WEEKLY CURRENT AFFAIRS MAGAZINE for

U.P.S.C.-C.S.E.

DECEMBER-VOL-I-2023

1 December to 7 December

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Topic 1. LOSS AND DAMAGE FUND CLEARED ON DAY ONE OF COP-28 SUMMIT

Important for the subject: Environment

On the first day of COP 28, member countries agreed to make operational a **Loss and Damage (L&D) fund** that is meant to compensate countries already dealing with climate change.

Loss & Damage (L&D):

- **IPCC defines L&D** – The term 'losses and damages' refers to the economic and non-economic impacts of climate change, including extreme and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change. It's destructive, irreversible, and cannot be addressed by mitigation and adaptation measures.

CoP19 of UNFCCC- 2013: held at Warsaw, Poland.

- Countries agreed to formally establish the L&D fund.

- **Warsaw mechanism-** It was being created to provide financial and technical assistance to economically developing nations that were incurring L&D due to climate change.

CoP25 of UNFCCC: held at Madriad, Spain in 2019

- The **Santiago Network for L&D** was set up, but countries didn't commit any funds.

- The **vision** of the **Santiago Network** is to **catalyze the technical assistance** of relevant organizations, bodies, networks and experts, for the **implementation** of relevant approaches for averting, minimize and addressing L&D at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change.

Loss & Damage (L&D) Fund:

- First announced in **2022** at the conclusion of **COP-27** in **Sharm El-Sheikh, Egypt.** A **'transitional committee'** was setup to decide the working conditions of the fund.

- It will be based at the **World Bank** but **managed by an independent secretariat.** The World Bank will be the **"interim host"** of the fund for a period of **four years**.

- **Payments are voluntary** and a certain percentage has been set apart for a category of countries called **Least Developed Countries** and **Small island developing states**. Commitments worth atleast $450 million have already been made by countries.

- **Contributors include:** European Union, United Arab Emirates, Germany, the United States, the United Kingdom, and Japan.

Cost of L&D due to Climate Change:

- Reports suggest a **Loss and damage** from **climate change** cost about **$1.5 trillion** ($1,500 billion) in **2022**.

- Several developing countries and some of the poorest lost an average of about **8.3% of GDP** due to climate change.

Topic 2. AIR POLLUTION CAUSES OVER 2 MILLION DEATHS ANNUALLY IN INDIA: BMJ STUDY

Important for the subject: Environment

The study was conducted by the **Max Planck Institute for Chemistry,** Germany.

Data has been taken from the **Global Burden of Disease 2019** study, **NASA satellite**-based **fine particulate matter** and **population data,** and **atmospheric chemistry, aerosol,** and **relative risk modelling** for **2019.**

Death due to Air Pollution in India:

- **Outdoor air pollution** from **all sources** accounts for **2.18 million deaths per year** in **India**, second only to **China**.

- **Air pollution** from using **fossil fuels** in industry, power generation, and transportation accounts for **5.1 million extra deaths a year** worldwide.

- This equates to **61% of a total estimated 8.3 million deaths worldwide** due to **ambient (outdoor) air pollution from all sources** in **2019**, which could potentially be avoided by replacing fossil fuels with clean, renewable energy.

- Most (52%) of deaths were related to common conditions such as **ischemic heart disease** (30%), **stroke** (16%), **chronic obstructive lung disease** (16%) and **diabetes** (6%). Deaths were partly linked to **high blood pressure** and **neurodegenerative disorders** such as **Alzheimer's** and **Parkinson's disease.**

Topic 3. WHAT IS COOKING AT COP28?

Important for the subject: Environment

Climate finance:

'Market Mechanism' or **'Carbon Market'** is a way of making finance available to fight climate change. **Article 6 of the Paris Agreement**, which deals with **bilateral (6.2)** and **global carbon markets (6.4)**, is said to be the most complex part of the agreement.

Carbon markets are a **tool** for putting a **price on carbon emissions.** It allows the **trade of carbon credits** with the overall objective of **bringing down emissions**.

- These markets **create incentives to reduce emissions** or **improve energy efficiency**. It establishes **trading systems** where **carbon credits or allowances** can be **bought and sold**.
- A **carbon credit** is a kind of **tradable permit** that, per **United Nations standards, equals one tonne of carbon dioxide removed, reduced, or sequestered** from the atmosphere.
- **Carbon allowances or caps,** meanwhile, are determined by countries or governments according to their emission reduction targets. **Article 6** of the **Paris Agreement** provides for the use of **international carbon markets** by countries to **fulfill their NDCs** (Nationally Determined Contributions). **NDCs** are climate commitments by countries setting targets to achieve net-zero emissions.

Types of Carbon Markets:

Compliance Markets:

- Set up by **policies at the national, regional, and/or international level** and are **officially regulated.** Compliance markets mostly operate under a principle called **'cap-and-trade",** most popular in the **European Union (EU).**
- Under the **EU's emissions trading system (ETS)** launched in **2005,** member countries set a **cap or limit for emissions** in different sectors, such as power, oil, manufacturing, agriculture, and waste management. This cap is determined as per the climate targets of countries and is lowered successively to reduce emissions.
- Entities in this sector are issued **annual allowances or permits** by governments equal to the emissions they can generate. If companies produce emissions beyond the capped amount, they have to purchase additional permits. This makes up the **'trade'** part of **cap-and-trade.**
- The **market price of carbon** is determined by **market forces** when purchasers and sellers trade in emissions allowances.

Voluntary Markets:

- Voluntary markets are those in which **emitters**— corporations, private individuals, and others— **buy carbon credits to offset the emission of one tonne of CO2 or equivalent greenhouse gases.**
- Such carbon credits are created by activities which **reduce CO2 from the air, such as afforestation**.
- In this market, a corporation looking to compensate for its **unavoidable GHG emissions** purchases **carbon credits** from an entity engaged in projects that reduce, remove, capture, or avoid emissions.
- In voluntary markets, **credits are verified by private firms** as per popular standards. There are also traders and online registries where climate projects are listed and certified credits can be bought.

Topic 4. INDIA AT THE CLIMATE SUMMIT

Important for the subject: Environment

BASIC Group:

The **BASIC group** was **formed** as the result of an agreement signed by the **four countries (Brazil, South Africa, India and China)** on **28th November, 2009.** All members of **BRICS nations** except **Russia,** are part of the **BASIC group.** It was initiated and led by **China**.

The signatory nations committed to acting together at the upcoming **United Nations Climate Change Conference,** commonly known as the **Copenhagen Summit,** scheduled in **Copenhagen, Denmark** from **December 7-18, 2009.**

- **BASIC** is one of several groups of nations working together to fight climate change and carry out **negotiations** within the **UNFCCC.**

- Other than **BASIC,** there are the **Organisation of Petroleum Exporting Countries (OPEC),** the group of countries of **Central Asia, Caucasus, Albania and Moldova (CACAM),** etc.

- **Brazil, South Africa, India** and **China** put together has **one-third of the world's geographical area** and nearly **40% of the world's population.**

Like-Minded Developing Countries (LMDC):

- **LMDC** comprises around **25 developing countries** from **Asia** and **other regions.** It organises themselves as a **block of negotiators** in **international organizations** such as the **United Nations** and **WTO.** They represent m**ore than 50% of the world's population**.

- **Member countries:** Algeria, Bangladesh, Belarus, Bhutan, China, Cuba, Egypt, India, Indonesia, Iran, Malaysia, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Sudan, Syria, Vietnam, and Zimbabwe.

Topic 5. INDIA OFFERS TO HOST 2028 CLIMATE MEET

Important for the subject: Environment

Prime Minister of India in his address at **COP-28**, offered to host the **33rd edition** of the annual summit due in **2028** in **India**. **India** had previously hosted the summit in **2002**.

He also pitched for countries to join India in its **"Green Credit initiative"** which was a "non-commercial" effort to create a carbon sink.

Conference of Parties (COP) of UNFCCC:

- The **COP is the supreme decision-making body of the Convention.**

- All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.

- The **first COP** meeting was held in **Berlin, Germany** in March, **1995**.

- The **last COP** in **2022** was held in **Sharm Al-Sheikh, Egypt COP28** in **2023** is being held at **Dubai, UAE**.

- **From Asia region– Kyoto, Japan** (COP3- 1997), **New Delhi, India** (COP8- 2002), **Bali, Indonesia** (COP13- 2007), **Doha, Qatar** (COP18- 2012) and **Dubai, UAE** (COP28- 2023) have held the summit.

How is the host country of the conference selected?

- Regional group members hold consultations to determine which country from their region will make an offer to host a conference.

- The **host country of the COP** normally rotates among the **five United Nations regional groups** (The African Group, the Asia-Pacific Group, the Eastern Europe Group, the Latin American and Caribbean Group (GRULAC) and the **Western European and Others Group (WEOG)**).

- Once agreed, the country selected by the regional group to host the conference sends its offer formally to the **UNFCCC secretariat.**

- The COP considers the offers and adopts a decision, usually titled **"Dates and Venues of Future Sessions"**, accepting the offer, Important for the subject to confirmation by the **Bureau of the COP**.

- The **secretariat** then undertakes a fact-finding mission to the prospective host country to determine that all "logistical, technical and financial elements for hosting the sessions are available" and reports back to the Bureau, early at the start of the year.

- A proposal to host the Conference of the Parties (COP) must be **approved by other signatories to the United Nations Framework Convention on Climate Change (UNFCCC).**

What is the role of the COP host government?

- The **host government** provides **premises and facilities, equipment, utilities and services for the COP**.

- This includes **translation services** for **all six working languages of the UN** and making sure that facilities for media representatives are available. It also includes **security for the COP** outside of the core **"blue zone"** of the meeting, which is secured by UN staff.

- The host government also provides leadership on engaging governments and non-Party

stakeholders to ensure a smooth preparation and delivery of successful COPs.

Green Credit Program (GCP): Incentivizing Environmental Actions

- GCP was notified on **13th October, 2023** is an **innovative market-based mechanism** designed to **incentivize voluntary environmental actions** across diverse sectors, by various stakeholders like **individuals, communities, private sector industries,** and **companies**.

- The **GCP's governance framework** is supported by an **inter-ministerial Steering Committee** and **The Indian Council of Forestry Research and Education (ICFRE)** serves as the **GCP Administrator,** responsible for **program implementation, management, monitoring,** and **operation.**

In its initial phase, the GCP focuses on two key activities:

- **water conservation and afforestation**.

- Draft methodologies for awarding **Green Credits** have been developed and will be notified for stakeholder consultation. These methodologies set benchmarks for each activity/process, to ensure environmental impact and fungibility across sectors.

- The **Green Credit Registry and trading platform,** being developed by **ICFRE** along with experts, would facilitate the registration and thereafter, the buying and selling of Green Credits.

Topic 6. UAE ANNOUNCES $30-BN FUND TO BOOST CLIMATE INVESTMENTS

Important for the subject: Environment

Investment Fund ALTERRA:

The **UAE**, host of the **28th Conference of Parties** (**COP-28**), announced a **$30-billion commitment** to an investment fund called **ALTÉRRA**.

ALTERRA is a **privately managed fund** that **aims** to mobilise **$250 billion globally** by **2030** and be the **largest of its kind,** geared towards **climate investments** and **transforming emerging markets** and **developing economies**. **ALTÉRRA** has been established by **Lunate,** an **independent global investment manager,** and is **domiciled** in the **Abu Dhabi Global Market.**

Other partners include: BlackRock, Brookfield and TPG.

- The fund will be **chaired** by the **COP28 President** Sultan Ahmed Al Jaber. **ALTÉRRA** will have **four key verticals namely: Energy Transition, Industrial Decarbonisation, Sustainable Living** and **Climate Technologies.**

- An unspecified amount has been earmarked for development of over **6 GW (1 GW is 1,000 MW)** of **new clean energy capacity** in **India**.

Topic 7. AGRICULTURE- AN EASY TARGET TO MEET CLIMATE GOALS

Important for the subject: Environment

A media report revealed that the government was deliberating plans to **cull some 200,000 cows** over the course of **three years,** at an **yearly cost of €200 million** (around US $211.5 million) to be paid to **farmers as compensation,** for meeting the **country's climate emission goals.** The news triggered large-scale farmer protests.

High-income nations across the world seem to have chosen **agriculture as a priority sector to enforce emissions cut** for meeting their **national climate targets. Announcements or plans declared by countries since 2022 to curb greenhouse gas emissions from livestock and agriculture-**

Country	Announcement
Denmark	Danish government is considering taxing beef products to cut CO_2 emissions
Canada	In August 2022, Canada announced a voluntary plan for farmers to reduce use of nitrogen fertiliser to cut the country's nitrogen emissions by 30 per cent below 2020 levels by 2030
Ireland	Ireland government was deliberating plans to cull some 200,000 cows over three years, at an yearly cost of €200 million to be paid to farmers as compensation
Netherlands	In June 2022, the Netherlands announced a plan to cut nitrogen emissions 50% by 2030. Since then, farmers have held protests by blocking roads and supermarket distribution centres with tractors and trucks, dumping manure on highways and setting hay bales on fire
New Zealand	In June 2022, the government announced a tax on cow emissions (based on factors like the number of animals kept, the size of the farm and the type of fertiliser used) from 2025
Belgium	Since February 2022, the country is implementing a €200 million-scheme for pig farms to reduce or entirely close their production capacity to cut nitrogen emissions in the agricultural sector.

Emissions from the agriculture sector:

- **Methane** (from livestock belching, flatulence and dung) and **nitrous oxide** (from nitrogen fertilisers) are the **two main greenhouse gases (GHGs)** from the **agriculture sector. Methane** and **nitrous oxide** account for **16 per cent** and **6 per cent** of **global GHGS**.

- **Emissions and storage from soil carbon** (which is counted in land use) and **farm energy use** are **not counted as part of agricultural emissions**.

Methane emissions:

- **Methane** is the **second most abundant greenhouse gas (GHG)** after **carbon dioxide (CO2),** accounting for **20 per cent** of **global emissions**. It is **25 times** potent than **CO2**, but **short-lived** and is **responsible for about half of the net rise** in **global average temperature** since the **pre-industrial era**.

- **Methane** from **livestock** originates as **carbon dioxide** in the **atmosphere** that is taken up by **grass** and other plants during **photosynthesis**.

- These plants are eaten by animals, who then burp **methane** during digestion, or release it as flatulence. The gas is also released through **decaying manure**.

- About **32 per cent** of **global anthropogenic methane** come from **microbial processes** that occur during the **enteric fermentation of ruminant livestock** and **manure management systems**, while **oil and gas operations** contribute about **63 per cent**.

- **Methane is of two main types** — **biogenic** (produced from plants and animals) and **fossil** (which has been locked up underground for millions of years).

- **Biogenic methane** has an **atmospheric life** of about a **decade**, before it becomes **carbon dioxide (CO2)** and is taken up by **plants** again, followed by the same cycle of plants being eaten by animals.

- **Methane from fossil fuels** adds **CO2** to the **atmosphere**. It is linked with leaks from **coal mining** and **flaring from oil and gas drilling**, **transport of fossil fuels**, and **natural sources** like **onshore seeps**.

Two main multilateral treaties to deal with agricultural emissions:

- **Global Methane Pledge (GMP)**, which has been signed by **149 countries** since its launch in **2021** at the **Conference of the Parties (COP)** to **UNFCCC** held at **Glasgow, Ireland.**

- The signatory nations have **pledged to cut methane emissions** by **25 per cent** by **2030** compared to **2020 levels**.

- The **European Green Deal,** a **Europe-specific treaty** announced in **2020** and signed by **27 countries**, which are required to **reduce their GHG emissions** by **at least 55 per cent by 2030** compared to **1990 levels**.

- A **Nature Restoration Law,** passed in **July 2023** under the deal, **aims** to **restore and recover nature on at least 20 per cent of EU land and sea area by 2030**, through binding targets relating to habitat and species restoration.

Animal product and food security:

- Animal products make a substantial contribution to food security, providing protein and micro-nutrients.

- The global demand for animal products will increase by 60 to 70 per cent by 2050. Measures under the **Green Deal of EU** will **decrease meat supply** by **14 per cent** and **raw milk supply** by **10 per cent**.

Topic 8. DROUGHT EMERGENCY DECLARED BY 23 COUNTRIES IN 2022-23, SHOWS GLOBAL DROUGHT MAP

Important for the subject: Environment
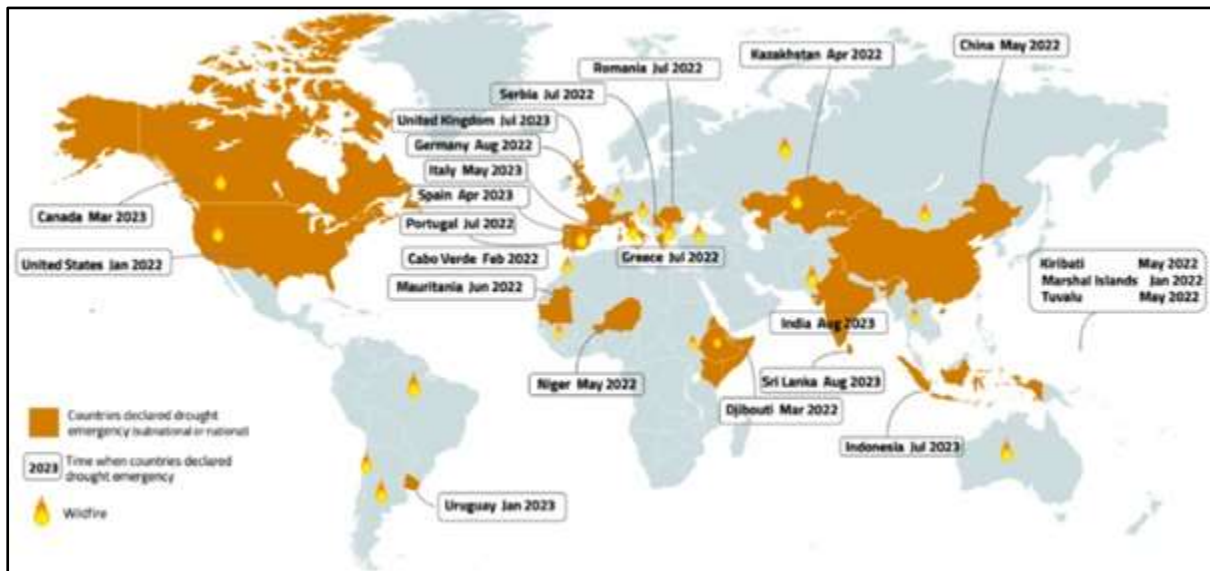
At least **23 countries,** including **India**, declared **drought emergencies** at a **national or sub-national level** during **2022-23,** showed new data from a **global drought map** compiled by the **United Nations,** pointing to unprecedented urgency on a planetary scale.

Title: **Global Drought Snapshot 2023**

Released by: **United Nations Convention to Combat Desertification (UNCCD)**

Report is based on reporting by **101 Parties** to the **UN Convention to Combat Desertification (UNCCD).**

Key findings:

- **1.84 billion people** were **drought-stricken**, out of which **4.7 per cent** were exposed to **severe or extreme drought.**

- An emergency was declared in **23 countries** due to the **impact of drought**. Of these, **Europe** had the **highest number (8)** — **Spain, Italy** and **United Kingdom** declaring it in April, May and July 2023, respectively, while **Greece, Portugal, Romania** and **Serbia** in July 2022.

- In **2022,** the **continent** recorded its **largest overall drought impacted area** — over **630,000 square kilometres,** as opposed to the **167,000 square kilometres** annual average between 2000 and 2022.

- In **Asia**, **five countries** declared drought — **India**, **Sri Lanka**, **Indonesia**, **Kazakhstan** and **China**.

- **Countries that have declared drought-** the USA, Canada, **Uruguay** and the **African countries** of **Ethio[ia, Kenya, Somalia, Niger, Djibouti, Cabo Verde** and **Mauritania, Kiribati, the Marshal Islands,** and **Tuvalu**.

- On **November 17, 2023**, the **world breached 2 degrees Celsius of warming**, a number the world was constantly warned of not crossing.

- **85 per cent** of people affected by droughts live in **low-or middle-income countries.** Moreover, **98 per cent** of the **32.6 million new disaster displacements** in **2022** were the result of **weather-related hazards** such as **storms, floods** and **droughts**.

Impact of these droughts:

- Decreased reservoir levels, declining crop yields, loss of biological diversity, famines and serious economic consequences, especially in agriculture-dependent regions where drought-related crop failures lead to food shortages and often skyrocketing prices, potentially disrupting global food supply chains.

International Drought Resilience Alliance (IDRA):

- First announced by **Spain** at the **77th session** of the **UN General Assembly** in September **2022** to be **officially launched** at the **UNFCCC COP27** in **November 2022.**

- The alliance is **jointly convened** by the **Governments of Senegal** and **Spain.** Interested members of the Alliance see the urgent need to pivot from emergency response to increasing drought resilience through a more coordinated and effective response.

Topic 9. COP28: NEW REPORT FINDS AGRICULTURE MOST CLIMATE-AFFECTED SECTOR; CALLS FOR URGENT FOOD SYSTEMS FOCUS IN L&D FUND

Important for the subject: Environment

Agriculture is the **climate-affected sector globally,** with **40 per cent of countries** reporting **economic losses explicitly** linked to it, according to a new **United**

Nations (UN) analysis.

Some **134 countries** — representing over **5.7 billion people, 70 per cent** of the food we eat, nearly **500 million farmers** and **76 per cent** of **total emissions** from the **global food system** — signed the **Emirates Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action.**

The **agrifood sector** employed over **866 million people globally** in **2020** and represented a turnover of **$3.6 trillion**.

Analysis findings:

- Analysis was done by the **UN Food and Agriculture Organisation (FAO).** It is an analysis of **Nationally Determined Contributions (NDCs)** of **168 countries** as part of their **climate commitments** under the **2015 Paris Agreement**.

- About **one-third (or 35 per cent)** of current **climate action** plans explicitly refer to **L&D**, highlighting the growing relevance of the issue on the global stage, with agriculture being identified as the single most impacted area.

- About **three-fourths of countries** explicitly **mentioning loss and damage** are **middle-income nations.** The mentions are concentrated in **Latin America and the Caribbean,** followed by **East Asia** and the **Pacific**, and **Europe** and **Central Asia**.

- Among countries reporting on L&D, **33 per cent** of **non-economic losses** related to the **agricultural sector**.

Emirates Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action:

- Announced at a special session of the **World Climate Action Summit** led by Joko Widodo, President of **Indonesia;** Giorgia Meloni, Prime Minister of **Italy;** Fiamē Naomi Mataʻafa, Prime Minister of **Samoa** and Anthony J Blinken, Secretary of State for the **United States of America**.

- This Declaration commits **134 countries** to **integrating food into their climate plans** — or **NDCs** — by **2025,** marking the **first time in UN climate talks** that countries have made a clear commitment to **take action on the global food system**.

- The countries also included those with **highest food systems-related greenhouse gas emissions** like **Brazil, China** and the **European Union**. **Food loss** and **waste** is responsible for **8 to 10 per cent of global emissions. Food banks** around the world are a **time-tested solution** by **collecting surplus food** and **delivering** it to those who need it.

Global Agrifood System:

- **Agrifood systems** refer to the **journey of food from farm to table** – including when it is grown, fished, harvested, processed, packaged, transported, distributed, traded, bought,

prepared, eaten and disposed of. It has the benefit of nutrition and livelihood.

Hidden costs of Global Agrifood System:

- The **global agrifood system** has **hidden costs,** such as those related to **health** and the **environment**. These add up when estimating the value of the agricultural process of production, distribution and consumption, to society.

- The **hidden costs** – a cost that is not reflected in the market price of a product or service – is **12.7 trillion** at **2020 Purchasing Power Parity (PPP) dollars**. The **total hidden cost** is equivalent to the **10% of th global GDP**.

- These **hidden costs** come from **greenhouse gas** and **nitrogen emissions, water use, land-use change, unhealthy dietary patterns, undernourishment** and **poverty.**

- The **majority of the hidden costs** (over **$9 trillion** or **73%** of the total **$12.7 trillion** hidden costs in **2020**) are **health-related costs** resulting from **productivity loss** because of **unhealthy dietary patterns**.

- Most of these costs come from **upper-middle-income countries** (39% of the total hidden costs) and **high-income countries (36%). Lower-middle-income countries** contribute **22%** of the **hidden costs,** while **low-income countries** make up **3%**. In **lower-middle-income countries,** the **social costs** from **poverty** and **undernourishment** are more significant contributors to **hidden costs**.

Country-wise estimate of the hidden cost:

- The countries with the **highest net hidden costs** are the **world's largest food producers and consumers,** with the **United States of America** accounting for **13%** of total quantified hidden costs, the **European Union 14%**, and the bloc of **Brazil,** the **Russian Federation, India** and **China (the BRIC countries)** accounting for **39%.**

- In **India** the **total hidden costs** of the agrifood systems amount to **$1.12 trillion**. Under the **total hidden costs, social costs** includes the **cost of poverty** among agrifood workers, **cost of dieseases** related to undernourishment and dietry patterns.

The State of Food and Agriculture 2023 report- released by the UN FAO.

- The report introduces **True Cost Accounting (TCA)** as an approach to estimate **hidden costs** and to unveil the **hidden impacts of agrifood systems on environment, health** and **livelihoods.**

- **TCA** goes beyond market exchanges to account for all flows to and from agrifood systems, including those not captured by market transactions.

- **Database used are-** FAO's Corporate Database for Substantive Statistical Data (FAOSTAT), the World Bank's World Development Indicators, the Global Burden of Disease database, and the Ecosystem Services Valuation Database.

Topic 10. INDIA NOT AMONG 118 NATIONS THAT PLEDGED TO PUSH GREEN ENERGY

Important for the subject: Environment

As many as 118 countries DUBAI signed a pledge to triple installed renewable energy capacity by 2030 during the ongoing COP28 climate summit here on Saturday and India is among those countries whose name is not on the list.

Objectives of Global Renewables and Energy Efficiency Pledge

- The pledge **committed to tripling worldwide installed renewable energy generation capacity to at least 11,000 gigawatts(GW) and to double the global average annual rate of energy efficiency improvements to more than 4% by 2030**

Why didn't India sign?

- As per some apprehensions some of the language in the text was "problematic"

What are the Initiatives taken by India to Promote Renewable Energy?

- **National Solar Mission (NSM):** The 100 GW solar ambition at the heart of the world's largest renewable energy expansion programme.

- **The Wind Energy Revolution:** Leveraging India's robust wind energy sector to boost clean energy manufacturing and the rural economy

- **National Biofuels Policy and SATAT:** Building value chains to reduce fuel imports, increase clean energy, manage waste, and create jobs

- **International Solar Alliance (ISA):** Harnessing the infinite power for the Sun for sustainable human development.

- **Small Hydro Power (SHP):** Harnessing the power of water to integrate remote communities into the economic mainstream.

- **National Hydrogen Energy Mission (NHEM):** Exploring the commercial viability of a versatile clean fuel.

- **Production-Linked Incentive (PLI) Scheme:** Integrating India into the global clean energy value chains

What are the themes of COP28 Climate Summit?

- **Emissions Mitigation Targets:** Countries will engage in negotiations to set ambitious emissions reduction targets, aligning with the broader goal of limiting global temperature rise set in the Paris Conference (2015).

- **Phase Down vs Phase-Out:** Developed nations may push for an accelerated phase-out, but developing countries, including India, face challenges in balancing energy security

needs with emission reduction goals.

- **Climate Finance:** The provision of financial support from developed to developing nations for climate mitigation and adaptation efforts will be a contentious issue.

- **For Example:** Developing countries will need at least $200 billion every year by 2030 to adapt to worsening climate impacts like coastal sea rise or storms, according to the U.N.

- **Industry-led solutions:** COP28 climate summit will likely witness discussions on harnessing industry-led innovations to drive sustainable development and reduce carbon footprints.

- **Low-carbon Innovation:** Emphasis on fostering low-carbon innovations and technologies will be a key aspect of the conference, with a focus on creating a pathway for a sustainable future.

- **Progress on operationalizing the Paris Agreement article:** COP28 climate summit will assess progress on operationalizing the various aspects of the Paris Agreement, including mechanisms for reporting and transparency.

- **Reforming the role of private sector investment:** The role of private sector investment in climate actions will be under scrutiny, with discussions on how private capital can be effectively mobilized to address climate challenges.

Topic 11. COUNTRIES COMMITTED IN MAKING THEIR OWN FOOD SYSTEM: COP28

Important for the subject: Environment

World leaders have convened at the 28th Conference of Parties to the United Nations Framework Convenion on Climate Change (UNFCCC COP28) in the United Arab Emirates (UAE) from November 30 to December 12.

Notably, this COP marks a significant departure by placing a major focus on food systems and their sustainability, acknowledging their pivotal role in achieving the Paris Agreement Goals.

The UAE has dedicated a day, December 10, to discussions on food, agriculture, and water, and has called for world leaders to endorse the COP28 Declaration on Resilient Food Systems, Sustainable Agriculture, and Climate Action.

Historic Emphasis on Food Systems:

- COP28 prioritizes food systems, previously overlooked in climate negotiations. Dedicated day and COP28 Declaration stress urgency in addressing the link between food systems and climate change.

Alignment with Paris Agreement Goals:

- COP28 Declaration urges national governments to align food systems and agriculture strategies with Nationally Determined Contributions (NDC) under the Paris Agreement. Underscores interconnectedness of climate action and sustainable food practices.

Fossil Fuels and Food Systems Link:

- Acknowledgment of intricate link between food systems and fossil fuels. Pressure on COP28 to prioritize phasing out fossil fuels due to the significant reliance of the food industry on high-carbon energy.

- Emphasis on comprehensive transformation in food production, processing, packaging, consumption, and waste management.

Caution Against Green washing:

- Concerns raised about the influence of fossil fuel and Big Agriculture lobbyists at COP28.

- Criticism of potentially pushing unproven technological solutions. "Climate-smart" approaches like "efficient" use of fertilizers and pesticides are criticized for reinforcing harmful industrial food and agriculture systems

Global Initiatives and Local Actions:

- The Agriculture Innovation Mission for Climate Initiative faces criticism for controversial solutions.

- Coalition of 70 organizations advocates for holistic food systems approach within UNFCCC. Emphasis on local governments spearheading actions promoting sustainable diets, reducing food waste, and supporting organic farming

Climate Finance and Agriculture:

- Agriculture, often overlooked in climate financing, receives minimal attention. Smallholder farmers receive only 0.3% of climate finance. Urgent calls to channel funds to smallholder farmers on the frontlines of the climate crisis

Upcoming Reports and Expectations:

- IPES-Food report emphasizes the urgency of a just transition toward resilient, diverse food systems.

- Food and Agriculture Organization to release a report during COP28, highlighting the impact of loss and damage on agrifood systems.

Topic 12. INDIA WILL NOT BE BOUND BY CURBS ON ENERGY USE: ENVIRONMENT SECRETARY

Important for the subject : Environment

At **COP28, India** was conspicuously absent from a list of **118 countries** signed on to a **pledge to triple installed renewable energy capacity** by **2030**.

- **India** has also reiterated its **right to use coal** on the grounds that its historical contribution to the **carbon crisis** has been negligible, as **below-global-average per-capita emissions of 4%.**

India's GHG emission:

- According to India's latest communications to the United Nations, its greenhouse gas emissions **increased 4%** from **2016-2019** to **2.6 billion tonnes of C02**. The **energy sector** contributed the most to the **overall anthropogenic emissions (75.81%)**, followed by the **agriculture sector (13.44%), Industrial Process and Product Use (IPPU) sector (8.41%),** and **Waste (2.34%)**

'COP28 UAE Declaration on Climate and Health':

- The **COP28** Presidency, in partnership with the **World Health Organization** and **UAE Ministry of Health and Prevention,** unveiled the **'COP28 UAE**

- **Declaration on Climate and Health'** to place **health at the heart of climate action** and accelerate the development of climate-resilient, sustainable and equitable health systems.

- A set of new **finance commitments on climate and health** was announced to back up these political commitments, including a **USD 300 million commitment** by the **Global Fund to prepare health systems, USD 100 million** by the **Rockefeller Foundation** to scale up climate and health solutions, and an announcement by the **UK Government** of up to **GBP 54 million.**

- The Declaration is announced ahead of the first ever **Health Day** at a COP and joins a series of announcements made during the **World Climate Action Summit** to keep **1.5C** within reach.

- Endorsed by **123 countries,** the Declaration marks a world first in governments acknowledging the growing health impacts of climate change on communities and countries.

- It also acknowledges the large benefits to people's health from stronger climate action, including by reducing air pollution and lowering health care costs. **India** has **not signed** this pledge as well.

Global Renewables and Energy Efficiency Pledge:

- The pledge says that renewables deployment must be accompanied in this decade by a rapid increase of energy efficiency improvements and the phase down of unabated coal power, in particular ending the continued investment in unabated new coal-fired power plants.

Topic 13. COP28 PRESIDENT URGES NATIONS TO UPDATE NDCS TO COVER METHANE, OTHER NON-CO2 GREENHOUSE GASES

Important for the subject: Environment

The recent summit on methane and other non-CO2 greenhouse gases held on December 2nd, 2023, marked a critical juncture in the fight against climate change. It highlighted the growing recognition that tackling methane, responsible for 50% of global warming, is indispensable for keeping the 1.5°C goal within reach.

- While carbon dioxide (CO2) gets all the attention, there are several other sneaky players in the greenhouse gas game. These non-CO2 gases, though less abundant, pack a powerful punch when it comes to trapping heat and warming the planet.

Here are some of the key culprits:

- **Methane (CH4):** This potent gas, over **80 times more effective than CO2** at trapping heat, comes from a surprising variety of sources. From leaky gas pipelines and burping cows to decomposing landfills and even rice paddies, methane's reach is far and wide.

- **Nitrous oxide (N2O):** This invisible troublemaker, **300 times more potent than CO2,** has a more specific origin story. Think fertilizers applied to fields, the burning of fossil fuels, and even the treatment of wastewater. Every time these activities take place, a bit more N2O sneaks into the atmosphere.

- **Fluorinated gases (F-gases):** This diverse group of human-made chemicals, including refrigerants, foam-blowing agents, and even some medical inhalers, are all masters of heat absorption. Though individually not as potent as methane or N2O, their sheer number and long atmospheric lifespan make them a force to be reckoned with.

- **Ozone (O3):** This blue beauty shields us from harmful UV rays but also absorbs infrared radiation, warming the planet. While stratospheric ozone is our friend, the pollutant ozone closer to the ground is not.

- **Black Carbon (BC):** This sooty char, emitted from burning fuels and deforestation, hangs out in the atmosphere, absorbing sunlight and warming the planet directly. It also darkens snow and ice, reducing their ability to reflect heat, creating a vicious cycle.

- **Water Vapor (H2O):** The most abundant greenhouse gas, water vapor, is a double-edged sword. It amplifies the warming caused by other gases but also forms clouds that reflect sunlight, cooling the planet. Its complex role makes it a climate wild card.

- **Sulfur Hexafluoride (SF6):** This electrical insulator may be invisible, but its heat-trapping power is monstrous.

Topic 14. METHANE: MORE POTENT, LESS PERSISTENT

Important for the subject: Environment

It is a **potent climate pollutant**. At the ongoing COP-28 climate summit in the United Arab Emirates, a group of well-endowed philanthropic bodies, including the Sequoia Climate Foundation and the Bezos Earth Fund, announced that they would collectively invest $450 million in solutions to tackle methane emissions.

Methane:

- **Methane** is an organic compound. Its molecule consists of **carbon** and **four hydrogen atoms (CH4). Methane is the second-biggest cause of global warming caused by anthropogenic activity after carbon dioxide and is 80 times more powerful.**

- The **GWP** is a measure of the warming caused by a substance relative to that due to the same mass of carbon dioxide; the **GWP100** measures this over a century at a time. If **carbon dioxide** has a **GWP100** of **1, methane** is **28**, **nitrous oxide** is **265,** and **sulphur hexafluoride** is **23,500**.

- However, while **carbon dioxide** lasts for several decades at a time in the atmosphere before breaking down, **methane** breaks down in a matter of years. That is, it's a **short-lived climate pollutant.**

- Its sources include **cattle-farming, landfills, wastewater treatment facilities, rice cultivation**, and some **industrial processes**.

- **Energy, agriculture** and **waste sectors** are the **primary emitters of methane,** responsible for **30 per cent** of the earth's warning.

Methane emission alert:

- The **Methane Alert and Response System (MARS)** notified governments of 1**27 plumes** spanning four continents and identified **1,500 plumes** in its pilot stage, according to the new report by UNEP.

Methane Alert and Response System (MARS):

- Launched by the **UNEP's International Methane Emissions Observatory (IMEO)** at **COP27, Egypt.**

- It is the **first-ever global system** that uses **satellite data to monitor major emission events** and notify governments and companies who can address them.

- **IMEO**, launched at the **G20 Leaders Summit** in **2021,** gathers methane emissions-related from satellites through MARS and from industries through the **Oil and Gas Methane Partnership 2.0.** It also relies on scientific measurement studies.

- The **Oil & Gas Methane Partnership 2.0 (OGMP 2.0)** is **UNEP's** flagship programme

that includes a partnership of companies to improve the accuracy and transparency of methane emissions data from the oil and gas sector through a committed framework.

- Under the **OGMP,** a **"Gold Standard"** reporting is achieved once companies empirically reconcile measurements at source (Level 4) and site (Level 5) levels for the vast majority of their assets. 84 companies met the Gold Standard pathway criteria.

Global Methane Pledge

- The Global Methane Pledge was launched at the ongoing UN COP26 climate conference in Glasgow. So far, over 90 countries have signed this pledge, which is an effort led jointly by the United States and the European Union.

- Methane is the second-most abundant greenhouse gas in the atmosphere, after carbon dioxide, and, therefore, pledges related to cutting down its emissions are significant.

- The pledge was first announced in September by the US and EU, and is essentially an agreement to reduce global methane emissions. One of the central aims of this agreement is to cut down methane emissions by up to 30 per cent from 2020 levels by the year 2030.

- Among the signatories is **Brazil** — one of the **five biggest emitters of methane**, which is generated in cows' digestive systems, in landfill waste and in oil and gas production.

- Three others —**China, Russia and India** — have not signed up. **Australia** has said it will not back the pledge.

- According to the latest Intergovernmental Panel on Climate Change report, methane accounts for about half of the 1.0 degrees Celsius net rise in global average temperature since the pre-industrial era.

Topic 15. CAN AFRICA GREEN INDUSTRIALISATION INITIATIVE BE THE CONTINENT'S HOLY GRAIL?

Important for the subject: Environment

Africa Green Industrialisation Initiative (AGII):

Launched on December 2 at the **28th Conference of Parties (COP28)** to the **United Nations Framework Convention on Climate Change** at **Dubai, UAE**.

- It **aims** to **upscale and accelerate green industries** and **businesses across Africa** was launched by presidents and representatives from Kenya, Angola, Burundi, Djibouti, Ghana, Ivory Coast, Mauritania, Nigeria, Senegal and Zambia.

- The **initiative** underscores the importance of **green industrialisation to harness Africa's vast and quality resources** to **secure prosperity for all**.

- It incorporates elements of the **Sustainable Development Goals (SDGs)** and the **Paris Agreement**, discourages **fossil fuel production** and use that immensely contributes to

global warming.

Approach of AGII:

- The initiative will bring together African Governments, initiative's partners and other supporting institutions to offer accelerated end-to-end green growth solutions for committed government.

The work will be organized in two parallel and mutually enforcing work streams:

- Delivering transformational projects

- Effecting Systemic change

Why AFRICA?

- Africa has 40 per cent of the world's critical minerals necessary for energy transition such as bauxite, chromium, cobalt, copper, gold, iron, etc.for instance it contains the world's largest reserves of manganese needed for making solar panels etc.

- The continent's potential of exporting green steel through reserves of iron ore and production of green hydrogen.

- There are huge bauxite reserves for green aluminium and renewables assets in the Sahel region. It has the world's largest natural carbon sink.

Other Important topics from the topic:

Green Ammonia:

- Ammonia (NH3) is a colorless gas made of hydrogen and nitrogen. It's widely used in fertilizer production, household cleaners, and industrial applications. It's also a by product of biological processes and can be found in nature, like in soil, water, and the atmosphere.

- Green ammonia refers to ammonia that's produced using renewable energy sources for its synthesis. (The term "green" signifies its environmentally friendly production process, as it avoids fossil fuels and reduces carbon emissions compared to traditional methods.)

Some important Methods of producing green ammonia are:

- **Haber-Bosch synthesis**: It involves the use of renewable electricity, like solar or wind power, to produce hydrogen through water electrolysis. This hydrogen is then combined with nitrogen (usually obtained from the air) to create ammonia through a process called Haber-Bosch synthesis.

- **Biomass Conversion**: Processes such as gasification or pyrolysis can transform biomass into hydrogen-rich gas. This hydrogen can subsequently be employed in ammonia production together with nitrogen.

- **Solid Oxide Electrolysis Cells (SOEC):** SOECs have the capability to directly convert

steam into hydrogen using renewable electricity. This resultant hydrogen can be incorporated into ammonia synthesis.

- **Green Hydrogen:** Green hydrogen refers to hydrogen produced through a process called electrolysis, where renewable energy sources like solar, wind, or hydroelectric power are used to split water into hydrogen and oxygen. This method generates hydrogen without emitting greenhouse gases, making it environmentally friendly.

Some method of producing it are:

- **Electrolysis using Renewable Energy:** This method involves using renewable energy sources like solar, wind, or hydroelectric power to perform electrolysis on water, splitting it into hydrogen and oxygen. Proton Exchange Membrane (PEM) electrolysis and Alkaline Electrolysis are two prevalent techniques used for this purpose.

- **Biological Production:** Certain microorganisms or algae have the capability to produce hydrogen through biological processes like photosynthesis or fermentation.

Topic 16. GERMANY UNVEILS CLIMATE CLUB TO TACKLE INDUSTRIAL EMISSIONS

Important for the subjects: Environment
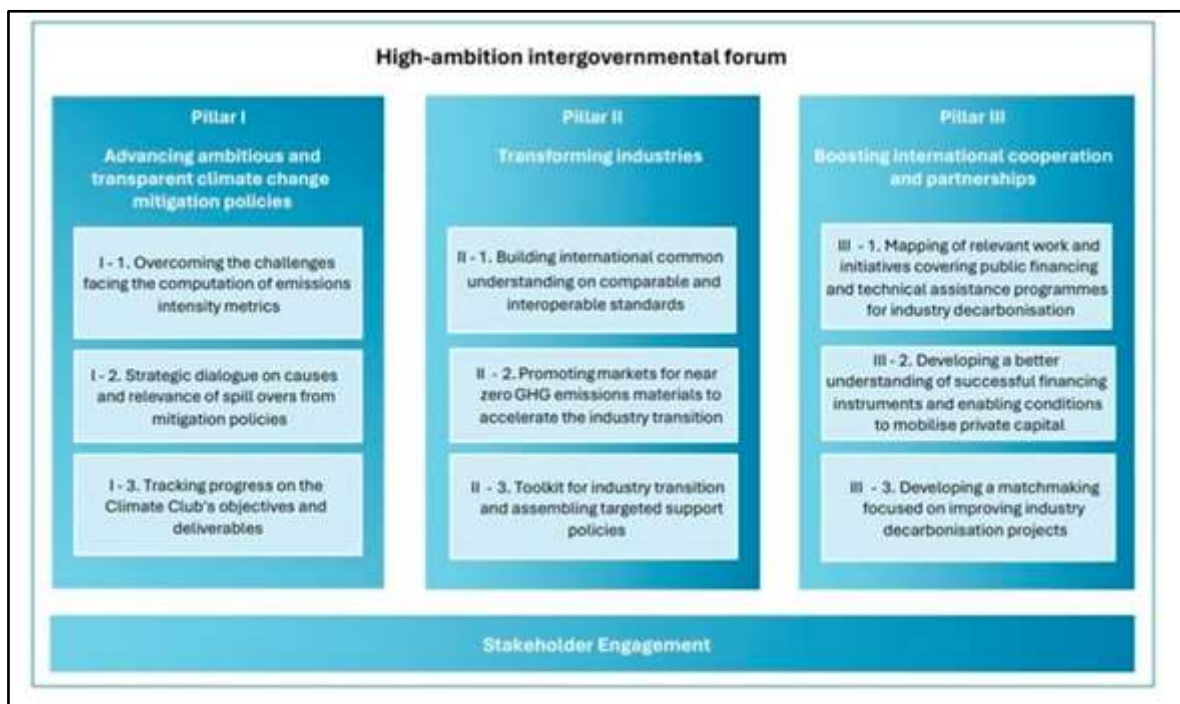
Climate club:

Launched at the **28th Conference of Parties (COP28)** to the **United Nations Framework Convention on Climate Change,** at **Dubai, UAE.** Led by **Germany** and **Chile**.

Chaired by- Germany's Chancellor Olaf Scholz.

Aim- cooperation between countries in decarbonising the industrial sector.

The Club is claimed to currently represent **55 per cent** of the **global economy**. The Club has garnered support from **36 member countries** including **Kenya, the European Union, Switzerland** and others.

What is the climate club work programme 2024?

- The Club's core idea is based on the fact that the hard-to-abate sectors, including steel, cement, and chemicals, are responsible for about 70 per cent of global CO2 emissions from industry, and developed countries account for a significant share of these emissions.

The activities are divided into three key pillars:-

- Advancing ambitious and transparent climate change mitigation policies.

- Transforming industries

- Boosting international cooperation and partnership

- These three pillars are further divided into **nine interconnected Modules**, setting the pathway for initial work of the club.

Governance framework;

- The **two co-chairs** will be elected for **two-year terms** for the Club. Currently, **Germany** and **Chile** are the co-chair.

- A body of members will determine the scope and approve the work programme, budget and amendments. A steering group will be formed to support the body of members when the Club reaches 40 members.

- A **secretariat** will be formed to implement the work program. Currently, **OECD** and **IEA** are the joint interim heads of secretariat. The **work programme for 2024** will focus on the **steel** and **cement sectors**.

- The UK pledged support through financial assistance, contributions to the Green Climate Fund and collaboration with the Breakthrough Agenda to make clean technologies more affordable.

- The **United Kingdom** highlighted **three key areas of focus** within the **Climate Club.** The importance of creating baselines for sustainable standards in industrial products. Understanding and addressing the carbon leakage risk. Support for workers and industries.

Topic 17. EU'S DEFORESTATION-FREE PRODUCTS REGULATION (EU-DR)

Important for the subject: Environment

India has raised concerns about the EU's Deforestation-Free Products Regulation (EU-DR), which will be implemented in December 2024, possibly leading to discrimination against some countries and acting as a disguised restriction on international trade. However, the bloc has said the proposed rules were based on objective, scientific, non-discriminatory and proportionate criteria.

EU's Deforestation-Free Products Regulation (EU-DR)

- It is a European Union regulation that aims to counter deforestation by requiring companies registered in the EU that import or export specific items (list of 479 for India) have not been produced on land that was deforested after December 31, 2020.

- The EU-DR covers seven primary commodities and a variety of products derived from these. While the main commodities are **cattle, cocoa, coffee, oil palm, rubber, soya, and wood, the derived commodities are several such as meat products, leather, chocolate, coffee, palm nuts, palm oil derivatives, glycerol, natural rubber products, soybeans, soy-bean flour** and oil, fuel wood, wood products, pulp and paper and printed books.

Why India opposing EU-DR?

- There is criticism that this is just a form of **non-tariff barrier** to trade, as EU itself has reduced its primary forest cover to increase agricultural output before the said date, and now is not allowing other countries to do the same as they struggle with population pressure on resources.

- India's stand is that it violates **Most Favored Nation (MFN)** and **National Treatment principles**. This is the second such measure by the EU after its **Cross Border Adjustment Mechanism**. It is estimated that both together are likely to adversely affect exports from India to EU worth $9.5 billion.

- In its reply to India's queries, the EU said that no commodities or countries will be Important for the subject to discrimination, and the regulation will apply equally to commodities and products produced inside and outside the EU.

Topic 18. THE NEED TO TRANSFORM AGRI-FOOD SYSTEMS

Important for the subject: Environment

UN-FAO Report highlighted that the **hidden costs** of our **global agri-food systems** has surpassed an astonishing **$10 trillion**.

- In **middle-income countries** like **India,** these costs **constitute** nearly **11%** of the **GDP,** which manifests as higher poverty, environmental harm, and health-related

impacts, including undernourishment and unhealthy dietary patterns.

- The report blames **"unsustainable business-as-usual activities and practices"** for these escalating costs.

- There is a need to transform agri-food systems via **shift to multi-cropping systems** that have the potential to protect farmers' well-being, **improve nutritional outcomes for our communities,** and **positively impact ecological health**.

What are the impacts of intensive agriculture?

- Technological improvements in agriculture in India has led to mono-cropping and chemical intensive farming systems. **HYV seeds** of **wheat and paddy** constitute more than **70%** of India's agricultural production.

- These seeds and fertilizers undermined seed sovereignty, dismantled Indigenous knowledge systems, compromise the nutritional needs, bring ecological disasters like excessive groundwater extraction, increase the debt burden among agricultural households and fuelled a shift from diverse crop varieties and staples such as pulses and millets to monoculture plantations.

Which are the crops being favoured?

- **Rice** and **wheat** are heavily favoured due to it being included under the **PDS scheme** of central government. The area under **rice** and **wheat increased** by nearly **20%** and **56%** respectively between **1966-67** and **2017-18**.

- **Other crops that are favoured by the government-** Sugarcane (water-intensive), arecanut, **Jowar, bajra, ragi, maize,** and **barley** are **not** paid much attention as they constitute **less than 1%** of total foodgrain procurement.

How can crop diversification help?

- It will revitalise degraded land and soil.

- **Millets,** whose yield per hectare is comparable to those of **rice** and **wheat**, are also more **nutritious,** grow in **semi-arid conditions** without burdening groundwater tables, require **minimal input,** and provide a **diversified food basket.**

Diversified multi-cropping system-

- Known as **'akkadi saalu'** in **Karnataka**, involve **intercropping** with a combination of **legumes, pulses, oilseeds, trees, shrubs,** and

How can farmers transition?

- Gradual shift from chemical-intensive practices to non-pesticide management, then adopting natural farming practices, can reduce input costs. Diversification by including livestock and poultry.

Topic 19. COUNTRIES AGREE ON HOST FOR THE SANTIAGO NETWORK; DIVERGENCES ON GST

Important for the subject: Environment

At the ongoing **COP28** of **UNFCCC**, nations are agreed upon to host the **Santiago Network**, but there is a divergence among countries on

- The **Santiago Network** aims to provide **technical knowledge** and resources to developing countries on averting, minimising and addressing loss and damage. The **United Nations for Disaster Risk Reduction** and **United Nations Office for Project Services** have been selected as **hosts**.
- The **vision** of the **Santiago Network** is to catalyze the **technical assistance** of relevant organizations, bodies, networks and experts, for the implementation of relevant approaches for averting, minimize and addressing L&D at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change

COP 25 in Madrid, Spain:

- Parties established the **Santiago network** as part of the **WIM (Warsaw Implementation Mechanism)**, to catalyse technical assistance of relevant organizations for the implementation of relevant approaches in developing countries that are particularly vulnerable to the adverse impacts of climate change.

COP 26 in Glasgow, UK:

- COP 26/CMA 3 decided on the functions of the Santiago Network and issued a call for submissions.

COP 27 in Sharm El-Sheikh, Egypt:

- Terms of reference for the Santiago network was adopted and established the Advisory Board of the Santiago network.

COP 28 in Dubai, UAE:

- Countries agreed upon hosting the **Santiago Network.**

Article 6 of the Paris Agreement:

- **Article 6** of the **Paris Agreement** recognizes that some Parties choose to pursue **voluntary cooperation** in the **implementation of their nationally determined contributions** to allow for **higher ambition in their mitigation and adaptation actions** and to **promote sustainable development and environmental integrity**.

Global Goal on Adoption (GGA):

- It was established under the **Paris Agreement** to enhance **climate change**

adaptation by increasing awareness of and funding towards countries' adaptation needs in the context of the **5/2°C goal** of the **Paris Agreement.**

- At **COP26,** Parties established the **2022-2023 Glasgow-Sharm el-Sheikh (GlaSS) Work Programme on the Global Goal on Adaptation** to define the key elements of the goal, including the methodologies, indicators, metrics, and data sources to support the assessment of overall adaptation progress.

- Negotiations around the **GGA** currently focus on what metrics and indicators can be used at both global and local levels to effectively monitor collective progress, while incorporating and addressing outstanding concerns on bridging the gap between the local- and context- specificity of adaptation and the need to track it at a global scale.

Decarbonisation:

- The **decarbonisation** of the **cement sector** through **Carbon, Capture and Storage (CCS)** in **developed** and **developing economies** very slow and will take at least five years to effectively start **capturing carbon dioxide (CO2)**.

- There is the **risks of leakage** — the possibility of **dissolution of heavy metals in drinking water** through **leaked CO2 in storage wells.**

Sovereign debt and climate event:

- Hosted by the **Debt Relief for a Green and Inclusive Recovery project** hosted prominent speakers such as **Colombia** and

- The amount of resources that annually flow from poor countries to developed countries are in trillions and only 7/29 low-income countries have the fiscal space to implement actions in their National Adaptation Plans.

- Developing countries export raw materials and buy industrialised products that keep them in debt.

Topic 20. COAL CONCERN HAS PROHIBITED INDIA FROM SIGNING GLOBAL PLEDGE ON RENEWABLES AND ENERGY AT COP28

Important for the subject: Environment

Concern about mounting pressure to **phase out coal** any time soon has mainly **prevented India from signing the global pledge on renewable energy and energy efficiency** at the **28th Conference of Parties (COP28)** to the **United Nations Framework Convention on Climate Change**.

Global Renewables and Energy Efficiency Pledge:

- Some **116 countries** signed the Pledge, agreeing to **triple the worldwide installed renewable energy generation capacity** to at least **11,000 gigawatts** and **double** the **global average annual rate of energy efficiency**

improvements to more than **four per cent** by **2030**.

- According to the **IEA** (International Energy Agency) and **IPCC** (Intergovernmental Panel for Climate Change), in order to meet the **Paris Agreement goal,** renewables deployment must be accompanied in this decade by a **rapid increase of energy efficiency improvements** and the **phase down of unabated coal power,** in particular ending the continued investment in **unabated new coal-fired power plants,** which is incompatible with efforts to **limit warming to 1.5°C**.

- Under **Indian presidency, G20** has recently mentioned the need to **triple renewable energy globally.**

- Both **India** and **China**, major emitters, have **not signed the pledge**. **India** is planning to **add coal-based power plants** soon to meet its rise in power demand. The country has added an average **five gigawatts of coal-based electricity generation capacity annually** over the last **five years**, apart from aggressively pushing up renewable energy.

Global Decarbonization Accelerator (GDA):

- It is a new mechanism unveiled by **COP28 President Sultan Al Jaber** to **decarbonise** and achieve the target under the **pledge**. **GDA** is a set of **initiatives** designed to **speed up the energy transition** and **sharply reduce global emissions.**

- It is focused on **three key pillars: (i)** rapidly scaling the energy system of tomorrow; **(ii)** decarbonising the energy system of today; and **(iii)** targeting methane and other non-CO2 greenhouse gases.

Oil and Gas Decarbonization Charter (OGDC):

- Under the **GDA**, **50 companies** representing over **40 per cent of global oil production** have signed on to the **(OGDC)**.

- They have thus committed to **zero methane emissions** and **ending routine flaring by 2030** and to **total net-zero operations** by **2050** at the latest.

- **Signatories to the Charter** agree to target a number of **key actions,** including investing in the energy system of the future including renewables, low-carbon fuels and negative emissions technologies; increasing transparency, including enhancing measurement, monitoring, reporting and independent verification of GHG emissions and their performance and progress in reducing emissions.

- The **GDA** also proposes to have a **formal mechanism to track mode of decarbonisation across key heavy-emitting sectors**.

Topic 21. INDIAN COMPANIES SHOULD INVEST IN 'CLIMATE VULNERABLE' NATIONS: NASHEED

Important for the subject: Environment

The former President of Maldives, Mohamed Nasheed, emphasized the need for Indian companies to invest in clean energy projects in Maldives and other climate-vulnerable countries.

- Nasheed suggested that such investments would be more beneficial than putting money into traditional sectors like "iron and steel."

Climate Vulnerable Forum (CVF):

- International partnership of 58 countries highly vulnerable to climate change. Represents regions including Africa, Asia, the Caribbean, Latin America, and the Pacific.

- A platform for South-South cooperation to address global climate change challenges.

- Rotating chairmanship with Ghana currently holding the position for 2022-2024, following Ethiopia's leadership.

CVF's Objectives:

- Formation in November 2009 near Male', Maldives.

- Adoption of the Manila-Paris Declaration and the 2016-2018 Roadmap during the CVF High-Level Meeting at UNFCCC COP21.

- Commitment at COP22 to ambitious climate action, including achieving maximal resilience and 100% domestic renewable energy production.

India's Commitments:

- India committed to installing 500 GW of electricity from non-fossil fuel sources.

- Pledged to reduce emissions by 45%, aligning with the Paris Agreement's goals of limiting global temperature rise below 2°C and ideally below 1.5°C.

Mohamed Nasheed's Recommendations:

- Nasheed encourages Indian companies to invest in renewable energy projects in climate-vulnerable countries.

- Highlights the importance of development banks and richer countries in "de-risking investments" for climate-vulnerable nations.

- Nasheed notes interest from several Indian investors in renewable energy projects within the CVF, particularly in solar and wind.

Role of Development Banks:

- Nasheed underscores the significant role development banks can play in de-risking investments in climate-vulnerable nations.

- The focus is on attracting real investments rather than relying solely on grants.

Topic 22. GLOBAL FOREST FACILITY

Important for the subject: Environment

Brazil has proposed the **Global Forest Facility** to mobilise billions from existing funds at **COP28** of **UNFCCC**.

Tropical Forest Forever Facility (TFFF):

- Launched by- **Brazil**

- It **aims** at **mobilizing $250 bn** to **protect standing tropical forests** in up to **80 countries**.

- The scheme would provide a guaranteed, long-term flow of resources for tropical forest conservation. The **U.K.** has committed **£35 million** to protect **Amazon forests** in **Brazil**.

- To be **eligible,** the **deforestation rate of a country must remain below** a certain percentage and **deforestation must be decreasing or less than a percentage**.

- **Tropical forests** provide an array of ecosystem services beyond carbon. The proposal recognizes the **role of tropical rainforest** conservation for biodiversity, carbon capture, and cooling effects, as well as its importance for social and economic development.

- The Facility can be fully operational by **COP30,** which is to be held in **Belém, State of Pará, Brazil**.

Funding Mechanism:

- Funds will come from **sovereign wealth funds,** and **institutional investors** among others.

Topic 23. GLACIERS SHRANK 1M A YEAR IN A DECADE: WMO

Important for the subject: Environment

Decade of extremes

The decade from 2011 to 2020 witnessed a rise in economic losses due to extreme weather, but also saw a drop in deaths

- The drop in deaths was due to advancements in early warning systems and disaster management
- This was also the first decade that the depleted ozone hole visibly showed recovery
- Heatwaves caused the highest human casualties and tropical

cyclones inflicted the most economic damage

- While climate finance nearly doubled, it needs to increase sevenfold by the decade's end

SOURCE: WORLD METEOROLOGICAL ORGANIZATION

The **2011-2020** decade, though the **warmest ever recorded in history**, saw the **lowest number of deaths from extreme events,** said a report from the **World Meteorological Organisation**.

Report title- **The Global Climate 2011-2020: A Decade of Acceleration**

Released by- **WMO**

Heat waves were responsible for the **highest number of human casualties,** while **tropical cyclones** caused the **most economic damage**.

- The **2011-2020** decade was the **first** since **1950** when there was **not a single short-term event** with **10,000 deaths or more.**

- This is due to the **improvement** in the **"early warning system"** driven by improvements in **forecasting** and **better disaster management**.

- In **India,** improvements in forecasting **cyclone formation** and the time it takes to reach land have led to **greater preparedness** and **evacuation** of those most at risk. This was the **first decade** that the **depleted ozone hole visibly showed recovery.**

- **Glaciers** that were measured around the world **thinned by approximately 1 metre per year** on average between **2011** and **2020.**

- **Greenland** and **Antarctica** lost **38%** more ice during the period than during the **2001-2010** period. **Public** and **private climate finance** almost **doubled** during the period. However, it needed to **increase at least seven times** by the end of this decade to achieve climate objectives.

Topic 24. GLOBAL STOCKTAKE DRAFT CALLS FOR PHASING OUT FOSSIL FUELS

Important for the subject: Environment

The latest version of the **Global Stocktake (GST)** includes a clause committing all signatories to **"an orderly and just phase out of fossil fuels"**.

- For the **first time,** a key document being negotiated at the **UN's annual climate summit** has underlined the need for the world to do away with **all fossil fuels,** in its draft text.

Global Stocktake (GST):

- GST will be a **Party-driven process** conducted transparently and with the participation of **non-party stakeholders**. It will be done every **five years,** starting from **2023.**

- It enables countries and other stakeholders to see **where they're collectively making progress** toward meeting the goals of the **Paris Agreement** – and where they're not.

- It's like taking **inventory**. It means looking at everything related to where the world stands on climate action and support, identifying the gaps, and working together to agree on solutions pathways (to 2030 and beyond).

- GST also points to a **growing gap** between the **needs of developing countries** and the **support provided and mobilized for them**, and calls for the unlocking and redeployment of trillions of dollars towards climate action and climate-resilient development.

Topic 25. THE JOURNEY TOWARDS A PLASTIC-FREE WORLD

Important for the subject: Environment

Under the **UN Environment Assembly** Resolution 5/14, the **Intergovernmental Negotiating Committee (INC)** is responsible for delivering a global plastics treaty by 2025.

- It would be an **international legally binding instrument** to end plastic pollution worldwide. The **INC-3,** held at **Nairobi** in November 2023, was a **make-or-break opportunity** as countries came together to negotiate the **'zero draft'** text developed by the committee's secretariat.

What does the 'Zero Draft' say?

- It contains a strong option for an international legally binding treaty to end plastic pollution. But leave some high-impact elements like primary polymer production, chemicals of concern, problematic and short-lived plastics, trade, and financial mechanisms, among others.

- A group of **like-minded countries** — including **Saudi Arabia, Russia, China, Iran,** and some members of the **Gulf Cooperation Council** — argued to include the clause "while contributing to the achievement of sustainable development", to ensure their economic interests and investments.

Does the treaty discuss finance?

- The **zero draft** contains options such as **imposing a plastic-pollution fee** to be paid by plastic polymer producers, and another on **reducing the financial flow into projects** with a **high carbon footprint**.

Are there limits on plastic trade?

- The draft tries to fill the gap in the plastic trade that was not included in the **Basel convention,** but any restrictions on trade is considered to be impinging on the freedom and sovereignty of nations.

- The **Centre for International Environmental Law (CIEL),** a non-profit in **Washington, D.C.**, has found that the **bloc (of like-minded countries)** misconstrued the **World Trade Organisation (WTO)** rules to their advantage.

- The **WTO rules** provide for sufficient scope for **trade restrictions** when they are **"necessary to protect human, animal or plant life or health"** and nothing prohibits states under international law to **regulate or restrict the trade of certain products and materials**.

What is the issue with the rules of procedure?

- A handful of countries, including **India,** continued to demand **consensus-based decision-making** instead of a **two-thirds vote majority**. Now, the **INC-4** meeting will decide the rules of procedure.

- The **African Group of Countries** and **Small-Island Developing States (SIDS)** advocated for **strong binding provisions** for the **high-impact elements** in the treaty. They championed the voices of **waste-pickers** and **indigenous peoples** and approached the treaty from a **human rights** and **public health perspective**.

Topic 26. DEVELOPING COUNTRIES REJECT GGA DRAFT, VOTE OF SUPPORT FOR RECHANNELING SPECIAL DRAWING RIGHTS

Important for the subject: Environment

Global Goal on Adaptation (GGA):

A draft text on the GGA was made available at the COP28 meeting.

- The text around the principle of **common but differentiated responsibilities and respective capabilities,** means of implementation, particularly finance, financial targets,

accountability mechanisms and closing of the adaptation finance gap were either missing from the text or were bracketed.

About GGA:

- It was established under the **Paris Agreement** to enhance **climate change adaptation** by increasing awareness of and funding towards countries' adaptation needs in the context of the 5/2°C goal of the Paris Agreement.

- At **COP26,** Parties established the **2022-2023 Glasgow-Sharm el-Sheikh (GlaSS) Work Programme on the Global Goal on Adaptation** to define the key elements of the goal, including the methodologies, indicators, metrics, and data sources to support the assessment of overall adaptation progress.

- Negotiations around the **GGA** currently focus on what metrics and indicators can be used at both global and local levels to effectively monitor collective progress, while incorporating and addressing outstanding concerns on bridging the gap between the local- and context- specificity of adaptation and the need to track it at a global scale.

Finance:

- A roundtable on Leveraging **Special Drawing Rights** for climate was organised at COP28. **Developed countries** like **Spain** supported the **rechanneling of SDRs** from **developed to developing countries**.

- **IMF** has exceeded the target for the **Resilience and Sustainability Trust** to **$41 billion**, accessible to the poorest countries.

- **World Bank** has started the five new initiatives such as **targeting 45 per cent of their financing for climate by 2025**, and **tackling methane from rice, livestock** and **waste management**.

Special Drawing Rights (SDR):

- The **SDR** is an **international reserve asset** created by the **IMF** to supplement the official reserves of its member countries.

- The **SDR** is **not a currency.** It is a potential claim on the **freely usable currencies of IMF members.** As such, **SDRs** can provide a country with liquidity.

- A basket of currencies defines the SDR: **the US dollar, Euro, Chinese Yuan (Renminbi), Japanese Yen,** and the **British Pound**.

Equitable fossil fuel phaseout:

- The **Civil Society Equity Review Report** released at **COP28** noted that **Canada, the United States, Norway, Australia** and the **United Kingdom** must end fossil fuel extraction by the very early **2030s**.

Mitigation Work Programme (MWP):

- First introduced by **UNFCCC** at **COP26 in Glosgow.** Launched at- **COP27 Sharm Al-Sheikh, Egypt**

- It aims to**" urgently scale up mitigation ambition and implementation"** to help reach the 1.5DC goal.

- At **COP27,** Parties further fleshed out the programme to be operationalised each between **2023-2026** via at least two annual global dialogues and investment-focused events.

Topic 27. SECURE HIMALAYA PROJECT

Important for the subject: Environment

UNDP India climate chief

The 'Secure Himalaya' project is funded by the **Global Environment Facility** launched in 2017. It supports the government's efforts for conservation of **snow leopard** and its habitat by developing and implementing a landscape-based approach for Himalayan ecosystems, and addresses key issues of habitat degradation, threatened livelihoods and illegal trade in wildlife.

Components:

- Conservation of key biodiversity areas and their effective management to secure long-term ecosystem resilience, habitat connectivity and conservation of snow leopard and other endangered species.

- Securing sustainable community livelihoods and natural resource management in high range Himalayan ecosystems. Enhancing enforcement, monitoring and cooperation to reduce wildlife crime and related threats. Gender Mainstreaming, Monitoring, evaluation and knowledge management.

Project Landscapes:

1. **Changthang**, Ladakh Landscape, Jammu & Kashmir

2. **Lahaul-Pangi** and **Kinnaur Landscapes**

3. **Khangchendzonga-upper Teesta Valley.**

4. **Gangotri-Govind and Darma-Byans Landscapes**

Topic 28. WHO IS RESPONSIBLE FOR FARMING'S IMPACT ON THE ENVIRONMENT

Important for the subject : Environment

The **expansion of international trade** has created **global supply chains,** directly linking consumers to geographically distant impacts, including carbon emissions, biodiversity loss,

freshwater depletion, soil degradation and labour-rights issues – all of which have local, regional, and global relevance.

- Due to its **vast size** and **consumer market, India** is a **global anchor** of the **trade in agricultural products**.

Food-based impact accounting:

- **Large land areas in India** are used to service the **international demand** for food products, which puts **pressure on national soil and water resources.**

- Similarly, **India's vast consumer market** means that **large amounts of land**, even outside its borders, are used to satisfy domestic demand, which led to an increase in the **environmental pressure** in the **exporting countries**.

- Measuring impacts and allocating responsibility is based on a **production-based accounting method:** it measures impacts in the place where the products are produced. But, there are concerns about its **limitations** in **managing 'leaks', fixing accountability,** and **ensuring equity and justice** among producers and consumers.

- Another alternative is **consumption-based accounting.**

Consumption-based accounting:

- It accounts for **impact at the point of consumption**, attributing all the social and environmental impacts that occurred during production and trade to the final products and to the eventual consumers.

- This approach calls to adopt **sustainable consumption practices** as a form of environmental action.

- It highlights the **responsibility of industrialised states** to **mitigate the impact of climate change** and the **rights of developing economies to not carry an excessive burden.**

- This is an extension of the principle of **common but differentiated responsibilities** that make up **global climate governance**.

What is the demand perspective?

- Developed countries are the largest consumers so they are responsible for any consequences that occur during the production process.

- It also includes the issue of equity and justice surrounding the issue of historical responsibility.

- Studies suggest that **developing economies** like **India** have contributed **only 23%** of **global cumulative emissions** and are **responsible** for about **20-40%** of

the **global average temperature rise** since the preindustrial era.

Benefits of environmental action?

- The **European Commission** recently initiated steps to ensure products consumed in the European Union have not contributed to deforestation in their country of origin.

- **India** has a **unique position** in this regard, as **India is a major consumer** as well as a **major producer** of **agricultural products**.

Topic 29. CLIMATE CHANGE IS MAKING THE WORLD SICK

Important for the subject: Environment

The **public health** has been compromised by **climate change** in the form of **heat stress, Lung damage** from wildfire smoke, and the **spread of disease-carrying mosquitoes into new regions** as temperatures rise.

From **2030malnutrition, malaria and dengue, diarrhoea,** and **heat stress** will push **global death tolls** up by **250,000 per year,** according to the **World Health Organisation (WHO)**.

- The **warmer temperatures** and **heavy rains** create more hospitable conditions for **disease-carrying mosquitoes** to breed and spread to new regions.

- **Malaria** (a mosquito-born disease) spread into the **highlands of Africa** that previously had been **too cold for mosquitoes**. Diseases that are spreading fast due to warming and heavy rain are- **Diarrhoea, Cholera, Malaria, dengue, Zika,** and **West Nile** among others.

- The world is already about **1.1 degrees C warmer** than the **average pre-industrial temperature** and people in **2022** experienced about **86 days on average** of dangerously **high temperatures** that resulted in **drier forests** and **extreme wildfires.**

Topic 30. UK UNIVERSITY ACADEMIC IS LENDING EXPERTISE TO CUT INDIA'S SNAKEBITE DEATHS

Important for the subject: Science and Technology

India has the **biggest burden of deaths due to snakebites** in the **world**, with most of the cases in **rural India**.

Death due to snakebite in India:

- According to the **World Health Organization (WHO)**, around **81,410** to **137,880** people around the **world** die each year because of snake bites.

- With **more than 50,000 people** dying from **snakebites** each year, **India** is the global capital of snakebite deaths. WHO formally listed **snakebite envenoming** as a **highest-**

priority neglected tropical disease in **June 2017**.

- In **2015, India** ratified the **WHO's Snakebite Envenoming Strategy** for Prevention and Control through the **National Action Plan,** along with the **United Nations' Sendai Framework for Disaster Risk Reduction** for halving the number of deaths by **2030**.

Avoidable Deaths Network (ADN):

- It is a diverse, dynamic, inclusive and innovative global membership network dedicated to avoiding human deaths from natural hazards, naturally triggered technological hazards and human-made disasters in low- and middle-income countries.

- In **2023**, it launched a **global campaign**, declaring **12 March** as the **'International Awareness Day for Avoidable Deaths' (IAD4AD)**. Their campaign slogan is **'Disaster Deaths Are Avoidable'** with the ultimate goal of saving lives.

- This global campaign **aims** to raise the visibility of indirect disaster deaths and missing persons. Join us to celebrate this day annually.

- Experts from the ADN have set up a pilot study to prevent death from snakebite in Burujhari village in **Odisha**.

- **Their suggestions to reduce the deaths due to snakebite is-** setting up early warning system for snakes, positioning motorcycles and ambulances to transport snakebite victims to the nearest hospital, developing a risk governance infrastructure.

Topic 31. INDIA SET TO LAUNCH XRAY POLARIMETER SATELLITE, SAYS ISRO

Important for the subject: Science and Technology

Indian Space Research Organisation (ISRO) has announced that India is set to launch its first X-Ray Polarimeter Satellite (XPoSat), aiming to investigate the polarisation of intense X-Ray sources.

- The XPoSat spacecraft is designated for **observation from Low Earth Orbit**, carrying two scientific payloads. With these two payloads, the XpoSat mission is capable of simultaneous studies of **temporal, spectral, and polarization features** of the **bright X-Ray sources**.

The mission objectives include:

- **Measurement of X-Ray polarization** in the energy band of **8-30 keV** emanated from X-Ray sources, **long-term spectral and temporal studies** of **cosmic X-Ray sources** in the energy band of **8-15 keV.**
- The **mission life** is expected to be approximately **five years**. The payloads onboard XpoSat will observe the X-Ray sources during the spacecraft's transit **through the Earth's shadow**, i.e., during the eclipse period.

- The XpoSat will be launched by the **Polar Satellite Launch Vehicle** (PSLV), from the Satish Dhawan Space Center in Sriharikota. XpoSat (X-ray Polarimeter Satellite) is **India's first dedicated polarimetry mission** to study various dynamics of **bright astronomical X-ray sources** in extreme conditions.

- The spacecraft will **carry two scientific payloads** in a **low earth orbit**. The **primary payload POLIX** (Polarimeter Instrument in X-rays) will measure the **polarimetry parameters** (degree and angle of polarization) in medium X-ray energy range photons of astronomical origin.

- The **XSPECT** (X-ray Spectroscopy and Timing) payload will give **spectroscopic information**.

Significance of the mission:

- The **emission mechanism** from various astronomical sources such as blackhole, neutron stars, active galactic nuclei, pulsar wind nebulae etc. **originates** from **complex physical processes** and are challenging to understand.

- While the **spectroscopic and timing information** by various space based observatories provide a wealth of information, the **exact nature** of the emission from such sources still poses **deeper challenges to astronomers**.

The polarimetry measurements add two more dimension to our understanding:

- The **degree of polarization** and the **angle of polarization.** Thus is an **excellent diagnostic tool** to understand the **emission processes** from astronomical sources.

Topic 32. THREE ANTI SUBMARINE WARFARE SHIPS FOR THE INDIAN NAVY LAUNCHED

Important for the subject: Science and Technology

Recently, the Cochin Shipyard marked a significant milestone with the simultaneous launch of the first three ships in a series of eight Anti-Submarine Warfare (ASW) shallow water crafts commissioned by the Indian Navy.

- The ceremony, attended by distinguished naval officials and their spouses, unveiled INS Mahe, INS Malva, and INS Mangrol.

Capabilities:

- Cochin Shipyard, in a 2019 contract with the Ministry of Defence, undertook the construction of eight ASW vessels known as the Mahe class. These vessels are designed to replace the Navy's existing Abhay class ASW corvettes, equipped with capabilities for anti-submarine operations, low-intensity maritime scenarios, mine laying, and sub-surface surveillance operations.

Indigenous Content:

- With over 80% indigenous content, the ASW SWC ships exemplify India's commitment to 'Aatmanirbhar Bharat' (self-reliant India).

- The emphasis on indigenous production contributes to large-scale defense manufacturing within the country, fostering employment opportunities and enhancing national capabilities.

Arms and Equipment:

- The ASW vessels are armed with state-of-the-art technology, including light-weight torpedoes, ASW rockets, mines, a close-in weapon system (30 mm gun), and 12.7 mm stabilized remote control guns.

- These armaments enhance their effectiveness in various naval operations, including coordinated ASW operations with aircraft and search and rescue missions.

Vessel Specifications:

- Each Mahe class vessel, measuring 78 meters in length, 11.36 meters in width, with a draught of 2.7 meters, boasts a displacement of 896 tonnes and can achieve speeds of up to 25 knots.

- With an endurance of 1,800 nautical miles, these vessels accommodate indigenously-developed sonars for underwater surveillance. The crew composition includes 57 personnel, including seven naval officers.

Challenges Overcome:

- Madhu S. Nair, CMD of the shipyard, addressed challenges faced during the construction process, including the pandemic, forex variations, and the war in Ukraine.

- Despite these obstacles, the vessels were delivered within specified price limits, showcasing the resilience and dedication of the Cochin Shipyard.

Project Timeline:

- According to a press release, the first ship of the ASW SWC project is scheduled for delivery by November 2024.

- This timeline emphasizes the efficiency and dedication with which Cochin Shipyard is progressing in the construction and commissioning of these crucial naval assets.

Topic 33. THE SPREAD OF AIDS CAN BE STOPPED WITH SCIENCE BACKED PROTOCOLS

Important for the subject: Science and technology

As of December 1, 2023, individuals with HIV who consistently undergo antiretroviral therapy (ART) experience a life comparable to those without HIV, with modeling studies

indicating nearly identical life expectancies.

- This development challenges historical perceptions of HIV as a life-threatening condition and emphasizes the efficacy of sustained antiretroviral treatment.

Normal Life with ART:

- Individuals with HIV who adhere to uninterrupted antiretroviral therapy are reported to lead normal lives. This marks a significant shift from earlier perceptions of HIV as a potentially life-threatening condition.

Life Expectancy Parity:

- Modeling studies have demonstrated that the life expectancy of individuals with HIV under consistent antiretroviral therapy is nearly indistinguishable from that of individuals without HIV.

- This finding underscores the effectiveness of modern medical interventions in managing the virus.

Global HIV Statistics:

- Since the first reported case of HIV in 1981, approximately 39 million people globally are currently living with HIV. In India, the number stands at 2.4 million. This highlights the global and national impact of the virus.

New Infections:

- Despite progress in managing HIV, there were 1.3 million new HIV infections worldwide in 2022, with India contributing 63,000 to this figure. The data emphasizes the ongoing challenges in preventing new infections.

- Key Populations at Risk: Most transmissions occur within key populations, including female sex workers, men having sex with men, the transgender community, and injecting drug users.

About Human Immunodeficiency Virus (HIV):

- HIV is a lentivirus, a sub-classification of retrovirus, that leads to the HIV infection and, over time, progresses to AIDS (Acquired Immunodeficiency Syndrome).

Types of HIV:

- **Type One (HIV-1):** This is the most common type, further categorized into four groups – Group M (Major), Group N (Non-M & Non-O), Group O (Outlier), and Group P. Group M is responsible for approximately 90% of HIV cases worldwide.

- **Type Two (HIV-2):** Found primarily in Western Africa, with some cases in India and Europe, HIV-2 is further categorized into eight groups (A to H). It is closely related to the

simian immunodeficiency virus endemic in a monkey species.

- **AIDS**: This is a severe condition where the immune system fails, making the affected person susceptible to life-threatening infections and cancers.

- **Transmission:** HIV can be transmitted through blood, breast milk, vaginal fluids, semen, or pre-ejaculate. It exists as free particles and within infected immune cells in bodily fluids.

- **Survival Period**: Without treatment, the average survival period for a person with HIV is nine to eleven years, depending on the subtype of HIV.

- **Treatment:** Antiretroviral therapy can prevent the progression of HIV to a severe form.

First-line HIV Treatment – TLD:

- **Tenofovir Disoproxil Fumarate, Lamivudine, and Dolutegravir** (TLD) is a **single-pill antiretroviral treatment**. **WHO** endorsed TLD in 2018 due to its effectiveness, fewer side effects, and simplicity.

Historical Progress and Collaboration:

- **2017**: **TLD** was introduced at **$75 annually in low- and middle-income countries with global support.**

- Partnerships led to **19 million in resource-limited settings receiving TLD**, promoting efficiency and sustainable pricing.

Future Initiatives and Impact:

- **Global Fund's NextGen approach** focuses on **affordable HIV treatment** through collaborations, particularly in India and Africa.

Pooled Procurement Mechanism and Reach

- Mechanism negotiated $1.5 billion in 2021 orders, serving 90 countries, and providing access to essential health products.

The Global Fund

- The Global Fund is an **international financing and partnership organization**. It was created in **2002** and its secretariat is located in **Geneva, Switzerland**. The Global Fund aims to attract, leverage, and invest additional resources to end the **epidemics of AIDS, tuberculosis, and malaria** to support the attainment of the **Sustainable Development Goals.**

- It is designed to promote innovative solutions to global health challenges. It works in

partnership with governments, civil society, technical agencies, and people affected by the diseases.

- **Public sector contributions have constituted 95 percent** of all financing raised; the **remaining 5 percent** comes from the **private** sector or other financing initiatives such as **Product Red**.

Govt Initiatives to control HIV

- Government of India provides free lifelong antiretrovirale (ARV) medicines for people living with HIV. Under its National AIDS Control Programme, presently 15.23 lakh (Approx.) people living with HIV are given ARV medicines through 687 ART centers and 1261 link ART centers irrespective of their income background.

- It includes free adherence counselling, diagnostic and monitoring services like baseline laboratory investigations, CD4 count testing, viral load testing, etc.

- To de–stigmatize the myths revolving around the disease, NACO implements multimedia campaigns along with mass media supported by outdoor media such as hoardings, bus panels, information kiosks, folk performances and exhibition vans to create awareness on HIV/AIDS and promoting services/facilities across the country.

- At the inter-personal level, training and sensitization programmes for Self-Help Groups, Angan wadi workers, ASHA, members of Panchayati Raj Institutions and other key stakeholders are carried out to spread awareness about treatment and other facilities.

- This year's World Aids Day, observed on 1st December, was observed widely with the theme Equalize.

- The Adolescence Education Programme is implemented in more than 50,000 schools, providing 100% coverage to students of class 8th, 9th and 11th through co-curricular activities based on life skill education approach in senior and senior secondary schools.

- 32 States included the topic of HIV /AIDS in curricula of schools. Red Ribbon Clubs are formed in colleges to encourage peer to peer messaging on HIV prevention and provide a safe space for young people to seek clarification to their doubts on myths surrounding HIV/AIDS.

Topic 34. INDIA IS BUILDING ITS OWN 'SOVEREIGN AI'

Important for the subject: Science and Technology

India is building its own 'sovereign AI'

India is **aiming to adopt a Digital Public Infrastructure (DPI)** approach to artificial intelligence (AI) after **successfully implementing similar strategies** for initiatives like **Aadhaar and Unified Payments Interface (UPI).**

- The government **wants to establish sovereign AI**, emphasizing the **importance of**

developing its own AI ecosystem rather than relying solely on global players like Google and Meta.

- The **focus is not only on competing in generative AI models** but also on addressing **real-world applications in healthcare, agriculture, governance, language translation**, and more.

- The goal is to **leverage AI for economic development** and offer a sanctioned AI compute infrastructure for **various use cases.** Minister of State for Electronics, Rajeev Chandrasekhar, **expressed this vision during an event organized by the Financial Express.**

What is India's plan for controlling its own AI:

- India's **Ministry of Electronics and IT** has **proposed the creation of an India Datasets platform** as part of the **National Data Governance Framework Policy**.

- The platform **aims to house non-personal and anonymised datasets** from Central government entities, which have collected data from Indian citizens. The **objective is to make this non-personal data accessible to start ups and Indian researchers,** fostering an environment **for artificial intelligence (AI) and data-led research and start ups in the country**.

- The **proposal is part of an effort to modernize government data** collection and enhance governance.

- A **report from a working group under the IT Ministry** suggests that the **India datasets program could serve as a unified national data sharing** and **exchange platform, benefiting various stakeholders**, including government bodies, private sector companies, startups, academia, and more.

- The **non-personal data within the platform might also be monetized, contributing to the growth of the AI ecosystem in India** by providing a **solid foundation for data-driven innovation and development.**

How will India regulate AI:

- India is planning to **introduce laws governing artificial intelligence (AI)** with a focus on bringing **significant changes to its digital economy**.

- The approach is **expected to be a hybrid of both the European model, which emphasizes regulation for the rights of citizens, and the U.S. model**, which **focuses on market regulation**.

- The government is **reportedly considering issuing a directive to major tech companies like Facebook, Google, and Amazon** to share **anonymised personal data with a government-backed database**, as part of the **draft Digital India Bill**.

- The directive **could mandate depositing non-personal data into the India datasets platform.** This initiative **aims to harness economic benefits from aggregated non-personal datasets and was initially proposed by a committee chaired by Infosys co-founder Kris Gopalakrishnan.**

What are the key Provisions of the Digital India Bill:

- The Bill is a key **part of a comprehensive legal framewor**k which encompasses various legislative measures such as

The recently-notified Digital Personal Data Protection Act 2023

- **The draft Indian Telecommunication Bill 2022, and A policy addressing the governance of non-personal data.** The Bill p**rioritizes online safety and trust**, aiming to **protect citizens' digital rights while remaining adaptable** to market changes and **international legal principles.**

- Recognizing the **significance of new technologies like artificial intelligence (AI)** and block chain, the **Bill provides guidelines** for their responsible use.

- It **upholds the idea of an open internet, balancing accessibility** with necessary regulations to **maintain order and protect users.** The Bill **introduces stringent Know Your Customer (KYC) requirement**s for **wearable devices, backed by criminal law sanctions**.

- Contemplating a **review of the "safe harbour" principle,** the Bill suggests a **potential shift in online accountability standards,** presently **shielding online platforms from liability related to user-generated content.**

Topic 35. BATTLING WATER WOES IN LAND OF TRAGEDY

Important for the subject: Science and Technology

Over the years, studies have found groundwater in different residential areas outside the factory contaminated with heavy metals and other toxic substances, which could lead to cancer and other diseases.

- This is because hundreds of tonnes of toxic waste dumped by the UCIL within its factory premises from 1969 to 1984 and 11 lakh tonnes of contaminated soil have not yet been cleared by authorities, despite court orders and warnings.

What are the Major Findings of the Research?

- **About:** The study reveals that the repercussions of the Bhopal Gas Tragedy extend beyond immediate mortality and morbidity. It has been observed that the impacts of the disaster are visible in a 100 km radius around Bhopal, affecting a wider area than previously reported.

- The findings highlight the social costs associated with the tragedy, which continue to

afflict subsequent generations.

- **Health Issues Faced by Survivors:** The survivors of the Bhopal Gas Tragedy have experienced a range of health problems over the years. These include respiratory, neurological, musculoskeletal, ophthalmic (related to eyes), and endocrine issues.

- Additionally, there has been a significant increase in miscarriages, stillbirths, neonatal mortality, menstrual abnormalities, and premature menopause among women exposed to the toxic gas.

- **Investigating Long-Term Health Effects:** Researchers from the University of California (UC) conducted a comprehensive analysis to assess the long-term health consequences and potential intergenerational effects of the Bhopal Gas Tragedy.

- They gathered data from the National Family Health Survey (NFHS-4) conducted between 2015 and 2016 and the Integrated Public Use Microdata Series from India for the year 1999, including individuals ranging from ages six to 64 years and those in utero at the time of the disaster.

- Disability among Women: Women who were pregnant with male fetuses and resided within 100 km of Bhopal had a one percentage point higher disability rate that affected their employment 15 years later.

- **Decline in Male Births:** There was a decline in the proportion of male births from 64% (1981-1984) to 60% (1985) among mothers living within 100 km of Bhopal suggesting a higher vulnerability of male fetuses to external stress. No significant change was observed beyond the 100 km radius.

- **Increased Cancer Risk:** Men born in 1985 within 100 km of Bhopal had an eightfold higher risk of cancer compared to those born in the periods 1976-1984 and 1986-1990.

- Furthermore, men born in 1985 who continued to reside within 100 km of Bhopal experienced a 27-fold higher risk of cancer in 2015 compared to their counterparts born in the reference periods and individuals living more than 100 km away.

- **Employment Disabilities:** Those who were in utero during the tragedy and lived within 100 km of Bhopal were one percentage point more likely to report employment disability compared to older individuals and those residing further from Bhopal.

- The likelihood increased to two percentage points among those living within 50 km of the city.

Topic 36. WHAT WAS THE BHOPAL GAS TRAGEDY?

Important for the subject: Science and Technology

The Bhopal gas tragedy was one of the worst industrial accidents in history that occurred on the night of 2-3 December 1984 at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, MP. It exposed people and animals to the **highly toxic gas methyl isocyanate**

(**MIC**)**,** causing immediate and long-term health effects and deaths.

Causes of Gas Leak:

- The exact cause of the gas leak is still disputed between corporate negligence or employee sabotage. However, some of the factors that contributed to the disaster are: The **UCIL plant was storing large quantities of MIC, a highly reactive and volatile chemical, in poorly maintained tanks.**

- The plant was operating with reduced staff and safety standards due to financial losses and market competition. The plant was located in a densely populated area with no proper emergency plans or warning systems for the nearby residents.

- On the night of the disaster, a large amount of water entered one of the MIC storage tanks (E610), either due to a faulty valve or a deliberate act of sabotage by a disgruntled worker.

- This triggered an exothermic reaction that increased the temperature and pressure inside the tank, causing it to rupture and release a large cloud of MIC gas into the atmosphere

Reactions:

- A 2019 report by the UN's International Labour Organization (ILO) said at least 30 tonnes of the poisonous gas affected more than 600,000 workers and nearby inhabitants. It added the disaster was among the world's "major industrial accidents after 1919".

Laws Passed:

- **Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985** – Gave the Central Govt the "exclusive right" to represent, and act in place of every person connected with the claims.

- **Environment (Protection) Act, 1986**, – Authorised the central govt to take relevant measures and regulate industrial activity for environmental and public safety.

- **Public Liability Insurance Act of 1991 –** Provides public liability insurance for providing immediate relief to the persons affected by an accident occurring while handling any hazardous substance.

- **Civil Liability for Nuclear Damage Act 2010**– India enacted the CLNDA in 2010 to put in place a speedy compensation mechanism for victims of a nuclear accident.

- It provides for strict and no-fault liability on the operator of the nuclear plant, where it will be held liable for damage regardless of any fault on its part.

Topic 37. BCG REVACCINATION STUDY IN ADULTS TO BEGIN IN 23 STATES

Important for the subject: Science and Technology

Twenty three States have consented to participate in the BCG revaccination study in adults that will be undertaken in a "programme implementation study mode" to evaluate the effectiveness of the vaccine in reducing TB disease incidence.

- It is a **vaccine for tuberculosis (TB).** The vaccine was **developed by Calmette and Guerin** and was first administered to human beings in 1921. It is the most widely administered vaccine and is usually a part of the routine newborn immunization schedule.

- BCG vaccine also **offers protection against non-tuberculous mycobacterial infections like leprosy and Buruli ulcer.**

- It is often given to infants and small children. It is rarely given to anyone over the age of 16 because there is little evidence it works very well in adults

Key facts about Tuberculosis (TB):

- Tuberculosis (TB) is caused by **bacteria (Mycobacterium tuberculosis)** that most often affect the lungs. It is **curable and preventable disease.**

Two kinds of tuberculosis infection:

- **Latent TB**-The bacteria remain in the body in an inactive state. They cause no symptoms and are not contagious, but they can become active.

- **Active TB**– The bacteria do cause symptoms and can be transmitted to others. About one-quarter of the world's population has latent TB.

- People infected with TB bacteria have a 5–15% lifetime risk of falling ill with TB. However, persons with compromised immune systems, such as people living with HIV, malnutrition or diabetes, or people who use tobacco, have a much higher risk of falling ill

Transmission:

- TB is **spread from person to person through the air.** When people with lung TB cough, sneeze or spit, they propel the TB germs into the air. Even after inhaling a few drops of these germ, a person can get infected.

Topic 38. SIX EXOPLANETS FOUND ORBITING A NEARBY BRIGHT STAR

Important for the subject: Science and Technology

Six exoplanets orbiting around a nearby bright star (HD 110067) in the Coma Berenices constellation has been discovered.

About HD110067

HD 110067 is a star with 6 known sub-Neptune exoplanets.

- The star is located in the constellation Coma Berenices, which is near Virgo in the northern sky. It is about 100 light-years away from Earth. The 6 planets in HD 110067 orbit the star in a rhythmic pattern. The planets form a "resonant chain" in successive pairs of 3:2, 3:2, 3:2, 4:3, and 4:3.

- **NASA's Transiting Exoplanet Survey Satellite (TESS) detected the star's brightness dipping in 2020.** This indicated that planets were passing in front of the star

What are Exoplanets?

- **Exoplanets are planets that orbit other stars and are beyond our solar system.** The first confirmation of detection of exoplanets occurred in 1992.

- **According to NASA, to date, more than 5,000 exoplanets** have been discovered. **Scientists believe that there are more planets than stars as each star have at least one planet orbiting it.**

- Exoplanets come in a host of different sizes. They can be gas giants bigger than Jupiter or as small and rocky as Earth. They are also known to have different kinds of temperatures — boiling hot to freezing cold.

Discovery:

- **Exoplanets are very hard to see directly with telescopes.** They are hidden by the bright glare of the stars they orbit.

- So, astronomers use other ways to detect and study exoplanets such as looking at the effects these planets have on the stars they orbit.

- Scientists rely on indirect methods, such as the transit method, which is measuring the dimming of a star that happens to have a planet pass in front of it.

- Other detection methods include **gravitational microlensing**– Light from a distant star is bent and focused by gravity as a planet passes between the star and Earth. The same method could hypothetically use our Sun to see exoplanets

Significance:

- Studying exoplanets **not only broadens our understanding of other solar systems but also helps us piece together information about our own planetary system and origin.**

- However, the most compelling reason to learn about them is to find the answer to one of the most profound and thought-provoking questions of humankind — are we alone in this universe?

- Another important element of the study is finding out the distance between an exoplanet and its host star.

- This helps scientists determine if a discovered world is habitable or not. If an exoplanet is too close to the star, it might be too hot to sustain liquid water. If it's too far, it might only have frozen water.

- When a planet is at a distance that enables it to have liquid water, it is said to be in the "**Goldilocks zone" or the habitable zone**

A massive exoplanet closely orbits a very low-mass star

- The discovery of a Neptune-mass exoplanet **orbiting the very lowmass M dwarf star LHS 3154 challenges theoretical models of planet formation.**

- The planet, which has a mass at least 13 times that of Earth, tightly orbits a star nine times less massive than the Sun, demonstrating that small stars can sometimes host larger planets than was previously thought.

- Although massive planet candidates have been detected around a few very low mass dwarfs.

Topic 39. THE TRANSFORMATIVE BENEFITS OF POPULATION LEVEL GENOME SEQUENCING

Important for the subject: Science and Technology

The UK has recently achieved a significant milestone by completing the sequencing of half a million whole genomes, constituting nearly 0.7% of its population, as part of the **'deCODE' Initiative.**

- This initiative follows the global trend of large-scale genome projects, with a particular focus on understanding disease genetics and utilizing genomic data for various objectives.

'deCODE' Initiative:

- **Inception**: Launched in Iceland in 1996, deCODE genomics enrolled a substantial portion of the Icelandic population for genetic studies.

- **Contributions**: The initiative has significantly contributed to the understanding of disease genetics and has set standards for the responsible handling of genomic data. It integrates medical records with genealogies.

Merit of Large-Scale Sequencing:

- Large-scale genome projects globally aim to comprehend disease prevalence, identify therapeutic targets, and formulate public-health initiatives using extensive genomic data.

- The UK's '100K Genome' project has translated into immediate health benefits for participants.

Cost and Accessibility:

- **Decreasing Costs:** The cost of whole-genome sequencing is consistently decreasing, making it more accessible to larger populations.

- **Potential Impact:** The decreasing costs pave the way for a future where a substantial portion of the global population may have their genomes sequenced, revolutionizing routine medical diagnostics.

Genomic Initiatives in Asia and India:

- **GenomeAsia Project:** Aiming to sequence 100,000 whole genomes across diverse Asian populations.

- **India's IndiGen Programme**: Providing insights into genetic diseases and variants, with plans for a larger GenomeIndia initiative to sequence 10,000 genomes.

Country/Company	Name of their Genome Initiative
UK	'100K Genome
USA	AllofUS
European Union	'1+ Million Genomes'
Private pharmaceutical companies	Diversity Human Genome Initiative.

Long-Term Impact and Future Prospects:

- **Beyond Individual Health:** Population-scale genomics is anticipated to enhance understanding of human evolution, migration, and adaptation.
- **Personalized Medicine:** Large-scale sequencing paves the way for personalized healthcare based on individual genetic profiles.
- **Billion Genome Project**: There is a prospect of sequencing a billion genomes in a single project, accompanied by considerations of individuals' rights to access and understand their genomic data.

Topic 40. WHY IS FACEBOOK PARENT META SUING THE US FEDERAL TRADE COMMISSION?

Important for the subject: Science and Technology

In a surprising turn of events, Meta, the parent company of Facebook, filed a lawsuit against the U.S. Federal Trade Commission (FTC) in late November.

- This unconventional move by Meta accuses the regulator of engaging in an "obvious power grab," asserting that the FTC's actions could cause "immediate and irreparable" harm to the social media giant.
- The lawsuit revolves around the FTC's attempt to reopen a 2020 privacy settlement with Meta, aiming to prevent the company from profiting from data collected on users under the age of 18.

FTC's 2020 Privacy Settlement:

- In May of the current year, the FTC accused Meta of non-compliance with the terms of a 2020 privacy settlement.

- The proposed changes to the agreement included preventing Meta from monetizing data collected on individuals under the age of 18, encompassing information gathered through its virtual-reality products

Meta's Lawsuit Against FTC:

- Meta's legal action against the FTC is an attempt to halt the regulator from reopening the 2020 privacy settlement.

- The lawsuit contends that the FTC is overstepping its authority and engaging in an unconstitutional power grab.

Supreme Court's Influence:

- The filing of Meta's complaint follows a notable development in the U.S. Supreme Court. The conservative majority in the Supreme Court indicated openness to challenges against the Securities and Exchange Commission's (SEC) approach to fighting fraud.

- The suggestion from the court's majority implied that individuals accused of fraud by the SEC should have the right to have their cases decided by a federal court jury, mirroring elements of Meta's lawsuit against the FTC

Senator Markey's Critique:

- U.S. Senator Edward Markey, known for his criticism of Meta and other Big Tech companies, dismissed Meta's lawsuit as a "weak attempt to avoid accountability."

- Markey characterized Meta's adoption of "extreme, right-wing legal theories" as a desperate move in the face of potential significant fines.

Topic 41. GOOGLE UNVEILS 'GEMINI', AI TECH TRAINED TO BEHAVE LIKE HUMANS

Important for the subject: Science and Technology

Google Gemini, a new multimodal general AI model is now available to users across the world.

What is Google Gemini?

- Google Gemini comes in three sizes: **Ultra, Pro and Nano.** It is being seen as **Google's answer to ChatGPT** which has been ahead of the gameso far when it comes to GenAI.

- **Gemini is multimodal, which means it is not limited to the type of information it can process and can work understand and operate across text, code, audio, image and video.**

- In contrast, **ChatGPT cannot work on video at the moment.** It is also **much more powerful** than existing models.

- Gemini can understand, explain and generate high-quality code in the world's most popular programming languages, like Python, Java, C++ and Go.

What is the need of launching Gemini in three sizes?

- Gemini will be **available in different sizes** to scale it as per the need.

Gemini Ultra, the largest and most capable model, will be meant for highly complex tasks.

- Gemini Pro will be best at scaling across a wide range of tasks for regular users across the world.

- Gemini Nano will manage on-device tasks.

About ChatGPT

- ChatGPT is an **AI chatbot capable of natural language generation, translation, and answering questions.**

GPT stands for Generative Pre-trained Transformer.

- GPT-3 was the largest language model in existence at the time of its 2020 launch, with 175 billion parameters.

- The latest version, GPT-4, accessible through ChatGPT Plus or Bing Chat, has one trillion parameters.

Topic 42. MHA TO EXAMINE CONSTITUTIONAL SAFEGUARDS FOR LADAKH

Important for the subject: Polity

The Ministry of Home Affairs (MHA) has taken a significant step in addressing the demands of civil society groups in Ladakh by agreeing to examine constitutional safeguards for the Union Territory. This development is outlined in an order issued recently to re-constitute a high-powered committee (HPC) for Ladakh.

Background and Unrest:

- Ladakh, with a population of 2.74 lakh as per the 2011 Census, has witnessed protests in recent years due to concerns about the protection of land, resources, and employment for locals.

- The bifurcation of the erstwhile State of Jammu and Kashmir into two union territories – J&K and Ladakh – in 2019, following the abrogation of Article 370, has contributed to the region's unrest. Ladakh, unlike J&K, lacks a legislative assembly.

About Sixth Schedule (Indian Constitution):

- The sixth schedule contains provisions related to the Administration of Tribal Areas in the States of Assam, Meghalaya, Tripura and Mizoram. The Sixth Schedule provides for the administration of certain tribal areas as autonomous entities.

- The provisions of the sixth schedule are provided under Articles 244(2) and 275(1) of the Indian Constitution.

Key Highlights:

Committee Reconstitution:

- The MHA has issued an order to re-constitute a high-powered committee (HPC) for the Union Territory of Ladakh. Chaired by Minister of State for Home Nityanand Rai, this 22-member committee includes representatives from both Kargil and Leh divisions.

Terms of Reference:

- The committee's terms of reference encompass a comprehensive set of objectives. These include discussing measures to preserve Ladakh's unique culture and language, ensuring protection of land and employment for the local population, promoting inclusive development and employment generation, and addressing concerns related to the Ladakh Autonomous Hill District Councils of Leh and Kargil.

- Importantly, the committee is tasked with examining constitutional safeguards that could be implemented to ensure the aforementioned measures and protections.

Leh Apex Body's Demands:

- The Leh Apex Body, supported by the influential Ladakh Buddhist Association and the Kargil Democratic Alliance, has been advocating for statehood for Ladakh, inclusion in the Sixth Schedule of the Constitution, job reservations for locals, and parliamentary representation for both Leh and Kargil.

Topic 43. DISMAY OVER ADDITION OF COLOUR IMAGE OF DHANVANTARI TO NMCS LOGO

Important for the subject: Polity

The recent directive from the Union Health Ministry to rename Ayushman Bharat Health and Wellness Centres to 'Ayushman Arogya Mandir' with the tagline 'Arogyam Parmam Dhanam' has initiated a broader rebranding process in the health sector.

- This move has been followed by the National Medical Commission (NMC) modifying its logo, incorporating a colored image of Dhanvantari, a deity associated with Ayurveda in Hinduism, along with the word 'Bharat' above it.

- The National Medical Commission (NMC) has been established through legislation called the National Medical Commission Act, 2019, passed by the Parliament.

- Functioning as the principal authority overseeing medical education and practice in India, the NMC is dedicated to maintaining the utmost standards in healthcare education.

- Its primary objective is to guarantee the provision of high-quality medical education and training throughout the country.

Rebranding Initiative:

- The decision to rename Ayushman Bharat Health and Wellness Centres and modify the NMC logo has stirred discontent among doctors, leaders, and the public.

- Critics question the necessity of this exercise, particularly when the Department of Health and Family Welfare, with a budget allocation of around 2% of the total Central government expenditure for 2023-24, is undertaking a renaming process for the 1.16 lakh health centers across India.

Financial Allocation:

- The communication from the Centre to the States and Union Territories indicates that the proposed funds for renaming each health centre are ₹3,000.

- This has raised concerns about the utilization of resources and the priority given to such rebranding initiatives amidst broader health challenges.

Ayushman Bharat Centres' Objective:

- Ayushman Bharat Health and Wellness Centres aim to provide a comprehensive package of services, covering preventive, curative, rehabilitative, and palliative care for all age groups. The project receives 60% funding from the Centre and 40% from the States.

Secular Concerns:

- Doctors and activists argue that the inclusion of Dhanvantari in the logo embraces pseudoscientific beliefs associated with Ayurveda, raising questions about the secular nature of medical institutions. The move is seen as contrary to the principles of science and rationality.

National Medical Commission (NMC):

- The NMC, previously known as the Medical Council of India, is a 33-member regulatory body overseeing medical education in the country.

- The controversy surrounding its logo change adds to existing debates about its role and priorities in the healthcare sector.

Topic 44. GOVT ACTING AS CHANCELLOR NOT BOUND BY STATE ADVICE :SC

Important for the subject: Polity

Governors acting as Chancellor not bound by advice of ministers, says Supreme Court.

The **Supreme Court of India** ruled that **Governors, when acting as University Chancellors,** are **not obligated to follow the advice of the council of ministers**.

- The decision came as the **court invalidated the reappointment of Gopinath Ravindran as Vice-Chancellor of Kannur University.**
- The **three-judge bench, led by Chief Justice D Y Chandrachud**, emphasized that the **Chancellor and the State Government are distinct authorities according to statutes, and the Governor, as Chancellor, acts in a personal capacity**.

- The ruling stated that the **powers and duties exercised by the Governor as the University Chancellor have no connection** to those **performed as the Governor of the state**.

- The judgment **highlighted the principle that statutory powers** must be **executed by the designated body** or authority and **any delegation of such powers is considered an abdication of statutory mandate,** contrary to the rule of law.

- The **decision referred to a 1981 judgment** emphasizing the **Governor's independence in appointing/removing a Vice-Chancellor**, asserting that the **Governor, as the ex officio Chancellor,** is **not bound by the advice of the council of ministers in this context.**

What is the role of the Chancellor in public universities:

- **State public universities** are established through **laws passed by state legislatures.** In **most laws** the **Governor has been designated as the Chancellor** of these universities.

- The Chancellor f**unctions as the head of public universities**, and **ap**points the Vice-

Chancellor of the university. The Chancellor **can declare invalid, any university proceeding** which is not as per existing laws.

- The Chancellor also **presides over the convocation of the university, and confirms proposals for conferring honorary degrees**. (This is **different in Telangana**, where the **Chancellor is appointed by the state government**.)

- The Chancellor **presides over the meetings of various university bodies** (such as the **Court/Senate of the university**). The Court/Senate d**ecides on matters of general policy** related to the development of the university, such as:

- **Establishing new university departments, Conferring and withdrawing degrees and titles, and Instituting fellowships.**

Does the Governor have discretion in his capacity as Chancellor:

- In **1997, the Supreme Court of India** ruled that the **Governor is not bound by the advice of the Council of Ministers** when performing **duties related to a separate statutory office,** such as that of the Chancellor in educational institutions.

- The **Sarkaria and Puunchi Commissions**, which addressed the Governor's role in educational institutions, **agreed that the Governor is not legally obligated to follow the advice of the Council of Ministers** while carrying out statutory functions.

- Both commissions **suggested that it could be beneficial for the Governor to consult the relevant Minister** despite **not being bound by their advice**. The **Sarkaria Commission recommended that state legislatures should refrain from granting statutory powers to the Governor** beyond those envisioned by the Constitution.

- The **Punchhi Commission noted that the Governor's role as Chancellor may expose the office to controversies or public criticism**, advocating for limiting the Governor's role to constitutional provisions.

- The **West Bengal University Laws (Amendment) Bill, 2022 cites this recommendation from the Puunchi Commission in its Statement of Objects and Reasons.**

Topic 45. GOVERNOR CAN'T SEND RE-ADOPTED BILL TO PRESIDENT AFTER WITHHOLDING ASSENT: SC

Important for the subject: Polity

Governor can't send re-adopted Bill to President after withholding assent

The **Supreme Court of India has urged Tamil Nadu Governor R N Ravi** to engage with **Chief Minister M K Stalin and resolve the impasse** over the delay in clearing Bills sent to him by the Assembly. The **court emphasized that a Governor cannot refer a Bill for Presidential assent after it has been re-adopted or re-enacted by the Assembly**.

- The Chief Justice of India, **D Y Chandrachud, suggested that the Governor and Chief Minister sit down and resolve the issues**.

- The **court clarified that if the Governor withholds assent** to a Bill, **he must send it back to the Assembly** and cannot simply retain it.

- The **case involves the Tamil Nadu Governor** withholding **assent and not returning the Bills to the Assembly,** referring them to the President after the Assembly re-enacted them.

The court stated that the Governor has three options under Article 200:

- **Assent to the Bill, Withhold assent, Reserve the Bill for the President.**

- The court will further examine the matter in the next hearing.

What does the Constitution say:

- **Article 200** of the **Constitution outlines four options** available to a **Governor** when a legislature-passed Bill is presented for assent:

Grant assent immediately.

Withhold assent.

- **Return the Bill to the legislature, requesting reconsideration of the Bill or specific provisions.**

- **If the legislature reapproves the Bill**, **with or without accepting Governor-suggested amendments, the Governor is constitutionally obligated** to grant assent. Alternatively, the **Governor may reserve the Bill for the President's consideration.**

- In the **case of Presidential consideration** i.e **Article 201** the **decision to grant or withhold assent is made by the President.** Notably, **there is no specified timeframe for the President** to decide on the Bill's outcome.

Do Governors have discretion:

- **Governors did have a discretion** to **return Bills** before the **first provision in the draft Article 175 (now Article 200).**

- This was **amended by the Constituent Assembly in 1949.** The **first provision to Article 200** is thus a **saving clause and retains the discretion over the fate of the Bill** solely in the hands of the State Cabinet.

Article 163 makes it clear the Governor is not expected to act independently.

- The **Supreme Court in the Shamsher Singh case** verdict has held that a **Governor exercises all his powers** and **functions conferred on him** by or under the Constitution **on the aid and advice of his Council of Ministers** save in **spheres where the Governor is required by or under the Constitution to exercise his functions** in his

discretion.

- The **assent or return of the Bill does not involve the discretion** of individuals occupying the Governor's post.

Can a Governor in practice actually sit on a Bill forever:

- Granting assent to Bills is **among the limited areas where the Governor** has **discretionary powers**. However, the exercise of this discretion **must adhere to constitutional principles,** relying on compelling reasons rather than personal preferences.

- Notably, **Article 200** employs the term **"shall," suggesting that the Constitution framers intended a mandatory requirement** for Governors in this regard.

What were the recommendations of different commission:

- The **Sarkaria Commission (1987)** has **emphasized that the Governor's power** to reserve **Bills for the President's consideration** is a rare and implied discretionary authority, primarily applicable in cases of unconstitutionality.

- In all other instances, the **Governor should adhere to Article 200,** acting on **ministerial advice.** The commission **suggested that the President should resolve such Bills within a maximum of six months, communicating reasons for withholding assent** when possible.

- Despite r**ecommendations from the Punchhi Commission (2010)** to decide on Bills **within six months,** these proposals remain unimplemented.

What are various Supreme Court observations w.r.t Governor

Purushothaman Nambudiri vs State of Kerala (1962):

- The **Constitution Bench clarified** that **no specific time limit is imposed by the Constitution for the Governor** to **provide assent to Bills.** Emphasized that the **Governor must align actions with the will of the Legislature** and operate in harmony with their Council of Ministers.

- The **Supreme Court asserted that withholding assent to a law validly passed by the Legislature constitutes a direct attack on the federal structure** of the Constitution. Noting that **causing delays in assenting to Bills would be an arbitrary exercise, contradicting the constitutional spirit**.

Shamsher Singh vs State of Punjab (1974):

- A **7-judge Constitution Bench outlined** that the **President and Governor** should **exercise their formal constitutional powers** based on the **advice of their Ministers, with few well-known exceptions.**

Nabam Rebia case (2016):

- The **SC cited B R Ambedkar's observation**s, stating that the **Governor has no independent functions** to execute but **does have specific duties to perform,** urging recognition of this distinction by the House.

- Ruled that **Article 163 of the Constitution does not grant the Governor general discretionary power** to act against or **without the advice of the Council of Ministers.**

Rajiv Gandhi assassination case (2018):

- The **SC expressed dissatisfaction** with the **Governor's delay in taking action** on the **release of seven convicted prisoners**, citing a lapse of more than two years.

What are the other Constitutional Position related to Governor:

- **Article 153** of the Indian Constitution **mandates the appointment of a Governor** in each state. The **7th Amendment to the Constitution** however, **allows for the appointment of the same person as Governor of two or more states**.

- **Article 154:** The Governor shall have **executive power over the state,** which he shall **exercise either directly or through officers subordinate to him** in conformity with this Constitution.

- **Article 163:** There shall be a **council of ministers, led by the Chief Minister, to assist and advise the Governor** in the exercise of his powers, except when he is compelled to execute his **functions at his discretion.**

- **Article 164:** The **council of ministers is collectively responsible** to the state's legislative assembly. This provision is the **cornerstone of the state's parliamentary system** of governance.

- The **Governor has the same Executive, Legislative, Financial, and Judicial authorities as the President of India**.

- However, the Governor's power is restricted in several ways compared to that of the President, as the **Governor lacks the President's military, diplomatic, and emergency authorities.**

Topic 46. RETIRED JUDGES CONTROL ARBITRATION WITH A TIGHT FIST, NEED REFORM

Important for the subject: Polity

Retired judges are keeping country's arbitration system in a tight grip

Vice-President Jagdeep Dhankhar highlighted the **dominating influence of retired judges** in **India's arbitration space,** echoing Chief Justice DY Chandrachud's earlier remarks on the system resembling an "**Old Boys' club."**

- Dhankhar **called for necessary reforms**, including **potential legislation, emphasizing**

the need to diversify arbitrator appointments.

- He **commended CJI Chandrachud** for speaking out **against the dominance of retired judges**, acknowledging the **courage required to address the issue within his own fraternity.**

- Dhankhar **stressed the importance of a robust, fast, and effective arbitration system** amid **India's explosive economic growth**, emphasizing the **role of institutional arbitration** in ensuring **fair and conclusive dispute resolution**

What is Arbitration.

- Arbitration is a **form of alternative dispute resolution (ADR)** where **parties to a dispute agree to resolve** their differences outside of a court system.

- In arbitration, a **neutral third party, called an arbitrator,** is **appointed to hear the evidence presented by both parties** and make a **binding decision** that resolves the dispute.

What are the Mechanism for Arbitration in India.

- **Arbitration in India** is regulated by the **Arbitration and Conciliation Act, 1996.** The Act **draws inspiration from the 1985 UNCITRAL Model Law on International Commercial Arbitration and the UNCITRAL Arbitration Rules 1976.**

Legislative Amendment (2015):

- In 2015, t**he Arbitration and Conciliation (Amendment) Act was enacted** to enhance the arbitration process in India.

- Objectives **included expediting contract enforcement, facilitating** the recovery of **monetary claims, reducing court case pendency**, and accelerating dispute resolution through arbitration.

New Delhi International Arbitration Centre (NDIAC):

Established in 2019 under the **provisions of the NDIAC Act, 2019.**

- Aims to **improve the management of arbitration in India** by promoting institutional arbitration. Provides **state-of-the-art infrastructure** for arbitration proceedings.

International Centre for Alternative Dispute Resolution (ICADR):

- **Founded in 1995** to promote and **develop alternative dispute resolution (ADR) facilities and techniques.** Focuses on **facilitating early dispute resolution** and reducing the backlog of cases in the courts.

What are the Types of Arbitration in India.

- There are **two types of arbitration in India: Ad-hoc arbitration and Institutional**

arbitration.

Ad-hoc Arbitration

- It is a process where a **tribunal conducts arbitration** using either **pre-agreed rules or tribunal-laid rules,** in the **absence of any agreement** between the parties.

Institutional Arbitration

- Institutional arbitration refers to the **administration of arbitration by an institution in accordance** with its **rules of procedure.** The institution **provides appointment of arbitrators**, **case management services including oversight of the arbitral process**, venues for holding hearings, etc.

Topic 47. CENTRE APPOINTS RAKESH ASTHANA AND 6 OTHER AS NHRC SPECIAL MONITOR

Important for the subject: Polity

Center appoints Rakesh Asthana and 6 other as NHRC special monitor

The **Centre has appointed seven special monitors**, including former **Delhi police commissioner Rakesh Asthana**, for the **National Human Rights Commission (NHRC).**

- The order, **effective until September 22, 2025**, designates **Asthana to oversee thematic areas such as terrorism, counter-insurgency, communal riots, and Left-wing extremism.**

- Other appointees will focus on areas like cybercrime, artificial intelligence, environment, climate change, human rights, elementary education, literacy, water sanitation, public health, healthcare, mental health, HIV/AIDS, spurious drugs, diagnostics, labs, livelihood, skilling, and employment.

- **Asthana, a retired IPS officer** with diverse experience, previously **served in the CBI and faced controversy during a feud** with the agency's then director Alok Verma.

Some facts about NHRC:

- The National Human Rights Commission is a **statutory body established under the Protection of Human Rights Act, 1993.**

- The Commission is the **watchdog of human rights in the country**. The Commission is a **multi-member body** consisting of a **chairperson and five members.** The **chairperson should be a retired chief justice of India or a judge of the Supreme Court.**

- Members should be a **serving or retired judge of the Supreme Court, a serving or retired chief justice of a high court and three persons (out of which at least one should be a woman) having knowledge or practical experience with respect to human rights.**

- The **chairperson and members are appointed by the President** on the **recommendations of a six-member committe**e consisting of –

Prime Minister as its head

Speaker of the Lok Sabha

Deputy Chairman of the Rajya Sabha

Leaders of the Opposition in both the Houses of Parliament

Central Home Minister

- The chairperson and members are **appointed for the term of 3 years or till the age of 70** years, whichever is earlier. The chairperson and members are **eligible for reappointment.**

- The Commission also has **five Specialized Divisions i.e. Law Division, Investigation Division, Policy Research & Programmes Division, Training Division and Administration Division.**

Topic 48. HOW EC DECIDES POLL SCHEDULE AND WHY IT CHANGED MIZORAM'S COUNTING DATE

Important for the subject: Polity

How EC decides poll schedule and why it changed Mizoram's counting date

What does the Election Commission take into account while deciding the schedule for elections:

The **election schedule**, issued by the **Election Commission of India (ECI), encompasses the period** from the **gazette notification** issuance to the **conclusion of the election process.** The **critical dates for ordinary voters** are the **polling date(s)** and counting date.

The **ECI has the flexibility** to **announce elections within six months** after the **Lok Sabha or state Assembly term** concludes, as **outlined in Sections 14 and 15 of the Representation of the People Act, 1951**. The election process **must be completed before the existing term expires.**

- In **determining the election schedule,** the **ECI considers factors** such as the **availability and movement requirements** of **security forces, logistics for electronic voting machines (EVMs)** and poll officials, significant national and local festivals, and the prevailing law and order situation.

- When **multiple state Assemblies face term expiration simultaneously**, the **ECI aims to conduct elections concurrently.** Although polling may occur on different days, the vote counting **typically takes place** on the same day.

What happened in this current round of Assembly elections

- After **extensive oversight by Election Commission of India** (ECI) officials and the Election Commissioners themselves, the **election schedule for five states was announced on October 9.**

- **Mizoram** and approximately **half the seats in Chhattisgarh** were set for **voting on November 7**, while **Telangana was scheduled last** on November 30. Counting for all states was initially planned for December 3.

- While the **ECI ensured that Mizoram's voting** was **not scheduled** on a Sunday, considering a **significant number of electors attend church on that day**, counting for all states, including Mizoram, was initially slated for a Sunday.

- **Following multiple representations advocating against counting** on a Sunday, the **ECI decided on December 1** to **postpone the counting in Mizoram** by a day to **December 4**

Have counting dates for elections been shifted earlier:

- Yes, **changes in election dates** have occurred in **previous elections** as well, with the **Election Commission of India** (ECI) providing **various reasons** for such adjustments.

- In the **case of Mizoram**, during the **2013 Assembly elections**, the ECI initially declared that the counting of votes would take place on December 8, a Sunday. However, the **date was later revised to December 9, a Monday.**

- Similarly, in the **current round of elections**, the **polling date for Rajasthan was initially set for November 23.** However, just two days after the announcement, the **ECI modified the date to November 25.**

- The decision **was influenced by concerns** raised by **political parties and social organizations,** highlighting the **large-scale weddings and social engagements** scheduled for the **initially proposed date**, which **could inconvenience a significant number of people.**

Topic 49. SEC 6A OF CITIZENSHIP ACT

Important for the subject: Polity

Supreme court ask the government about how many availed Sec 6A of Citizenship Act.

The Supreme Court **inquired about the number of individuals who acquired citizenship under Section 6A of the Citizenship Act, 1955**, implemented after the Assam accord.

- This provision **allows individuals who arrived in Assam between January 1, 1966, and March 25, 1971**, from Bangladesh to apply for Indian citizenship.

- The court, **hearing challenges to the provision, highlighted the historical**

context, considering I**ndia's role in the creation** of Bangladesh during the war.

- The **Chief Justice noted that Section 6A** addresses **not just illegal immigration but a humanitarian aspect** connected to historical events.

- The petitioner **argued that the provision, by not protecting those arriving** after atrocities, may undermine democratic principles and the rule of law.

What is Section 6A of the Citizenship Act, 1955:

- **Section 6A** is a **special provision inserted into the 1955 Act** in furtherance of a **Memorandum of Settlement called the 'Assam Accord'** signed on **August 15, 1985** by the then **Rajiv Gandhi government with the leaders of the Assam Movement** to preserve and protect the Assamese culture, heritage, linguistic and social identity.

- **Under Section 6A**, foreigners who had entered Assam before January 1, 1966, and been "ordinarily resident" in the State, would have all the **rights and obligations of Indian citizens.** Those who had **entered the State between January 1, 1966 and March 25, 1971 would have the same rights and obligations except that they would not be able to vote for 10 years.**

What was Assam accord:

- The **Assam Accord was signed in 1985** between the **Union government and the All Assam Students' Union** at the **end of a 6-year-long agitation** against the influx of migrants from Bangladesh into the state.

- It determines **who is a foreigner in the state of Assam. Clause 5 of the Assam Accord** states that **January 1, 1966 shall serve as the base cut-off date for the detection and deletion of "foreigners"**.

- But it also contains **provisions for the regularization of those who arrived in the state after that date and up till March 24, 1971**.

Some facts about National Register of Citizens (NRC)

- N**ational Register of Citizens, 1951** is a **register prepared after the conduct of the Census of 1951** in respect of each village, **showing the houses or holdings in a serial order** and indicating against each house or holding the number and names of persons staying therein.

- The NRC was **published only once in 1951** and since then, **it has not been updated until 2019.**

- The **NRC of 1951 and the Electoral Roll of 1971 (up to midnight of 24 March 1971)** are together called **Legacy Data. Persons** and their **descendants whose names appeared in these documents are certified as Indian citizens.**

Topic 50. PANEL BEEN SETUP FOR GUIDELINES ON SEIZURE OF E DEVICES

Important for the subject: Polity

Panel being set up for guidelines on seizure of e-devices

The **Indian government** has **requested additional time to formulate** guidelines for i**nvestigative agencies** regarding the search and **seizure of electronic devices such as phones and laptops**.

- An Additional Solicitor General informed the court that a **committee is being established to address this matter,** and **guidelines will be developed**.

- The **court, expressing concern** over the delay, **emphasized the need for a resolution and urged the government to expedite the process.**

- The **case involves petitions** asserting that **current powers of investigative agencies lack regulation** in the context of search and **seizure of digital devices, emphasizing the absence of guidelines** regarding what can be seized and accessed, as well as the **protection of personal data**.

- The court has adjourned the hearing to December 14, expecting progress by then.

Topic 51. THE ROLE OF SPECIAL INQUIRY COMMITTEES OF PARLIAMENT

Important for the subject: Polity

Recently, the ethics committee of the Lok Sabha is believed to have recommended the **expulsion of a Trinamool Congress Member of Parliament (MP) from the Lok Sabha for her unethical conduct and breach of privileges**.

About ethics committee:

The ethics committee was constituted in 2000, to oversee the moral and ethical conduct of members and examine cases of 'unethical conduct' referred to it.

The Committee examines complaints filed against members of the House by:

- **other members; outsiders through a member; or referred by the Speaker.**

- The Committee makes a prima facie inquiry before deciding to examine a complaint and presents its report to the Speaker, who places it before the House for consideration.

- The **term 'unethical' is not defined.** It is left to the Committee to decide whether any act is unethical or not.

Role of Privileges committees:

- The **privileges committee or special inquiry committee examines the more serious accusations against a member.**

- In 1951, a special committee found a member guilty of promoting a business interest by putting questions in return for financial benefits.

- It was again a special committee that inquired into the 'cash for query' scam of 2005 where 10 MPs of Lok Sabha were recommended for expulsion.

How is an expulsion constitutional?

- The Constitution under Article 101 lists down the grounds for vacation of a seat by an MP.

- It **includes: voluntary resignation, disqualification and continuous absence from the House for 60 sittings.** Expulsion is not mentioned explicitly in the Constitution.

Supreme Court judgments in this regard:

- In Raja Ram Pal versus Hon'ble Speaker (2007), it upheld the power of Parliament to expel its members for breach of privilege by interpreting Article 101 to include expulsion as a ground.

- In Amarinder Singh versus Special committee, Punjab Vidhan Sabha (2010), the Supreme Court held expulsion by the State Assembly as unconstitutional.

Reconciliation of privileges of the House and democratic representation:

- The privileges of the House developed in medieval Britain to protect the House of Commons from an authoritarian King. It is **important to preserve the dignity and privilege of the House.**

- It is equally imperative to ensure that democratic representation is not prejudiced for political reasons.

- It must be noted that Parliamentary Committee proceedings are not as detailed as a judicial case that is conducted as per the Evidence Act.

- Even in this case, the ethics committee is believed to have recommended legal inquiry and the CBI has already registered a preliminary inquiry.

- It would be prudent to set up fast track courts to conduct trials for such cases in a time bound manner of say 60 days.

- If they are convicted in such a trial, it would **result in their disqualification under the Representation of the People Act, 1951.** Otherwise, they should continue to be a member of the House.

Topic 52. MOCHA AMONG 'MOST IMPACTFUL' GLOBAL CYCLONES IN 2023: WMO REPORT AT COP28

Important for the subject : Geography

Cyclone Mocha in the **Bay of Bengal** was **one of the most severe cyclones** in **2023 globally**, the **World Meteorological Organization (WMO)** has noted in its report released on the first day of the **CoP28 summit**.

Report title- **Provisional State of the Global Climate 2023**

Published by– **World Meteorological Organisation (WMO)**

Key findings of the report:

- **Tropical Cyclone Mocha**, in May 2023, was **one of the most intense cyclones ever** observed in the **Bay of Bengal,** reaching peak **10-minute sustained winds** of **115 kilometres per hour.**

- It triggered **1.7 million displacements** across the sub-region from **Sri Lanka** to **Myanmar** and through **India** and **Bangladesh**.

- **2023** is going to be the **"warmest year" ever recorded** surpassing the **previous joint warmest years**, **2016** at **1.29 ± 0.12 °C** above the **1850–1900** average and **2020** at **1.27±0.13 °C**.

- The **global mean near-surface temperature** in **2023** was around **1.40 ± 0.12 °C** above the **1850-1900** average.

- Observed concentrations of the **three main greenhouse gases** (warming gases) — **carbon dioxide, methane,** and **nitrous oxide** — reached record-high levels in 2022.

Topic 53. INDIA CLOSE TO SECURING LITHIUM RESERVES OVERSEAS

Important for the subject: Geography

The **Geological Survey of India (GSI)** has taken up **125 exploration projects** this year which is the highest ever. In **2023,** a list of **30 critical minerals** was announced by the **Ministry of Mines.**

- The list included lithium, cobalt, copper, graphite, molybdenum, nickel, platinum of elements, phosphorus, potash, Rare Earth Elements, silicon, tin, titanium, and tungsten. **Active lithium blocks in India- Salal-Haimna** in **Jammu & Kashmir,** and **Katghora** in **Chhattisgarh**.

Global lithium reserves:

- **Chile, Australia, Argentina, China, US** are a few of the countries in the world with

the **largest overall lithium reserves,** regardless of their stage of development.

- **Argentina, Bolivia,** and **Chile** make up the **"lithium triangle."** The **three countries,** along with **Peru**, contain about **67% of proven lithium reserves** and produce about **half of the global supply**, according to the U.S. Geological Survey.

- **Bolivia** is home to the **world's biggest lithium reserves**. With estimates of **21 million tonnes, Bolivia** holds about **one-quarter** of the entire global resource – including the **world's single-biggest lithium deposit,** the **Salar de Uyuni salt flat,** which is visible from space.

- **Argentina** has the **world's second-largest lithium reserves,** totalling around **17 million tonnes.** Like neighboringg **Bolivia** and **Chile,** these reserves are contained in vast **salt flats,** where the **solar evaporation of brine pools** is the technique used to extract it.

- The **Salar del Hombre Muerto salt flat** is a notable **lithium resource** in **Argentina. Chile** accounts for around **nine million tonnes of lithium reserves.** In **2021** by far **Chile** has the **world's largest mine reserves, totaling 8.6 million tonnes.**

- Although the **US** has the **world's fourth-largest lithium reserves,** measured at **6.8 million tonnes**, production activity in the country is minimal.

- **Australia** may only rank **fifth** on the list of largest overall reserves with **6.3 million tonnes**, but it was by far the **world's biggest lithium producer in 2019**. **China** is **sixth-placed** on the list, with overall **lithium reserves** estimated at **4.5 million tonnes**.

Topic 54. INDIA WILL BE LARGEST COTTON PRODUCER

Important for the subject: Geography

Indian textile industry working towards achieving $250 billion by 2030, including $100 billion in exports, says Textiles and Commerce Minister Piyush Goyal.

- India also inaugurates global cotton producing nations' meet; also introduces **'Kasturi Cotton Bharat', a 'blockchain traceable' textile brand**

- Cotton is one of the most important commercial crops cultivated in India and **accounts for around 25% of the total global cotton production.** India has the **largest area under cotton cultivation and is the second largest producer (after China).**

- It plays a major role in sustaining the livelihood of an estimated **6 million cotton farmers and 40-50 million people engaged in related activities such as cotton processing and trade.**

- The Indian Textile Industry consumes a diverse range of fibres and yarns and the ratio of use of cotton to non – cotton fibres in India are around 60:40 whereas it is 30:70 in the rest of the world.

- Apart from being the provider of a basic necessity of life i.e., clothing which is next only

to food, cotton is also one of the largest contributors to India's net foreign exchange by way of exports.

- The Indian textile industry is **working towards achieving $250 billion by 2030, including $ 100 billion export.** Due to its economic importance in India, it is also termed as "**White-Gold**".

- Also, India will provide leadership in cotton textiles and technical textiles. Technical textiles are man-made fabric meant for a specific function and are not generally used for apparel or aesthetic appeal.

What is the International Cotton Advisory Committee (ICAC)?

- It is an **association of governments of cotton producing, consuming and trading countries** which acts as the international commodity body for cotton and cotton textiles.

- Founded at the International Cotton Meeting in Washington, DC in 1939, the ICAC advocates for cotton producing nations, publishes studies and technical information on the cotton industry.

- While most of the world's cotton producing nations are members, **two of the ten largest producers (China and Turkmenistan) are not members of the ICAC.** The ICAC along with private sector cotton organisations initiated the International Forum for Cotton Promotion (IFCP) in 2000.

- The IFCP serves as a forum and clearinghouse for the exchange of proven cotton promotion techniques. The IFCP facilitates domestically focused and domestically funded cotton promotion programs

India's Efforts Towards Improving Cotton Productivity:

- **PM MITRA:** India has also launched PM MITRA- a Central government scheme to set up mega textile parks and promote the entire value chain.

- **The National Technical Textiles Mission:** It promotes research and development in technical textiles.

- **The "Kasturi Cotton Bharat" brand:** Which is claimed could be traceable using blockchain technology, and that it would be "carbon positive".

- **State-of-the-art testing laboratories:** The Textile Ministry and the Department of Consumer Affairs would open these labs nationwide to ensure that high quality textile products are manufactured and exported from India.

- **Drone-based pesticide spraying:** Indian cotton farmers will benefit from the technology, adding that the use of innovation and Internet of Things will benefit Indian cotton farmers.

Topic 55. A.P. BRACES FOR HEAVY RAINFALL AS MICHAUNG INTENSIFIES

Important for the subject: Geography

Cyclone Michaung is expected to cause heavy rains accompanied by winds clocking 90-100 kilometres per hour (kmph) at Andhra and Chennai coasts.

Cyclone Michaung:

- Cyclonic Storm **"MICHAUNG"** (pronounced as **MIGJAUM**) hs formed over the southwest Bay of Bengal. It is expected to pass through **Chennai** and make landfall on somewhere between **Machilipatnam** and **Nellore** (both in south Andhra Pradesh).

- **Areas impacted**– Chennai, Nellore, Machilipatnam, Vijayawada, Hyderabad and Warrangal.

- **Three rivers** (Cooum, Adyar and Kosasthalaiyar), **two major water courses** (Buckingham Canal and Otteri Nullah) and several **waterbodies** ('tanks') lie within or the vicinity of Chennai.

- It will become a **Severe Cyclonic Storm** with a **maximum sustained wind speed** of **90-100 kmph,** gusting to **110 kmph**.

Topic 56. MAPPING THE SOCIO-ECONOMIC CHANGES IN THE LOWER CAUVERY DELTA

Important for the subject: Geography

In **2018,** the **Foundation for Agrarian Studies** launched a project to study agrarian relations in the **lower Cauvery delta** with a special focus on **two villages**– **Palakurichi** and **Venmani.**

Both the villages are at the "tail-end" of the **Cauvery irrigation system,** and thus are deeply affected when there is a f**all in Cauvery water supply.**

The **lower Cauvery delta** was known for its **cultivation of rice** and **agricultural surplus**.

- During **Green Revolution**, the region changed from **single crop region** to a **double cropped region,** but again in **2018,** the region has changed into **single rice crop region.**

- The delta has **declined** as a **hub of rice cultivation** in the State, coinciding with the **fall in the availability of water,** caused mainly by changes in **water-sharing arrangements** for **cauvery river** between **Karnataka**, and **Tamil Nadu**.

- **Reasons for decline in crop production-** Uneven supply of water from the Cauvery, Agriculture and irrigation policy failure, crop unsuitablity, lack of modernisation of micro-irrigation system, events of drought and flood (due to cyclone Gaja).

- **Acute inequality persists** among the agricultural workers and landlords. The **largest class** in the villages is a **class of wage labour,** engaged in multiple agricultural and non-agricultural jobs.

Topic 57. WHY CYCLONE MICHAUNG HEADED TO ANDHRA COAST

Important for the subject: Geography

Cyclone Michaung, headed to the Andhra coast

Tropical Cyclone Michaung is anticipated to **make landfall on the Andhra Pradesh coast in Bapatla district, between Nellore and Machilipatnam**, on Tuesday morning (December 5), as confirmed by the I**ndia Meteorological Department**.

- The storm, **located approximately 80 km southeast of Nellore and 120 km north-northeast of Chennai** as of 5:30 pm on Monday, is **moving northward along the Andhra Pradesh coast**.

- Michaung has **already brought heavy rainfall to various regions in Tamil Nadu,** parts of Andhra Pradesh, and southern Odisha.

- The **occurrence of such a high-intensity cyclone in December is unusual,** as storms in the **North Indian Ocean during this period typically don't reach such destructive** intensities.

- Initially classified as a '**tropical cyclone,' Michaung was upgraded to the status of a 'severe' storm** on Sunday, featuring wind speeds ranging from 8**8 kph to 166 kph**—an uncommon intensification for December cyclones, **attributed to above-normal heat index values off** the southern Andhra Pradesh coast.

Some facts about Indian tropical storms:

- Climatologically, the **North Indian Ocean basin, encompassing the Bay of Bengal and the Arabian Sea,** experiences the development of **approximately five cyclones each year. Of these, an average of four cyclones develop over the Bay of Benga**l, while one

typically forms over the Arabian Sea.

- **Cyclones occurring in the Arabian Sea often achieve higher intensities**, posing an increased **risk of causing widespread damage.**

- The **North Indian Ocean basin is most susceptible to cyclone** development during the **pre-monsoon months (April-June) and post-monsoon months (October-December).**

- **Cyclones formed in May and November tend to reach higher intensities** compared to storms **originating at other times due to favorable ocean conditions.**

How are Cyclones Classified

- Cyclones are **classified on the basis of wind speed** by the Indian Meteorological Department

- **Depression:** Wind speeds of between **31–49 km/h**

- **Deep Depression**: Between **50-61 km/h**

- **Cyclonic Storm**: Between **62–88 km/h**

- **Severe Cyclonic Storm:** Between **89-117 Km/h**

- **Very Severe Cyclonic Storm:** Between **118-166 Km/h**

- **Extremely Severe Cyclonic Storm:** Between **167-221 Km/h**

Super Cyclonic Storm: **Above 222 Km/h**

How Storm intensification happen:

- Tropical cyclones are **fueled by ocean heat** in addition to other factors.

- **Ocean temperatures of 26 degrees Celsius** or more, prevailing at **depths between 50 metres and 100 metres,** are **conducive for cyclogenesis**, which refers to the processes that **lead to the development and strengthening of a cyclone.**

- **Warm oceans contribute to a cyclone's rapid intensification** while at sea. An **oceanographic parameter called the Tropical Cyclone Heat Potential (TCHP) is considered an important factor** in cyclone genesis, intensification, and propagation.

- The i**ntensification process of tropical cyclones** is a **complex phenomenon** influenced by **various favorable atmospheric conditions.**

- These **include boundary layers (the fluid layer adjacent to a bounding surface), wind shear (changes in wind direction and/or speed over a vertical or horizontal distance), convection (the transfer of heat within a fluid), Rossby waves (which occur in rotating fluids), upper ocean circulation, and air-sea interaction**.

- The **interaction of these factors contributes to the development and strengthening of**

tropical cyclones.

What is landfall of a cyclone:

- Landfall **occurs when a tropical cyclone moves** from a **position over water to coming onto land.**

- **According to the IMD, a tropical cyclone** is considered to **have made landfall when its center, or eye, crosses the coast.**

- The **"eye" of a cyclone is a zone of relatively calm weather** situated at the center of the storm, c**haracterized by light winds, clear or partly cloudy skies, and reduced precipitation.**

- **Within the eye, winds are gentle and variable,** often **accompanied by clear or partially cloudy skies**.

- The **size of the eye can vary widely, ranging** from a **few kilometers to over 50 kilometers in diameter** in larger cyclones.

- **During landfall,** the **outer bands of the storm may have already reached the coast, bringing strong winds, heavy rain, and storm surge.** Landfall **signifies the official moment when the cyclone reaches the land**.

- It's important to note that **landfall is distinct from a 'direct hit,' which occurs when the core of high winds (or eyewall) comes onshore** while the **center of the storm may remain offshore.**

- Cyclones **lose their intensity** once t**hey move over land** because of **sharp reduction of moisture supply and increase in surface friction.**

Topic 58. MOUNT MERAPI ERUPTION

Important for the subject: Geography

Locations of Selected Volcanoes of Indonesia

Some facts about Mount Merapi:

Mount Merapi is a **volcanic mountain peak located near the centre** of the **island of Java, Indonesia.**

It is **located on Sumatra**, the westernmost and **third largest of Indonesia's 18,000 islands.**

It stands **2,891m high.** Mount Marapi, which means **"Mountain of Fire"**, is among the **most active of Indonesia's 127 volcanoes** and is also popular among hikers.

The **Indonesian archipelago sits on the so-called Pacific Ring of Fire**, where the **meeting of continental plates** causes high volcanic and seismic activity.

Why do more volcanoes occur in Indonesia:

• **Indonesia is situated** within the **expansive Ring of Fire** encircling the **Pacific Ocean, comprising more than 17,000 islands** and islets, along with **nearly 130 active volcanoes**.

• Also known as the **Circum-Pacific Belt, the Ring of Fire** denotes a **pathway around the Pacific Ocean** marked by **active volcanoes and frequent seismic activity**.

• The **prevalence of volcanoes** and **earthquakes along** this belt is a consequence of intense tectonic plate movements in the region. At **many points along the Ring of Fire, tectonic plates** intersect at **convergent boundaries known as subduction zones**.

• In these zones, the **lower plate is forced downward**, or **subducted, by the upper plate.**

As the **rock undergoes subduction,** it **melts and transforms into magma**.

- The **abundance of magma** in **close proximity to the Earth's surface** creates **favorable conditions for volcanic activity.** A **noteworthy exception** occurs at the **boundary between the Pacific and North American Plates.**

- This **segment of the Ring of Fire functions as a transform boundary,** where plates **slide horizontally** past one another.

- Such **boundaries give rise to a substantial number of earthquakes** as tension in the Earth's crust accumulates and is subsequently released.

Some facts about volcanoes:

- Volcanoes are **openings, or vents where lava, tephra (small rocks)**, and **steam erupt onto the Earth's surface.** Volcanoes **can be on land and in the ocean.**

- They are, in part, a **result of their own eruptions** but also the general formation of our planet, as tectonic plates move.

Volcanoes can be classified as:

- **Active:** Have a **recent history** of eruptions

- **Dormant:** Have **not erupted for a long** time but may erupt in the future

- **Extinct:** Are **not expected to erupt in the future**

- There are **four main types of volcanoes: cinder cones, composite or strato volcanoes, shield volcanoes and lava domes.**

- Their type is **determined by how the lava from an eruption flows** and how that flow affects the volcano, and, as a result, how it affects its surrounding environment.

Topic 59. ELECTRIC- VEHICLE BOOM DRIVES MINER'S $100-M HUNT FOR NEW PALLADIUM USES

Important for the subject: Geography

Russia's MMC Norilsk Nickel is spending $100 Mn to find new uses for palladium as the electric-vehicle boom threatens the metal's crucial catalytic converter market.

Palladium:

- It is a **rare** and **lustrous silvery-white metal**.

- **Nornickel** mines about **40%** of the world's palladium. **Nornickel** is researching **new uses of palladium** in the **hydrogen, solar power** and **chemical sectors.**

- **South Africa** is the **leading producer** of palladium followed by **Russia, Canada, the USA** and **Zimbabwe**, while **Russia** is the leading exporter.

Deposits:

- **Ore deposits** of **palladium** are rare. It is mainly found in the **norite belt** of the **Bushveld Igneous Complex** covering the **Transvaal Basin** in **South Africa**, the **Stillwater Complex** in **Montana, United States;** the **Sudbury Basin** and **Thunder Bay** District of **Ontario, Canada,** and the **Norilsk Complex** in **Russia**.

- Recycling is also a source, mostly from **scrapped catalytic converters**.

Application:

- **80% of all palladium** ends up in **autocatalysts** that **curb emissions** in **automobiles,** but **electric vehiclesdo not** need a **pollution-controlling device**.

- As a **catalytic converter,** Palladium converts as much as **90%** of the **harmful gases** in **automobile exhaust** (hydrocarbons, carbon monoxide, and nitrogen dioxide) into **nontoxic substances** (nitrogen, carbon dioxide and water vapour).

- Palladium is also used in **electronics, dentistry, medicine, hydrogen purification, chemical applications, groundwater treatment,** and **jewellery.**

- Palladium is a **key component** of **fuel cells,** in which **hydrogen** and **oxygen** react to produce **electricity, heat,** and **water.**

New products:

- Palladium can be used as a catalyst in **hydrogen power systems,** and **solar power cells**, as a catalyst for the **synthesis of acids for biodegradable packaging,** as an **electrode for disinfecting water,** and in the **cosmetics industry**.

Topic 60. NAVY GETS READY FOR ITS BIGGEST NAVAL EXERCISE AMID OCEAN ENGAGEMENTS

Important for the subject: International Relations

Exercise MILAN:

Exercise Milan is a **biennial multilateral naval exercise** which began in **1995**. It is the **largest naval exercise** conducted by India.

- The next edition of **Exercise MILAN** is scheduled to be held in February 2024 and is expected to see the participation of over 50 countries. The last edition was held at **Vishakhapatnam, Andhra Pradesh.**

Navy Day:

- **Navy Day** is celebrated on **December 4**. This year, it will be celebrated at **Sindhudurg Fort** on the **western seaboard,** built in **1660** by **Chhatrapati Shivaji.** It is located **550**

km from **Mumbai** and about **135 km** from **naval station** at **Goa.**

- **December 4** is observed as **Navy Day** to commemorate the **Navy's daring attack on Karachi harbour** during the **1971 War** under **'Operation Trident'.**

Indian Naval Exercise and cooperation with other nation:

- Since **July 2022**, the **Indian Navy** has joined the **Bahrain-based Combined Maritime Force (CMF),** a **US-led multi-national naval partnership** that **aims** to promote security, stability, and prosperity across international waters in IOR.

- There are **17 multilateral** and **20 bilateral exercises** that the **Navy conducts annually** which exemplifies **India's commitment to maintaining strong defence ties.**

- These exercises are crucial for honing operational capabilities, sharing best practices, building mutual trust, fostering interoperability, strengthening diplomatic ties, and enhancing maritime security.

- **Indian-built Off-shore Patrol Vessels (OPV)** and **Fast Attack Craft (FAC)** are in service in **Mauritius, Seychelles** and **Sri Lanka,** facilitated th**rough defence Lines of Credit**. A fast **attack craft (FAC)** is a **small, fast, agile, offensive, often affordable warship** armed with **anti-ship missiles, gun** or **torpedoes**.

- **FACs** are usually **operated in close proximity to land** as they lack both the sea keeping and all-round defensive capabilities to survive in blue water.

- In **October 2020, India** gifted a **kilo-class Submarine INS Sindhuvir** which was extensively refitted and upgraded prior handing over, to **Myanmar** (renamed as **UMS Minye The in khathu**).

- **India** also gifted **Maldives** an **FAC** and a **landing craft**. **India** gifted an **operational Khukri-class corvette, INS Kirpan** to **Vietnam**.

Topic 61. HENRY KISSINGER

Important for the subject: International Relations

Henry Kissinger, dominant US diplomat of Cold War era, dies aged 100. Henry Kissinger, the **influential U.S. diplomat** known for his pivotal role in **Cold War-era diplomacy**, has **died at the age of 100**.

- **Born in Germany**, **Kissinger played a key part in opening diplomatic relations** between the **U.S. and China**, negotiating **arms control agreements with the Soviet Union,** and concluding the Vietnam War.
- Despite **being celebrated for his strategic brilliance**, Kissinger **faced criticism for supporting anti-communist** regimes, particularly in Latin America. He **served as national security adviser** and **secretary of state under Presidents Nixon and Ford.**

Some more facts about Henry Kissinger:

- **Heinz Alfred Kissinger,** born in **Germany in 1923** and later known as **Henry Kissinger, moved to the United States in 1938** to escape the **Nazi regime's persecution of Jews**.

- After **serving in the U.S. Army during World War II,** he **attended Harvard University** on a scholarship, eventually **earning a doctorate and staying on as a faculty member for 17 years.**

- Kissinger, an **influential figure in U.S. diplomacy**, worked as a **consultant to government agencies**, acting as an **intermediary for the State Department with North Vietnam in 1967**.

- With connections to **President Lyndon Johnson's administration,** he facilitated communication **about peace negotiations to the Nixon camp.** Nixon appointed him **national security adviser in 1968.**

- In **1973, Kissinger,** serving as **both national security adviser and secretary of state,** engaged in s**huttle diplomacy** to ease tensions in the **Arab-Israeli conflict,** leading to a **disengagement agreement between Israel and Syria in the Golan Heights**.

- In an effort to **counter Soviet influence**, **Kissinger initiated diplomatic relations** with China, c**ulminating in President Nixon's historic summit** with **Chairman Mao Zedong in 1972.** He was **awarded the Nobel Peace Prize** in **1973** for his efforts to **bring peace to Vietnam.**

Topic 62. WILL MYANMAR REBEL OFFENSIVE CHANGE EU APPROACH TO CONFLICT

Important for the subject: International Relations

A major offensive against Myanmar's military-run government by an alliance of three militias of ethnic minorities

What is the issue:

- Myanmar has been in flames ever since the military seized power on February 1, 2021. The **Ethnic Armed Organizations (EAOs) and People's Defence Forces (PDFs), armed civilian groups,** have **joined hands** against the **military, aligning with the self-declared National Unity Government** in exile.

- In intense clashes, **they successfully took control of two towns near the India-Myanmar border**, i.e. **Rikhawdar, close to Zokhawthar in Mizoram, and Khampat in Sagaing region,** around **60 km from Moreh in Manipur** causing a refugee influx into Mizoram.

- The recent conflict, **known as Operation 1027,** initiated by the **Three Brotherhood Alliance** on October 27 in **Shan State**, resulted in the capture of over 100 military outposts and crucial border towns.

The alliance is a front of three EAOs:

- **the Myanmar National Democratic Alliance Army (MNDAA), the Ta'ang National Liberation Army, and the Arakan Army.**

- **Chinshwehaw, a vital point** on the **China-Myanmar border t**rade route and a **key revenue source** for the junta, was among the seized locations.

- Simultaneously, **local resistance forces ignited fighting** in various parts of the country. **Khampat in Sagaing region** is also **part of the proposed India-Myanmar-Thailand trilateral highway project.**

- The recent offensive by the **"Three Brotherhood Alliance"** in Myanmar, composed of **three ethnic armed organizations,** known as **"Operation 1027,"** has **not led to a major shift in Western policy** towards the ongoing conflict, despite **reports suggesting it could be a turning point**

- Some observers suggest this offensive could be the **beginning of the end for the junta**, but Western governments are **taking a cautious "wait-and-see" approach.** The **National Unity Government (NUG)**, established after the coup, is trying to **garner support from ethnic armed organizations.**

- The EU stated it is **closely monitoring the situation, which could be a turning point, but it's too early to draw firm conclusions.**

What does the opposition want from the West:

- The **National Unity Government (NUG) of Myanmar** has been in communication with

the European Union (EU), updating them on the ongoing offensive against the military junta.

- The NUG previously i**ssued the "Prague Appeal,"** outlining its **vision for a post-war federal democracy** and urging the EU to recognize the NUG and evolving state governments as Myanmar's legitimate authorities.

- The EU has **responded with humanitarian aid, releasing around €68 million this year**, and imposing **seven rounds of sanctions targeting individuals and entities linked to the military junta.**

- The EU emphasizes the **need for an end to hostilities, respect for international humanitarian law,** and the creation of an inclusive and democratic federal governance system in Myanmar.

What comes next for Myanmar:

- **Concerns persist** regarding the **balance of power** within the **anti-junta movement in Myanmar,** particularly as much of the recent **fighting has been carried out by ethnic militias not formally aligned with the National Unity Governmen**t (NUG).

- While the European Union (EU) and European governments express support for inclusive dialogue i**nvolving all parties**, **including ethnic armed organizations (EAOs)**, un**certainty remains about how to engage** with these militias due to limited past contact.

- While no high-level meetings between the NUG and European officials are currently scheduled, the **NUG's foreign minister and representatives from some EAOs visited Lithuania** to meet local parliamentarians.

- An anonymous EU diplomatic source emphasized the **necessity of genuinely inclusive dialogue that involves both EAOs and the NUG.** The military junta's repression has consistently faced opposition, leading to concerns for the junta's stability.

Topic 63. U.S., U.K., AUSTRALIA DEFENSE CHIEFS TOUT DEEP SPACE RADAR AND AI IN JOINT DEAL

Important for the subject: International Relations

US, UK, Australia defense chiefs tout deep space radar, AI in joint deal

The **defense chiefs of the United States, Australia, and UK** convened in California to strengthen **their collaboration on deep space radar, AI, and quantum computing, focusing on enhancing their armed forces** against global threats, particularly from China.

- The **meeting in Silicon Valley** aimed to **build on the AUKUS partnership**, established in **September 2021**, to counter **assertiveness from Beijing and Moscow.**

- The discussions **included plans for a "Deep Space Advanced Radar Capability"** program, quantum technologies for **navigation and weapons direction, and resilient artificial intelligence for precision targeting**.

- The **collaboration underscores** a shared commitment to peace and security in the Indo-Pacific region.

What is AUKUS:

- AUKUS is a **trilateral security partnership** for the **Indo-Pacific**, between **Australia, the UK and the US (AUKUS) which was signed in 2021** that aims for **deeper cooperation in the IndoPacific** and **greater sharing of defence capabilities** within the alliance.

- Under the pact, **the US and the UK will help Australia to acquire nuclear-powered submarines,** though **not equipped with nuclear weapon**s. It also allows for **greater sharing of intelligence.**

- It **involves a new architecture of engagements** across e**merging technologies such as artificial intelligence, quantum technologies, cyber capabilities** and **additional undersea capabilities.**

Topic 64. CHINA AND VIETNAM WEIGH RAIL LINK THROUGH RARE EARTHS HEARTLAND

Important for the subject: International Relations

China and Vietnam are working on a possible significant upgrade of their underdeveloped rail links to boost a line that crosses Vietnam's rare earths heartland and reaches the country's top port in the north.

- The upgraded **railway would pass through the region where Vietnam has its largest deposits of rare earths,** of which China is by far the world's biggest refiner.
- Vietnam is trying to build its own industry in what is seen as a **possible challenge to China's dominance,** but what appear as internal fights have cast a shadow over these efforts.

- Chinese and Vietnamese rare earths industry experts last week discussed stronger cooperation on processing the minerals. It is unclear how much China would contribute to the upgraded railway track in Vietnam and whether Hanoi would accept sizeable financing from Beijing on this.

- The line could be seen as part of China's **flagship Belt and Road Initiative (BRI)** which is supporting infrastructure investment across the world, **but is not clear whether it would be labelled as a BRI project.**

- A strengthened railway link could also **boost Vietnam's export to China, mostly of**

agriculture products, boost Chinese tourism to northern Vietnam and further integrate the two countries' manufacturing industries, which experts already consider as symbiotic, with factories in Vietnam largely assembling components produced in China.

- **China is Vietnam's largest trading partner and so far this year is also the main investor,** taking into account investment from Hong Kong, as many Chinese companies move south some of their operations amid trade tensions between Beijing and Washington.

- Despite the booming economic links, the two communist nations are embroiled in a years-long maritime dispute in the South China Sea and fought a brief war in the late 70s, China's latest.

What are Rare Earth Metals?

- They are a set of **seventeen metallic elements**. These include the fifteen lanthanides on the periodic table in addition to scandium and yttrium that show similar physical and chemical properties to the lanthanides.

- The 17 Rare Earths are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).

- These **minerals have unique magnetic, luminescent, and electrochemical properties** and thus are used in many modern technologies, including consumer electronics, computers and networks, communications, health care, national defense, clean energy technologies etc.

Even futuristic technologies need these REEs.

- For example, high-temperature **superconductivity**, safe storage and transport of hydrogen for a post-hydrocarbon economy etc.

- They are called 'rare earth' because **earlier it was difficult to extract them from their oxides forms technologically.** They occur in many minerals but typically in **low concentrations to be refined in an economical manner.**

How China Monopolised Rare Earths?

- China has over time acquired **global domination of rare earths**, even at one point, it produced 90% of the rare earths the world needs.

- **Today, however, it has come down to 60% and the remaining is produced by other countries, including the Quad** (Australia, India, Japan and United States).

- Since 2010, when China curbed shipments of Rare Earths to Japan, the US, and Europe, production units have come up in Australia, and the US along with smaller units in Asia, Africa, and Latin America.

- Even so, the dominant share of processed Rare Earths lies with China.

What is India's Current Policy on Rare Earths?

- **Exploration in India has been conducted by the Bureau of Mines and the Department of Atomic Energy.** Mining and processing has been performed by some minor private players in the past, but is today concentrated in the hands of **IREL (India) Limited (formerly Indian Rare Earths Limited), a Public Sector Undertaking under the Department of Atomic Energy.**

- India has granted government corporations such as IREL a monopoly over the primary mineral that contains REEs: **monazite beach sand**, found in many coastal states.

- IREL produces rare earth oxides (low-cost, low-reward "upstream processes"), selling these to foreign firms that extract the metals and manufacture end products (high-cost, high-reward "downstream processes") elsewhere.

- IREL's focus is to provide thorium — extracted from monazite — to the Department of Atomic Energy.

What are the Related Steps taken?

Globally:

- The Multilateral **Minerals Security Partnership (MSP)** was announced in June 2022, with the goal of bringing together countries to build robust critical minerals supply chains needed for climate objectives.

- Involved in this partnership are the United States (US), Canada, Australia, Republic of Korea, Japan, and various European countries.

India is not included in the partnership.

By India:

- **Ministry of Mines** has **amended Mines and Minerals (Development and Regulation) (MMDR) Act, 1957** through the Mines and Minerals (Development and Regulation) Amendment Act, 2021 for giving boost to mineral production, improving ease of doing business in the country and increasing contribution of mineral production to Gross Domestic Product (GDP).

- The amendment act provides that no mine will be reserved for particular end-use.

What is the Belt and Road Initiative?

- The BRI, represents a multifaceted development strategy aimed at **enhancing global connectivity and cooperation.** It was launched in 2013 and aims to link Southeast Asia, Central Asia, the Gulf region, Africa and Europe with a network of land and sea routes.

- The project was first named the **'One Belt, One Road'** but renamed as the BRI to convey a more open and inclusive initiative as opposed to a Chinese-dominated one. The initiative includes two principal components: the Silk Road Economic Belt and the Maritime Silk Road.

Routes of BRI:

Silk Road Economic Belt:

- This segment of the BRI is dedicated to improving connectivity, infrastructure, and trade links across Eurasia through a network of overland transportation routes.

Maritime Silk Road:

- This component emphasizes **maritime connections and cooperation in the form of ports, shipping routes, and maritime infrastructure projects.**

- It begins via the South China Sea going towards Indo-China, South-East Asia and then around the Indian Ocean thus reaching Africa and Europe

Objective:

- The **primary goal of the BRI is to boost international connectivity by enhancing infrastructure, trade, and economic cooperation.**

- The initiative encompasses a wide range of projects, including railways, ports, highways, and energy infrastructure.

Topic 65. 1M1B ACTIVATE IMPACT SUMMIT

Important for the subject: International Relations

The **1M1B Activate Impact Summit**, organized by the **Department of Global Communications** in collaboration with the **NGO 1M1B** and supported by the **Civil Society Unit, DGC,** is an annual event **highlighting young change makers driving impactful initiatives aligned with the UN Sustainable Development Goals** (SDGs).

- In its **7th edition, the Summit features 45 young SDG champions** presenting **Rocket Pitches, engaging in Slam Poetry, and participating in discussions covering Technology for Social Impact**, **Community and Inclusivity, and Sustainability & Climate Action.**

- The **event aims to inspire global youth to actively contribute to the SDGs**. Additionally, the summit **gathers insights for the Summit of the Future 2024, focusing on AI, cyber safety, climate action,** and inclusive technologies.

Topic 66. UN BARS ALTERING GUYANA CONTROL OF TERRITORY

Important for the subject: International Relations

UN court bars Venezuela from altering Guyana's control over disputed territory. The **International Court of Justice (ICJ)** ordered **Venezuela to refrain from taking any action** that would **alter Guyana's control over** the disputed **Essequibo region**.

The ruling, while **not explicitly halting Venezuela's planned referendum** on the territory's future, stated that **Venezuela must avoid any action modifying the current situation in Essequibo**.

- Guyana had sought the **ICJ's intervention**, expressing concerns that the **referendum was a prelude to Venezuela** annexing the disputed territory.

- The ICJ's l**egally binding order will remain in place until a final decision** is reached in the case brought by Guyana against Venezuela, a process that could take years.

- Both countries interpreted the ruling as supporting their positions. Venezuela, **despite not recognizing the ICJ's jurisdiction, considered it a victory as the court did not halt the referendum plans**.

- Guyana **welcomed the decision, emphasizing that Venezuela is prohibited from annexing or trespassing upon Guyanese territory.**

- The **territorial dispute has a long history**, dating back to the **1899 border decision and**

exacerbated by oil and mineral resources in the region.

Some facts about ICJ:

- The **International Court of Justice (ICJ)** is the **principal judicial organ** of the United Nations (UN).

- It was **established in June 1945** by the Charter of the United Nations and began work in April 1946.

The seat of the Court is at the Peace Palace in **The Hague (Netherlands).**

- The Court's role is to settle, in accordance with international law, legal disputes submitted to it by States and to **give advisory opinions on legal questions** referred to it by authorized United Nations organs and specialized agencies.

- The ICJ has **15 judges who are elected to nine-year terms** by the **UN General Assembly and Security Council,** which **vote simultaneously** but separately. To be elected, a **candidate must receive a majority of the votes** in both bodies.

A third of the court is elected every three years.

- The **president and vice-president of the court** are **elected for three-year terms by secret ballot**. Judges are eligible for re-election.

Four Indians have been members of the ICJ so far.

- **Justice Dalveer Bhandari, former judge of the Supreme Court,** has been serving at the **ICJ since 2012**. Others being **R S Pathak (1989-91), Nagendra Singh (1973-88), Sir Benegal Rau (1952-53).**

- It is **assisted by a Registry,** its administrative organ. Its official languages are English and French

India at the ICJ:

- India has been a party to a case at the ICJ on **six occasions, four of which have involved Pakistan.**

They are:

- **Right of Passage over Indian Territory** (**Portugal v. India, culminated 1960); Appeal Relating to the Jurisdiction of the ICAO** Council (India v. Pakistan, culminated 1972);

- **Trial of Pakistani Prisoners of War** (Pakistan v. India, culminated 1973); Aerial Incident of 10 August 1999 (Pakistan v. India, culminated 2000);

- **Obligations concerning Negotiations relating to Cessation of the Nuclear Arms Race and to Nuclear Disarmament** (**Marshall Islands v. India, culminated 2016) Kulbhushan Jadhav** (India v. Pakistan, culminated 2019).

Some Facts about Guyana:

- The **Co-operative Republic of Guyana,** is a **country on the northern mainland of South America**. Guyana is an **indigenous word which means "Land of Many Waters"**. The **capital city is Georgetown**.

- Guyana is **bordered by the Atlantic Ocean to the north, Brazil to the south and southwest, Venezuela to the west, and Suriname to the east.** Guyana is the **third smallest country** in mainland South America.

Topic 67. NAVY RANK TO BE RENAMED IN LINE WITH INDIAN TRADITION

Important for the subject: History

Navy Day function at Sindhudurg Fort

Prime Minister Narendra **Modi announced the decision to rename ranks in the Indian Navy to reflect Indian culture**, erasing colonial military lineage.

- During the **Navy Day function at Sindhudurg Fort** in Maharashtra, PM Modi stated that the **epaulettes worn by Naval officers would now carry the symbol of Shivaji Maharaj's army**. He congratulated the **Navy for appointing the country's first woman commanding officer on a naval ship**.

- The PM **emphasized the nation's move towards self-reliance** and praised Chhatrapati **Shivaji Maharaj's legacy,** stating that the new epaulettes would carry the symbol of Shivaji Maharaj's army.

- Defence Minister **Rajnath Singh called the unveiling of Shivaji Maharaj's statue a moment of privilege**, highlighting Shivaji's recognition of the relevance of the Navy.

- Indian Navy Chief Admiral R Hari Kumar **acknowledged Shivaji's foresight** in investing in **sea power and mentioned the new insignia** inspired by Shivaji Maharaj's royal seal.

Some facts about Chola Navy

- The Chola navy was **known for its innovative shipbuilding techniques and advancements in naval warfare.**

- They developed **specialized warships with multiple decks, powerful catapults, and effective incendiary weapons.**

Several Chola kings emerged as skilled naval commanders, including:

- **Aditya Chola I (871-907 CE):** Expanded the Chola navy and **initiated naval raids against neighboring kingdoms.**

- **Rajaraja Chola I (985-1014 CE):** Established **Chola dominance over the**

seas, **defeating the Sri Lankan navy** and launching expeditions to Southeast Asia.

- **Rajendra Chola I** (**1014-1044 CE**): Conquered the **kingdom of Srivijaya in present-day Indonesia**, marking the **Chola navy's peak power.**

Some of famous Chola Ports are:

- **Poompuhar:** Situated on the **Kaveri River Delta,** Poompuhar was the **oldest and most prominent Chola port**. It served as a **major trading hub, connecting India with Southeast Asia and the Mediterranean.**

- **Nagapattinam:** Located on the **Bay of Bengal**, Nagapattinam was another major port and a strategic location for Chola naval operations. It provided **access to maritime routes and facilitated trade** with neighboring kingdoms.

- **Kulachal**: Situated on the **Malabar Coast**, Kulachal was a significant trading hub and a **gateway to the Indian Ocean**. It was particularly important for **spice trade with Southeast Asia.**

- **Korkai:** Located on the **Vaigai River**, Korkai was an early and important Chola port. It served as a **center for maritime trade and cultural exchange** with the Roman Empire.

- **Kadalur**: Situated on the **Pennar River**, Kadalur was a **strategic port and a base for Chola naval operations** in the lower reaches of the river. It played a role in controlling the trade routes in the region.

- **Thoothukudi:** Located on the **shores of the Palk Strait,** Thoothukudi was a **bustling port and a major center for trade** and shipbuilding. It facilitated **maritime connections with the Sri Lankan subcontinent.**

Some facts about Maratha Navy

- **Chhatrapati Shivaji Maharaj** put great **emphasis on sea-faring prowess**, and laid the foundations of a modern naval force in the **17th century.**

- Shivaji's strategic thought ensured that a **strong naval presence was established along the Konkan coast** to protect the **sea trade of the Maratha empire.**

- As per an Indian Navy document, Shivaji **built ships in towns such as Kalyan, Bhivandi, and Goa,** both for trade and to establish a fighting navy. "He also **built a number of sea forts** and **bases for repair,** storage and shelter.

- Shivaji f**ought many lengthy battles with Siddis of Janjira on coastline**. The fleet grew to reportedly 160 to 700 merchant, support and fighting vessels. He **started trading with foreigners on his own after possession of eight or nine ports in the Deccan,**

- His fleet was **equipped with ghurabs (gunboats) and gallivats (row boats).** The Maratha Navy was **primarily a coastal "green water" navy**, compared to an ocean-going or "blue water" navy.

- Their **ships were dependent on land/sea breezes.** The Maratha did not build ships large enough to engage the British out at sea far from the coastal waters

Some of Notable Commanders and Victories of Marathas:

- **Kanhoji Angre**, the renowned **Maratha admiral,** played a crucial role in expanding the navy's power and establishing its supremacy in the Konkan region.

- The Maratha Navy **inflicted significant defeats on the Portuguese, Siddis of Janjira,** and the **English East India Company**, challenging their dominance in the region.

- Their v**ictories, such as the Battle of Colaba (1662) and the Battle of Vishakhapatnam (1719),** demonstrated their prowess and established their reputation as a formidable naval force.

Some of the famous ports were:

- **Kalyan, Ratnagiri, Khanderi, Colaba** along the Konkan coast and **Golrah, Harishpur, Bishenpur, and Manikpatna**: along the Odisha coast

Topic 68. DHANWANTRI IMAGE IN IMC LOGO

Important for the subject: History

Dhanwantri image in IMC logo. Why doctor protesting

The **logo of the National Medical Commission**, featuring a **colorful depiction of the physician god Dhanvantri,** has faced criticism **from doctors, prompting the Indian Medical Association** to **call for "corrective steps."**

- The IMA **expressed concerns** about the **neutrality of the logo**, emphasizing that s**ymbols of national institutions** should be inclusive and avoid causing grievances among different sections of society.

- NMC officials **defended the logo, noting that the image of Dhanvantri** had always been part of it, albeit in a dark silhouette. The new logo **adds color to the image and replaces 'India' with 'Bharat'.**

- The officials pointed out that the **use of mythological symbols, such as the Caduceus in Greek mythology,** is not uncommon in medical logos. Officials clarified that **Dhanvantri had always been part of the logo, even though the logo was officially adopted in 2022 when the NMC took over from the Medical Council of India in 2020**.

Who was Dhanvantari

- **Lord Dhanvantari** holds a significant role in Ayurveda's history, revered as the **physician of the Gods** and a skilled surgeon.

- In Hinduism, **worshipers seek his blessings for effective healing**. Legend has it that, **as the king of Kashi i.eDivodasa,, Dhanvantari taught the science of Ayurveda to sages**, including the r**enowned surgeon Susruta.**

- Dhanvantari recasted**Brahma's Ayurveda into 8 divisions**i.e**shalya, shalakya, kayachikitsa, bhutavidya, kaumarabhrtya, agadatantra, rasayanatantra, vajikaranatantra** and began teaching within the **framework of pratyaksa (perception), agama (authoritative scripture), anumana (inference) and upamana (analogy).**

- He is also considered an **avatar of Vishnu**, and a well-known tale depicts him **emerging from the churning ocean with a bowl of nectar** during the quest for the elixir of life.

- In the context of Ayurveda, **physicians of the School of Atreya** were known to **refer surgical cases to practitioners from the School of Dhanvantari**

What is the meaning of the name:

- The **term "dhanus"** is a **symbolic representation** indicating the **science of surgery, and Dhanvantari,** having **mastered it, is associated** with this knowledge.

- The word "**dhanvan" is linked to the concept of a desert,** as seen in **RigVeda [V.36.1], where "dhanvachara"** signifies **someone moving in a desert.** This aligns with a **Vedic mantra expressing Lord Vishnu** as akin to a **place in the desert where water is provided to travelers** (**dhanvanivaprapaasi).**

- Therefore, **Dhanvantari, as the incarnation of Lord Vishnu** holding a **pot of nectar, symbolizes a nourishing oasis in the desert of worldly existence.**

What is the story of Dhanvantari:

- **Lord Dhanvantari** is prominently **featured in the Bhagavata Purana**, **emerging** from the **Ocean of Milk** during the **churning episode** known as **Samudra Mathana**.

- As the Devas and Asuras churned the ocean using the **Mandara mountain and Vasuki, Dhanvantari appeared holding the pot of amrita (nectar)**.

- This nectar was eventually **seized by the Asuras**, leading to the intervention of another avatar, Mohini, who reclaimed it.

- **Dhanvantari is revered** as the **father of Ayurveda,** and according to the **Charaka Samhita,** Ayurvedic knowledge is eternal, revealed in each cycle of the universe's creation. **Lord Vishnu, when required, incarnates as Dhanvantari to reintroduce Ayurveda and alleviate human suffering.**

- The **churning of the ocean of milk**, a significant episode **symbolizing spiritual endeavor for Self-realization**, involves various divine interventions. Lord Dhanvantari **emerged during this process,** personifying the d**ivine source of Ayurvedic wisdom.**

- The subsequent events included the appearance of the **deadly poison (halahala),**

consumed by Lord Shiva, and the **ultimate manifestation of Lord Dhanvantari holding the coveted pot of ambrosia.**

- The **demons, driven** by **greed, engaged in quarrels** over the **nectar pot, leading to Lord Vishnu's trickery**.

- He assumed the **form of Mohini,** a captivating woman who successfully recovered the nectar from the demons and **distributed it exclusively to the demigods**. This revitalized the demigods, enabling them to triumph over the demons.

- **Lord Vishnu had prophesied Dhanvantari's reappearance** to teach the science of Ayurveda. True to the prophecy, **Dhanvantari descended at the plea of Lord Indra,** who **witnessed the afflictions of humanity.**

- The scriptures **emphasize that remembering Dhanvantari's** name can provide relief from all diseases.

- **King Dirghatamas of Kashi** earnestly **performed austerities** to please **Lord Dhanvantari**, seeking the boon of a son.

- Pleased with the king's devotion, **Dhanvantari was born in the royal household of Kashi.**

- He **orally imparted the wisdom of Ayurveda** to sages and rishis, whose disciples later recorded these teachings in the **Agni Purana.**

- Dhanvantari's legacy **endured through disciples** like **Susruta, Pauskalavata, Aurabha, and Vaitarana.**

Topic 69. GARBA DANCE OF GUJARAT MAKES IT TO UNESCO LIST

Important for the subject: History

Gujarat's traditional dance form, "Garba," has been added to the UNESCO Intangible Cultural Heritage list, becoming the **15th cultural element from India** to receive this recognition.

- Garba is a **traditional dance form from Gujarat,** India, primarily performed during the Navratri festival to **worship the Hindu goddess Durga.**

- **Origins:** The term "Garba" comes from "Garbha" (womb) and "Deep" (lamp).The dance is performed around a central lamp or a representation of the Goddess, symbolizing life, death, and rebirth.

- **Nature of Dance:** Garba is characterized by energetic, circular movements, clapping hands, and intricate footwork, reflecting the cyclical nature of life.

- **Music and Instruments:** The dance is accompanied by rhythmic music, traditionally using instruments like the dhol (drum), harmonium, and flute, with modern adaptations

including electronic instruments.

- **Traditional Attire:** Women wear a chaniya choli (a colorful, embroidered skirt set) and men don a kediyu and dhoti or pajama, often embellished with mirrors and embroidery.

- **Inclusivity and Community Aspect:** The dance is inclusive, attracting people of all ages and backgrounds, and emphasizing community participation.

- **Dandiya Raas Association:** Garba is often followed by Dandiya Raas, another dance form using sticks (dandiyas), especially after the Aarti (worship ritual).

India's ICH on the UNESCO list

- **Sangeet Natak Akademi is the nodal organisation** which looks after this function, and files nominations of intangible cultural entities from India, for evaluation by the international body.

- ICG from India include **Kolkata's Durga Puja (2021), Kumbh Mela** (2017), **Navroz** (2016), **Yoga** (2016), **traditional brass and copper craft of utensil-making** among coppersmiths of Punjab (2014), **Sankirtana**, a ritual musical performance of Manipur (2013), and the **Buddhist chanting of Ladakh** (2012).

- Before 2011, the list included **Chhau dance, Kalbelia folk songs and dance of Rajasthan, and Mudiyettu,** a dance drama from Kerala (2010), **Ramman**, a religious festival and theatre performance of Garhwal in the Himalayas (2009), and **Kutiyattam or Sanskrittheatre, and Vedic chanting (2008).**

- **Ramlila, a traditional performance of Ramayana, was also included in 2008**.

What is UNESCO Intangible Cultural Heritage (ICH) ?

- ICH means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artifacts and cultural spaces associated with them that communities, groups and, in some cases, individuals recognize as a part of their cultural heritage.

- Furthermore, its importance is not in the **cultural manifestation itself**, but in the wealth of knowledge, know-how and skills that are transmitted from one generation to the next.

- The **adoption of the Convention for the Safeguarding of the ICH by the General Conference of UNESCO in 2003** was a crucial step towards preserving intangible heritage.

- UNESCO's list of Intangible Cultural Heritage of Humanity was established in the year 2008.

Criteria for the selection

- There are three criteria for an intangible cultural heritage to be inscribed in the United Nations list.

The entity must-

- Be **recognized by communities**, groups and, in some cases, individuals as part of their cultural heritage.

- Be **transmitted from generation to generation** and be constantly recreated by communities and groups in response to their environment, their interaction with nature and their history.

- **Provide them with a sense of identity and continuity**, thus promoting respect for cultural diversity and human creativity.

Topic 70. WORLD BANK RECALLS PAPER ON DECLINE IN TOILET USAGE IN INDIA

Important for the subject: Government Schemes

World Bank published a departmental working paper highlighting the "**most concerning" trend of toilet usage declining in rural India since 2018** despite early gains of the Swachh Bharat Mission-Gramin.

What is Swachh Bharat Mission Grameen (SBM-G)?

- It was **launched in 2014 by the Ministry of Jal Shakti** to accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation.

- The mission was implemented as a nation-wide campaign/Janandolan which aimed at eliminating open defecation in rural areas.

Swachh Bharat Mission (G) Phase-I:

- The rural sanitation coverage in the country at the time of launch of SBM (G) on 2nd October, 2014 was reported as 38.7%.

- More than 10 crore individual toilets have been constructed since the launch of the mission, as a result, rural areas in all the States have declared themselves ODF as on 2nd October, 2019.

SBM(G) Phase-II:

- It emphasizes the sustainability of achievements under phase I and **to provide adequate facilities for Solid/Liquid & plastic Waste Management (SLWM) in rural India.**

- It will be implemented from 2020-21 to 2024-25 in a mission mode with a total outlay of Rs. 1,40,881 crores.

- The SLWM component of ODF Plus will be monitored on the basis of **output-outcome indicators for 4 key areas:**

- **Plastic waste management, Biodegradable solid waste management (including**

animal waste management), Greywater (Household Wastewater) managemen, Fecal sludge management.

Top Performing States:

- The top five performing states are **Telangana, Tamil Nadu, Odisha, Uttar Pradesh and Himachal Pradesh** where maximum number of villages have been declared as ODF Plus.

What is the Significance of Swachh Bharat Mission?

- It will continue to generate employment and provide impetus to the rural economy through construction of household toilets and community toilets, as well as infrastructure for SLWM such as compost pits, soak pits, waste stabilisation ponds, material recovery facilities etc.

- It will also help rural India effectively handle the challenge of solid and liquid waste management and will help in substantial improvement in the health of the villagers in the country.

What is Open Defecation Free Status?

- **ODF:** An area can be notified or declared as ODF if at any point of the day, **not even a single person is found defecating in the open.**

- **ODF+:** This status is given if at any point of the day, **not a single person is found defecating and/or urinating in the open, and all community and public toilets are functional and well maintained.**

- **ODF++:** This status is given if the area is **already ODF+ and the faecal sludge/septage and sewage are safely managed and treated, with no discharging or dumping of untreated faecal sludge and sewage into the open drains, water bodies or areas**

What are the Schemes as part of SBM?

- **GOBAR-DHAN (Galvanizing Organic Bio-Agro Resources) Scheme:** Launched by the **Ministry of Jal Shakti in 2018** and aims to **augment income of farmers by converting biodegradable waste into compressed biogas (CBG).**

- **Individual Household Latrines (IHHL):** Individuals get around **15 thousand for the construction of toilets.**

- **Swachh Vidyalaya Abhiyan:** The **Ministry of Education launched** the Swachh Vidyalaya Programme with an **objective to provide separate toilets for boys and girls in all government schools within one year.**

Topic 71. AFTER COVID BREAK, CENTRE APPROVES FOURTH PHASE ROLL-OUT OF GIAN SCHEME

Important for the subject: Government schemes

Centre approves fourth phase roll-out of GIAN scheme

Eight years after its launch and a **brief discontinuation during the COVID period**, the **Ministry of Education** is set to resume the **fourth phase of the Global Initiative of Academic Networks (GIAN)**.

- This initiative, **spearheaded by Prime Minister Narendra Modi, aims to bring distinguished scholars from around the world** to **teach at Indian universities.**

- The government has **allocated a substantial amount, approximately ₹126 crore,** for **foreign faculty's travel expenses and honorarium**.

- Notable experts, including **indologist David Shulman and cell biologist Bhanu Pratap Jena,** have participated. The **National Institute of Educational Planning and Administration (NIEPA)** has **recommended the program's continuation** after evaluation.

- Of the **2,101 approved courses, 1,772 have been delivered**, involving 1,612 foreign faculty members **from 59 countries**.

- Phase **four applications began in July 2023** after a two-year hiatus due to COVID. The **majority of courses were conducted at IIT and NIT campuses**, prompting a call for greater involvement in state universities and smaller colleges.

- The **U.S. contributed 41.4% of visiting academicians, benefitting approximately 72,000 Indian students.**

- The **Ministry of Education** is emphasizing the **inclusion of video recordings and webcasting** in the approval process for **phase four,** with **plans to create a repository of GIAN lectures** accessible to universities across India as a teaching and assessment tool.

  Some facts about Global Initiative of Academic Networks (GIAN):

- Global Initiative of Academic Networks (GIAN) in Higher Education was **launched in 2015.**

- It is a **program of the Ministry of Education**. An **honorarium is paid to the foreign experts** to **cover their travels and other expenses. Short term courses** are c**onducted by these experts/faculties** in Indian Institutions.

- This programme was **first launched to establish** collaboration **between India and The United States of America,** but later, the scope of the programme was extended.

- The duration of courses differ for different courses. The **minimum duration is one week**

and the maximum duration is 3 weeks.

- A **lump-sum amount of up to US$ 8000** for **12 to 14 hours** of contact and up to US$ 1**2000 for 20 to 28 hours** of contact can be **paid to the foreign experts covering their travel and honorarium.**

- Up to **41.4% (668) of academicians who visited India belonged to the U.S. The rest consisted of experts from the U.K. (143), Germany (93), Canada (89)** trends, typologies and developments.

Topic 72. ₹930 CRORE SAVED FROM BEING SIPHONED OFF IN FINANCIAL FRAUDS

Important for the subject: Schemes

930 crore saved from being siphoned off in financial frauds. The **Ministry of Home Affairs reported that the timely action** against over **3.80 lakh complaints through the 'Citizen Financial Cyber Fraud Reporting and Management System' saved ₹930 crore** from being **siphoned off in financial frauds.**

- The system is **part of the 'Indian Cyber Crime Coordination Centre (I4C)' initiative.**

- Additionally, the MHA informed that more than **2.45 lakh SIM cards and 42,000 IMEIs reported by police** from different states have been **blocked by the Central government. The National Cyber Forensics Laboratory (Investigation),** established under **I4C,** has provided services in around 8,840 cyber forensics cases.

- The MHA has also **provided financial assistance of ₹122.24 crore under the 'Cyber Crime Prevention against Women and Children (CCPWC)' Scheme** to states and union territories for capacity building.

- The public **can report cyber offenses**, particularly those **against women and children, on the 'National Cyber Crime Reporting Portal. Seven Joint Cyber Coordination Teams (JCCTs)** have been established **under I4C to enhance coordination among law enforcement agencies.**

What is Cyber crime

- It is **unlawful acts wherein the computer** is either a tool or a target or both. Cyber crimes can involve criminal activities that are traditional in nature, such as theft, f**raud, forgery, defamation and mischief,** all of which are Important for the subject to the Indian Penal Code.

Cyber crimes are of two type:

- **Computer as a Target:**-using a **computer to attack other computers**–e.g. Hacking,Virus/Worm attacks,DOS attack etc. **Computer as a weapon:**-using a **computer to commit real world crimes**–e.g. Cyber Terrorism, IPR violations, Credit

card frauds, EFT frauds, Pornography etc.

What are the Cyber crime control regime in India

- **Information Technology Act 2000** is the **main law connected with cyber security** in India.

- **Section 65** – **Tampering with computer** Source Document

- **Section 66** – **Using password of another person**

- **Section 66D** – **Cheating** Using computer resource

- **Section 66E** – **Publishing private Images** of Others

- **Section 66F** – Acts of **cyber Terrorism**

- **Section 67** – Publishing **Child Porn** or predating children online

- **Section 69** – **Govt.'s Power to block websites**

- **Section 43A** – **Data protection at Corporate level**

- A c**ybercrime complaint can be filed using the National Crime Reporting Portal of India-**This portal is an initiative of the Government of India to facilitate victims/ complainants to report cybercrime complaints online.

What is Indian Computer Emergency Response Team (CERT-IN or ICERT)

- The Indian Computer Emergency Response Team (CERT-IN or ICERT) is an office **within the Ministry of Electronics and Information Technology o**f the Government of India.

- CERT-In is the **national nodal agency** for responding to **computer security incidents as and when they occur.** CERT-In has been **operational since January 2004 and** has been **designated to serve as the national agency** to perform the following functions in the area of cyber security:

- **Collection, analysis and dissemination** of information on cyber incidents. Forecast and alerts of cyber security incidents. Emergency measures for handling cyber security incidents. Coordination of cyber incident response activities.

- CERT-IN has **overlapping responsibilities** with other agencies such as **National Critical Information Infrastructure Protection Centre (NCIIPC). Indian Penal Code, 1860 is also used to book criminals connected with cybercrimes.** India also has a **cyber security policy.**

What are the Government Initiatives to Cope with Cyber Crimes in India

Indian Cyber Crime Coordination Centre (I4C):

- **Coordinates nationwide efforts** to combat various forms of cyber-crime.

National Cyber Forensic Laboratory:

- Offers **early-stage cyber forensic suppor**t to Investigating Officers **from all State/UT Police through online and offline modes.**

CyTrain Portal:

- A **Massive Open Online Courses (MOOC) platform** designed for the capacity building of police officers, judicial officers, and prosecutors.

- **Focuses on critical aspects of cyber-crime investigation, forensics, and prosecution.**

National Cyber Crime Reporting Portal:

- A **platform allowing the public to report cyber-crime incidents**, with special attention to crimes against women and children.

Citizen Financial Cyber Fraud Reporting and Management System:

- Enables **immediate reporting of financial frauds.** Assists in **lodging online cyber complaints** through a toll-free helpline.

Cybercrime Prevention against Women and Children (CCPWC) Scheme:

- Provides **financial assistance to States/UTs** to enhance the **capabilities of Law Enforcement Agencies in investigating cyber-crimes.**

Joint Cyber Coordination Teams:

- Established to **improve coordination among Law Enforcement Agencie**s in States/UTs, particularly in areas with multi-jurisdictional issues related to cyber-crimes.

Central Assistance for Modernization of Police:

- Offers **financial support to States/UTs for the acquisition of modern weaponry, advanced communication/forensic equipment**, and cyber policing equipment.

Cyber Surakshit Bharat Initiative:

- MeitY in collaboration with National e-Governance Division (NeGD) came up with this initiative in **2018 to build a cyber-resilient IT set up**.

National Critical Information Infrastructure Protection Centre (NCIIPC)

- To battle **cyber security threats** in strategic areas such as air control, nuclear and space. It will **function under the National Technical Research Organisation,** a technical **intelligence gathering agency** controlled directly **by the National Security Adviser in PMO.**

Topic 73. SHARP DECLINE IN FDI INTO INDIA FROM CAYMAN ISLANDS, CYPRUS DURING APRIL-SEP

Important for the subject: Economy

Sharp decline in FDI into India from Cayman Islands, Cyprus during April-Sep

Foreign direct investment (FDI) into India from the **Cayman Islands and Cyprus** witnessed a significant contraction **during April-September** of the current fiscal year, contributing to an **overall 24% decline in FDI inflows**, according to government data.

- FDI from the Cayman Islands **decreased by 75% to $145 million** during this period, while **inflows from Cyprus contracted by over 95% to $35 million**. Experts attribute this sharp decline to heightened scrutiny of applications.

- The **overall decline in FDI** is seen as **influenced by factors such as increased interest rates** due to high inflation **in the US and other Western nations**, along with geopolitical situations in **Eastern Europe and West Asia**.

- The **recent removal of the Cayman Islands from the grey list** by the **Financial Action Task Force (FATF)** in October may **lead to positive FDI flow** from the region in the future.

What is FATF:

- The Financial Action Task Force (FATF) is **an inter-governmental body established in 1989 during the G7 Summit in Paris.**

- The objectives of the FATF are to **set standards and promote effective implementation of legal, regulatory and operational** measures for combating **money laundering, terrorist financing** and other related threats to the integrity of the international financial system.

- Its **Secretariat** is located at the **Organisation for Economic Cooperation and Development (OECD)** headquarters **in Paris.**

- FATF members **include 39 countries**, including the **United States, India, China, Saudi Arabia, Britain, Germany, France, and the EU** as such. **India became a member of FATF in 2010**.

- The FATF Plenary is the **decision-making body** of the FATF. It **meets three times per year.**

What are the two type of list of FATF:

- **Grey List**: Grey list is also called as **"Jurisdictions under Increased Monitoring"**. Countries that are considered **safe haven for supporting terror funding** and money laundering are put in the FATF grey list. This **inclusion serves as a warning to the**

**country** that it may enter the blacklist.

- **Black List**: The black list is called as **High-Risk Jurisdictions Important for the subject to a Call for Actio**n. Countries known as **Non-Cooperative Countries or Territories (NCCTs)** are put in the blacklist. These countries support terror funding and money laundering activities. The FATF **revises the blacklist regularly**, adding or deleting entries. **North Korea, Iran and Myanmar** are in the black list

What are the consequences of being on the FATF blacklist:

- **No financial aid** is given to them by the In**ternational Monetary Fund**, the **World Bank, the Asian Development Bank** and the **European Union.** They also face a **number of international economic and financial restriction**s and sanctions.

Topic 74. FINANCIAL INTELLIGENCE UNIT INDIA (FIU)

Important for the subject: Economy
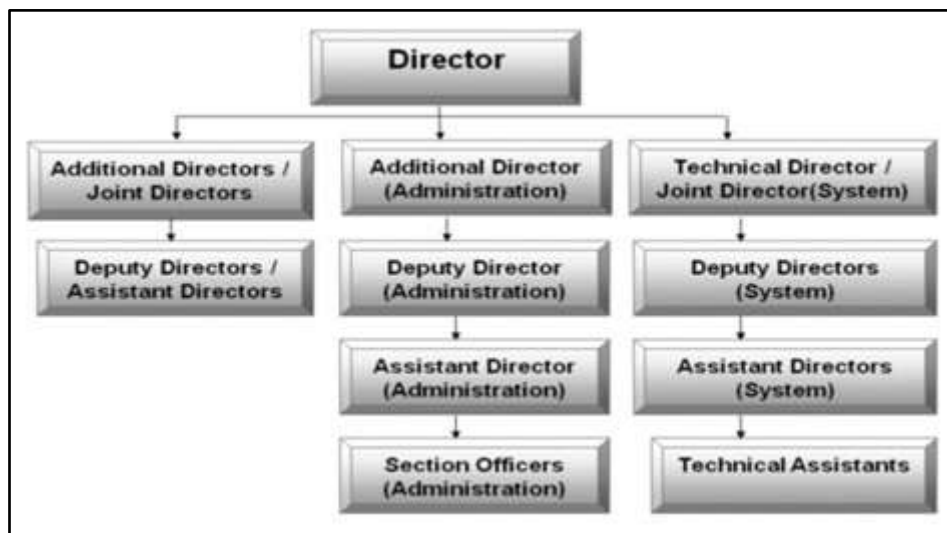
The Ministry of Finance has clarified that offshore cryptocurrency exchanges serving the Indian market have to be registered with the Financial Intelligence Unit India (FIU) as reporting entities.

- As many as 28 Virtual Digital Assets (VDA) service providers, including **Wazir X, Coin DCX and Coinswitch,** have registered themselves with the **Financial Intelligence Unit-India (FIU-IND)**.

- The Finance Ministry in March had said entities dealing in VDAs, crypto exchanges and intermediaries would be considered "reporting entity" under the Prevention of money laundering Act (PMLA). Accordingly, crypto exchanges and intermediaries dealing with

VDAs were required to perform KYC of their clients and users of the platform.

Financial Intelligence Unit – India (FIU-IND)

- It was set by the Government of India on 18th November 2004 as the **central national agency responsible for receiving, processing, analysing and disseminating information relating to suspect financial transactions.**

- FIU-IND is also responsible for coordinating and strengthening efforts of national and international intelligence, investigation and enforcement agencies in pursuing the global efforts against money laundering and financing of terrorism.

- FIU-IND is an independent body reporting directly to the **Economic Intelligence Council (EIC) headed by the Finance Minister.**

- FIU-IND is a **multi disciplinary body with a sanctioned strength of 75 personnel– from different organizations** namely Central Board of Direct Taxes (CBDT), Central Board of Excise and Customs (CBEC), Reserve Bank of India (RBI), Securities Exchange Board of India (SEBI), Department of Legal Affairs and Intelligence agencies.

Organisational Structure:

Main Functions:

- **Collection of Information:** Act as the central reception point for receiving Cash Transaction reports (CTRs), Non-Profit Organisation Transaction Report(NTRs), Cross Border Wire Transfer Reports (CBWTRs), Reports on Purchase or Sale of Immovable Property (IPRs) and Suspicious Transaction Reports (STRs) from various reporting entities.
- **Analysis of Information:** Analyse received information in order to uncover patterns of transactions suggesting suspicion of money laundering and related crimes.
- **Sharing of Information:** Share information with national intelligence/law enforcement agencies, national regulatory authorities and foreign Financial Intelligence Units.
- **Act as Central Repository:** Establish and maintain national data base on the basis of reports received from reporting entities.
- **Coordination:** Coordinate and strengthen collection and sharing of financial intelligence through an effective national, regional and global network to combat money laundering and related crimes.
- **Research and Analysis:** Monitor and identify strategic key areas on money laundering