Lanka last year, during which the Sri Lankan central bank fixed the exchange rate between the Sri Lankan rupee and the U.S. dollar.

About Gresham's law

- It refers to the dictum that **"bad money drives out good."** It comes into play **when the exchange rate between two currencies is fixed by the government** at a certain ratio different from the market exchange rate.
- Such price fixing **causes the undervalued currency** (currency whose price is fixed at a level below the market rate) to go out of circulation. The overvalued currency remains in circulation, but it does not find enough buyers.
- This theory often describes the stability and movement of different currencies in global markets.
- Stable currencies, such as the U.S. dollar or the Euro, can be **considered good money** as they circulate as an international medium of exchange.
- Weaker currencies of less developed nations circulate very little outside the jurisdictions of their issuing countries and can be **considered bad money.**

Indian Economy Grows 7.8% In April-June

According to the Commerce Ministry, the Combined Index of Eight Core Industries increased by 8% as compared to the year-ago period.

About:

- **Eight Core Industries** include **Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity**. These comprise **40.27%** of the weight of items included in the Index of Industrial Production (IIP).
- With China logging **6.3 %** growth in the first quarter, India remains the fastest-growing major economy.
- Private Consumption and Investment, Agriculture and Services have been able to do well whereas Manufacturing and Merchandise Shipments have lagged behind.

Benefits of economic growth:

- **Investments in infrastructure**: Economic growth often involves investments in infrastructure, including transportation, energy, and communication systems.
- **Attracts Foreign Investment**: A growing economy attracts foreign direct investment (FDI). This influx of capital can boost domestic industries, create jobs, and facilitate the transfer of technology and know-how.
- **Improved standard of living**: Economic growth leads to higher per capita income, which can improve the standard of living for many citizens.
- **Influence on international forums**: A strong and growing economy can boost a country's global standing and influence in international forums leading to better diplomatic relations and trade opportunities.

Downsides of economic growth:

- **Pressure on scarce resources**: Rapid economic growth can lead to increased pressure on scarce resources, such as water, arable land, and minerals resulting in resource conflicts and environmental degradation.
- **Rising income inequality**: Economic growth can exacerbate income inequality if the benefits are not distributed evenly. In India, rich are benefiting disproportionately from growth.

INTERNATIONAL RELATIONS

West Coast Refinery Project

India and Saudi Arabia will set up a joint task force to explore the early implementation of the **West Coast refinery project** to speed up the implementation of the $50 billion West Coast refinery project.

About the West Coast Refinery Project:

- First conceptualised in 2014, the West Coast refinery project, is envisioned as **India's largest greenfield refinery** with a capacity of 60 million tonnes per annum.
- **Location**: India's western coast, specifically in Ratnagiri, Maharashtra.
- The refinery is expected to **produce around 1.2 million barrels of oil a day** when completed, alongside the various petroleum products that will be produced by attached petrochemical plants.
- **RRPCL-** is a 50:25:25 joint venture partnership formed in 2017 by India's three leading government-owned PSUs in the oil and gas sector, Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL), and Hindustan Petroleum Corporation Limited (HPCL).

- In 2019, Saudi Aramco and the Abu Dhabi National Oil Company (ADNOC) decided to get involved as well, collectively acquiring a 50 % stake in the project.

Modern-day Sea-Rail Spice Corridor - from India to Europe

In the recent G20 Summit, the India-Middle East-Europe Economic Corridor (IMEE EC) was proposed.

About IMEE EC:

- It is being positioned as a modern-day Spice Route, and as an ideological alternative to **China's Belt and Road Initiative**.
- It aims to leverage **railway tracks and shipping corridors** through the Arabian Peninsula to help physically link up a vast stretch of the Eurasian subcontinent.
  - o Work on the inclusion of energy products such as **green hydrogen**, while improving digital connectivity and catalyzing trade among countries.
  - o Include a rail link as well as an **electricity cable, a hydrogen pipeline** and a **high-speed data cable.**
  - o Also called "**a green and digital bridge across continents and civilizations".**
- **Members:** India, USA, UAE, Saudi Arabia, France, Germany, Italy and the European Union Commission.
- **Funding:** It is part of the **Partnership for Global Infrastructure Investment (PGII),** a collaborative effort by **G7 nations** to fund infrastructure projects in developing nations.

What is PGII?

- A **West-led initiative**, seen as a counter to China's BRI.
- Launched as a joint initiative **to help fund infrastructure projects in developing countries** through public and private

Why this Corridor is proposed?
- Increase prosperity among the countries involved through an increased flow of **energy and digital communications**.
- Help deal with the lack of infrastructure needed for **growth in lower and middle-income nations.**
- It could help "**turn the temperature down**" on "**turbulence and insecurity**" coming out of the Middle East.
- **Indian Perspective:** This project is in line with initiatives such as **Make in India, Sagarmala and Atmanirbhar Bharat**. It will facilitate and enhance our self-reliance in the infrastructure, logistics and transportation sectors.

investments during the G7 summit in Germany (2022).

- Through the PGII, developing countries can contribute towards *reducing the infrastructure gaps* in the **Global South countries**.

Eastern Maritime Corridor (EMC)

Indian shipping Minister recently said India and Russia seek to begin operations on the Eastern Maritime Corridor (EMC).

About the EMC:

- A **proposed sea route between** the Indian port of **Chennai and the Russian port of Vladivostok.**
- Estimated to bring down transportation time between Indian and Russian ports in the Far East Region by up to 40% (24 days from the current 40 days).
- The present trade route between Mumbai, India, and St. Petersburg, Russia, covers a distance of 8,675 nautical miles.
- The **EMC will cover a distance of about 5,600 nautical miles**, which is significantly **shorter than the current route via the Suez Canal**.
- Once complete, **EMC will take 24 days, down from presently over 40 days**, to transport goods from India to Far East Russia.
- **For India,** it will provide a shorter and more efficient **route to access the markets of the Far East.**

About Vladivostok:

- A major city, located in **Russia's Far East**.
- Located on the Golden Horn Bay, north of North Korea, and a short distance from Russia's border with China.
- Largest port on Russia's Pacific coast and home to the Pacific Fleet of the Russian Navy. **Shipping and commercial fishing are the main commercial activities** at its massive port.
- **Eastern railhead of the legendary Trans -Siberian Railway**, which connects the Far East of Russia to the capital Moscow, and further west to the countries of Europe.

## International Organization of Legal Metrology (OIML)

The Union Ministry of Consumer Affairs secretary said that India has become an OIML certificate-issuing authority.

About OIML:

- It is an international **standard-setting body,** Headquartered in Paris.
- Develops model regulations, standards, and related documents for use by legal metrology authorities and industry.
- Plays a crucial role in **harmonising national laws and regulations** on the performance of measuring instruments like clinical thermometers, alcohol breath analysers, radar speed measuring instruments, ship tanks found at ports, and petrol dispensing units.
- **India became a member** of the OIML in 1956. In the same year, India signed the metric convention.

What is the OIML certificate?

- System for **issuing, registering and using OIML certificates** and their associated OIML-type evaluation/test reports for instruments like digital balances, clinical thermometers, etc.

- With the addition of India, the number of countries authorised to **issue OIML certificates has increased to 13.**
- It is a single certificate accepted worldwide.
- Indian domestic manufacturers can now **export their weighing and measuring instruments worldwide** without incurring additional testing fees, resulting in significant cost savings.
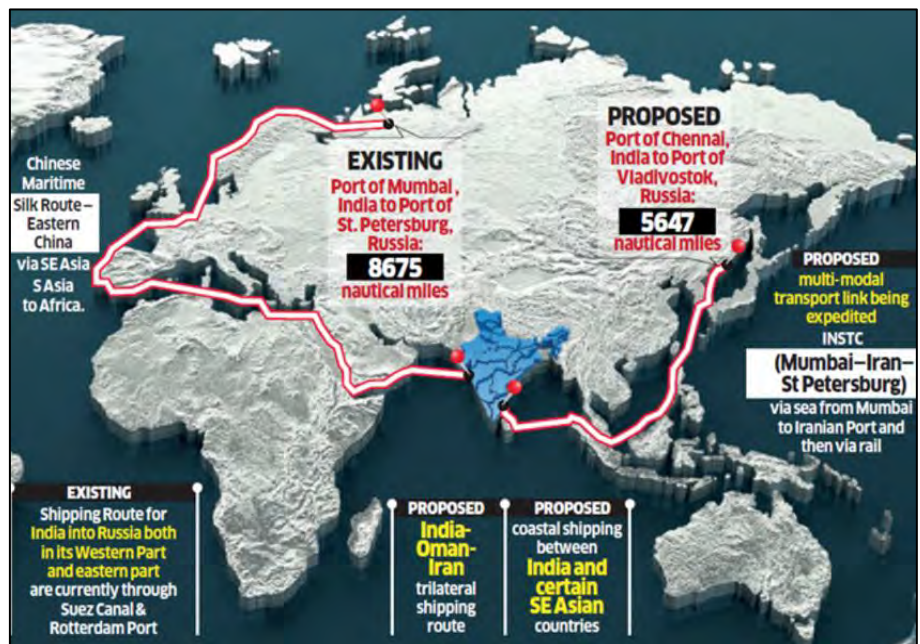
B-20

Recently, India successfully hosted the Business-20 (B-20) Summit in New Delhi on August 25-27, 2023.

About B-20:

- It is the official G20 dialogue forum, established in 2010, with global companies and business organisations as participants.
- Each year, the G20 Presidency appoints a B20 Chair (an eminent business leader from the G20 host country), who is supported by a B20 Sherpa and the B20 secretariat.
- It leads the process of galvanizing global business leaders for their views on issues of global economic and trade governance and speaks in a single voice for the entire G20 business community.

Aims of the summit:

- Deliver concrete actionable policy recommendations on priorities by each rotating presidency to spur economic growth and development.
- Develop consensus-based policy recommendations to the G20 and international organizations and institutions, based on Task Forces (TFs) and Action Councils (ACs).

Highlights of the summit held in India:

- **Theme: R.A.I.S.E** – Responsible, Accelerated, Innovative, Sustainable and Equitable Businesses.
- B20 India Communique includes 54 recommendations and 172 policy actions for submission to G20.

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- Recommended business leaders to focus on **Customer Care policies** and the green credit approach.
- Urged the business leaders to brainstorm on the new age of technology (**Artificial Intelligence and cryptocurrency**) disrupting the world.
- The Prime Minister's call for ethical AI and responsible cryptocurrency use reflects India's commitment to balance innovation with regulatory safeguards.

Stapled Visa

India withdrew its 8-athlete wushu contingent from the Summer World University Games beginning in Chengdu in July 2023 after China issued stapled visas to 3 athletes from the team belonging to Arunachal Pradesh.

About stapled visa:

- It is an unstamped piece of paper that is attached by a pin or staples to a page of the passport and can be torn off or detached at will.
- China has made it a practice to issue stapled visas to all Indian nationals from Arunachal Pradesh and Jammu and Kashmir.
- In 2006, the Chinese authority refused to give a visa to an Indian government official serving in Arunachal Pradesh.

Reasons behind the issue of stapled visa by China:

- China challenges the legal status of the McMahon Line (the boundary between Tibet and British India) that was agreed upon at the Shimla Convention of 1914.
- This disagreement lies at the heart of Chinese claims over the position of the Line of Actual Control (LAC), and its repeated transgressions into Indian territory.
- China claims some 90,000 sq. km of Arunachal Pradesh as its territory. It calls the area "Zangnan" in the Chinese language or "South Tibet".
- It issues lists of Chinese names for places in Arunachal Pradesh- it issued three such lists in 2017, 2021, and April 2023 and takes steps such as issuing stapled visas.

India's concerns and responses regarding this:

- The Indian government has consistently refused to accept China's issuance of stapled visas. India has stressed that there should be no discrimination or differential treatment based on domicile or ethnicity in the visa regime for Indian citizens holding valid Indian passports.

Types of Indian Visa:
- Employment visa
- Business visa
- Project visa
- Entry visa
- Tourist visa
- Research visa
- Transit visa
- Conference visa
- Medical visa

Oslo Accord

The Oslo Accords had called for a time-bound two-state solution to end the Arab-Israeli conflict over Palestine.

Oslo Accord

- On September 13, 1993, Israeli Prime Minister Yitzhak Rabin and Palestine Liberation Organization (PLO) Negotiator Mahmoud Abbas signed a Declaration of Principles on Interim Self-Government Arrangements, commonly referred to as the "Oslo Accord," at the White House (USA).
- Israel accepted the PLO as the representative of the Palestinians, and the PLO renounced terrorism and recognized Israel's right to exist in peace.
- Both sides agreed that a Palestinian Authority (PA) would be established and assume governing responsibilities in the West Bank and Gaza Strip over five years.
- As per the Oslo Accords of 1993 and 1995, the West Bank (region in Israel) was divided into Areas A, B, and C. Israel controls Area C, which constitutes 60% of the West Bank.
- It led to a kind of thaw in relations between Israel and MENA (Middle East and North African) countries in both official and unofficial ways. Jordan signed its peace deal with Israel in 1994.

Control of the West Bank under Oslo Accords
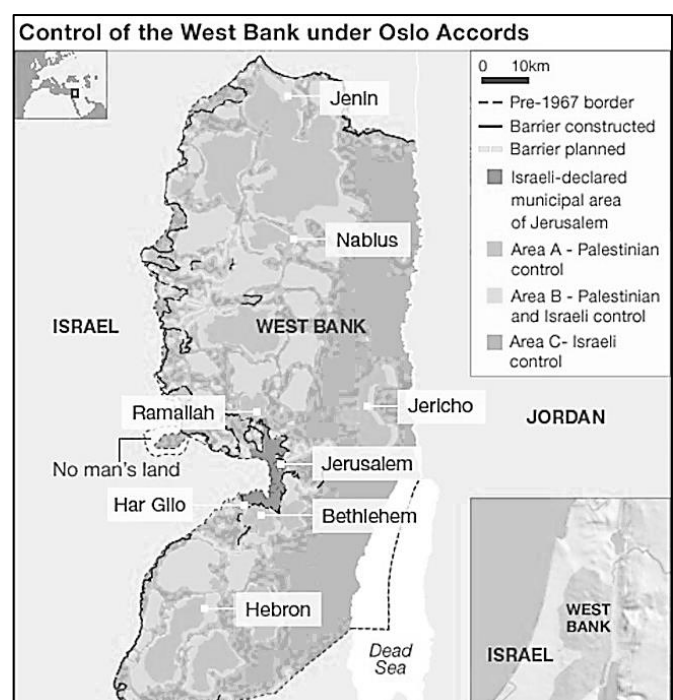
ENVIRONMENT & ECOLOGY

Project Cheetah

One year of successful implementation of **Project Cheetah** in India has been commemorated on **September 17, 2023.**
About the Project:

- It was launched on **17 September 2022** by introducing **eight African cheetahs from Namibia** translocated into **Kuno National Park** in Madhya Pradesh.
- Subsequently**, twelve cheetahs from South Africa** were also translocated and released in **Kuno National Park** in **February 2023.**
- **Aim:** Restoring the population of cheetahs, which were declared extinct in the country in 1952.

Way Forward:

- A task force for Project Cheetah is being created which will continue its assessments regarding the reintroduction of the cheetah.
- **Further scientific surveys** will be conducted in the designated project sites to provide a detailed report on their suitability as cheetah habitats and develop road maps for their eco-restoration.
- Discussions and negotiations with countries that currently host cheetah populations will be carried out to obtain suitable **cheetah individuals** for Project Cheetah.

About Cheetah
Cheetahs (Acinonyx jubatus) are known for being the **fastest land animal** and belong to the cat species. They have small heads, lean bodies, long legs, and a yellowish-tan coat with distinctive black spots.
IUCN Status: Vulnerable

- **Appendix I of CMS (Convention on Migratory Species).**
- **CITES Appendix I.**
- **Found only in the arid regions** of eastern Iran and Africa. Also, exists as a **flagship species** in **isolated populations** in grasslands, scrubland and open forests across the continent, especially in Botswana, Namibia and South Africa.

Green Hydrogen

Recently, India announced the **definition of Green Hydrogen.**

About Green Hydrogen: Green hydrogen is an environment-friendly fuel, produced from renewable sources of energy that can be easily replenished.

Definition as per the recent Government circular:

- Hydrogen produced **using renewable energy**, including, but not limited to, production through **electrolysis or conversion of biomass**.
- The standard defines **Green Hydrogen** as having a well-to-gate emission (i.e., including water treatment, electrolysis, gas purification, drying and compression of hydrogen) of not more than 2 kg CO_2 equivalent/kg H2.

Green hydrogen benefits:

- Sustainability- does not emit polluting gases in either its production or combustion.
- Reduces carbon footprints- does not release greenhouse gases.
- Versatile- can be transformed into either a synthetic gas or electricity.
- It can be utilised for commercial, domestic, mobility, or industrial purposes.
- It is also easily storable as hydrogen is very lightweight.

GREEN HYDROGEN MISSION

- On 4th January 2023, the Union Cabinet approved the National Green Hydrogen Mission with an outlay of ₹ 19,744 crore from FY 2023-24 to FY 2029-30.
- According to the Union Power & NRE Minister, it is expected to reduce ₹ 1 lakh crore worth of fossil fuel imports and nearly 50 MMT per annum of CO_2 emissions by 2030.

Hydrogen Types Based on Extraction Methods

Grey Hydrogen:
- Produced via coal or lignite gasification (black or brown), or via a process called steam methane reformation (SMR) of natural gas or methane (grey). mostly carbon-intensive processes.

Blue Hydrogen:
- Produced via natural gas or coal gasification combined with carbon capture storage (CCS) or carbon capture use (CCU) technologies to reduce carbon emissions.

Green Hydrogen:
- Produced using electrolysis of water with electricity generated by renewable energy. The carbon intensity ultimately depends on the carbon neutrality of the source of electricity.

E-WASTE

Aditya Birla Group Company Hindalco Industries will be investing ₹ 2,000 crore in a copper **e-waste recycling facility**.

About E-waste:

- E-waste covers items of all types of Electrical and Electronic Equipment (EEE) and its parts discarded by the owner as waste without the intention of re-use.
- Rapid growth of technology, upgradation of technical innovations, and a high rate of obsolescence in the electronics industry have led to one of the fastest growing waste streams in the world which consists of end-of-life EEE products containing toxic materials such as Refrigerators, Washing machines, Computers and Printers, Televisions, Mobiles, IPods etc.

Problem of Electronic Waste in the World: According to a UN report, the world generated **48.5 million tons of electronic waste in 2018**. This highlights the growing importance of recycling and also shows a worrying statistic only 20% of this is recycled. If we carry on like this, the UN estimates that we could reach 120 million tons of electronic scrap by 2050.

E-Waste Recycling:

- **Reprocessing and re-use** of these electronic wastes.
- Process of extracting valuable materials after shredding the e-waste into tiny pieces that could be reused in a new electronic appliance.
- It has the potential to reduce environmental hazards and pollution and also protect humans and other life forms existing in our world.

E-waste Rules and Regulations in India:

- The Government has taken several steps to formalize the e-waste recycling sector.
- The **E-Waste (Management) Rules, 2016** provide for **compulsory** authorization of the dismantling and recycling units from the concerned State Pollution Control Boards (SPCBs)/ Pollution Control Committees (PCCs). CPCB has issued guidelines/SOP for the processing of e-waste. The CPCB and SPCBs monitor the units and take necessary steps to mainstream and modernize the recycling industry with the help of the MeitY.

29th World Ozone Day

Ministry of Environment, Forest and Climate Change (MoEF&CC), celebrated the 29th World Ozone Day on the 16th of September 2023.

About the World Ozone Day

- It is celebrated on 16th September each year to commemorate the signing of the Montreal Protocol, which came into force on this day in 1987.
- It is celebrated every year to spread awareness among people about the depletion of the Ozone Layer and the measures taken/ to be taken to preserve it.
- The Ozone Cell, MoEF&CC, has been celebrating World Ozone Day since 1995 at the National and State levels.

Related terms:

- **Ozone Layer**: It exists in the Stratosphere, between 10 KM and 40 KM above the Earth's surface and protects us from UV radiation from the Sun. Ozone formed in the stratosphere is called stratospheric or good Ozone.
- **Significance of the Ozone Layer:** Without the Ozone layer, radiation from the sun would reach Earth directly, having ill effects on human health, i.e., eye cataracts, skin cancer, etc., and adverse impacts on agriculture, forestry and marine life.
- **Ozone Depleting Substances:** These are the manmade chemicals containing chlorine and bromine that reach the stratosphere and undergo a complex series of catalytic reactions, leading to the destruction of ozone.
- **The Vienna Convention:** It is an international treaty on the protection of the Ozone Layer, that **came into force in 1985.**
- Under this convention, **the Montreal Protocol came into force in 1987.** It is an international environmental treaty to protect the Earth's Ozone Layer by phasing out the production and consumption of Ozone Depleting Substances for end applications.
- The **theme** for World Ozone Day 2023 is "Montreal Protocol: fixing the ozone layer and reducing climate change".

NGT on Bhoj Wetland

The National Green Tribunal (NGT) ordered the Madhya Pradesh government to stop the operation of cruise vessels as well as other motor-propelled boats in the Bhoj wetland.

About the Bhoj Wetland:

- It consists of two contiguous **human-made reservoirs**, the Upper Lake called **Bhojtal (Bada Talaab)** and the Lower Lake called **Chhota Talaab**, located in Bhopal, **Madhya Pradesh.**

- The lakes are very rich in biodiversity, particularly for **macrophytes, phytoplankton and zooplankton.**
- It was designated as the **Ramsar site** in 2002.

National Green Tribunal (NGT):

- NGT has been established under the **National Green Tribunal Act 2010.**
- Its headquarters is in **New Delhi**, and Bhopal, Pune, Kolkata and Chennai are its other four regional places.
- **Composition**
  - It comprises **the Chairperson**, at least 10 and a maximum of 20 full-time Judicial members and Expert Members.
  - They shall hold office for **a term of 5 years** and are not eligible for reappointment.
  - The Chairperson is appointed by the Central Government in consultation with the Chief Justice of India (CJI).
  - A Selection Committee shall be formed by the central government to appoint the Judicial Members and Expert Members.

International Whaling Commission (IWC): First 'extinction alert'

The IWC has issued an extinction alert for the endangered **vaquita porpoise**, whose population is estimated to have shrunk to less than a dozen, marking the institution's first-ever extinction warning.

About vaquita porpoise: (IUCN status: Critically Endangered)

- The vaquita is only found in the northern-most part of the Gulf of California, Mexico.
- They are the world's smallest porpoise.
- Numbers have fallen from a population of ~570 in 1997 to ~10 in 2018.

International Whaling Commission (IWC)

- IWC was set up under the International Convention for the Regulation of Whaling signed in 1946. Today, it has 88 member countries.
- Its purpose is to provide for the proper conservation of whale stocks and make the orderly development of the whaling industry possible.
- An integral part of the Convention is its legally binding 'Schedule'.
- IWC work programme includes bycatch & entanglement, ship strikes, ocean noise, pollution and debris, and sustainable whale watching.

Issues leading to extinction:

- The vaquita is caught as a bycatch in gillnets meant for totoaba (its swimbladders are prized in Chinese cuisine).
- An illegal, international trade in totoaba fish, has complicated efforts to end gillnet fishing.

Way Forward

- 100% enforcement of a ban on gillnets in their core habitat.
- IWC emphasized encouraging wider recognition of the warning signs of impending extinctions and generating support and encouragement at every level for the actions needed now to save the vaquita.

Facts
- Maximum body length of 150 cm (4.9 ft) (females) or 140 cm (4.6 ft) (males).
- It has a large dark ring around its eyes and dark patches on its lips that form a thin line from the mouth to the pectoral fins.
- They are most often found close to shore in the Gulf's shallow waters, although they quickly swim away if a boat approaches.

Bandipur Tiger Reserve (BTR)

- The Karnataka Forest Department directed the Bandipur Tiger Reserve's eco-sensitive zone (ESZ) monitoring panel to act against illegal cottages built within the reserve's ESZ.

About Bandipur Tiger Reserve (BTR):

- It is situated in two contiguous **districts (Mysore and Chamarajanagar) of Karnataka** and located at the **tri-junction area of the States of Karnataka, Tamil Nadu and Kerala.**
  - Geographically, it is an "ecological confluence" of the Western and Eastern Ghats.
- It is **part of the larger Nilgiri Biosphere Reserve**, which is recognised as a UNESCO World Heritage Site.
- BTR is **surrounded by:**
  - **Nagarahole Tiger Reserve** (Tamil Nadu) in the North West (Kabini Reservoir separates the two).
  - **Mudumalai Tiger Reserve** (Tamil Nadu) in the South.
  - **Wayanad Wildlife Sanctuary** (Kerala) in the South West.

- **Rivers**: It is surrounded by **River Kabini in its north and River Moyar in its south**.
- **Climate**: Bandipur has a typical tropical climate with distinct wet and dry seasons.
- **Flora**: Diverse **vegetation ranging from dry deciduous to tropical mixed deciduous**.
- **Fauna**: It is a shelter for the largest population of wild Asian elephants in South Asia. It comprises other mammals such as Bengal tiger, gaur, sloth bear, golden jackal, dhole, four-horned antelope, etc.

GEOGRAPHY

Bagmati River

A boat carrying 32 school students capsized in the Bagmati River in Bihar's Muzaffarpur.

About Bagmati River:

- It is a **transboundary river** between **Nepal and India**.
- It originates in **the Shivapuri Hills** to the north of Kathmandu and flows southward through the city.
- It passes across the Kathmandu Valley in Nepal.
- It gets divided from Kathmandu through Patan, passing via Province No. 2 of the Southern region of Nepal that eventually seeps into the Bihar state of India.
- This river is assumed to be sacred by a pair of religions, Hindus as well as Buddhists.
- **Major tributaries** – Bishnumati, Hanumante, Dhobikhola and Tukucha.
- The River ultimately joins the Narayani River, located in southern Nepal.
- The merged waters of **the Bagmati and Narayani** eventually make their way southward into the Ganges.
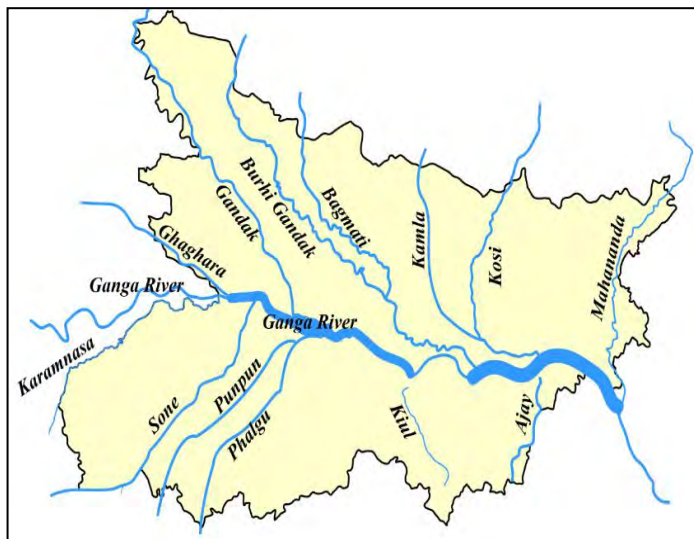
Rubber plantation in North-East India to be increased

The Rubber Board is implementing a project to expand the area under natural rubber in the Northeastern States.

Natural Rubber:

- Natural rubber is from **the monomer isoprene (2-methyl-1,3-butadiene)**.
- It is a native of the Amazon basin, introduced to countries in the tropical belts of Asia and Africa in the late nineteenth century.
- Climatic conditions
  - Moist and humid climates with heavy rainfall of more than 200 cm.
  - Equatorial climates and temperatures above 25 degrees Celsius.
  - Well-drained, weathered soils.

About Rubber Board: It is a statutory organization headquartered in Kottayam, Kerala, constituted under the **Rubber Act, 1947**. It functions under the Ministry of Commerce and Industry.
Composition: The Board is headed by a Chairman appointed by the Central Government and has 28 members.

Rubber production in India: Worldwide, India is 3rd largest producer and 4th largest consumer of natural rubber and 5th largest consumer of natural and synthetic rubber together.

Rubber Growing Areas in India

- **Traditional:** Tamil Nadu's Kanyakumari District and Kerala.
- **Non-traditional**: Coastal Karnataka, Goa, Maharashtra's Konkan Region, coastal Andhra Pradesh and Orissa, the northeastern provinces, the Andaman and Nicobar Islands, etc.

Fourteenth World Spice Congress (WSC)

The 14th edition of the World Spice Congress (WSC) began at Vashi in Navi Mumbai.

About World Spice Congress (WSC):

- It was planned and conceived in 1990 as a forum for discussion and interaction between the importers and exporters of spices.

- It is the **conglomeration of the global spice industry** to deliberate the concerns and considerations of the sector over its three-decades-long presence.
- Since its inception, it has been organized **under the leadership of the Spices Board**, **Ministry of Commerce and Industry**, Government of India.
- Theme for 2023: **VISION 2030: S-P-I-C-E-S** (Sustainability, Productivity, Innovation, Collaboration, Excellence and Safety).

About the Spices Board of India

- It was constituted on 26th February 1987 under **the Spices Board Act 1986** with the merger of the erstwhile Cardamom Board (1968) and Spices Export Promotion Council (1960).
- It is functioning under **the Ministry of Commerce & Industry.**
- It is responsible for the export promotion of the 52 scheduled spices and the development of Cardamom (small and large).

Global Warming and Cirrus Clouds

According to a study, a significant statistical correlation occurs between thunderstorms around the world and the formation of wispy cirrus clouds, resulting in increased global warming.

Features of Cirrus Clouds:

- White or light grey **delicate, feathery clouds, made mostly of ice crystals** originating from the freezing of supercooled water droplets.
- **Thin and wispy** in appearance, this **shape comes from wind currents,** twisting and spreading the ice crystals into filaments or strands**.**
- They are **commonly known as "mare's tails**" because they are **shaped like the tail of a horse.**
- Typically found at heights greater than 20,000 feet (6,000 metres).
- They generally occur in fair weather and point in the direction of air movement at their elevation.

Other Main Cloud Types:

- **Cumulus clouds:**
  - They are **puffy clouds** with a distinct **white or light grey appearance.**
  - They have a **relatively short life** cycle. Their bottom is fairly close to the ground**.**
  - Cumulus clouds that do not get very tall are indicators of fair weather. If they do grow tall, can turn into thunderstorms.
- **Stratus clouds:**
  - They are **low-level cloud formations** characterised by their uniform and featureless appearance.
  - They look like **flat sheets of clouds** covering the sky like a **continuous, greyish or whitish** blanket and are associated with overcast or cloudy weather conditions.
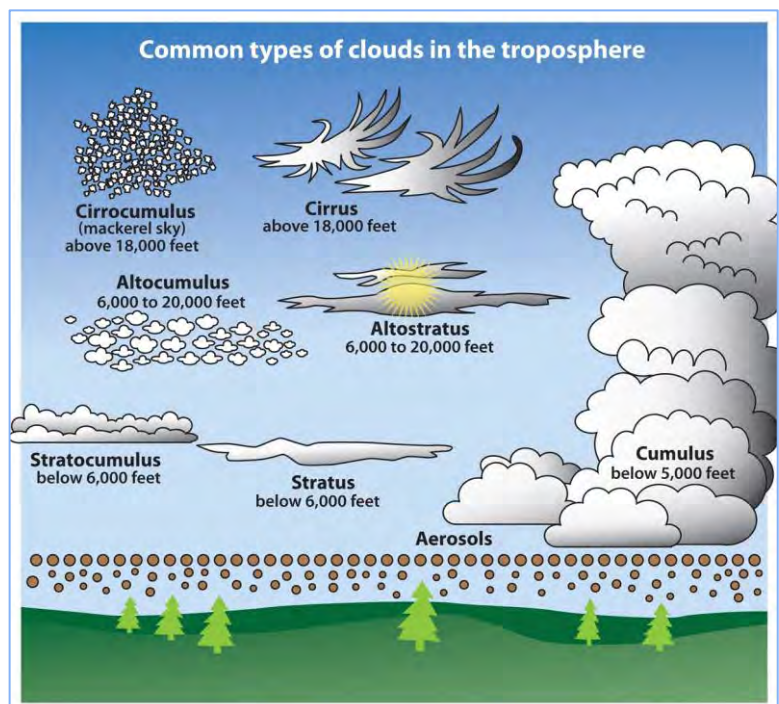
Morocco Earthquake and High Atlas Mountains

The epicentre of the recent devastating earthquake in Morocco was in the High Atlas Mountains, about 71 kilometres southwest of Marrakesh.

About the High Atlas Mountains:

- They are a prominent **mountain range in North Africa,** primarily located in Morocco.
- They are part of the Atlas Mountain Range, stretching across Morocco, Algeria, and Tunisia. It extends north eastward for 1000 km from the Atlantic Coast to the Moroccan-Algerian border.
- **Geography**:
  - They are characterised by **rugged and steep terrain** and are known for their **high peaks, deep valleys, and extensive plateaus**.

- o It includes **several peaks over 4,000 metres** (13,000 feet) in elevation, with **Mount Toubkal being the highest at approximately 4,167 metres** (13,671 feet).
- **Cultural Significance:** The region is inhabited by **Berber communities** and traditional Berber villages throughout the mountains**.**
- **Climate Divide:** Its saw-toothed **Jurassic peaks** act as a weather barrier between the mild Mediterranean climate to the north and the encroaching Sahara to the south.

About Morocco:
- Morocco with its capital Rabat is located in the northwest corner of Africa, bordered by the North Atlantic Ocean and the Mediterranean Sea with a significant part covered by the Sahara Desert.
- It shares land borders with Algeria to the east and southeast and Western Sahara to the south. The High Atlas Mountains separate the mild coastline from the harsh Sahara.
- Climate: Ranging from Mediterranean along the coast to desert in the interior experiencing hot summers and mild winters.
- Government: A constitutional monarchy with an elected parliament.
  - o King Mohammed VI has been the reigning monarch since 1999.
  - o It was a French protectorate between 1912 and 1956.

SCIENCE & TECHNOLOGY

Havana Syndrome

The Central government has told the Karnataka High Court that it will look into the matter of the 'Havana Syndrome' in India.
About Havana Syndrome:
- A set of mental health symptoms said to be experienced by US intelligence and embassy officials in various countries.
- It traces its **roots** to **Cuba in late 2016**, a year after the US opened its embassy in Havana.
- **Symptoms:** Headache, nausea, Insomnia, depression, impaired balance, concentration and memory loss

Causes of Havana Syndrome
- Initially, the suspicion was on Cuban intelligence or a section within the Cuban establishment. It was speculated to be a "**sonic attack**".
- However, further study by US scientists and medical examination of the victims began to suggest subjection to high-powered microwaves.
- Greater exposure to high-powered microwaves causes damage to the nervous system.
- The use of microwaves as a counter-intelligence tactic has been experimented with since the Cold War by both Russia and the US.

Havana Syndrome in India:
- A US intelligence officer travelling with the CIA director in India reported these symptoms in 2021.
- However, sources in the Indian security establishment denied any such weapon being in the possession of an Indian agency.

US reports on Havana Syndrome:
- The US has not been able to come up with any conclusive evidence supporting "microwave weapon". There is also a question mark on how it specifically targets certain individuals and does not affect all the people in its range.
- Some US medical experts have called the syndrome a psychological illness amplified by widespread fear of being targeted.

Dinkinesh asteroid

NASA's Lucy spacecraft has captured its first images of the main belt asteroid Dinkinesh, marking the beginning of a 12-year voyage.
About Dinkinesh asteroid:
- It was discovered in **1999 by the LINEAR survey.**
- Dinkinesh is a slow rotator with a moderately large light-curve amplitude.
- It is an **S-type asteroid, which** means it is composed **mainly of silicates and some metal.**
- It will be Lucy mission's 1st fly-by target on November 1, 2023, during its cruise to the Trojan Clouds.
- The observations were made by Lucy's high-resolution camera, the **Lucy Long Range Reconnaissance Imager** (L'LORRI instrument).

Lucy Mission:

- Launched by NASA from the Cape Canaveral Space Force Station in Florida in 2021.
- 12-year **mission** that will take close observations of **nine of Jupiter's Trojans** and two main belt asteroids along with that.
- First spacecraft sent to study the **Trojan asteroids**, which orbit the Sun in the same path that the planet Jupiter takes.

Alpha Keratin and Beta Keratin

Recently, Keratin present in the *silk of spiders* and the *horns of rhinos* was discussed by scientists.

What is Keratin?

- A *broad group of proteins*, defined as a fibrous protein that forms the main structural constituents of hair, feathers, claws, horns, etc.
- The **alpha keratin** and **beta keratin** are two forms of keratin, that occurs in animals.

Difference between Alpha and beta keratin:

	Alpha keratin	Beta keratin
Presence	A type of protein found in Mammals.	A structural protein that mainly occurs in the epidermis of reptiles.
Occurrence	Occurs in hair, horns, nails, and the epidermal layer of their skin.	Occurs in the epidermal stratum corneum of their skin, rich in stacked beta-pleated sheets.
Function	Provides the mammal with structural Stability	Provides rigidity to skin, waterproofing and prevention of desiccation in reptiles.

Function of Keratin:

- Provides support and protection in your body.
- Human hair, nails and skin rely on the amount of keratin in your body for their overall health. Moreover, human glands and organs also contain keratin.
- Keratin is strong, so **won't dissolve** in *diluted acids, alkaline, solvents* or *water*.
- Even though the human body has many toxic chemicals in it due to increasing pollution levels, none of them affect keratin.

Naming sites on the Moon: Outer Space treaty

PM Modi announced the name '**Shiv Shakti**' to the point where the Chandrayaan-3 lander touched down on the lunar surface.

Debate on naming the place on the Moon:

- The **Moon does not come under any single jurisdiction**.
- In 1966, the **United Nations Office for Outer Space Affairs** came out with the **Outer Space Treaty**.
- Setting some common principles for space exploration, the Treaty said: "*Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means*".
- This meant countries had to cooperate in their Space exploration activities and could not stake a claim to the Moon. It can plant a flag in some places.
- However, the treaty *didn't talk about the naming of sites on the Moon*.

Who names the landing sites on the Moon?

- **International Astronomical Union (IAU)** (1919):
  o The Union headquartered in Paris, has **92** member countries of which **India too is a part**.
  o IAU determines some other rules for Space activities which similarly applies to the naming process.
  o **Process of naming a place on the moon:**
    ▪ Upon successful review by vote of the expert members in planetary science, of the Working Group, Approved names are immediately entered into the *Gazetteer of Planetary Nomenclature*, and posted on its web.

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INDORE: 7314977441 | **BENGALURU:** 7619166663 | **HYDERABAD:** 79960 66663 | **IMPHAL:** 9650245599 | **SRINAGAR:** 98712 35599| **MUMBAI:** 9871265599|

- Any objections can be raised by mailing to **the IAU General Secretary** within **3 months** from the time the name was implemented/used.

Other Indian names on the Moon		
Sarabhai crater	**Jawahar Sthal**	**Tiranga Point**
It is a small, circular, bowl-shaped crater on the *Mare Serenitatis,* in the northeast quadrant of the Moon. It is the landing site of *Apollo 17 and Luna 21 missions.*	After the *Chandrayaan-1 mission* in 2008, a spot where the probe crashed, was named *"Jawahar Sthal"* after the *first Indian PM, Jawaharlal Nehru.*	This point represents, where the *Chandrayaan-2 mission* crashed, which was the second attempt by India to reach the Moon.

Cryptozoology

On August 26-27, '**Monster Hunters'** converged on Loch Ness lake in the Scottish Highlands to understand the biggest search in 50 years for a legendary monster named '**Nessie**'.

About Cryptid:

Nessie is also known as a '**cryptid**', a creature that is unknown, legendary, or extinct and whose present existence is disputed or unsubstantiated.

What is Cryptozoology?

- It is a field of study and subculture that searches for and studies cryptids.
- **Cryptids** have been reported on every continent and several cultures.
- Some famous include –
  - o *Mokele Mbembe* (dinosaur-like creature of the **Congo**).
  - o *Chupacabra* of Latin America and the **Caribbean**.
  - o *Bigfoot* or *Sasquatch* of **North America**.
  - o *Yeti* of **Himalayas**.

SECURITY

INS Sumedha and Exercise Bright Star-23

The Indian Navy Ship (INS) Sumedha recently participated in Exercise Bright Star-23 with multiple other navies in the Mediterranean Sea.

About INS Sumedha:

- 3rd ship of the indigenously built Saryu class Naval Offshore Patrol Vessels (NOPV).
- Indigenously designed and commissioned into the Indian Navy in 2014.
- Part of the **Indian Navy's Eastern Fleet**, based in Visakhapatnam.
- **Primary Functions:** To undertake EEZ surveillance, anti-piracy patrols, fleet support operations, provide maritime security to offshore assets and carry out escort operations for high-value assets.
- **Features:**
  - o It can carry an Advanced Light Combat Helicopter onboard.
  - o The ship is propelled by two diesel engines, the largest of their kind ever deployed in the Indian Navy, which allow it to reach a top speed of 25 knots.
  - o With a range of 6,000 nautical miles (11,000 km) at 16 knots (30 km/h), it is suitable for extended missions and operations.

About Exercise Bright Star-23:

- Biennial multinational tri-service exercise, conducted in northern Egypt and led by the US and Egyptian armed forces.
- Largest-ever joint military exercise in the Middle East and North Africa region.
- Since its inception in 1980, it has occurred 18 times.
- This edition of the exercise saw participation from 34 countries, including India.

Storm Shadow Missile

Storm Shadow missiles were recently used in a Ukrainian strike that damaged a Russian submarine and ship at a major naval port in Crimea.

About the Storm Shadow Missile (SCALP):

- A **long-range cruise missile** with stealth capabilities jointly **developed by the UK and France**.
- Intended to **strike high-value stationary assets** such as airbases, radar installations, communications hubs and port facilities.
- Able to **operate in extreme conditions**, it offers operators a **highly flexible, deep-strike capability** based on a sophisticated mission planning system.
- It is also in service with the air forces of Egypt, India, Italy, Greece, Saudi Arabia, Qatar, and UAE.

Features:
- It is typically launched from the air, **weighs 1.3 tonnes** and is just **over 5m long.**
- Powered by a **turbo-jet engine**, the missile travels at speeds of more than 600mph.
- It carries a 450kg conventional warhead to a range of up to 200 miles (300km).
- It is equipped with **fire-and-forget** technology and fully autonomous guidance.
- The missile is fitted with a **passive imaging infrared seeker.**
- The missile is programmed with every detail of the target and the path to be taken before its launch.
- Once launched, the missile drops to a low altitude to avoid detection by enemy radar before latching onto its target with the infrared seeker.

ART & CULTURE

TRIFED's Artisanal Treasures

The G20 Summit showcased India's rich tribal heritage and craftsmanship, curated and presented by TRIFED (Tribal Cooperative Marketing Development Federation of India), Ministry of Tribal Affairs.

About TRIFED's Artisanal Treasures:

Longpi Pottery:
- Named after the village **Longpi in Manipur**, the **Tangkhul Naga tribes practice** this pottery style.
- Longpi **does not resort to the potter's wheel.** All shaping is done with the hand and mould's help.
- E.g.- grey-black cooking pots, stout kettles, quaint bowls, mugs, and nut trays, at times with a handle of fine cane.

Chhattisgarh Wind Flutes:
- Curated by the **Gond Tribe of Bastar** in Chhattisgarh, the **'Sulur' bamboo** wind flute produces melodies through **a simple one-handed twirl.**
- The 'Sulur' also serves utilitarian purposes, helping tribal men ward off animals and guide cattle through jungles.

Gujarat Hangings:
- It is curated by the **Bhil & Patelia Tribe in Dahod, Gujarat.**
- They boast mirror work, zari, stones, and beads, evolving to suit contemporary fashion while preserving tradition.

Rajasthan Artistry
- **Glass Mosaic Pottery** captures the mosaic art style, meticulously crafted into lampshades and candle holders. When illuminated, they unleash a kaleidoscope of colours.
- **Meenakari:** It is the art of decorating metal surfaces with vibrant mineral substances, a **technique introduced by the Mughals**. Delicate designs are etched onto metal, creating grooves for colours to nestle in. Each hue is fired individually, creating intricate, enamel-adorned pieces.
- **Metal Ambabari Craft:** It is curated by the **Meena Tribe** and also embraces enamelling (a process that elevates metal decoration). Today, it extends beyond gold to metals like silver and copper.

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India MAP

Western Sector

With 2,150 km of border, the two sides differ over the boundary line that separates J&k from Xinjiang province of China.

India accuses China of illegally occupying Aksai Chin, and some other parts of Ladakh region.

The 1962 war saw fierce fighting.

Tense standoffs occasionally takes place, and in summer months, the two sides send deep patrols to assert their respective claims on boundary region.

Eastern Sector

The 1,140 km long boundary is contentious and historically refered to as the McMahon Line, which chinese do not accept because this line was agreed by Tibetan representatives.

China claims the whole Arunachal Pradesh around 85,000 sq. km, as Chinese territory.

The two sides fought during 1962 but a better prepared Chinese had the advantage.

Ladakh

Himachal Pradesh

Middle sector

The 625 km in this secor are the least controversial of the three. Himachal Pradesh and Uttaranchal abet the boundary.

Both sides do not have much disagreement over this area.

Uttarakhand

CHINA

NEPAL

Arunachal Pradesh

Bagmati river   **Umiam Lake**
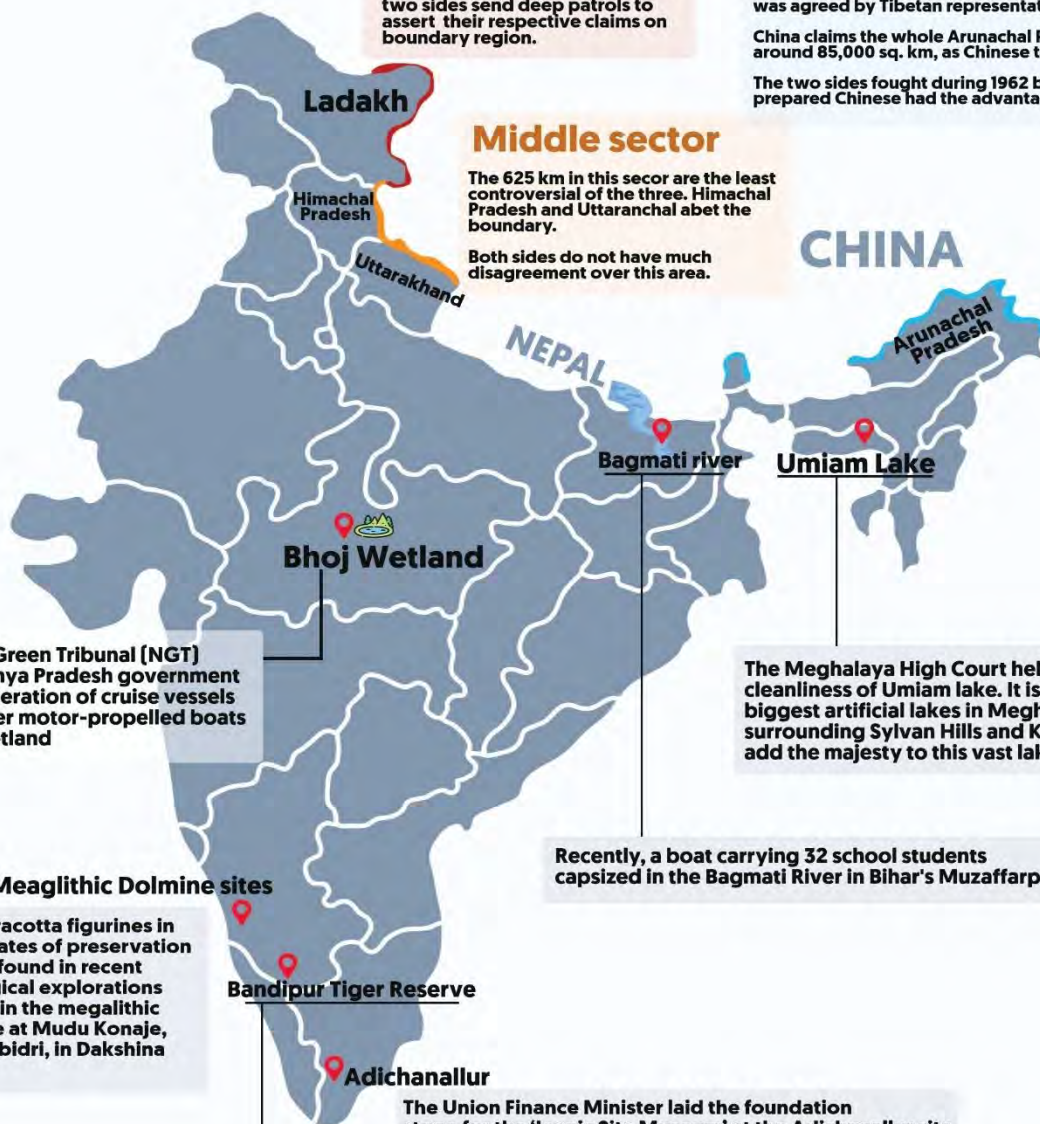
Bhoj Wetland

The National Green Tribunal (NGT) ordered Madhya Pradesh government to stop the operation of cruise vessels as well as other motor-propelled boats in the Bhoj wetland

The Meghalaya High Court held the PIL on cleanliness of Umiam lake. It is one of the biggest artificial lakes in Meghalaya. The surrounding Sylvan Hills and Khasi pines add the majesty to this vast lake.

Recently, a boat carrying 32 school students capsized in the Bagmati River in Bihar's Muzaffarpur

Meaglithic Dolmine sites

Unique terracotta figurines in different states of preservation have been found in recent archaeological explorations conducted in the megalithic dolmen site at Mudu Konaje, near Moodbidri, in Dakshina Kannada.

Bandipur Tiger Reserve

Adichanallur

The Union Finance Minister laid the foundation stone for the 'Iconic Site Museum' at the Adichanallur site.

The Karnataka Forest Department recently directed the Bandipur Tiger Reserve's eco-sensitive zone (ESZ) monitoring panel to act against illegal cottages built within the reserve's ESZ

World MAP

It is a mountainous country in western North Africa that lies directly across the strait of Gibralter. Recent Earthquake in Morocco has killed thousands of people and devastated parts of Marrakech and communities south of the major city.

The Ecuador presidential candidate was shot dead. It is a country situated on northern edge of South America which is situated on Equator.

Ecuadorians made a historic decision by voting against oil drilling in Yasuni National Park.

It is located in the province of Napo and Pastaza in North of Ecuador.

Situated on western shores of Africa and located on Equator.

Saudi Arabia hosted a conference for a peace talks on the Russia-Ukraine war in the Red Sea port city of Jeddah.

It is an Italian island located in Mediterian Sea which is struggling with a surge in migrant arrivals from North Africa.

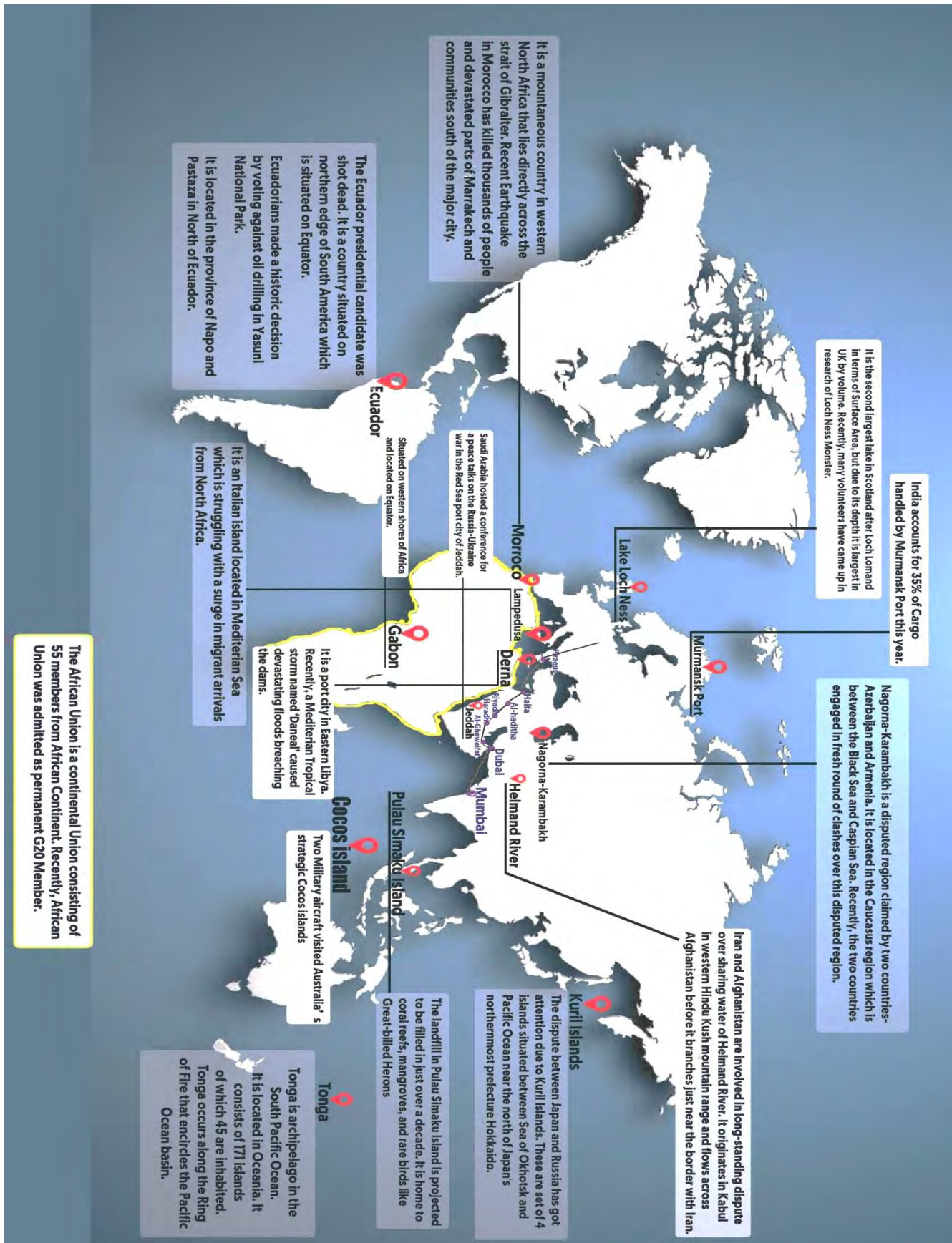It is a port city in Eastern Libya. Recently, a Mediterian Tropical storm named 'Daneal' caused devastating floods breaching the dams.

The African Union is a continental Union consisting of 55 members from African Continent. Recently, African Union was admitted as permanent G20 Member.

It is the second largest lake in Scotland after Loch Lomand in terms of Surface Area, but due to its depth it is largest in UK by volume. Recently, many volunteers have came up in research of Loch Ness Monster.

India accounts for 35% of Cargo handled by Murmansk Port this year.

Nagorna-Karambakh is a disputed region claimed by two countries- Azerbaijan and Armenia. It is located in the Caucasus region which is between the Black Sea and Caspian Sea. Recently, the two countries engaged in fresh round of clashes over this disputed region.

Iran and Afghanistan are involved in long-standing dispute over sharing water of Helmand River. It originates in Kabul in western Hindu Kush mountain range and flows across Afghanistan before it branches just near the border with Iran.

Two Military aircraft visited Australia's strategic Cocos islands

The landfill in Pulau Simaku Island is projected to be filled in just over a decade. It is home to coral reefs, mangroves, and rare birds like Great-billed Herons

The dispute between Japan and Russia has got attention due to Kuril Islands. These are set of 4 islands situated between Sea of Okhotsk and Pacific Ocean near the north of Japan's northernmost prefecture Hokkaido.

Tonga is archipelago in the South Pacific Ocean. It is located in Oceania. It consists of 171 islands of which 45 are inhabited. Tonga occurs along the Ring of Fire that encircles the Pacific Ocean basin.

Ecuador

Morocco

Lampedusa

Lake Loch Ness

Murmansk Port

Gabon

Derna

Halfa

Riyadh
Al-hadtha
Al-Gheweltat
Jeddah

Nagorna-Karambakh

Dubai

Mumbai

Helmand River

Cocos Island

Pulau Simaku Island

Kuril Islands

Tonga

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PHILOSOPHY OF THE MONTH

"Every word has consequences, every silence too." – Jean-Paul Sartre

In our daily lives, we are constantly faced with decisions that shape our future. Whether we act or remain silent, our words and actions carry significant consequences. Silence, often considered a safe option, can either be a shield against unwanted outcomes or a subtle form of conformity that empowers those seeking control. The role of silence and its impact on our lives can be explored in the following ways:

Weight of Silence:
- **Silence as Neutrality:** Many people view silence as a neutral response, devoid of any clear affirmation or rejection. It can be seen as a way to avoid taking a stance and thereby sidestep serious consequences.
- **Silence as Conformity:** It is argued that silence is a subtle response to crises and tragedies, often interpreted as a form of consent. Tyrants and dominant individuals may perceive silence as an invitation to seize power.

Silence in Communication:
- **Minor Matters and Obvious Answers:** In everyday conversations, silence can indicate that the answer is self-evident.
- **Breaking Impasse and Indecision:** Silence in situations of indecision can lead to misunderstandings and conflicts that intensify over time. Communication, even non-verbal, needs subconscious and unconscious effects.

Awareness Factor:
- **Anticipating the Effects:** Every element of communication has a ripple effect. We must anticipate how our silence or words will affect our future.
- **Consequences of Neutrality:** Remaining neutral, even in silence, can backfire if not carefully considered. Our neutrality may inadvertently empower those with malicious intentions.

Silence in communication is far from a passive act. It can be a strategic response or a path to conformity. Each decision to speak or remain silent carries the potential to shape our future and impact the world around us. Silence is never truly silent; it is a powerful tool that can either shield us or leave us vulnerable.

"Freedom of mind is the real freedom." - Ambedkar

True freedom is not solely defined by external circumstances or the absence of physical constraints but is, at its core, a state of inner liberation. In other words, genuine freedom resides in the realm of thought, consciousness, and the capacity to make independent choices.

- **Autonomy of Thought**: It means having the capacity to think independently, to form one's own beliefs, and to question established norms and dogmas, asserting that individuals should have the autonomy to think, ponder, and contemplate without external constraints. The ability to explore diverse ideas, ideologies, and worldviews without fear of reprisal fosters intellectual growth and expands the horizons of human understanding.

- **Liberation from Mental Bondage**: Philosophically, it suggests breaking free from the chains of ignorance, prejudice, and indoctrination. Individuals possess radical freedom, meaning they are condemned to be free and responsible for their choices. Overcoming the limitations imposed by fear, anxiety, and societal expectations allows individuals to manifest their authentic selves.

- **Inner Peace and Harmony**: It means having the mental fortitude to confront life's challenges with equanimity and resilience, irrespective of external circumstances.

- **Freedom in Creativity**: Freedom of mind is the wellspring of innovation. It allows individuals to tap into their creative potential and explore new realms of expression.

- **Pursuit of Virtue and Wisdom**: Virtue ethics, as advocated by Aristotle, advocates that true freedom lies in the cultivation of virtuous character traits, enabling individuals to act in accordance with their best selves.

- **Quest for Truth**: It means seeking truth not only in the external world but within oneself. The Enlightenment era philosophers championed reason and rational inquiry as means to achieve intellectual freedom.

- **Role of Self-awareness**: Philosophers such as Socrates emphasized the importance of self-examination. Understanding one's desires, biases, and prejudices is integral to achieving true freedom of mind. It enables individuals to make conscious choices rather than succumbing to unconscious impulses. Self-awareness empowers individuals to challenge their preconceptions, fostering intellectual and moral growth.

- **Conscious Autonomy**: This refers to the capacity to make decisions and choices based on one's values, beliefs, and rational deliberation. Philosophers like Immanuel Kant argue that true moral autonomy lies in the ability to act according to one's own rational will, guided by the categorical imperative, rather than being subject to external influences. Conscious autonomy

underscores the significance of making ethical choices that align with one's internal moral compass, even in the face of societal pressures.

Thus, true freedom is the unfettered exploration of the boundless realms of the mind and the perpetual quest for enlightenment and self-discovery.

THEMATIC ESSAYS

- Wars of nations are fought to change maps. But wars of poverty are fought to map change.
- I think therefore I am.
- If we are to preserve our culture, we must continue to create it.

SCAN THIS QR TO GET ANSWER

CONCEPT CLEARING ASSIGNMENT

1. Enumerate the constitutional provisions regarding the summoning of Parliament. Examine how the fewer sitting days of parliament sessions affect the governance of the country.
2. Explain the concept of the Right to Repair. Highlight the challenges and benefits associated with it.
3. What are the major challenges faced by the online gaming industry in India? Suggest measures to strike a balance between safeguarding the growth of the sector and associated socio-economic concerns.
4. Discuss the relevance of BRICS in the present changing world order. Examine the significance of the expansion of BRICS among its previous members.
5. "In the current geopolitical scenario, India and the European Union are finding mutual interests in their relationship." Elucidate. Also, mention the challenges in India-EU relations.
6. What do you understand by the 'Atlantification of Arctic Ocean'? How it will impact our environment?
7. How do ocean pollution and climate change impact Small Island Developing Nations (SIDS)? Critically analyse the role of organisations such as UNCLOS and ITLO in this regard.
8. Critically analyse the role of the Kampala Declaration in addressing climate-induced human mobility.
9. Highlight the distinct features of Indian temple architecture that influenced the evolution of modern infrastructures in India.
10. What are the salient features and objectives of Aditya L1? Explain its significance for India's space journey.
11. How will the success of the Chandrayaan-3 mission impact the involvement of the private sector in the space sector? Also, mention the challenges associated with the participation of private entrepreneurs in this sector.
12. An anti-dumping duty is not necessarily a protectionist measure if it is effectively controlled by the WTO rules. Discuss.
13. Although India has improved its tax-to-GDP ratio in the last few years, it is still lower compared to other countries. Give reasons. Also, suggest measures to improve this ratio.
14. Discuss the impact of volatility in global fertiliser supplies on Indian agriculture. Also, suggest measures to reduce reliance on imported fertilisers
15. Explain the significance of INDUS-X. To what extent does it align with the shared interests of India and the US?

1. **With reference to special session of Parliament, consider the following statements:**
   1. It is mentioned in Article 84 of the Constitution, but the term "Special Session" is not defined.
   2. The Goods and Services Tax was rolled out during the special session.
   3. It is carried out in accordance with the Rules of Procedure and Conduct of Business in both houses.

   How many of the above statements are correct?
   (a) Only one   (b) Only two
   (c) All three   (d) None

2. **With reference to Article 85 of the Constitution, consider the following statements:**
   1. It deals with the summoning of Parliament's sessions, their prorogation and dissolution.
   2. It provides for the President of India to summon each House of Parliament and mandates that two successive sessions be held within six months of each other.

   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

3. **Consider the following statements:**
   Statement-I:
   The Right to repair is likely to be one of the enablers of the circular economy.
   Statement-II:
   The Right to repair requires manufacturers to share their product details with consumers.

   Which one of the following is correct in respect of the above statements?
   (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
   (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
   (c) Statement-I is correct but Statement-II is incorrect
   (d) Statement-I is incorrect but Statement-II is correct

4. **Consider the following statements regarding the Right to repair:**
   1. Right to Repair gives consumers access to affordable repair from original equipment manufacturers (OEMs) or third-party repairers.
   2. It is based on the lines of the LiFE (Lifestyle For Environment) initiative.
   3. It will encourage the culture of planned obsolescence.

   How many of the above statements are correct?
   (a) Only one   (b) Only two
   (c) All three   (d) None

5. **Consider the following statements:**
   1. India, that is Bharat, shall be a Union of States.
   2. The States and the territories thereof shall be as specified in the First Schedule.
   3. Territories that may be acquired by the Government of India at any time.

   How many of the above are included under the Article 1 of the Indian constitution?
   (a) Only one   (b) Only two
   (c) All three   (d) None

6. **With reference to Article 368, consider the following statements:**
   1. To amend Article 1, approval of at least two-thirds of the members present and voting in both Houses of Parliament is required.
   2. A constitutional amendment bill can only be introduced in the Lok Sabha.

   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

7. **With reference to "Hindustan", consider the following statements:**
   1. It is thought to have derived from "Hindu", the Persian form of the Sanskrit word "Sindhu".
   2. The Achaemenids used the term Hindustan to identify the lower Indus basin.

   Which of the statements given above is/are ***incorrect***?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

8. **With reference to Online Gaming, consider the following statements:**
   1. The GST council has applied a 28% tax rate to the full value of online gaming.
   2. The Information Technology Act 2000 is the only regulation governing online gaming activities in India.
   3. Sikkim is the first state in the country to legalize online gambling

   How many of the above statements are **incorrect**?
   (a) Only one   (b) Only two
   (c) All three   (d) None

9. **With reference to Rules for Online Gaming 2023, consider the following statements:**

Statement -I:

Online gaming companies are required to verify their users through the KYC process.

Statement -II:

KYV verification is crucial in ensuring sovereignty and integrity of India.

(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I

(c) Statement-I is correct but Statement-II is incorrect

(d) Statement-I is incorrect but Statement-II is correct

10. **Consider the following statements regarding Bharatiya Nagarik Suraksha Sanhita Bill 2023:**

1. Citizens can lodge an FIR at any police station, irrespective of jurisdictional limits.

2. In a mercy petition, no appeal against the order of the President shall lie in any court.

3. A person accused of a crime can be tried and convicted in his absence.

How many of the above statements are correct?

(a) Only one   (b) Only two

(c) All three   (d) None

11. **Consider the following countries:**

1. Eritrea   2. Ethiopia

3. Egypt   4. Iran

5. Iraq   6. Israel

How many of the above countries were invited to become the permanent members of BRICS at its 15th summit??

(a) Only two   (b) Only three

(c) Only four   (d) Only five

12. **Consider the following statements:**

1. After expansion of the BRICS, its combined GDP at purchasing power parity (PPP) is greater than G7 countries.

2. Share of oil production of BRICS has tripled across globe after the addition of world's biggest oil producers like Saudi Arabia, the UAE, and Iran.

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

13. **Consider the following statements:**

1. The African Union is the first regional block to join G20.

2. India, Brazil, and Italy are the founding members of the Global Biofuels Alliance.

3. Leaders at the G20 Summit agreed to phase out fossil fuels in order to achieve net-zero emissions.

How many of the above statements are correct?

(a) Only one   (b) Only two

(c) All three   (d) None

14. **Consider the following statements:**

Statement -I:

India-Middle East-Europe Economic Corridor (IMEC) is a network of transport corridors aimed at promoting economic growth through integration between Asia, the Arabian Gulf, and Europe.

Statement -II:

IMEC aims to counter China's Belt and Road Initiative and secure funding for countries to construct vital infrastructure.

(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I

(c) Statement-I is correct but Statement-II is incorrect

(d) Statement-I is incorrect but Statement-II is correct

15. **'Trade and Technology Council' is sometimes seen in the news in the context of negotiations held between India and**

(a) ASEAN

(b) Shanghai Cooperation Organization

(C) BRICS

(d) European Union

16. **With respect to cancer treatments, consider the following statements:**

1. Even with improvements in treatment, both the incidence of cancer and mortality continue to rise in the country.

2. The rates of cervical and smoking-related cancers have gone down, especially in India.

3. There was a steep reduction in the rates of cervical cancer in women between 2012 and 2019.

Which of the statements given above is/are correct?

(a) 1 only

(b) 1 and 2 only

(c) 3 only

(d) 1, 2 and 3

17. **Consider the following:**
    1. Government Service
    2. Public Service
    3. Emergent Leadership
    4. Community Leadership

    In how many of the above categories Ramon Magsaysay Award is given every year?
    (a) Only one   (b) Only two
    (c) Only three   (d) All four

18. **Which one of the following best describes "Tipping Point"?**
    (a) It is a critical threshold that when crossed leads to large and often irreversible changes in the climate system
    (b) It is a situation when the global population surpasses a certain threshold, leading to an increase in poverty due to a lack of resource supply.
    (c) The minimum temperature at which condensation, sublimation, and evaporation can take place together.
    (d) It is the situation when an organ experiences insufficient oxygen delivery to meet the metabolic needs of the tissues.

19. **With reference to Chausath Yogini Temple, consider the following statements:**
    1. The Chausath Yogini Temple groups of 64 chambers are dedicated to Vaishnavism.
    2. All the temples were constructed during Kadwaha's reign in the 11th century AD.
    3. The Kachchhapaghatas dynasty also contributed to building irrigation facilities like artificial lakes.
    4. The Kachchhapaghata Rulers in Central India were religiously tolerant.

    Which of the statements given above is/are correct?
    (a) 1 and 2 only   (b) 2 and 4 only
    (c) 3 and 4 only   (d) 1, 2, 3 and 4

20. **Consider the following pairs:**

Temples	Rulers Associated
1. Chausath Yogini Temple	King Devapala
2. Kailash Temple	King Krishna I
3. Virupaksha Temple	King Rajsimha I
4. Lakshmana Temple	King Yashovarman

    How many of the above pairs are correctly matched?
    (a) Only one   (b) Only two
    (c) Only three   (d) All four

21. **Consider the following statements:**
    1. Atlantification is the increasing influence of Atlantic water in the Antarctic region.
    2. Seeding population refers to an animal or plant population that forms in one location and then is transported to another, acting to replenish numbers in the second location.

    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

22. **With reference to the United Nations Convention on Law of the Seas (UNCLOS, consider the following statements:**
    1. It was adopted in 1982 and lays down a comprehensive regime of law and order in the world's oceans.
    2. The United States of America has not yet ratified the UNCLOS.
    3. Under UNCLOS, states have the right to conduct military manoeuvres and movements within the 200 nm EEZ of a state.

    Which of the statements given above are correct?
    (a) 1 and 2 only   (b) 2 and 3 only
    (c) 1 and 3 only   (d) 1, 2 and 3

23. **Consider the following pairs:**

Country/ Bloc	-	Solar Missions
1. Japan	-	Hinode (Solar B)
2. India	-	Aditya-L1
3. China	-	Beidou
4. European Union	-	Ulysses

    How many of the above pairs are correctly matched?
    (a) Only one   (b) Only two
    (c) Only three   (d) All four

24. **With reference to Aditya- L1 Mission, consider the following statements:**
    1. It will be stationed in a halo orbit around the Lagrange point 1 (L1) of the Sun-Earth system.
    2. Satellites positioned at Lagrange points burn a lot of fuel to stay in position.
    3. The main payload of the Aditya-L is the Visible Emission Line Coronagraph (VLEC) which will help study the solar corona.

    How many of the above statements are correct?
    (a) Only one   (b) Only two
    (c) All three   (d) None

25. **Consider the following statements:**
    1. The Indian Space Policy 2023 allows for increased participation of non-government entities across the entire value chain of the space economy.

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2. The government has established the New Space India Limited (NSIL), as a single-window agency for space promotion and authorization.
3. According to Space Tech Analytics, India is the third-largest player in the industry, with 3.6% of the world's space-tech companies (as of 2021).

How many of the above statements are correct?

(a) Only one   (b) Only two
(c) All three   (d) None

26. **With reference to India's Tax- GDP Ratio, consider the following statements:**
    1. It measures how well the government controls a country's economic resources.
    2. The Tax-to-GDP ratio in India is higher than the OECD average.
    3. The Tax –GDP ratio has steadily declined in India in the last 10 years.

    How many of the above statements are *incorrect*?

    (a) Only one   (b) Only two
    (c) All three   (d) None

27. **Consider the following statements:**
    1. Innovations for Defence Excellence (iDEX) is funded and managed by the Defence Innovation Organization (DIO).
    2. The Defence Ministry has set a target to raise India's annual defence exports to $5 billion by 2030.

    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

28. **With reference to the India-US Defence Acceleration Ecosystem (INDUS-X) initiative, consider the following statements:**

1. The initiative was launched by iDEX in collaboration with the US Department of Defense.
2. It has been launched under the initiative on critical and emerging technologies (iCET) framework.
3. It seeks to explore possibilities for co-producing jet engines, long-range artillery, and infantry vehicles.

How many of the above statements are correct?

(a) Only one   (b) Only two
(c) All three   (d) None

29. **With reference to the capital adequacy ratio (CAR), consider the following statements:**
    1. It is the ratio of a bank's capital in relation to its risk-weighted assets and current liabilities.
    2. The Reserve Bank of India has mandated a uniform capital-to-risk-weighted-assets ratio for commercial and public sector banks.
    3. The higher the capital adequacy ratio of a bank, the greater will be the degree of protection for depositors' assets.

    How many of the above statements are correct?

    (a) Only one   (b) Only two
    (c) All three   (d) None

30. **With reference to Anti-dumping duties, consider the following statements:**
    1. It is imposed on imported goods to offset subsidies given by the exporting country's government.
    2. The WTO does not intervene in the activities of companies engaged in dumping
    3. It can also lead to higher prices for domestic consumers.

    How many of the above statements are correct?

    (a) Only one   (b) Only two
    (c) All three   (d) None

Answer Key

1.	(b)	11.	(b)	21.	(c)
2.	(c)	12.	(a)	22.	(d)
3.	(a)	13.	(d)	23.	(c)
4.	(b)	14.	(b)	24.	(b)
5.	(c)	15.	(d)	25.	(a)
6.	(a)	16.	(d)	26.	(b)
7.	(d)	17.	(d)	27.	(a)
8.	(a)	18.	(a)	28.	(c)
9.	(a)	19.	(c)	29.	(b)
10.	(c)	20.	(c)	30.	(b)

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