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- Championships
- National Film Awards 2023

CONTENTS

1. POLITY

1.1   NATIONAL OVERSEAS SCHOLARSHIP (NOS) SCHEMES

Context
- The Ministry of Social Justice & Empowerment implements two National Overseas Scholarship (NOS) schemes. This information was given by the Minister of State for the Ministry of Social Justice and Empowerment.

Scheme 1: Under DoSJE
- One is implemented by the **Department of Social Justice & Empowerment** for students from Scheduled Castes, Denotified Nomadic and Semi-Nomadic Tribes, Landless Agricultural Labourers, and Traditional Artisans category for pursuing Master's degree or Ph. D courses abroad.

Scheme 2: Under DoEPwD
- The other is implemented by the **Department of Empowerment of Persons with Disabilities (DoEPwD)** to provide financial assistance to students with benchmark disabilities for pursuing Master's level courses and Ph. D abroad in the following specified fields of study:
  a) Engineering & Management
  b) Pure Sciences and Applied Sciences
  c) Agricultural Science & Medicine
  d) Commerce, Accounting and Finance and
  e) Humanities, Social Science including Law& Fine Arts.

Category
- The National Overseas Scholarship schemes of both departments **are central sector schemes**.

Eligibility Criteria

Criteria	DoSJE	DoEPwD
Minimum Qualification	• For Ph.D.: At least 60% (sixty percent) marks or equivalent grade in relevant Master's Degree. • For Masters' Degree: At least 60% (sixty percent) marks or equivalent grade in relevant Master's Degree	• For Ph.D.: First class or 55% (fifty five per cent) marks or equivalent grade in relevant Master's Degree. • For Masters' Degree: 55% (fifty five per cent) marks or equivalent grade in relevant Bachelor's Degree.
Age	• Age not more than 35 years as on first day of April for Selection Year.	• Below 35 (Thirty -Five) years as on Ist January of the year of application.
Income	• Total family income from all sources shall not exceed Rs. 8.00 lakh per annum.	• Parents/Guardian's income: Should not be more than Rs.8.0 lakh per annum.
Institute	• Priority is given to candidates	

	having unconditional offer of admission to top 500 ranked foreign Institutes/Universities as per the latest available QS rankings.	

Scholarship Amount Disbursement

- Under both the schemes, disbursement of scholarship amount/ of miscellaneous expenses (on a reimbursement basis), etc. incurred by the candidate, **is done by the Ministry of External Affairs (MEA)** through Indian Missions abroad, and for this fund is sanctioned to MEA through Letter of Authorization (LoA) by Ministry of Social Justice & Empowerment.
- Funds are released to MEA **from time to time on demand by the Indian embassy concerned in respect of any NOS student.**

1.2   AYUSHMAN BHARAT – PRADHAN MANTRI JAN AAROGYA YOJANA

Context

- The Comptroller and Auditor General of India (CAG) has revealed that nearly 7.5 lakh beneficiaries were linked with a single cellphone number — 9999999999 under the Ayushman Bharat – Pradhan Mantri Jan Aarogya Yojana (PMJAY).

Recommendation
It was launched as recommended by the National Health Policy 2017.

Vision
To achieve the vision of Universal Health Coverage (UHC).

Aim
This scheme aims to undertake path-breaking interventions to holistically address the healthcare system (prevention, promotion and ambulatory care) at the primary, secondary and tertiary level.

Objective
This initiative has been designed to meet Sustainable Development Goals (SDGs) and its underlining commitment, which is to "leave no one behind."

Components
Ayushman Bharat adopts a continuum of care approach, comprising of two inter-related components, which are -
1. Health and Wellness Centres (HWCs)
2. Pradhan Mantri Jan Arogya Yojana (PM-JAY)

Ayushman Bharat, a flagship scheme of the Government of India launched in 2018.

Components

1. Health and Wellness Centers (HWCs)

- In February 2018, the Government of India announced the creation of **1,50,000 Health and Wellness Centres (HWCs)** by transforming the existing Sub Centres and Primary Health Centres.
- These centres are to **deliver Comprehensive Primary Health Care (CPHC) bringing healthcare closer to the homes of people**.

- They **cover both, maternal and child health services and non-communicable diseases**, including free essential drugs and diagnostic services.
- Health and Wellness Centers are envisaged to deliver an expanded range of services to address the primary healthcare needs of the entire population in their area, expanding access, universality and equity close to the community.
- The emphasis of health promotion and prevention is designed to bring focus on keeping people healthy by engaging and empowering individuals and communities to choose healthy behaviours and make changes that reduce the risk of developing chronic diseases and morbidities.

2. Pradhan Mantri Jan Arogya Yojana (PM-JAY)

- The second component under Ayushman Bharat is the Pradhan Mantri Jan Arogya Yojana or PM-JAY as it is popularly known.
- Ayushman Bharat PM-JAY is the **largest health assurance scheme in the world** which **aims at providing a health cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization to over 12 crores poor and vulnerable families (approximately 55 crore beneficiaries) that form the bottom 40% of the Indian population**.
- The households included are based on the deprivation and occupational criteria of the **Socio-Economic Caste Census 2011 (SECC 2011) for rural and urban areas respectively.**
- PM-JAY was earlier known as the **National Health Protection Scheme (NHPS)** before being rechristened.
- It subsumed **the then-existing Rashtriya Swasthya Bima Yojana (RSBY)** which had been launched in 2008.
- The coverage mentioned under PM-JAY, therefore, also **includes families that were covered in RSBY but are not present in the SECC 2011 database**.
- PM-JAY is **fully funded by the Government and the cost of implementation is shared between the Central and State Governments**.

Key Features of PM-JAY

- PM-JAY is the world's largest health insurance/ assurance scheme fully financed by the government.
- It provides a **cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization** across public and private empanelled hospitals in India.
- Over 12 crore poor and vulnerable entitled families (approximately 55 crore beneficiaries) are eligible for these benefits.
- PM-JAY provides **cashless access to health care services** for the beneficiary at the point of service, that is, the hospital.
- It covers up to **3 days of pre-hospitalization and 15 days of post-hospitalization expenses** such as diagnostics and medicines.
- There is **no restriction on the family size, age or gender.**
- **All pre–existing conditions are covered** from day one.
- Benefits of the scheme are **portable across the country** i.e. a beneficiary can visit any empanelled public or private hospital in India to avail cashless treatment.
- Public hospitals are reimbursed for healthcare services at par with private hospitals.
- The cover under the scheme includes all expenses incurred on the following components of the treatment:

Medical examination, treatment and consultation, Pre-hospitalization, Medicine and medical consumables, Non-intensive and intensive care services, Diagnostic and laboratory investigations, Medical implantation services (where necessary), Accommodation benefits, Food services, Complications arising during treatment, Post-hospitalization follow-up care up to 15 days

- The benefits of **INR 5,00,000 are on a family floater basis** which means that it can be used by one or all members of the family.

Evaluation of Ayushman Bharat

- **Same out-of-pocket Expenditure as before:** There is **no national evaluation of the impact of PM-JAY**, insured patients in Chhattisgarh spent similar amounts out-of-pocket as uninsured patients, found a study by authors

from the Raipur-based State Health Resource Centre.

- **Beneficiaries are getting charged:** Beneficiaries enrolled in PM-JAY were charged for diagnostics, medicines and pre-hospitalisation costs, found a **2020 Economic and Political Weekly (EPW) study** of the programme in Jharkhand.
- **Fraudulent practices**: **Continuing Out-of-Pocket Expenditure (OOPE) due to fraudulent practices** by private hospitals is one of the reasons the scheme hasn't been able to provide financial protection for healthcare which is the main objective of the scheme-People's Health Movement (PHM).
- **Information not publicly available:** To ensure the quality of healthcare services, the **National Health Agency (NHA)** has partnered with the Quality Council of India (QCI), as per the 2020 PM-JAY annual report. The NHA conducts monthly quality audits of services provided by empanelled hospitals but information on the results is not publicly available.
- **Large-scale corruption in insurance claims settlement[CAG report on the PMJAY]**
  - **CAG report on the PMJAY** [Assessment Period: 2018-2021] found **large-scale corruption in insurance claims settlement**.
  - It reported that not enough validation was done by the Admins before releasing the claims to the hospitals which were empanelled under the scheme. It noted that in 2.25 lakh cases, the **date of the 'surgery' done was shown to be later than the date of discharge.**
  - In other instances, the hospitals had made claims and the money was transferred for dates even before the inception of the scheme.
  - The payments were made to hospitals in some cases prior to submission of claims. In other cases, patients above 18 years of age were given treatment under 'paediatric speciality packages'.

  - Lakhs of claims continued to be made against some who had been shown as 'deceased' in the database.
  - The audit found several cases where one patient had been shown to be hospitalised in multiple hospitals at one given point in time.
  - The data showed that 88,760 patients had died during treatment. And yet, 2,14,923 claims were shown as paid in respect of 'fresh treatments' given to these dead 'patients'. Almost Rs 7 crore was spent towards settling these claims in 24 states and UTs.
  - Lakhs of cards issued to beneficiaries were cancelled just as they were registered owing to malpractices.
  - The scheme stipulates that a unique PMJAY ID should be issued to beneficiaries once verification is complete. The audit discovered that 1.57 unique IDs appeared more than once in the database. In other words, all **these IDs were duplicated**. In such circumstances, possibility of the **presence of ineligible beneficiaries in the Beneficiary Identification System [BIS]** database cannot be ruled out.
  - The audit brought to light that there were large numbers of beneficiaries registered against the same or invalid mobile number. For example, 7.5 lakh beneficiaries were registered against the '9999999999' mobile number and 1.4 lahks under the '8888888888' number.
  - In many states, **lack of speciality services** necessitated the beneficiaries to move far-off places which causes hardship and great amount of inconvenience to the beneficiaries and may lead to out-of-pocket expenditure.
  - The existence of hospitals in the empanelled list did not necessarily translate into their existence in the scheme. In Andhra Pradesh, for example, out of 1,421 empanelled EHCPs, half of them submitted zero claims thus indicating they were not providing

PMJAY services at all. Such examples were found in other states as well.

Way Ahead

CAG made various recommendations for improving the implementation of the scheme. Here are a few important recommendations.

- To have a suitable mechanism in place for identifying State-wise beneficiaries under the scheme and to weed out ineligible beneficiaries in a time-bound manner.
- **Validation checks** should be in place to avoid invalid entries and increase the accuracy and reliability of the data.
- NHA must put in **a mechanism to map and identify PMJAY beneficiaries** so that there is **no overlap of PMJAY and state-specific schemes**.

- **Need to invest in public hospitals** to improve and upgrade the quality of the existing healthcare facilities. Encourage private hospitals to be part of the scheme.
- **Monitoring of Empanelled Health Care Providers (EHCPs) through physical inspections and necessary audits** so that malpractices may get detected and action may be initiated.
- Admins **must ensure that claim amount is utilized by Public/Government Hospitals** for improving the overall infrastructure, functioning of the hospital etc.
- Diversion of grant from one head to another should be discouraged and NHA/SHA should ensure that grant is utilized for the purpose it was released.

1.3   22ND LAW COMMISSION

Context

- The Government has constituted the 22nd Law Commission of India.

Details

- The 22nd Law Commission of India for a period of three year with effect from 21st February, 2020.The term of 22nd Law Commission has since been extended upto 31st August, 2024. The composition of 22nd Law Commission of India as under:
  1. a full-time Chairperson;
  2. four full-time Members (including Member-Secretary);
  3. Secretary, Department of Legal Affairs as ex officio Member;
  4. Secretary, Legislative Department as ex officio Member; and
  5. not more than five part-time Members.
- The Government has appointed Chairperson, four Full-time Members (including Member-Secretary) and two Part-time Members in the 22nd Law Commission of India.

Law Commission of India

- **About**: The Law Commission of India is an **executive body established by an order of the Government of India**.
- **Function:** The commission's function is to research and advise the government on legal reform, and is composed of legal experts, and headed by a retired judge.
- **Tenure:** The commission is **established for a fixed tenure** and works as an advisory body to the Ministry of Law and Justice.
- **First Commission:** The first Law Commission was established in 1834 by the East India Company **under the Charter Act of 1833** and was **presided over by Lord Macaulay.**
- **Independent India:** The first Law Commission of independent India was **established in 1955 for a three-year term**. Since then, twenty-one more commissions have been established.

How Law Commission is established?

- A law commission is **created when the central government passes a resolution for the formation of a new law commission after the expiry of the previous one.**

- After the resolution is passed, and the **President gives his assent to it**, the government has the liberty to choose the chairman of the new commission formed.
- After seeing the tradition followed in the previous commissions, it can be concluded that it is always a former judge of the Supreme Court who heads the commission.

Constitutional Provision

- The **Indian Constitution does not say anything about the formation of law commission or what it actually is**. But at some places, it makes an indication of the existence of some authority that would ensure the promotion of justice, **like in Part III and IV of the constitution i.e., Fundamental Rights and Directive Principles of State Policy respectively.**

- As per **Article 39 A of the Indian Constitution**, it state's duty to promote justice by providing equal opportunities, free legal aid through suitable schemes. The State has to ensure that justice is not denied to any on the basis of any disability.
- In a way, the main reason behind the formation of the law commission is the directions issued by Article 39 A.
- **Also, as per Article 372**, it was necessary that some authority existed to repeal, amend and revise laws, and to see if they are actually required.
- It is necessary to keep pace with the changing needs of the time, and that can be possible only if someone is there to keep themselves updated.

Role of Law Commission in Ensuring Legal Reform in India

- The Law Commission of India plays a very crucial role in ensuring public interest. It **helps in the formulation of strong public policies**.
- While on the one hand, **it acts as an advisory body on the other it criticises government policies which do not benefit the public**.
- In case of any defect in any public policy, it **points out the defective part of the policy and suggests some ways to correct it.**
- Though the recommendations made by the commission **do not bind the government to act accordingly it as the discretion of the government to either accept or reject it.**

- Also, the **liberty of taking up matters suo motu (on its own motion) acts as a beneficial factor** in cases where there is no one to raise objection on some defective laws. The Supreme Court, too, has recognised the recommendations made by the commission.
- In many cases, the Supreme Court has accepted and followed the recommendations made by the commission.

1.4   OFFSHORE AREAS MINERALS AMENDMENT BILL

Context
- The Lok Sabha passed the Offshore Areas Minerals (Development and Regulation) Amendment Bill, 2023 to begin a serious hunt for mineral treasures buried under water.

Background
- The Offshore Areas Mineral (Development and Regulation) Act, 2002 ('OAMDR Act') came into force in 2010. However, **no mining activity has been undertaken in the offshore areas till date.**
- Hence, the Central Government had proposed the present Amendment Bill **to bring several reforms in the offshore mining sector.**
- The OAMDR Act in its current form contains scope for discretion and **does not provide for fair and transparent allocation of operating rights in the offshore areas.**
- Introduction of auction regime through the present amendment in the OAMDR Act is expected to provide necessary impetus to the sector.

**Note:** _Offshore mining is the process of retrieving mineral deposits from the deep seabed, at a depth of more than 200 meters._

Maritime Resources of India: The Potential
- India has a unique maritime position. India's Exclusive Economic Zone (EEZ) of over two million square kilometers holds significant recoverable resources. GSI has delineate the resources of the following minerals in the offshore areas:
  - 1,53,996 million tons of lime mud within the EEZ off Gujarat and Maharashtra coasts.
  - 745 million tons of construction-grade sand off Kerala coast.
  - 79 million tons of heavy mineral placers in the inner-shelf and mid-shelf off Odisha, Andhra Pradesh, Kerala, Tamil Nadu and Maharashtra.
  - Phosphorite in the Eastern and Western continental margins.
  - Polymetallic Ferromanganese (Fe-Mn) nodules and crusts in Andaman Sea and Lakshadweep Sea.
- As India aims to become a high-growth economy, it needs to harness its maritime resources to its optimal capacity. In order to harness the full potential of these maritime resources, it is imperative to encourage the participation of the public and private sector. The private sector will bring the necessary expertise and technology to explore and mine the mineral resources present in the EEZ.

Aim of Offshore Areas Minerals (Development and Regulation) Amendment Bill, 2023
- The Bill aims to **provide a fixed 50-year production lease for offshore minerals.**

Key features of the Offshore Areas Mineral (Development and Regulation) Amendment Bill, 2023

Auction-based Allocation: The Bill proposes to grant production leases to the private sector solely through auction via competitive bidding, ensuring a transparent and non-discretionary process for allocation.

Government Reservation: Mineral-bearing areas reserved by the Central Government will receive operating rights without competitive bidding, granted to government entities or corporations.

Composite Licence: The introduction of a two-stage operating right, which involves exploration followed by production operations, will also be auctioned through competitive bidding exclusively to the private sector.

Strengthened Penalties: The Bill proposes an increase in fines for illegal mining and other related offenses to deter illegal activities.

Atomic Minerals: Exploration licences or production leases for atomic minerals will be exclusively granted to government entities or corporations.

Fixed Lease Period: Similar to the Mines and Minerals (Development and Regulation) Act, 1957, the Bill sets a fixed production lease period of fifty years, eliminating the provision for lease renewals.

Area Limits: To ensure fair distribution, the Bill will specify rules that limit the area a person or entity can acquire concerning specific minerals or associated mineral groups.

Offshore Areas Mineral Trust: An Offshore Areas Mineral Trust will be established to maintain a non-lapsable fund under the public account of India, aiming to fund exploration, disaster relief, research, and work for the benefit of those affected by exploration or production operations.

Timelines and Transfer: The Bill introduces specific timelines for commencement and re-commencement of production after the execution of a production lease. Additionally, it enables the transfer of composite licences or production leases to promote ease of doing business.

Environmental Protection: The Central Government will frame rules to conserve and systematically develop minerals in offshore areas while ensuring the protection of the environment from pollution caused by exploration or production operations.

Significance

- "Offshore mining has **remained neglected for long**. The transparent auction regime with well-defined norms for concession holders and operators is expected to attract investors and **mark the country's foray into offshore mining in the true sense.**
- It will give **confidence to investors by bringing in transparency and fair play.**
- Offshore mining is of strategic importance for India, which has an exclusive economic zone (EEZ) of the size of 2 million sq km. Firstly, the country needs to harness its maritime resources to fuel a high growth trajectory. Secondly, offshore mining operations -- **just like oil and gas exploration -- strengthens and safeguards territorial claims.**
- The introduction of the Offshore Areas Mineral (Development and Regulation) Amendment Bill, 2023, is a significant step towards **harnessing India's offshore mineral wealth for the nation's developmental needs while ensuring a transparent, sustainable, and environmentally responsible approach to resource allocation.**

READ IN DETAIL: DEEP SEA MINING

1.5   SUB-CATEGORISATION OF OBCS

Context

- The Justice Rohini Commission, constituted in 2017 by the Narendra Modi government to suggest sub-categorisation of OBCs, submitted its report to President Droupadi Murmu.

OBCs

- In the Indian Constitution, **OBCs are described as socially and educationally backward classes (SEBC),** and the Government of India is enjoined to ensure their social and educational development — for example, the OBCs are **entitled to27% reservations in public sector employment and higher education.**
- The list of OBCs **maintained by the Indian Ministry of Social Justice and Empowerment** is dynamic, with castes and communities being added or removed depending on social, educational and economic factors.

What is the sub-categorization of OBCs?

- The idea is to create sub-categories **within the larger group of OBCs for the purpose of reservation.**
- OBCs are **granted 27% reservation in jobs** and education under the central government. This has been a legal debate for other reservation categories too.
- For OBCs, the **debate arises out of the perception that only a few affluent communities among the over 2,600 included in the Central List of OBCs have secured a major part of the 27% reservation.**
- The argument for creating sub-categories within OBCs is that **it would ensure "equitable distribution" of representation among all OBC communities.**
- It was to examine this that the Rohini Commission was constituted on October 2, 2017.

The Rohini Commission's Mandate

- The primary objective of the Rohini Commission was to analyze how the 27% reservation for OBCs in jobs and education, along with other government benefits, was being utilized by different caste groups.
- It sought to identify the caste groups that dominated reservation benefits and those that were underrepresented.

What were the terms of reference of the Rohini Commission?

1. To examine the extent of inequitable distribution of benefits of reservation among the castes or communities included in the broad category of OBCs with reference to such classes included in the Central List.
2. To work out the mechanism, criteria, norms and parameters in a scientific approach for sub-categorisation within such OBCs.
3. To take up the exercise of identifying the respective castes or communities or sub-castes or synonyms in the Central List of OBCs and classifying them into their respective sub-categories.
4. To study the various entries in the Central List of OBCs and recommend correction of any repetitions, ambiguities, inconsistencies and errors of spelling or transcription.

Findings of Rohini Commissions Report
Sub-Categorization for Equitable Redistribution

- After extensive research, the Rohini Commission concluded that a small number of caste groups were dominating reservation and government benefits among all OBCs. To ensure equitable distribution of benefits, the Rohini Commission explored the sub-categorization of existing OBC groups. This involved further dividing the OBC caste groups based on their historical access to government benefits.

Formulating a Redistribution Formula

- The Commission developed a formula to allocate the highest share of the 27%

reservation to groups that historically had limited access to benefits. Simultaneously, it recommended allocating a smaller share to the caste groups that had traditionally dominated this sphere.

Submission of the Report

- The Rohini Commission submitted its report to the President, highlighting the need for detailed deliberations with stakeholders before implementing its recommendations. While the report provides essential insights into OBC communities' socio-economic status, the government remains cautious about its implications on electoral and political dynamics.

Why are the Commission's findings significant?

- With the Rohini Commission's findings expected to throw up exact numbers on OBC communities that have availed benefits since reservation for them began in 1992, this data set will for the first time show the changes, if any, in the socio-economic status of OBC communities that have historically been able to avail benefits.

- This is significant in light of the fact that the **clamour for a caste census** is growing louder and several State governments are already finding ways to conduct their own surveys on caste and socio-economic indicators.

- Further, the granularity of the data, as envisioned in the Rohini Commission's report, will inevitably have **a direct effect on the electoral mathematics of political parties, where communities that have been dominating benefits are also politically dominant.**

1.6   ANTI-RAGGING LAWS IN INDIA

Context

- An 18-year-old student died after falling from his hostel's second floor at the Jadavpur University campus in Kolkata.
- The family of the student has alleged that he was being ragged on campus.

What is Ragging?

- Ragging is defined as an act involving an activity violating a student's dignity. It is mostly done in the name of a fresher's welcome in the college or university.

Status of Ragging in India

- While close to **40 percent of students in colleges across India faced some kind of ragging, only 8.6 per cent reported the incidents, a study funded by the University Grants Commission (UGC)** on the directions of the Supreme Court has found out.
- **Society Against Violence in Education (SAVE),** the country's only registered anti-

ragging NGO, calculated that nine teenagers are killed every year due to ragging while hundreds of them get seriously injured, hospitalized, or disabled due to ragging by their seniors in colleges.

- A 2007 report by an anti-ragging group **Coalition to Uproot Ragging from Education (CURE),** which analyzed 64 ragging complaints, found that over 60 percent of these were related to physical ragging and 20 percent were sexual in nature.

- Raghavan, a former CBI director, in his report said that **the menace of ragging has assumed alarming proportions as freshers are subjected to torture, extortion, and harassment by seniors with a criminal bent of mind.**

What are the laws against ragging?

- In 2001, the Supreme Court (SC) banned ragging across India.

- However, in 2009, the death of Aman Kachru, a medical college student in Dharamshala, due to ragging, prompted the court to direct all educational institutions across the country to follow the anti-ragging law strictly.

Prevention of Ragging Act, 1997

- The law against ragging is governed by the **Prevention of Ragging Act, 1997, and its amendments.**
- The Act defines ragging *as "any disorderly conduct whether by words spoken or written or by an act which has the effect of teasing, treating, or handling with rudeness a fresher or any other student".*
- Under the anti-ragging law, if a student is found guilty, **he/she can be imprisoned for three years, along with a fine.**
- Under the law, if a college does not follow the rules or ignores the matter, **legal action can be taken against it.**

Indian Penal Code

- Some states in India have their own legislation on ragging, while the central legislation tackling ragging in India are through **the Indian Penal Code** (**Section294, 323, 324, 325, 326, 339, 340, 341, 342, and 506**), and the **UGC Regulations** on curbing the menace of ragging in higher educational institutions, 2009.

The UGC law against ragging

- To curb the menace of ragging, the UGC has introduced the **UGC Regulations on Curbing the Menace** of Ragging in Higher Educational Institutions, 2009.
- Under these regulations, all higher educational institutions have to follow the **UGC guidelines mandatorily**, and failing to do so will invoke strict action.
- The UGC has also set up a toll-free helpline **regarding anti-ragging, 1800-180-5522**, in which a victim can register his or her complaint in 12 languages.

The law of the All India Council for Technical Education

- Under Section 23 and Section 10 of the **AICTE Act, 1987**, there is an **"All India Council for Technical Education (Prevention and Prohibition of Ragging in Technical Institutions, Universities including Deemed to be Universities imparting technical education) Regulations 2009"** to prevent ragging.

The laws of the Medical Council of India

- The Medical Council of India formulated the **'Medical Council of India (Prevention and Prohibition of Ragging in Medical Colleges/Institutions) Regulations, 2009'**, which belongs to **Section 33 of the Indian Medical Council Act, 1956.**

Coalition for Uprooting Ragging from Education (CURE)

- The Coalition to Uproot Ragging from Education (CURE) is a non-profit, non-governmental organization (NGO) in India working to eliminate ragging in India.

Reasons behind the persistence and rise of Ragging in India

- Despite SC's direction to all educational institutions to take stringent anti-ragging measures, including slapping criminal cases against erring students, ragging incidents remain unchecked in the country.
- The anti-ragging measures are very strong. Sadly, ragging continues to exist **because of improper implementation** of the laws.
- Moreover, even though most institutes do not comply with the regulations, **no actions are taken by the regulatory agencies against them.**
- Other factors perpetuating ragging are the **use of alcohol in hostels and the lack of implementation of serious anti-ragging measures** by college authorities.

The Raghavan Committee mentioned in their Report

- Most of the parents have reported that the University/college support for following up on the case with **the law-and-order machinery has been lukewarm – indeed in some cases the institutions have actively dissuaded persistent parents."**
- It was brought to the notice of the Committee that it is almost impossible for a fresh student to lodge a complaint against a 'ragger' with [the appropriate] authorities.

Way Ahead

- Various practical steps to control ragging must include **strict role of authorities**, **ban on alcohol** within college and hostels, **surprise raids in hostels at night**, **postings (with accommodation) of wardens** in hostels, **separate hostels for juniors**, presence of college **"disciplinary committee" and "cultural committee,"** strict punishments for those involved in ragging, **actions by Medical Council of India (MCI)** and University Grants Commission (UGC) against the erring colleges and universities and strict implementation of anti-ragging laws.

- **Ragging should be declared a public health problem** because it involves the physical, mental and social exploitation of not only an individual but also of his/her family and the society as a whole.

- Also, **it is not just the stringent laws but awareness and involvement of civil society that can check the menace.**

1.7   CASTE-BASED SURVEY

Context

- The Supreme Court is set to hear a batch of petitions challenging the Patna High Court's verdict upholding the Bihar government's ongoing Caste Survey.

Why is Bihar carrying out a Caste-Based Census?

- The Centre conducted a **socio-economic and caste census in 2011**. However, the data from that exercise was never released citing errors in enumeration.

- The Bihar government previously said that **estimating the population of Other Backward Classes correctly is currently difficult** given that the census does not collect data on every Indian's caste. In fact, the last census that officially collected full caste data was in 1931.

- Therefore, proponents of the caste-based census argue that **the exercise is necessary to channel welfare policies and implement schemes according to the population.**

- The scientific data to be collected through caste-based survey **would facilitate in preparation state budget tailored for welfare of oppressed classes and better implementation of welfare schemes**.

- Conducting a caste-based census had been a **long-standing demand and resolutions** for this were passed unanimously by Bihar's Legislative Assembly in 2018 and 2019.

The Demand for Caste Census

- Caste identities are used to offer reservations in educational institutions and government positions. Scheduled Castes (SCs), commonly known as **Dalits (15%), and Scheduled Tribes (STs) (7.5%) have quotas based on caste and tribal identity.**

- The Other Backward Classes (OBCs) have the greatest reservation mandate, **at 27 percent,** since the BP Mandal Commission determined the class's backwardness based on caste.

- While quotas for Dalits and STs are proportionate to their number as determined by census procedures held every ten years, reservations for OBCs are not dependent on their percentage of India's population. The OBC quota was set at 27% since there was enough room to retain the reservation maximum at 50%. The most recent caste census data collected and released is from Census 1931.

- The British colonial government's final census, performed in 1941, collected caste data but did not publish the results. Following independence, the government only gathered and released caste data for **SCs and STs in the Census 1951.**

The Necessity of Caste Census

- Due to the lack of new caste census data, **the caste estimates from 1931 are being projected for welfare policy formulation in**

2023, which stands extremely haunting for those who will be subjected to such policies.

- A caste census is anticipated to **provide policymakers with new and updated data**.

- **Between 1999 and 2007**, the **NSSO (National Sample Survey Organization)**polls produced a range of estimates for OBCs, ranging from 36% to 45%. The **United District Information System for Education Plus (UDISE)** numbers recently revealed schooling data for each caste group. According to the **UDISE data**, OBC pupils make up **45 percent of primary school students, SCs 19 percent, and STs 11 percent.**

- The remaining 25 percent belonged to the higher caste.

- Caste enumeration should be feared by the most outspoken beneficiaries of caste-based reservations. Census data may give substantial evidence, which has been lacking thus far, that some castes are privileged and do not belong on the OBC (technically the SEBC, the Socially and Educationally Backward Classes) list. Indeed, the Supreme Court's landmark **Indra Sawhney decision (1992)** has been a benchmark for the subject matter of caste census as it **mandated that such information be collected every ten years in order to weed out privileged castes from quota privileges.**

Arguments in favour of Conducting Caste Census

- **Means to identify the disadvantaged:** Those at the lower levels of the Social System are not just disadvantaged socially but also economically, therefore it is important to identify them to ensure their welfare.

- **Clears Questions on affirmative action:** Caste data will promote independent research into the question of who does and does not need affirmative action.

- **Credible exercises of data collection:** The faith of our citizens cannot be restored until credible exercises of data collection are undertaken regarding caste.

- **Helps develop better policies:** A caste census, which will generate exhaustive data will allow policymakers to develop better policies and implementation strategies,** and will also enable a more rational debate on sensitive issues.

- **Improper sub-categorization:** The Justice Rohini committee was appointed in 2017 to look into the sub-categorization of the OBC communities;** however, in the absence of data, there can be no data bank or any proper sub-categorization.

- **Need for update:** All commissions have had to depend on data from the last caste census conducted in 1931. Therefore, the data has to be updated.

- **Helps tackle caste questions:** India needs to be bold and decisive in tackling caste questions through data and statistics in the way the US does to tackle race issues,** by collecting data around race, class, language, and inter-race marriages, among other metrics.

Argument against conducting caste census

- **Inaccurate Data**: The data will suffer in respect of **"completeness and accuracy"**, as Caste data collected in the Socio-Economic and Caste Census (SECC) of 2011 is "unusable" for official purposes as they are far from accurate and misleading.

- **Unregistered people:** Many people may not register themselves in the census to hide their caste identity.

- **Too late to add caste to the Census 2021**: It is too late now to add caste to the Census 2021, as the Planning and preparations for the census exercise started almost four years earlier and the preparations for Census 2021 are almost done.

- **Could further divide Indian society: This could further divide Indian society. The government had said that the total number of castes surveyed in 1931 was 4,147, while the SECC 2021 figures show that there are more than 46 lakh castes in India.**

- **Failed attempts:** Earlier attempts failed as the entire exercise was corrupted because the enumerators had used different spellings for the same castes. **In many cases, the**

respondents had refused to reveal their castes.

Way Forward

- **In democratic Societies there is nothing to legally stop a person from the most deprived class and caste from reaching the highest position, but these legal rights also need socio-economic support from the government as affirmative action.**
- Governments need to take effective affirmative action based on strong data to ensure the socio-economic development of marginalized people living at the bottom of the social hierarchy.

- People also need to understand that our **sources of knowledge about the past especially the ancient past are inadequate.** It is difficult to be very certain about what things were like at that time, or the reasons why some institutions and practices came to be established. But even if we knew all this, just because something happened in the past or is part of our tradition, it is not necessarily right or wrong forever. Every age has to think afresh about such questions and <u>come to its own collective decision about its social institutions</u>.

1.8   PROJECT AMBER

Context

- The project AMBER is being implemented.

All about Project AMBER

Initiative and Ministry	• PROJECT AMBER (Accelerated Mission for Better Employment and Retention) is a **joint initiative of the National Skill Development Corporation (NSDC) and Generation India Foundation (GIF).** • It is under the aegis of the **Ministry of Skill Development and Entrepreneurship (MSDE).**
Funding	• This project is co-funded by MSDE (**under the SANKALP program**) and

	private philanthropy.
Aim and Objectives	• It aims to **train 30,000 youth, 50% of whom will be women trainees.** • It **aims to empower women with essential digital skills.** • The initiative aims to **create a more inclusive and balanced workforce**. • It aims to **improve gender diversification in the tech industry and underprivileged groups.**
Methodology	• Learners are **exposed to essential components of cloud computing such as Linux, Python, networking, security, and relational databases**. • The approach is hands-on, involving real-world scenario-based exercises, practical labs, and coursework. • By engaging in these activities, **participants acquire the necessary skills and knowledge to excel in cloud computing, which is a crucial domain in the digital era.**
Outcome-Based Approach	• The overall objective of the project is to improve job placement and retention outcomes. • AMBER by virtue of its project design, adopts an outcomes-based approach where the stakeholders are rewarded for outcomes.
Certification	• The program covers the expenses associated with taking the **AWS Cloud Practitioner Certification exam**. • This certification enhances participants' employability prospects by demonstrating their competency in cloud computing.
Significance	• The program recognizes the importance of equipping youth with skills that are relevant to the changing landscape. • By investing in initiatives like AMBER, the government aims to equip individuals with skills that align with the **demands of Industry 4.0 and Web 3.0.**

QR:

Industry 4.0
https://www.iasgyan.in/daily-current-affairs/industry-40
Web 3.0:
https://iasgyan.in/daily-current-affairs/web-30

SANKALP Programme

• Skill Acquisition and Knowledge Awareness for Livelihood Promotion ("SANKALP") is a program of the Ministry of Skill Development **with loan assistance from the World Bank**.

RESULT AREA 1: INSTITUTIONAL STRENGTHENING | RESULT AREA 2: ENHANCING MARKET RELEVANCE AND QUALITY | RESULT AREA 3: INCLUSION AND ACCESS OF MARGINALISED COMMUNITIES | PROJECTS ACROSS MULTIPLE RESULT AREAS

• It aims to improve short term skill training qualitatively and quantitatively through strengthening institutions, bring in better market connectivity and inclusion of marginalised sections of the society.

• SANKALP was **launched on 19th January 2018.**

1.9   NATIONAL JUDICIAL DATA GRID (NJDG)

Context
- Recently, the National Judicial Data Grid (NJDG) was in the news.

All about NJDG

About	• National Judicial Data Grid (NJDG) is a **database of orders, judgments and case details** of 18,735 District and subordinate Courts and High Courts created as an **online platform under the eCourts Project.**
Function	• It **provides data relating to judicial proceedings/decisions of all computerized district and subordinate courts** of the country. • Data is **updated on a near real-time basis by the connected District and Taluka courts.** • Case data is available on NJDG **for both civil and criminal cases** with the ability to perform drill-down analysis based on the age of the case as well as the state and district.
Search Parameters	• Judgment records can be searched online with the following parameters - **Case No., Diary No., Judgment Date, Judge Name, Parties, Act-wise, Constitutional Bench, and Free Text.**
Significance	• NJDG **works as a monitoring tool to identify, manage, and reduce pendency of cases.** • It **helps to provide timely inputs for making policy decisions** to **reduce delays in disposing of cases and helps in reducing case pendency.**
Recognition	• The World Bank praised the National Judicial Data Grid in the **Ease of Doing Business report for 2018,** it made it possible to generate case management reports, thereby making it easier to enforce contracts. • The United Nations Development Programme (UNDP) hailed NJDG as a best practice, particularly in ensuring access to justice for marginalized populations.
Closing Remarks	• The National Judicial Data Grid (NJDG) stands as a **testament to India's commitment to transparency, efficiency, and progress in its judicial system.** • By offering comprehensive and real-time access to legal information, NJDG contributes to reducing case pendency, enhancing performance monitoring, and facilitating informed policy decisions. • As NJDG continues to evolve, **it holds the potential to redefine the way legal information is accessed and utilized across the nation.**

1.10   PRADHAN MANTRI JAN DHAN YOJANA (PMJDY)

Context
- The Pradhan Mantri Jan Dhan Yojana– the National Mission for Financial Inclusion – completed nine years of successful implementation.

Background
- Pradhan Mantri Jan Dhan Yojana (PMJDY) is **National Mission for Financial Inclusion to ensure access to financial services, namely, Banking/ Savings & Deposit Accounts, Remittance, Credit, Insurance, Pension in an affordable manner.**

Objectives:
- Ensure access of financial products & services at an affordable cost
- Use of technology to lower cost & widen reach

Basic tenets of the scheme
- **Banking the unbanked** - Opening of basic savings bank deposit (BSBD) account with minimal paperwork, relaxed KYC, e-KYC, account opening in camp mode, zero balance & zero charges
- **Securing the unsecured** - Issuance of Indigenous Debit cards for cash withdrawals & payments at merchant locations, with free accident insurance coverage of Rs. 2 lakhs
- **Funding the unfunded** - Other financial products like micro-insurance, overdraft for consumption, micro-pension & micro-credit

Initial Features of PMJDY
- The scheme was launched based on the following 6 pillars:
  1. Universal access to banking services – Branch and BC
  2. Basic savings bank accounts with overdraft facility of Rs. 10,000/- to every eligible adult
  3. Financial Literacy Programme– Promoting savings, use of ATMs, getting ready for credit, availing insurance and pensions, using basic mobile phones for banking
  4. Creation of Credit Guarantee Fund – To provide banks some guarantee against defaults
  5. Insurance – Accident covers up to Rs. 1,00,000 and life cover of Rs. 30,000 on account opened between 15 Aug 2014 to 31 January 2015
  6. Pension scheme for Unorganised sector

Achievements under PMJDY- As on August'23
PMJDY Accounts
- As on August 23 number of total PMJDY Accounts: 50.09 crore; 55.6% (27.82 crore) Jan-Dhan account holders are women and 66.7% (33.45 crore) Jan Dhan accounts are in rural and semi-urban areas
- During first year of scheme 17.90 crore PMJDY accounts were opened
- Continuous increase in no of accounts under PMJDY
- PMJDY Accounts have grown three-fold (3.4) from 14.72 crore in March 15 to 50.09 crore as on 16-08-2023. Undoubtedly a remarkable journey for the Financial Inclusion Programme.

PMJDY Accounts (in crore)

Mar'15	Mar'16	Mar'17	Mar'18	Mar'19	Mar'20	Mar'21	Mar'22	Mar'23	16.08.23
14.72	21.43	28.17	31.44	35.27	38.33	42.20	45.06	48.65	50.09
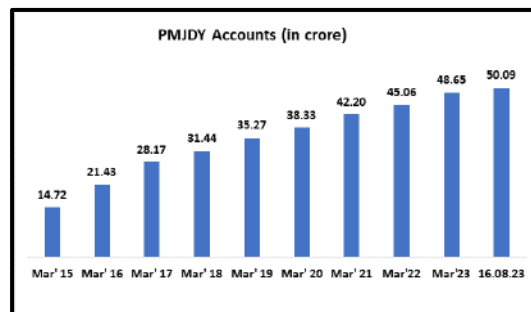
Deposits under PMJDY accounts
- Total deposit balances under PMJDY Accounts stand at Rs. 2,03,505 crore.
- Deposits have increased about 13 times with increase in accounts 3.34 times.

Average Deposit per PMJDY account

- Average deposit per account is Rs. 4,063 as on 16.08.2023.
- Avg. Deposit per account has increased over 3.8 times over August 15.
- Increase in average deposit is another indication of increased usage of accounts and inculcation of saving habit among account holders.

Deposits under PMJDY (in Rs. crore)
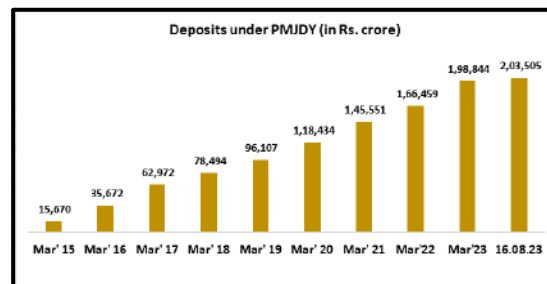
RuPay Card issued to PMJDY account holders

- Total RuPay cards issued to PMJDY accountholders: 33.98 crore
- Number of RuPay cards & their usage has increased over time

Jan Dhan Darshak App (JDD App)

- JDD App is a mobile application that provides a citizen-centric platform for locating banking touch points such as bank branches, ATMs, Banking Correspondents (BCs), Indian Post Payment Banks etc. in the country.

Deposit per A/c (in Rs).

- Over 13 lakh banking touch points have been mapped on the JDD App.
- This app is also being used for identification of villages which are yet to covered by banking outlets within 5 km radius. These identified villages are allocated to various banks by concerned SLBCs for opening of banking outlets. The efforts have resulted in a significant decrease in number of uncovered villages.
- **A total of 6.01 lakh villages are mapped on the JDD app as of July 2023. Out of these, 5,99,468 (99.7%) of total mapped villages are covered with banking outlets (Bank branch, Banking corner or Indian Post Payment Banks (IPPB) within 5 km radius).**

Number of Rupay Debit Cards issued in PMJDY accounts (in crore)
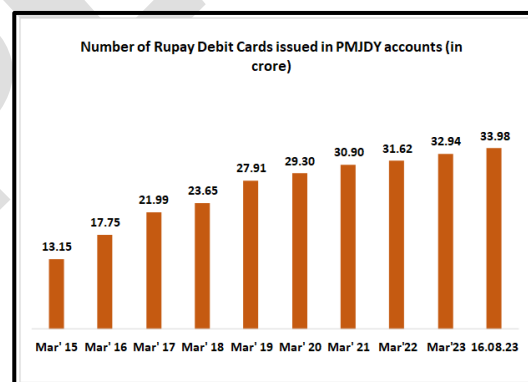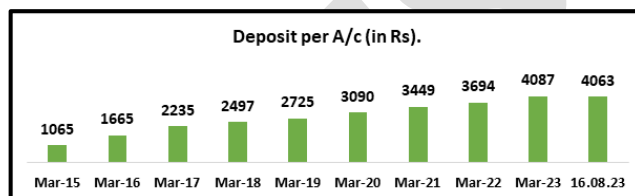
Towards ensuring smooth DBT transactions

- As informed by banks, about **6.26 crore PMJDY accountholders receive direct benefit transfer (DBT) from the Government under various schemes.** To ensure that the eligible beneficiaries receive their DBT in time, the Department takes active role in identification of avoidable reasons for DBT failures in consultation with DBT Mission, NPCI, banks and various other Ministries.

Digital transactions

- With the issue of over 33.98 crore RuPay debit cards under PMJDY, installation of 79.61 lakh PoS/mPoS machines and the introduction of mobile-based payment systems like UPI, the total number of digital transactions have gone up from 1,471 crore in FY 17-18 to 11,394 crore in FY 22-23.
- The total number of UPI financial transactions has <u>increased from 92 crore in FY 2017-18 to 8,371 crore in FY 2022-23</u>.
- Similarly, the **total number of RuPay card transactions at PoS & e-commerce** have increased from 67 crore in FY 2017-18 to 126 crore in FY 2022-23.

The road ahead

- Endeavour to ensure coverage of PMJDY account holders under micro insurance schemes. Eligible PMJDY accountholders will be sought to be covered under PMJJBY and PMSBY. Banks have already been communicated about the same.

- Promotion of digital payments including RuPay debit card usage amongst PMJDY accountholders through creation of acceptance infrastructure across India.
- Improving access of PMJDY account holders to Micro-credit and micro investment such as flexi-recurring deposit etc.

1.11　e-GOVERNANCE

Context
- Madhya Pradesh has won as many as many as 23 national e-governance awards since 2007 for excellence in Information Technology-based interventions in governance systems benefitting thousands of stakeholders.

e-Governance
- Electronic governance or e-governance can be defined as the usage of Information and Communication Technology (ICT) by the government to provide and facilitate government services, exchange of information, communication transactions and integration of various standalone systems and services.
- Through e-governance, government services are made available to citizens and businesses in a convenient, efficient and transparent manner. Examples of e-governance include **Digital India initiative, National Portal of India, Prime Minister of India portal, Aadhaar, filing and payment of taxes online, digital land management systems, Common Entrance Test etc.**

Advantages of e-Governance
- Better government interaction with industry and businesses
- Restructured administrative processes
- Access of information leading to citizen empowerment
- Improved delivery
- Efficiency in government services and management
- Less corruption and more transparency in administration
- Convenient for citizens and businesses
- Growth of revenue and cost reductions
- Increased legitimacy of the government
- Flattened organizational structure
- Reduces paperwork and red-tapism in the administrative process resulting in better planning and coordination between different government levels.
- Better relations between civil society and public authorities.

Challenges associated with e-Governance

- **Lack of computer literacy:** India is still a developing country and a vast majority of the citizens lack computer literacy which hinders the effectiveness of e-governance.
- **Lack of accessibility to the internet** or even computers in some parts of the country is a disadvantage to e-governance.
- e-Governance results in a **loss of human interaction**. As the system becomes more mechanised, lesser interaction takes place among people.
- It gives rise to the **risk of personal data theft and leakage**.
- e-Governance leads to a **lax administration**. The service provider can easily provide excuses for not providing the service on technical grounds such as "server is down" or "internet is not working", etc.

e-Governance in the Indian context

- e-Governance in India is a recently developed concept. The launch of **National Satellite-Based Computer Network (NICENET) in 1987** and the subsequent launch of the **District Information System of the National Informatics Centre (DISNIC) programme** to computerise all district offices in the country for which free hardware and software was offered to the State Governments provided the requisite impetus for e-governance.
- e-Governance thereafter developed with the growth of technology. Today, there are a large number of e-Governance initiatives, both at the Union and State levels. In 2006, the **National e-Governance Plan** (NeGP) was formulated by the Department of Electronics and Information Technology and Department of Administrative Reforms and Public Grievances that aims at making all government services accessible to the common man, ensure efficiency, transparency and reliability of such services at affordable costs to realise the basic needs of the common man. **The NeGP has enabled many e-governance initiatives like:**
  - **Digital India** was launched in 2015 to empower the country digitally. Its main components are:
    - ✓ Developing a secure and stable digital infrastructure
    - ✓ Delivering government services digitally
    - ✓ Achieving universal digital literacy
  - **Aadhaar** is a unique identification number issued by UIDAI that serves as proof of identity and address on the basis of biometric data. It is being used to provide many benefits to the members of the society. One can **e-sign** documents using Aadhar.
  - **myGov.in** is a national citizen engagement platform where people can share ideas and be involved with matters of policy and governance.
  - **UMANG** is a Unified Mobile Application which provides access to central and state government services including Aadhar, Digital Locker, PAN, Employee Provident Fund services, etc.
  - **Digital Locker** helps citizens digitally store important documents like mark sheets, PAN, Aadhar, and degree certificates. This reduces the need for physical documents and facilitates easy sharing of documents.
  - **PayGov** facilitates online payments to all public and private banks.
  - **Mobile Seva** aims at providing government services through mobile phones and tablets. The m-App store has over 200 live applications which can be used to access various government services.
  - **Computerisation of Land Records** ensures that landowners get digital and updated copies of documents relating to their property.
  - In addition to the above, State level e-governance initiatives include:
  - **E-Seva** (Andhra Pradesh) facilitates payment of utility bills, issuance of certificates, licenses and permits.
  - **Khajane Project** (Karnataka) digitalized the treasury system of the state.

- o **FRIENDS** (Kerala) is a single-window facility to pay taxes and other financial dues to the State government.
- o **Lokvani Project** (Uttar Pradesh) is a single-window solution relating to the handling of grievances, land record maintenance and providing a mixture of essential services.
- o **e-Governance Portal of India**
- o On this portal, one can get comprehensive information regarding the National Conference on e-Governance and reports on earlier conferences. Additionally, the portal provides links to the following important pages:
  - ✓ Digital India
  - ✓ National Portal of India: It is developed to provide access to information and services being provided by the government
  - ✓ PM India Website: provides information relating to the Prime Minister's Office.
  - ✓ United Nations e-governance website

Recommendations

In the end, the strategic recommendations that will be beneficial for e-Governance are:

- Systematic approach.
- Designing a flexible planning process.
- Boosting organizational learning and responsiveness.
- Monitoring strategic effectiveness based on governance reforms.
- Formation of strategic alliances for effective e-Governance.
- Bridging gaps between planners-beneficiaries.
- Incentivizing implementers for local initiatives.
- Enabling implementers and beneficiaries for participatory governance and demand-driven services.
- Ensuring adoption of e-Governance services.
- Strengthening the National Informatics Centre.
- Shared ownership of e-Governance services.
- Ensuring strategic coherence among planners and implementation.
- Improving service levels through learning loops.
- Practising contact leadership
- Rejuvenating IT units of government departments.
- Standing bottom-up planning through emergent strategy and rural level socio-economic databases.

Closing Remark

- To enable the administration of public utilities in a more transparent and efficient manner **it is required that the government makes judicious use of electronic governance platforms as well as to instill the public faith in the governance structure of the country.**

1.12	SHORT ARTICLES

NIDHI (National Initiative for Developing and Harnessing Innovations)

Context

- Union Minister Dr Jitendra Singh said, in order to foster innovation among the startups in the country, the Department of Science & Technology launched an umbrella program NIDHI (National Initiative for Developing and Harnessing Innovations) in 2016.

NIDHI (National Initiative for Development and Harnessing Innovations)

- **About**
- NIDHI (National Initiative for Development and Harnessing Innovations), is an umbrella program is pioneered by the Department of Science & Technology (DST), Government of India, for nurturing ideas and innovations (knowledge-based and technology-driven) into successful startups.
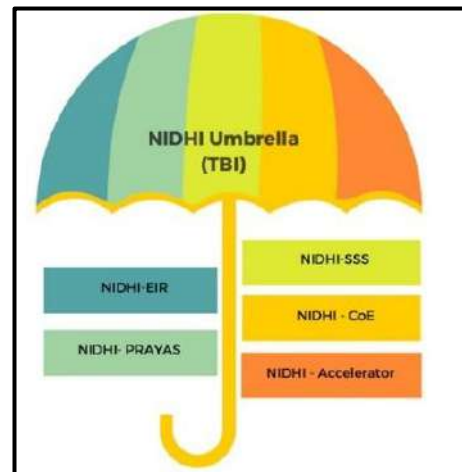
Objectives

- To take forward student innovations in IEDC / NewGen IEDC programme to commercialization stage.
- To promote student startups.
- To accelerate the journey of idea to prototype by providing initial funding assistance.

Components of NIDHI

- There are 8 components of NIDHI that support each stage of a budding startup from idea to market. They are as:
    1. NIDHI GCC – Grand Challenges and Competitions for scouting innovations.
    2. NIDHI – PRomoting and and accelerating Young and Aspiring Innovators and Startups (NIDHI-PRAYAS) – Support from Idea to Prototype
    3. NIDHI-Entrepreneur In Residence (NIDHI-EIR)-Support system to reduce risk.
    4. Startup-NIDHI.
    5. NIDHI-Technology Business Incubator(TBI)-Converting Innovations to start-ups.
    6. NIDHI-Accelerator-Fast tracking a start-up through focused intervention.
    7. NIDHI-Seed Support System (NIDHI-SSS)-Providing early stage investment.
    8. NIDHI Centres of Excellence (NIDHI-CoE)-A World class facility to help startups go global.

Farmer Welfare Schemes

Scheme

The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)

Brief description

- The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) Scheme is being implemented with a view to provide income support to all landholding Farmers' families across the country to enable them to take care of expenses related to agriculture and allied activities as well as domestic needs. The Scheme, effective from 1.12.2018, aims to provide a payment of Rs.6000/- per year for the farmers' families with cultivable land holding, subject to certain exclusions. The financial benefit of Rs.6000/- is being released by the Central Government in three 4-monthly installments of Rs.2000/- over the year directly into the bank accounts of the eligible farmers under Direct Benefit Transfer mode.

Scheme

Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)

Brief description

- The Government of India has launched the Central Sector Scheme (CSS) for "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" in the year 2020. Formation & promotion of FPOs are to be done through Implementing Agencies (IAs), which further engage Cluster Based Business Organizations (CBBOs) to form & provide professional handholding support to FPOs for a period of 05 years including preparation and execution of business plan for the concerned FPOs for ensuring better marketing opportunities & market linkages on sustainable basis.

Scheme

Agriculture Infrastructure Fund (AIF)

Brief description

- In order to address the existing infrastructure gaps and mobilize investment in agriculture infrastructure, Rs 1 lakh crore Agri Infra Fund was launched under Aatmanirbhar Bharat Abhiyan. The Agriculture Infrastructure Fund is a medium - long term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and credit guarantee support.

Scheme

National Mission on Edible Oil-Oil Palm (NMEO-OP)

Brief description

- A new Centrally Sponsored Scheme namely, National Mission on Edible Oil (NMEO)-Oil Palm (NMEO-OP) has been launched by Government of India to promote oil palm cultivation for making the country Aatamnirbhar in edible oils with special focus on North-Eastern States and A&N Islands. The Mission will bring additional area of 6.5 lakh ha under Oil Palm plantation with 3.28 lakh ha in north-eastern states and 3.22 in Rest of India in next 5 years from 2021-22 to 2025-26.

Scheme

National Beekeeping & Honey Mission (NBHM)

Brief description

- Keeping in view the importance of beekeeping, a new Central Sector Scheme entitled National Beekeeping & Honey Mission (NBHM) was launched in 2020 under AtmaNirbhar Bharat Abhiyan for its implementation in the field for overall promotion and development of scientific beekeeping & to achieve the goal of "Sweet Revolution".

The information above was given by the Union Minister of Agriculture and Farmers Welfare in Lok Sabha.

Cinematograph (Amendment) Bill, 2023

Context

- The Rajya Sabha passed the **Cinematograph (Amendment) Bill, 2023** that introduces stringent anti-piracy provisions, expanding the scope of the law from censorship to also cover copyright.

Features

- The Rajya Sabha passed the Cinematograph (Amendment) Bill, 2023 that **introduces stringent anti-piracy provisions, expanding the scope of the law from censorship to also cover copyright.**

- The Bill proposes **a jail term of up to three years and a fine of up to 5% of a film's production cost** for persons who "use any audio-visual recording device in a place licensed to exhibit films with the intention of making or transmitting ... an infringing copy of" a film, or trying to do so.

- The Bill **seeks to amend the Cinematograph Act, 1952**, which authorizes the Central Board of Film Certification (CBFC) to require cuts in films and clear them for exhibition in cinemas and on television.

- The Bill also introduces three age ratings for films requiring adult supervision. Such films currently get a U/A rating, but this has been split into **U/A 7+, U/A 13+ and U/A 16+.** The

IT Rules, 2021 had implemented these graded age ratings for streaming platforms.

- Films rated for adults have largely been prohibited on television for years, following a 2004 Bombay High Court order. As such, broadcasters often cut films voluntarily, and re-apply with the CBFC for a U/A rating. The Bill formalizes this practice, with language that allows films to be recertified for TV and "other media".

Note: To become a law, the Bill will have to be passed by the Lok Sabha.

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Expunging

Context

- The Parliament saw yet another protest from the Opposition when the expunged remarks made by BJP MP were restored.

Rules on Expunging from the Record

- **Article 105(2) of the Indian Constitution** provides Members of Parliament (MPs) with immunity from court proceedings for any statements made in Parliament. However, this does not mean that MPs have free rein to say anything they like in Parliament.
- The Indian Parliament **has its own set of rules that govern the behaviour and conduct of MPs**. The rules are designed to ensure that parliamentary proceedings are conducted in an orderly and dignified manner.
- **Rule 380 of the Rules of Procedure and Conduct of Business in Lok Sabha** gives the Speaker the power to expunge any words or expressions used in debate that are deemed defamatory, indecent, unparliamentary, or undignified.
- This means that the Speaker has the discretion to remove any words or phrases from the record of Parliament that are considered offensive or inappropriate.

No longer part of the official record

- The power to expunge from the record of Parliament is an important tool in maintaining the decorum and dignity of the House.
- It is **intended to ensure that parliamentary debates are conducted in a respectful and constructive manner**.
- The rules aim to maintain a high standard of debate that is free from personal attacks and insults.
- When the Speaker orders that certain parts of a speech be expunged from the record of Parliament, **those parts are effectively deleted from the official record of the House.**
- This means that the **expunged portions of the speech are no longer part of the official**

record and cannot be referred to in the future.

How is the decision taken?

- The decision to expunge words or phrases from the record of Parliament lies with the Presiding Officer of the House. In the Lok Sabha, the **Speaker is the Presiding Officer.**
- In the **Rajya Sabha, it is the Chairman**. The Presiding Officer has the discretion to decide which words or phrases should be expunged from the record of Parliament.
- When a word or portion of a speech is to be expunged from the record, **the decision is made by the Speaker of the House under Rule 380,** which gives the Speaker discretion to expunge any words or expressions used in debate **that are considered defamatory, indecent, unparliamentary, or undignified.**
- The head of the reporting section makes a recommendation to the Speaker, and the context in which the word or sentence was used is taken into account.
- **Rule 381** specifies that any portion of the proceedings of the House that is expunged shall be marked by asterisks and an explanatory footnote shall be inserted in the proceedings, indicating that the words have been expunged as ordered by the Chair.

Cannot be reported by the media

- The expunged portions **cease to exist in the records of Parliament and cannot be reported by media houses**, although they may have been heard during the live telecast of the proceedings.
- However, with the proliferation of social media, **implementing expunction orders has become challenging**. The widespread availability of digital recording devices means that portions of speeches that have been expunged from the records can still be disseminated via social media.
- Additionally, live-streaming of parliamentary proceedings means that expunged remarks can be seen and heard by viewers before they

are officially expunged, potentially causing damage or offence.

PUShP Portal

Context

- The National Power Committee (NPC) has asked States to provide suggestions for offering incentives to buyers and sellers on the surplus power portal, PUSHp, to encourage wider participation, which has been found missing.

Portal for Utilization of Surplus Power (PUShP)

- PUShP is a unique **initiative by the Ministry of Power** and the Regulator to enhance power availability.
- The PUShp portal **serves as a national-level generating capacity utilization mechanism** to assist states experiencing power shortages in buying power from states with surplus power.
- Tariffs for power transactions on the portal are **regulated and determined by relevant regulatory commissions.**
- **Distribution Companies (DISCOMs) can indicate their surplus power availability** in block times, days, or months on the portal.
- DISCOMs in need of power can requisition surplus power from the portal.
- The new buyer will pay both variable charges and fixed costs as determined by regulators.
- Reassigning power to a new beneficiary will shift the entire fixed cost liability to them, relieving the original beneficiary of the obligation.
- This approach **reduces the fixed cost burden on DISCOMs** and ensures better utilization of available generation capacity.
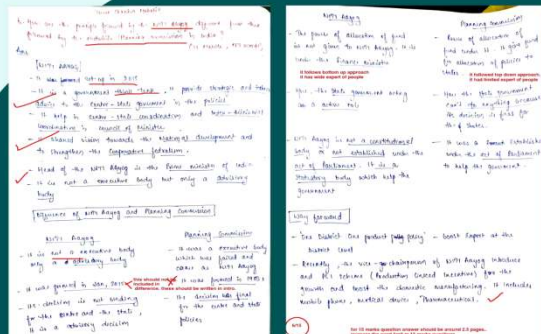
Controller of Certifying Authorities (CCA)

Context

- Cash prizes amounting to ₹3.4 crores are being promised to developers who help create an indigenous Indian Web browser "for the world", the Ministry of Electronics and Information Technology announced on Wednesday.
- An important caveat is that browser ideas entered into this competition will have to trust the Controller of Certifying Authorities (CCA), the Indian government's authority for digital signatures, including SSL (Security Sockets Layer) certificates.

Details

- As per **Section 18 of The Information Technology Act, 2000** provides the required legal sanctity to the digital signatures based on asymmetric cryptosystems. The digital signatures are now accepted at par with handwritten signatures and the electronic documents that have been digitally signed are treated at par with paper documents.
- The IT Act **provides for the Controller of Certifying Authorities(CCA) to license and regulate the working of Certifying Authorities.**

- The Certifying Authorities (CAs) **issue digital signature certificates for electronic authentication of users.**
- The Controller of Certifying Authorities (CCA) has been appointed by the Central Government under **section 17 of the Act** for purposes of the IT Act. The Office of the CCA **came into existence in 2000.**
- It aims to **promote the growth of E-Commerce and E-Governance through the wide use of digital signatures.**
- The Controller of Certifying Authorities (CCA) **has established the Root Certifying Authority (RCAI) of India under section 18(b) of the IT Act to digitally sign the public keys of Certifying Authorities (CA) in the country.**
- The RCAI is operated as per the standards laid down under the Act.
- The CCA certifies the public keys of CAs using its own private key, which enables users in cyberspace to verify that a given certificate is issued by a licensed CA. For this purpose it operates, the Root Certifying Authority of India(RCAI).
- The CCA **also maintains the Repository of Digital Certificates, which contains all the certificates issued to the CAs in the country.**

Vishwakarma Yojana

Context

- The Government of India has launched the Vishwakarma Scheme.

About

- PM Vishwakarma Scheme **aims to empower traditional artisans and craftsmen across the country**.
- It seeks to **provide financial assistance and skill development opportunities** to individuals engaged in traditional crafts and skills.
- The scheme offers **subsidized loans of up to Rs 2 lakh to craftsmen**, with a **concessional interest rate of 5%.**
- The scheme also **focuses on skill enhancement** through training programs and provides incentives for tool procurement, digital transactions, and marketing support.
- **Beneficiaries:** SC, ST, OBC, Women, Transgender, and Economically Weak Individuals
- With a **dedicated allocation of Rs 13,000 crore** over a period of five years, this scheme is set to benefit about 30 lakh families of artisans.

Eligibility Criteria for PM Vishwakarma Scheme:

- They must be engaged in traditional crafts and skills such as **carpentry, weaving, blacksmithing, pottery, and more.**
- They should belong to the **Other Backward Classes (OBCs) category.**
- They must have a **bank account linked to their Aadhaar card.**

1.13   1 MAINS & 5 MCQs

Q1. Why is there a growing demand for caste-based census? Evaluate the arguments in support and against the implementation of the Caste-based Census.

Introduction

- Caste census means the inclusion of caste-wise tabulation of India's population in the Census exercise.
- The last caste census was conducted in 1931. All caste data are projected on its basis. It became the basis for quota caps under the Mandal formula. Caste data were collected for the 2011 census but the data were never made public.
- **Demand for Caste-based Census:** It's actually an old demand, arising from the fact that the available data set is 90 years old while castes are often taken as bases for several welfare programs.

Arguments in favour of Conducting Caste Census

- **Means to identify the disadvantaged:** Those at the lower levels of the Social System are not just disadvantaged socially but also economically, therefore it is important to identify them to ensure their welfare.
- **Clears Questions on affirmative action:** Caste data will promote independent research into the question of who does and does not need affirmative action.
- **Credible exercises of data collection:** The faith of our citizens cannot be restored until credible exercises of data collection are undertaken regarding caste.
- **Helps develop better policies:** A caste census, which will generate exhaustive data will allow policymakers to develop better policies and implementation strategies, and will also enable a more rational debate on sensitive issues.
- **Improper sub-categorization:** The Justice Rohini committee was appointed in 2017 to look into the sub-categorization of the OBC communities; however, in the absence of data, there can be no data bank or any proper sub-categorization.
- **Need for update:** All commissions have had to depend on data from the last caste census conducted in 1931. Therefore, the data has to be updated.
- **Helps tackle caste questions:** India needs to be bold and decisive in tackling caste questions through data and statistics in the way the US does to tackle race issues, by

collecting data around race, class, language, and inter-race marriages, among other metrics.

Argument against conducting caste census

- **Inaccurate Data**: The data will suffer in respect of **"completeness and accuracy"**, as Caste data collected in the Socio-Economic and Caste Census (SECC) of 2011 is "unusable" for official purposes as they are far from accurate and misleading.
- **Unregistered people:** Many people may not register themselves in the census to hide their caste identity.
- **Too late to add caste to the Census 2021**: It is too late now to add caste to the Census 2021, as the Planning and preparations for the census exercise started almost four years earlier and the preparations for Census 2021 are almost done.
- **Could further divide Indian society: This could further divide Indian society. The government had said that the total number of castes surveyed in 1931 was 4,147, while the SECC 2021 figures show that there are more than 46 lakh castes in India.**
- **Failed attempts:** Earlier attempts failed as the entire exercise was corrupted because the enumerators had used different spellings for

the same castes. **In many cases, the respondents had refused to reveal their castes.**

Way Forward

- **In democratic Societies there is nothing to legally stop a person from the most deprived class and caste from reaching the highest position, but these legal rights also need socio-economic support from the government as affirmative action**.
- Governments need to take effective affirmative action based on strong data to ensure the socio-economic development of marginalized people living at the bottom of the social hierarchy.
- **People also need to understand that our sources of knowledge about the past especially the ancient past are inadequate.** It is difficult to be very certain about what things were like at that time, or the reasons why some institutions and practices came to be established. But even if we knew all this, just because something happened in the past or is part of our tradition, it is not necessarily right or wrong forever. Every age has to think afresh about such questions and come to its own collective decision about its social institutions.

....

Q2. With reference to the Law Commission of India consider the following statements.

a) The Indian Constitution does not say anything about the formation of a Law Commission.
b) The first Law Commission was established by the East India Company under the Charter Act of 1853.
c) The first Law Commission of Independent India was established in 1950 for a three-year term.
d) The commission is established for a fixed tenure and works as an advisory body to the Ministry of Law and Justice.

How many of the above statements are incorrect?
1. Only one

2. Only two
3. Only three
4. None

Q3. Which of the following are the provisions of the Offshore Areas Mineral (Development and Regulation) Amendment Act, 2023?

1. Production leases to the private sector solely through auction via competitive bidding.
2. Fixed production lease period of fifty years, eliminating the provision for lease renewals.
3. An Offshore Areas Mineral Trust to maintain a non-lapsable fund under the public account of India.
4. Operating rights to Government entities or corporations in Mineral-bearing areas

reserved by the Central Government without competitive bidding.
1. 1, 2 and 3 only
2. 1 and 2 only
3. 2, 3, and 4 only
4. All the above

Q4. Consider the following statements with reference to Vishwakarma Yojana.
1. It aims to empower traditional artisans and craftsmen across the country.
2. The scheme offers subsidized loans of up to Rs 5 lakhs to craftsmen, with a concessional interest rate of 5%.
3. To be beneficiaries under the Scheme they should belong to the Other Backward Classes (OBCs) category.
4. The scheme focuses on skill enhancement through training programs and provides incentives for tool procurement, digital transactions, and marketing support.
Which of the above-mentioned statements is/are correct?
a) 1, 2 and 3 only
b) 1 and 2 only
c) 1, 3, and 4 only
d) All the above

Q5. Consider the following pairs.
1. Rangarajan Committee – Disinvestment

2. Mashelkar committee – Developments of handlooms
3. Meera Seth committee –Auto fuel policy
4. Raghavan Committee- Report on Ragging in India
Which of the pairs given above is/are correctly matched?
a) 2 and 3only
b) 1 and 2only
c) 2, 3 and 4only
d) 1 and 4 only

Q6. Consider the following statements with reference to the National Judicial Data Grid (NJDG).
1. It provides data relating to judicial proceedings/decisions of all computerized district and subordinate courts of the country.
2. Case data is available on NJDG for civil cases but not criminal cases.
3. Data is updated on a near real-time basis by the connected District and Taluka courts.
4. National Judicial Data Grid (NJDG) is an online platform under the e-Courts Project.
Which of the above-mentioned statements is/are incorrect?
a) 2 and 3 only
b) 1 and 2 only
c) 2 only
d) 2 and 4 only

ANSWER: 2) 1, 3) 4, 4) c, 5) a, 6) c

2. INTERNATIONAL RELATIONS

2.1   G20'S ROLE IN SHAPING GLOBAL GOVERNANCE

Context
- The G-20 has provided Prime Minister Narendra Modi an opportune stage before the next general election in 2024.

Details
- **Promotions of the G-20**, with Mr. Modi's picture a part of them, are everywhere. Of greater significance to the world is that the G-20 is being led by India, the world's most populous country.
- **Global financial crises in the last 30 years compelled the G-7**, the United States-led cabal of western countries (and Japan) that controls global financial institutions, to expand the G-20 by adding **China, India, Russia, Brazil**, and a few other countries for solutions to global problems.
- The G-20 is at an impasse because the U.S. wants its members to shut out Russia and China who it sees as threats to its global hegemony. India is not easily swayed by pressure from the G-7.
- It wants the G-20 to concentrate on the agenda of **90% of humanity outside the G-7.**

<u>Trouble in shaping the Global Governance:</u>

Global governance is in bad shape
- **The trajectory of progress must change**. The world is being divided by wars amongst nations, and strife within them — wars with military weapons and with financial and trade weapons.
- Desperate millions are being pushed back to their deaths while trying to cross borders and oceans in search of better lives and safety, while three multi-billionaires are competing to create commercial space ventures to take a handful of wealthy people (paying hundreds of thousands of dollars each), for a brief joyride in borderless space.

Humanity cannot carry on the way it is
- **The trajectory of progress must be changed to make economic growth** more equitable and sustainable. Economists try to prove with numbers that poverty is reducing, and incomes are increasing for everyone.
- They should look around and **listen to real people struggling** in precarious livelihoods. People experience realities which statisticians' numbers cannot reveal. The planet is heating up inexorably.
- **It cannot take the pressure of the present consumptivemodel** of economic growth any longer.
  - More economic growth will not solve the world's problems. It must be sustainable and equitable too.

> *India, as chair of the G-20, has offered a vision of Vasudhaiva Kutumbakam (One Earth, One Family, One Future) to bring all citizens of the world together and make the world better for everyone.*

A map of ground realities
- **The McKinsey Global Institute** has produced a detailed map of realities on the ground, in its report, "*Pixels of Progress: A granular look at human development around the world" (December 7, 2022). It divides the world into 40,000 micro-regions*.
- Using advanced statistical techniques, it zooms in to examine actual progress on the ground which statistical averages at country level and growth of GDP cannot reveal.
- It applies the yardsticks of life expectancy and incomes to compare the well-being of people in these regions. The report concludes that growth of GDP at a country level explains only 20% of the progress on the ground.
  - The remaining 80% is local and specific.

- **The present theory-in-use of top-down problem-solving** is conceptually flawed. It does not matter how smart the expert or manager on top of the system is.
- **Complex systemic problems** that appear in many places require local systems solutions that are found using cooperation and implemented by communities that combine solutions to economic, environment, and social problems.

> *India has proposed an approach of LiFE (lifestyles for sustainable development) to the G-20. It requires "coherent actions amongst stakeholders at all levels rooted in collective actions across society".*
>
> *Principle 7 of LiFE also requires the world's leaders to "recognize and amplify the role of local communities, local and regional governments and traditional knowledge in supporting sustainable lifestyles".*

Measures

- To continue to **solve systemic problems** with the same approach that caused them is madness, Einstein declared. A new paradigm is required for global governance.
  - In 2015, all countries adopted the 17 UN Sustainable Development Goals (SDG) to be achieved by 2030.
- Time is running out. **Climate change is racing ahead**. Rich countries are unwilling to find equitable solutions. Precarity of employment is increasing even in rich countries.
- **The SDGs describe 17** complex combinations of environmental, social, and economic problems. All 17 problems do not appear in every country, and when they do, they do not appear in the same form.
  - For example, problems of the oceans are immediately life-threatening to island countries but not to land-locked countries as yet.
- **Environmental problems** are not the same in Canada and Barbados. **Opportunities for decent work (SDG 8)** are inadequate everywhere, but much fewer in countries in the Global South than in the rich North.

On local governance:

- **Democracy is government of, for, and by people**. A government elected by the people that provides benefits top-down to people is not a complete democracy. Government must be by the people themselves too.
- India has elections, but its citizens do not have "**poorna swaraj**" yet. Its political leaders since Independence have paid only lip service to the vision of local governance in its Constitution which is required for Poorna Swaraj (full political, social, and economic freedom) for all citizens.

Conclusion:

- **Paradigms** are hardly ever changed from their centres because people in power do not want to let go of power. It will not matter who wins the **Indian elections in 2024**, and whose pictures are on billboards thereafter, if the system of governance remains a top-down, expert-driven, centralised system.
- **Pressure to change and new solutions** must come from the peripheries of power systems, with movements on the ground in India and around the world.

2.2   FREE MOVEMENT REGIME (FMR)

Context
- The FMR allows tribes living along the border on either side to travel up to 16 km inside the other country, without a visa.

Details
- The illegal migration of tribal Kuki-Chin peoples into India from Myanmar is one of the key issues in the ongoing ethnic conflict between Meiteis and Kukis in Manipur.
- While the Meiteis have accused these illegal migrants and the alleged "narco-terror network" along the Indo-Myanmar Border (IMB) of fomenting trouble in the state, the Kukis have blamed the Meiteis and Chief Minister N Biren Singh, a Meitei himself, of using this as a pretext for "ethnic cleansing".

About Free Movement Regime:
- The border between India and Myanmar runs for 1,643 km in the four states of **Mizoram, Manipur, Nagaland, and Arunachal Pradesh.**
- The FMR is a **mutually agreed arrangement between the two countries** that **allows tribes** living along the border on either side to travel up to 16 km inside the other country without a visa.
- The FMR was **implemented in 2018** as part of India's Act East policy at a time when diplomatic relations between India and Myanmar were on the upswing.

Concepts of FMR:
- **The border between India and Myanmar** was demarcated by the **British in 1826**, without seeking the opinion of the people living in the region.
- The border **effectively splits people of the same ethnicity** and culture into two nations without their consent. Even the current IMB is a reflection of the line drawn by the British.
- Apart from facilitating **people-to-people contact**, the FMR was supposed to give an impetus to local trade and business.
- The region has a long history of **trans-border trade through customs and border haats**.
- **Given the low-income economy of the region**, such exchanges are vital for the sustenance of local livelihoods. For the border people in Myanmar, towns in India are closer to business, education, and healthcare than those in their own country.

Why is the FMR being discussed critically now?
- Although beneficial to local people and helpful in improving Indo-Myanmar ties, the FMR has been criticized for unintentionally aiding illegal immigration, drug trafficking, and gun running.
- The Indo-Myanmar border is almost entirely unfenced; in Manipur, less than 6 km of the border has been fenced. The border runs through forested and undulating terrain and is difficult to monitor.
- Manipur too has received a chunk of illegal migrants over the past year and a half. A committee set up by the state government to identify such migrants recently put their number at 2,187.
- The Manipur government has alleged that village chiefs have been illegally settling migrants from Myanmar in new villages in the hills, leading to deforestation.
- An eviction drive against these new villages became the flashpoint between Kukis in the hills and the government, leading to violence in the state.

Note: The Kuki and Naga peoples live in the hills that surround the Imphal valley, whereas the valley itself is home to the majority of Meiteis.

Should the FMR be removed?
- The regime has been reviewed from time to time, and most experts agree that the FMR needs better regulation.

- o As the crisis in Myanmar escalated and the influx of refugees increased, India suspended the FMR in September 2022.
- However, the removal of the FMR entirely may not be undesirable. Experts have pointed to the difficulties the local population may face if that happens.
- Villagers seemed to be enjoying dual citizenships and were entitled to move freely across the border before the outbreak of Covid-19 by virtue of the FMR.
- Also, "locals in Phek district, Nagaland, stated that the Myanmar villagers preferred to visit the Indian side for education, trade and medical facilities. For them, the nearest Myanmar town is far away".
  - o Hence, revoking FMR entirely may not be favoured by the locals"

Way forward

- The focus should be **on revising FMR** and transforming informal to formal trade by focusing on infrastructural development, regulatory mechanisms.
- Designated multiple entry points, within reasonable distance along the India-Myanmar Border, and **strict vigilance by deploying the border guards as per requirement**, must be initiated.
- Through these designated entry points, **people should be strictly informed to use the designated point for going and coming across the border.**
- **Deployment of manpower 24/7** and increasing their number, is a must to check the frequency of traders' movement, locals and people with local head loads.
- **Strict checking or frisking of ladies** should be done in a separate compartment, especially for women by deploying more women in uniform.

Closing thoughts

- To begin with, it should give the Assam Rifles the sole responsibility of guarding the India-Myanmar border and strengthen it with adequate manpower and equipment. At the same time, through sustained community interaction programmes, the border community should be sensitised to participate in the nation-building project.

2.3 INDIA SOUTH AFRICA RELATIONS

Context

- The two leaders note progress in bilateral cooperation as India and South Africa celebrate 30th anniversary of diplomatic relations.

Details

- The two leaders positively assessed the progress in bilateral cooperation, including in the context of the thirtieth anniversary of establishment of bilateral diplomatic relations being celebrated in 2023.
- President Ramaphosa invited PM for the BRICS Summit being hosted by South Africa on August 22-24, 2023 and briefed him on the preparations for the same.
- PM accepted the invitation and conveyed that he looked forward to his visit to Johannesburg to participate in the Summit.
- They also exchanged views on a number of regional and global issues of mutual interest.
- President Ramaphosa conveyed his full support to India's initiatives as part of its ongoing G-20 Presidency and said that he looked forward to visiting India to attend the G-20 Summit.

About India–South Africa Relations

Economic and Commercial Relations

- Major Indian exports to South Africa include vehicles and components, transport equipment, drugs and pharmaceuticals, engineering goods, footwear, dyes and intermediates, chemicals, textiles, rice, and gems and jewellery, etc.
- Major Indian imports from South Africa include gold, steam coal, copper ores & concentrates, phosphoric acid, manganese ore, aluminium ingots & other minerals.

Defence Cooperation

- To address the shortage of skills among South Africans which is a national priority of the Government of South Africa, an MoU on the setting up of the "Gandhi-Mandela Centre of Specialisation for Artisan Skills"(GMCoS) in South Africa was signed during the Prime Minister's visit to South Africa in July 2018.

Political Relations

- India and South Africa established a strategic partnership in March 1997.
- 2017 marked 20 years of our Strategic Partnership and 2018 marked 25 years since the re-establishment of diplomatic relations with South Africa.
- 2018 also marked 125 years since the Pietermaritzburg 'incident' involving Mahatma Gandhi.

Cultural Relations

- For the academic year 2020-21, 30 slots have been allocated to South Africa under ICCR. ITEC offered a total of 52 slots to South Africa in 2019-20.
- With the help of the Indian Council for Cultural Relations (ICCR), an intensive programme of cultural exchanges are organised throughout South Africa including scholarships for South African nationals.

Indian Community

- The South African Indian origin community numbers around 1 million and constitutes about 3% of South Africa's total population.
- About 80% of the Indian community lives in the province ofKwaZulu Natal, about 15% in the Gauteng (previously Transvaal) area and the remaining 5% in Cape Town.
- South Africans of Indian origin are well-represented in Government, business, media, legal and other professions.

2.4   REMEMBRANCE OF HIROSHIMA

Context

- The truth about the U.S. nuclear attacks on Hiroshima and Nagasaki, once concealed, is now known to the world.

Details

- While there may have been attempts to sanitise U.S. history, it's essential to acknowledge that some accounts of the bombing and its aftermath were limited.
- The writers who published their narratives have, however, given the world enough books which serve as haunting reminders of why it's imperative to remain nuclear-free.
- H.G. Wells is said to have first imagined an atomic bomb in his 1914 novel The World Set Free.
- But as scientists and physicists changed the course of human history, American writer and journalist John Hersey, gave the world one of the most important documents of the 20th century.

About Hiroshima

- Hiroshima, a city in Japan, holds profound **historical significance** as the target of the first wartime use of an **atomic bomb during World War II.**
- The events surrounding the bombing of Hiroshima on August 6, 1945, have left an indelible mark on global history and collective memory.

Background and Context

- Hiroshima was a **significant military and industrial center for Japan** during World War II.
- The city housed military facilities, factories, and communication centers vital to Japan's war effort.
- The decision to use atomic bombs was driven by the desire **to hasten Japan's surrender and end the war.**

The Bombing of Hiroshima

- On August 6, 1945, the American bomber plane "Enola Gay" dropped the atomic bomb named "Little Boy" on Hiroshima.
- The bomb detonated approximately 1,900 feet above the city, releasing an immense amount of energy in the form of heat, blast, and radiation.
- The explosion instantly killed tens of thousands of people and caused widespread destruction, leveling buildings and creating a shockwave felt for miles.

Immediate Aftermath

- The explosion generated a firestorm that engulfed large parts of the city, exacerbating the destruction.
- Survivors, known as "hibakusha," faced severe injuries, burns, and exposure to radiation.
- Communication and transportation infrastructure were severely disrupted, hampering relief efforts.

Humanitarian Crisis and Response

- The immediate aftermath of the bombing resulted in a humanitarian catastrophe, with hospitals overwhelmed and resources scarce.
- International aid and medical relief were slow to arrive due to Japan's isolation during the war.
- Survivors, rescue workers, and medical personnel faced unprecedented challenges in providing care and assistance.

Long-Term Impact and Consequences

- The bombing of Hiroshima had far-reaching consequences, both immediate and long-term.
- The immediate death toll was estimated at around 140,000, with many more suffering from injuries and radiation-related illnesses.
- The bombing raised ethical and moral questions about the use of nuclear weapons and their devastating effects on civilian populations.

End of World War II

- The bombing of Hiroshima and a second atomic bomb dropped on Nagasaki three days later prompted Japan's surrender on August 15, 1945.
- The bombings marked the conclusion of World War II and led to the beginning of a

new era of nuclear weaponry and Cold War tensions.

Legacy and Commemoration

- Hiroshima serves as a poignant reminder of the devastating potential of nuclear weapons and the horrors of war.
- The Hiroshima Peace Memorial, also known as the Genbaku Dome, stands as a UNESCO World Heritage Site and a symbol of the city's resilience and commitment to peace.
- The annual Hiroshima Peace Memorial Ceremony is held on August 6 to commemorate the victims and advocate for nuclear disarmament.

Conclusion

- Unless we read books to understand the nightmarish trauma of victims, the world will continue to be a place of threat for another nuclear war. For, those who forget the past are condemned to repeat it and, that is why bibliotherapy is a refuge one can turn to.

2.5   STRATEGIC IMPORTANCE OF COCOS ISLANDS

Context

- Indian military aircraft visit Australia's strategic Cocos Islands for refuelling and operational turnaround for the Indian military.

Details

- Expanding the strategic reach of the Indian military and improving interoperability with Australia, an Indian Navy Dornier maritime patrol aircraft and an Indian Air Force (IAF) C-130 transport aircraft visited Australia's Cocos (Keeling) Islands (CKI) in the Southern Indian Ocean, close to Indonesia and strategic maritime choke points earlier this month, diplomatic and official sources confirmed.
- Cocos can be an important base for refueling and Operational Turnaround for the Indian military, especially once the runway there is expanded to accommodate large aircraft like the P-8 long range maritime patrol aircraft.

Importance of Cocos Islands for India

- **Cocos Island is just 30 miles away from the Andaman & Nicobar Islands** of India and lies at a geographically strategic location that can take control of the important Sea Lines of Communication – SLOCs as well as the northeastern part of the Indian Ocean and the Malacca Strait.
- **The Andaman & Nicobar Islands of India** today is no longer an ordinary naval base as it stood in the past centuries, but has evolved into atri-service territorial command of the Indian Armed Forces with anti-access capabilities.
- India has been upgrading the **Andaman & Nicobar Islands** as a strategic forward outpost armed with sea-denial assets to deter rival powers.
- Additionally, under the **military logistics support agreements of India with all Quad countries** and other certain states, the Andaman & Nicobar Islands will be a strategic springboard for the Indian Navy and its alliances to project power deep inside the Indian Ocean.
- Accordingly, **Coco Islands, which is just 30 miles away from India's strategic archipelago**, will undoubtedly become crucial in terms of geography and military strategies.
- In view of maritime interests, **Coco Island is at a crucial point for commercial shipping lanes**.
    o It stands on a straight line starting from Hainggyi Island on the Mawtin point (Cape Negrais) to the Andaman Islands of India forming three channels between them.
- The three Channels also act as a critical international maritime trade route because most of the commercial ships coming from Malacca strait pass through the channels to reach Chittagong port of

- Bangladesh as well as major ports on the east coast of India, especially, Vizag port, Kolkata port, and Chennai port.
- Moreover, it is also observed that **over 80% of the import and export shipping of Bangladesh** regularly passes through the three significant channels.

Closing Remarks

- With an active Chinese presence and constant building of infrastructure, **India too has an imperative to boost its strategic depth in the region.**
- One measure that India must focus on is <u>strict surveillance of the Indian Ocean Region (IOR) and monitoring of activities in the Coco Islands.</u>
- With increased investments in Myanmar and the strengthening of relations, a Chinese military presence is a possibility. Such deployment will **not only affect India but also other regional nations especially Australia which happens to be a member of the Quad.**

In recent times, India and Australia are said to have undertaken a fourfold increase in military exercises. The coordinated relationship between New Delhi and Canberra opens the potential to engage with other nations in the western part of the Indian Ocean, too. Island territories are stepping stones to that opportunity.

2.6   CHALLENGING CHINA'S INDIAN OCEAN EXPANSION

Context

- India is strategically countering China's moves in the Indian Ocean.

Details

- The Indian Ocean region has been an important trade arena for centuries.
- Today, it remains critical to the security and stability of shipping lanes and trade routes, accounting for over one-third of the world's bulk cargo traffic and two-thirds of the world's oil shipments and ensuring global access to food, precious metals, and energy resources.
- Stretching from Africa's eastern coast to Australia's western coast, the region is home to thirty-three nations and 2.9 billion people.
- Given the region's importance, many countries around the world work with regional partners to maintain open access to the Indian Ocean's critical waterways and natural resources.

India's Maritime Security Concerns

Recent issues:

- **COVID-19** has highlighted the fragility of the global logistic supply chain, and India too has been affected. India's exports have been hit by the pandemic-induced scarcity of shipping containers, so much so that the country has now decided to make its own containers.
- The **recent Suez thrombosis** caused by the grounding of MV Ever Given in the Suez Canal has lessons for our economy and energy security.

Control of Choke Points

- Access to the Indian Ocean is geographically controlled by a number of choke points leading to and from the Arabian Sea and the Bay of Bengal, and from the Southern Indian Ocean, which are critical for safeguarding the Indian maritime interests.
- Examples: **Straits of Hormuz, Straits of Bab-el-Mandeb, Gulf of Aden, Malacca Strait**.

Regional Instability

- The Indian Ocean littoral has been **witness to large areas of political instability** in the recent past. Examples: Yemen, Indonesia, Somalia, Iran-Iraq, Sri Lanka and Myanmar
- Indian maritime security forces then had to conduct dedicated operations to combat this menace, like the Indian intervention in the Maldives in 1988 to foil a coup d'état.

Piracy

- India has not only escorted numerous merchant ships of all countries but concerted efforts of its maritime security forces has ensured that this piracy has been controlled

- Statistics have shown an **increase in piracy, off the coast of Bangladesh, Malaysia, and Indonesia.**

Trafficking

- The Indian Ocean Region is regrettably home to the world's most notorious areas of **drug production, the Golden Crescent and the Golden Triangle.**
- The trans-national networks established by the drug smugglers also serve as conduits for other de-stabilizing activities like **gunrunning and human trafficking.**

Maritime Terrorism

- India's huge coastline, a thriving maritime commercial community along its coast with nearly **200,000 fishing boats and a fishermen population of 4 million** make the job of monitoring maritime activity an unenviable task.
- The ability of adversarial interests to exploit this vast maritime activity for launching attacks on land is therefore quite high, as was witnessed in the **26/11 terrorist acts.**

Regional Security Architecture

- **Indian Ocean Rim Association (IORA):** launched in 1997 for promoting intra-regional economic cooperation and development.
- **Indian Ocean Naval Symposium (IONS):** is a voluntary initiative formed in 2008 that seeks to increase maritime co-operation among navies of the littoral states of the Indian Ocean Region.
- **Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP):** is a regional government-to-government agreement, brought into force in September 2006 to promote and enhance cooperation against piracy and armed robbery in Asia.
- **ASEAN Regional Forum (ARF):** objectives are to foster dialogue and consultation on political and security issues of common interest and make efforts towards confidence-building and preventive diplomacy in the Asia-Pacific region.

Other Initiatives Undertaken by The Government

- **Operation Sagar Kavach** was put in operation post 26/11 to improve coordination between security agencies including Indian Navy, Coast Guard and the local police.
- **Indian Maritime Security Strategy (IMSS) 2015** of Indian Navy: envisages greater coordination between different maritime agencies; securing SLOCs; Maritime Security Operations for contemporary assessments of maritime terrorism, piracy etc.; multilateral maritime engagement, local capacity building, technical cooperation etc.
- **Coastal Security Scheme** to strengthen security infrastructure of Marine Police Force in coastal states/UTs.
- Enhance Maritime Domain Awareness through **National Command Control Communication and Intelligence Network (NC3I),** an over-arching coastal security network which collates and disseminates data about all ships, dhows, fishing boats and all other vessels operating near our coast.

Way Forward

- **State police agencies may be integrated** leveraging their unique access to fishermen and local communities, facilitating the flow of vital human intelligence.
- **Comprehensive legislations** must be enacted to place systems and processes for the protection of India's maritime infrastructure.
- The government must promulgate a **National Commercial Maritime Security Policy Document**, to articulate its strategic vision for maritime security.

2.7   INDIA-BHUTAN RELATIONS

Context
- India and Bhutan are considering building a rail link between Bhutan and Assam.

Details:
- India and Bhutan are in talks for laying a railway link between Assam's Kokrajhar and Bhutanese town of Gelephu that could promote both trade and tourism.
- In an interaction with the media, he also said the internal situation in Myanmar has created challenges for various infrastructure projects including the ambitious trilateral highway initiative.
- The India–Myanmar–Thailand trilateral highway project is seen as a major initiative to boost regional connectivity.
- The internal situation in Myanmar has created challenges for infrastructure projects. This includes the segment of the trilateral highway that is still under construction, as also that of 69 bridges.
- The external affairs minister was interacting with the media on the progress in border infrastructure and connectivity since 2014.

About India - Bhutan Relations

Areas of Cooperation	• **Bhutan became the second country to launch the BHIM app**, further deepening the financial linkages between our two countries. • **Space cooperation** has continued with the two countries collaborating on the development of a small satellite for Bhutan. • **COVID-19 Assistance**: In line with India-Bhutan unique and special relations, GoI ensured continuous supply of trade and essential items to Bhutan, despite COVID-19 related lock-downs. • **Indian Community**: About 60,000 Indian nationals live in Bhutan, employed mostly in the hydro-electric power construction and road industry.
Development Partnership	• India has been extending economic assistance to Bhutan's socio-economic development since the early 1960s when Bhutan launched its Five Year Plans. • India continues to be the principal development partner of Bhutan.

	• For the 12th Five Year Plan, India's contribution of Rs. 4500 cr. will constitute 73% of Bhutan's total external grant component.
Economic and Commercial Relations	• India is Bhutan's **largest trading partner**. • In 2020, bilateral trade accounted for **82.6% of Bhutan's total trade**. • Imports from India accounting for more than 77.1% of Bhutan's total imports. • **Bhutan's exports** to India constituted 90.2 % of its total exports. • The revised **Bilateral Agreement on Trade, Commerce and Transit** between India and Bhutan came into effect in 2017, and would be valid for ten years.
Defence cooperation	• A 2,000 strong Indian Military Training Team (IMTRAT) is permanently based in western Bhutan to train the Royal Bhutan Army, while other units regularly cooperate with the Royal Bhutan Army.
Hydropower Cooperation	• **Mutually beneficial hydro-power cooperation** with Bhutan forms the core of bilateral economic cooperation. • The ongoing cooperation between India and Bhutan in the hydropower sector is covered under the 2006 bilateral agreement for cooperation and its Protocol signed in 2009. • **Four hydro-electric projects (HEPs)** totaling 2136 MW are already operational in Bhutan and are supplying electricity to India. • **The 720 MW Mangdechhu, 1200 MW Punatsangchhu-I, 1020 MW Punatsangchhu-II** in Inter-Governmental mode are under various stages of implementation.

Way Forward

• India needs to **step up efforts to publicize the benefits that accrue to Bhutan from Indian projects.**
• India continuously needs to **explore new areas of cooperation with Bhutan.**
• India **should try as much as possible to remain out of Bhutan's internal matters**, though it can act as a mentor.
• **Safety of Border from China is a concern for both nations**. Therefore, both sides need to work together on this issue.
• Being neighbours, it is necessary that **both nations continuously recognise value of each other.**For this, regular high level visits from both the sides are necessary.

2.8   MEETING OF THE GC-AISTDF-8

Context

• The Meeting of The Governing Council of ASEAN-INDIA Science and Technology Development Fund (GC-AISTDF-8) highlighted the importance of India's ASEAN technology partnership for prosperity of today and for the next generations.

Details

• India recognizes that science and technology will be the enabling tool to meet the unmet needs of society and address the global challenges that we all face.

• We therefore need to leverage more on science and technology to bridge disparities between urban and rural divide with focus on affordable technologies for inclusive development, economic growth, and employment generation.

• We, therefore, need to leverage more on science and technology to bridge disparities between urban and rural divide with focus on affordable technologies for inclusive development, economic growth, and employment generation," Dr. Rajesh Gokhale, Secretary of the Department of Science and

Technology (DST) and Chair of India ASEAN Working Group said during the GC-AISTDF-8 meeting.

About India ASEAN Science and Technology partnership

- The India ASEAN Science and Technology partnership encompasses all aspects of Research and Innovation, essential for both nations to achieve new heights together.
- Through the **ASEAN-India Science and Technology Development Fund (AISTDF)** and the Plans of Action for Peace, Progress, and Shared Prosperity, the collaboration extends to various areas like blue economy, healthcare, climate action, and sustainable development.
- **The aim is to leverage science and technology to bridge disparities** between urban and rural areas, with a specific focus on developing affordable technologies.
- While highlighting the remarkable progress in India and ASEAN relations, which have grown into a multi-dimensional partnership in recent year.
- The commitment to furthering cooperation in science, technology, and innovation between India and ASEAN reflects a shared vision to

address pressing challenges and drive growth and development in the region.

About ASEAN

- The **Association of Southeast Asian Nations**, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (**Bangkok Declaration**) by the Founding Fathers of ASEAN, namely Indonesia, Malaysia, Philippines, Singapore and Thailand.
- **Brunei Darussalam** then joined on 7 January 1984, **Viet Nam** on 28 July 1995, **Lao PDR** and **Myanmar** on 23 July 1997, and **Cambodia** on 30 April 1999, making up what is today the ten Member States of ASEAN.
- The motto of ASEAN is "**One Vision, One Identity, One Community**".
- 8th August is observed as ASEAN Day. ASEAN Secretariat – **Indonesia, Jakarta**.
- Its **objectives** are:
  o To promote regional stability, economic growth, social progress, cultural development, active collaboration in greater utilisation of resources, also promote **Southeast Asian studies** and cooperation in regional as well as international issues.

2.9 INDIA, UK FTA NEGOTIATIONS: KEY UPDATES

Context

- India-UK bilateral trade in 2022-23 was US$20.36 billion, up from US$17.5 billion in 2021-22.

Details

- India-UK FTA is likely to incorporate a minimum import price (MIP) for bottled scotch, along with reduced import duties for both bottled and cask whiskey.
- Currently, these import duties stand at 150 percent but could be reduced to 100 percent for bottled scotch and halved to 75 percent for casks.
- Additionally, ongoing negotiations involve the possibility of gradually lowering customer

duty on bottled Scotch over a 10-year period, with the target of reaching 50 percent eventually.

- It is speculated that India might agree to an MIP of US$4 per bottle, which could lead to a potential influx of Scotch imports from the UK.
- During the recently concluded eleventh round of FTA talks, India and the UK engaged in detailed discussions on the draft treaty text in nine policy areas. The commerce and industry ministry confirmed that these technical discussions took place across 42 separate sessions, covering various aspects of the agreement.

About India-UK FTA

Background:

- India and the United Kingdom have a multi-dimensional strategic partnership, and are actively engaged in bilateral trade. The two countries agreed to begin formal negotiations for an FTA in January 2022, aiming to advance trade and investment relations between them.
- The UK and India are now in the final stages of negotiating a free trade agreement. The consensus is that there can and will be an announcement by Diwali – a deadline agreed by Prime Minister Narendra Modi and Borris Johnson on his last official visit to India in April.
- UK is concerned but that India is trying to extract a few further concessions in the contentious areas of imported whisky and automobiles. India is also, pushing for relaxation on visas for Indian workers to the UK which has long been a bone of contention.
- Amid all these, there are growing fears that the proposed India-UK free trade agreement (FTA), currently in its final stages of negotiation is likely to be watered down.
- The FTA is important for both countries as it would provide a boost and create a robust framework of overall trade and investment between the two countries.

Which country does the U.K. have an FTA with?

- After Brexit (U.K. coming out of European Union), and Britain can now sign trade pact with other nations.
- **Australia FTA:** U.K. signed an FTA with Australia on December 17, 2021, eliminating almost 99% of tariff on both sides, allowing free flow of goods between the two countries. This pact will help Britain access the Pacific Rim through the **Comprehensive and Progressive Trans-Pacific Partnership.**
- Comprehensive and Progressive Trans-Pacific Partnership is an 11-nation trade conglomerate including Australia.

Which are the countries with which India has FTAs?

- As of 2022, India had 13 FTAs, including the South Asian Free Trade Area, and with Nepal, Bhutan, Thailand, Singapore, Japan and Malaysia. The 13 also include the agreements with Mauritius, UAE and Australia signed during the last five years. Additionally, India has also signed six limited Preferential Trade Agreements.

Level of India-UK Trade:

- India is UK's 12th largest trading partner and accounts for 1.9% of UK's total trade in four quarters to the end of 2022. UK is the seventh largest export destination for India. The trade balance maintained by India with UK has largely been a surplus.
- Top three services exported from India to UK are technical, trade-related and other business services, professional and management consulting services and travel.

The proposed FTA:

- Apart from reducing tariffs, the FTA also looks at lowering non-tariff barriers, particularly technical barriers to trade around rules of origin, investor protection and IPR.
- MoUs on joint recognition of certain educational qualifications and an outline pact on healthcare workforce have already been signed.
- Also, both UK and India have set up panels for a totalization deal being advocated by India and permitting Indian legal services for the UK.

What does an FTA with UK mean for India?

- India's trade would see a quantum jump when the free trade pact is signed, from £23.3 billion through an Enhanced Trade Deal to £50 billion post-FTA.
- With India set to becoming the world's third largest economy by 2050, India would become the U.K.'s most preferred partner.
- A trade deal between the UK and India is a huge opportunity to deepen our already strong trading relationship worth GBP 24.3 billion a year, which will benefit businesses and sectors right across both our countries.
- For India, there are many benefits from access to UK technologies, advanced research and development facilities, London's financial institutions and wealthy consumers.

Closing thoughts

- India ranked as the UK's 12th largest trading partner during this period, constituting 2.1 percent of the total UK trade. In terms of foreign direct investment (FDI), in 2021, the UK had an outward FDI stock of £19.1 billion in India, accounting for 1.1 percent of the total UK outward FDI stock. Conversely, the inward FDI stock in the UK from India in 2021 was £9.3 billion, representing 0.5 percent of the total UK inward FDI stock.

2.10 PARA DIPLOMACY

Context

- **E**xternal Affairs Minister S Jaishankar chaired a meeting of the Parliamentary consultative committee for External Affairs to discuss recent developments in the India-US relationship and Prime Minister Narendra Modi's recent visit to the US.

Details

- Earlier in the day, the Argentine Defence Minister visited the National War Memorial and laid a wreath while paying homage to the fallen heroes. A Tri-service Guard of Honour was also presented to the visiting dignitary before the talks with the Raksha Mantri.
- The Argentine Defence Minister visited BrahMos Aerospace and is scheduled to interact with leading think-tanks in Delhi. He will also travel to **Bengaluru and visit the Hindustan Aeronautics Ltd (HAL) facilities** and separately interact with the defence start-ups in an event organised by **Innovations for Defence Excellence (iDEX).**
- India-Argentina relations were elevated to the level of Strategic Partnership in 2019.
- An MoU on defence cooperation too has been in force since 2019 while both sides are engaged to conclude further instruments to deepen the engagement.
- India and Argentina are working closely together to make defence engagements an important facet of their Strategic Partnership.

The Importance of Incorporating Paradiplomacy into International Relations

- In the field of international relations, the prevailing theories still keep the subject of international law as the principal actor and the object of analysis.
- The rise of para diplomatic activity, which has been recognized and normalized, should not be seen as a displacement of the state but as its complement.
- It is indisputable that negotiations and treaty drafting, as well as the coordination of actions, continue to be carried out through the ministries of foreign affairs; and while state leaders are increasingly directly involved in the international arena, they continue to do so from the perspective of the central government of the country, without threatening the uniqueness of the State voice.
- Therefore, the state, as an actor and subject of analysis, will continue to be essential in order to understanding the international arena. However, neglecting para diplomatic participation hinders a more complex analysis of international reality.
- For instance, when the central government decided to withdraw the United States from the Paris Agreement on climate change, twelve state governors (both Democrats and Republicans) created the United States Climate Alliance (currently endorsed by 30 governors), because they refused to abandon the Paris' principles.
- In addition, nearly 400 mayors endorsed the agreement on their own, including those from the ten most populated cities in the United States (Díaz Abraham, 2019).
- If the analysis of the international impact of the Paris Agreement only considers states' behavior, it cannot explain the results achieved in the United States.

The Challenges Posed by Paradiplomacy

- **This growing activity of non-central governments** implies two major challenges.

The first is the articulation of paradiplomatic activity with foreign policy.

- The external action of states or provinces is a very sensitive issue for the central governments, either because they perceive paradiplomacy as a challenge to their sovereignty, or because the multiplicity of voices emanating from the same country to the international arena makes it difficult to present a coherent national foreign policy.

- In other words, the doctrines of national interest, sovereignty and territorial integrity, at least in the past, have predisposed the central governments against paradiplomacy, even though it neither jeopardizes the territory nor the borders of the country.

- **Unlike what happens in Europe, this challenge has a unique characteristic in the Americas**. The territorial extension of these countries generates situations in which the cities and intermediate governments, located in border areas, have more frequent and deeper contacts with their foreign counterparts than with their own national capitals.

- **This, in turn, has aroused suspicion about the possible effects that this link could have on the bilateral relationship** at the central level.

- However, even if the para diplomatic activity continues to expand, both in scope and in depth of topics, the central government will remain the main actor in international relations. That quality is, at least in the foreseeable future, undisputed

- Nevertheless, **this does not imply that the central government can continue acting** without paying attention to the new international actors; on the contrary, it must know how to transform itself into the module that articulates the pressure between the subnational and the supranational levels.

- **The second challenge rests with the para diplomatic actors themselves**, who need to prepare and plan their international actions. Paradiplomacy is not about governors who, in a personal capacity, make phone calls or visits abroad. If that was the case, it would be the same as the international activity of famous personalities.

- On the contrary, paradiplomacy involves an actor that is like the States, meaning that their authorities are elected by and, consequently, representatives of their citizens.

Closing thoughts

- To overcome the challenges, policy advisors and policy makers are key actors, but if they do not have relevant information and an appropriate approach to paradiplomacy and its link with the state, there is a real and growing risk that the central government will not articulate correctly the interests of their substate units. Consequently, they will act in an uncoordinated manner, which could generate inconsistencies in the foreign policy of the countries and, more seriously for non-central governments, the inefficient allocation of resources.

2.11   KATCHATHEEVU

Context

- Prime Minister Narendra Modi, in his speech in the Parliament during the No Confidence debate, mentioned the island of Katchatheevu.

Details

- PM Modi said it was the Indira Gandhi government which gave away Katchatheevu to Sri Lanka in 1974.

- "The transfer of Katchatheevu to Sri Lanka, by the Union government, without the state government's consent, has deprived Tamil Nadu fishermen's rights and adversely impacted their livelihoods.

Where is the island of Katchatheevu?

Location:

- **Katchatheevu is a 285-acre uninhabited speck in the Palk Strait**, between India and Sri

Lanka. It is no more than 1.6 km in length and slightly over 300 m wide at its broadest point.

- It lies northeast of Rameswaram, about 33 km from the Indian coast. It is about 62 km southwest of Jaffna, at the northern tip of Sri Lanka, and 24 km away from **the inhabited Delft Island, belonging to Sri Lanka**.

Historical importance of the island

- **The only structure on the island is an early 20th century Catholic shrine** – St Anthony's church. During an annual festival, Christian priests from both India and Sri Lanka conduct the service, with devotees from both India and Sri Lanka making the pilgrimage.
  - This year, 2,500 Indians made the journey to Katchatheevu from Rameswaram for the festival.
- Katchatheevu is **not suited for permanent settlement** as there is no source of drinking water on the island.

*In **Articles 5 and 6 of the "Agreement between Sri Lanka and India on the Boundary in Historic Waters between the two Countries** and Related Matters, June 1974", India acknowledged Sri Lanka's sovereignty over Kachchatheevu. This decision was made to strengthen bilateral relations.*

What is the island's history?

- The island is relatively new in the geological timescale, being the product of a 14-century volcanic eruption.
- In the early medieval period, it was controlled by the Jaffna kingdom of Sri Lanka.
- **In the 17th century, control passed to the Ramnad zamindari** based out of Ramanathapuram, about 55 km northwest of Rameswaram.

- It became part of the **Madras Presidency during the British Raj. But in 1921,** both India and Sri Lanka, at the time British colonies, claimed Katchatheevu in order to determine fishing boundaries.
- **A survey marked Katchatheevu in Sri Lanka**, but a British delegation from India challenged this, citing ownership of the island by the Ramnad kingdom.
- **This dispute was not settled until 1974.**

*India and Sri Lanka are binding under the **Vienna Convention on the Law of Treaties, 1969 ('VCLT')**. Both Agreements do not discuss the possibility of either termination or a withdrawal.*

What is the agreement now?

- **In 1974, Indira Gandhi made attempts** to settle the maritime border between India and Sri Lanka, once and for all.
- As a part of this settlement, known as the **'Indo-Sri Lankan Maritime agreement'**, **Indira Gandhi 'ceded' Katchatheevu to Sri Lanka.**
- At the time, she thought the island had little strategic value and that ceasing India's claim over the island would deepen its ties with its southern neighbour.
- **Moreover, as per the agreement, Indian fishermen were still allowed** to access Katchatheevu "hitherto". Unfortunately, the issue of fishing rights was not ironed out by the agreement.
- **Sri Lanka interpreted Indian fishermens' right** to access Katchatheevu to be limited to "rest, drying nets and for visit to the Catholic shrine without visa".
- **Another agreement in 1976**, during the period of Emergency in India, barred either country from fishing in the other's Exclusive Economic Zone.
- **Again, Katchatheevu lay right at the edge of the EEZs** of either country, retaining a degree of uncertainty with regards to fishing rights.

How did the Sri Lankan Civil War impact Katchatheevu?

- **However, between 1983 and 2009**, the border dispute remained on the backburner as a bloody civil war raged in Sri Lanka.

- **With the Sri Lankan naval forces preoccupied in their task of cutting off supply lines of the** LTTE based out of Jaffna, incursions by Indian fishermen well into Sri Lankan waters were commonplace. Bigger Indian trawlers were especially resented as they would not only tend to overfish but also damage Sri Lankan fishing nets and boats.
- **In 2009, the war with the LTTE ended**, and things dramatically changed. Colombo beefed up its maritime defences, and turned focus to Indian fishermen.
- **Facing a depletion of marine resources** on the Indian side, they would frequently enter Sri Lankan waters as they had been doing for years, but finally began facing consequences.
- **Till date, the Sri Lankan navy routinely arrests Indian fishermen** and there have been many allegations of custodial torture and death. The demand for Katchatheevu is revived each time such an incident happens.

What lies ahead?

- **Neither India nor Sri Lanka defined a shared rationale for punitive action** or peaceful settlement when they signed the agreement.
  - As a result, Sri Lanka has taken drastic steps of penalising fishermen with one crore INR as bail amount.
- **Furthermore, it is urged that both the governments agree to "coordinated patrols"** by both nations' naval forces.

- It should be practiced to the point of detaining and handing over the accused to their respective nations, where they will be judged for the same offence, rather than the harsh and barbaric conditions of the other country.
- **According to recent reports, the Sri Lankan fisheries ministry has raised this long-running fisherman's** complaint with United States Ambassador Martin K. Kelly.
- Furthermore, rumours have surfaced of Chinese ships approaching this area.
  - **For a considerable time, transgressions have become a cause of national security worry**, leading to job losses and environmental deterioration.
  - **Diplomatic accomplishment** is defined by the ability to turn a crisis into an opportunity.
- **It is an excellent opportunity for India to move fast and address the issue** before any third party complicates matters further.

Conclusion

- Keeping the gravity of the situation in mind, it is imperative to look out for the fishermen and provide them with sustainable alternatives to bottom-trawling, which will secure the future of both the Indian and Sri Lankan fishermen without jeopardising the existing bilateral relationship.

2.12   ECONOMIC COMMUNITY OF WEST AFRICAN STATE

Context

- ECOWAS' larger aims are to have a single common currency and create a single, large trading bloc in western Africa, but it has also intervened militarily in the region in the past.

Details

- In a July 26 coup, soldiers in the West African nation of Niger installed Gen. Abdourahmane Tchiani as head of state after ousting President Mohamed Bazoum, who said he was held "hostage".
- Along with the difficult economic conditions already prevailing in the country, what has added to the concern for some in the West are the Nigerien calls for assistance from Russia's Wagner Group."
- A mercenary organisation that was also active in the Ukraine war and maintained a footprint in Africa, the Group has fallen out of favour with Russian President Vladimir Putin after its leader Yevgeny Prigozhin attempted a coup in Moscow in late June this year.
- However, its presence in Africa pre-dates its involvement in Ukraine.

- Apart from the expected international players, such as Russia and the United States, the regional bloc ECOWAS or the Economic Community of West African States has been playing an active role.
- Its heads of state will meet on Thursday (August 10) to discuss their next steps, after Niger's military junta defied their August 6 deadline to reinstate the country's ousted president and the soldiers closed the country's airspace.
- There is also apprehension that ECOWAS may choose to intervene militarily.
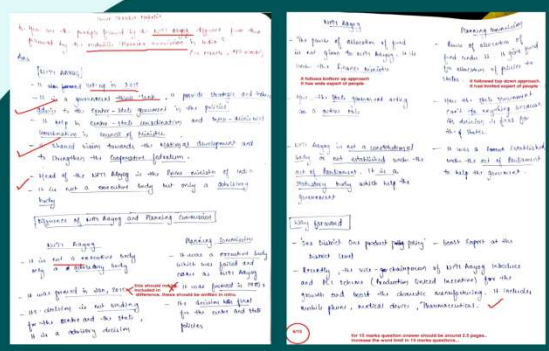
About ECOWAS

- Also known as **CEDEAO in French**, the regional group was **established in 1975 through the Lagos Treaty** – with a mandate of promoting economic integration among its members.
- **Today, ECOWAS has 15 members:** Benin, Burkina Faso, Cape Verde, Cote d' Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal and Togo. Around 400 million people live in this region.
- **Although, following coups in recent years in some of the biggest countries in the bloc** – namely Mali, Guinea and Burkina Faso – it suspended the three members and refused to recognise their new governments.

The West African bloc of nations has indicated that it is planning to intervene in the coup in Niger

15 ECOWAS members: Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Nigeria, Senegal, Sierra Leone, and Togo (in blue), and Niger (in red)

Aim:

- **ECOWAS' larger aims are to have a single common currency** and create a single, large trading bloc in areas of industry, transport, telecommunications, energy, financial issues, and social and cultural matters.
- **According to its website**, the vision of ECOWAS is the creation of a **"borderless region"** that is well-integrated.
- "ECOWAS is meant to be a region governed in accordance with the principles of democracy, rule of law and good governance.

Vision:

- The vision of ECOWAS is the creation of a "borderless region" that is well-integrated.

- "ECOWAS is meant to be a region governed in accordance with the principles of democracy, rule of law and good governance.

Objectives

The Revised Treaty of ECOWAS states the objectives:

- **The harmonization and coordination of national policies** and the promotion of integration programmes, projects and activities, particularly in <u>food, agriculture and natural resources, industry, transport and communications, energy, trade, money and finance, taxation, economic reform policies, human resources, education, information, culture, science, technology, services, health, tourism, legal matters;</u>
  - The harmonization and coordination of policies for the protection of the environment;
- **The promotion of the establishment** of joint production enterprises;
- **The establishment of a common market**; The establishment of an economic union through the adoption of common pol in the economic, financial, social and cultural sectors, and the creation of a monetary union.
- **The promotion of joint ventures by private sector enterprises** and other economic operators, in particular through the adoption of a regional agreement on cross-border investments;
  - **The adoption of measures for the integration of the private sectors**, particularly the creation of an enabling environment to promote small and medium-scale enterprises;
- **The establishment of an enabling legal environment**; the harmonisation of national investment codes leading to the adoption of a single community investment code;
  - **The harmonization of standards and measures**; the promotion of balanced development of the region, paying attention to the special problems of each member state particularly those of landlocked and small island member states;
- **The encouragement and strengthening of relations** and the promotion of the flow of information particularly among rural populations, women and youth organizations and socio-professional organizations such as associations of the media, business men and women, workers, and trade unions;
  - **The adoption of a community population policy** which takes into account the need for a balance between demographic factors and socio-economic development;
- **Any other activity that member states** may decide to undertake jointly with a view to attaining community objectives.

What kind of a role has ECOWAS played in the region so far?

- Beyond the goals of economic cooperation, **ECOWAS has attempted to quell military conflicts in the region.**
- **ECOWAS also operated a regional peacekeeping** operation known as ECOMOG, led by Nigeria in the 1990s and early 2000s, like in Liberia when forces were first deployed in 1990 during the deadly civil war and in Sierra Leone in 1997 when a democratically elected government was overthrown.
- **In 2017, it intervened in The Gambia after longtime President YahyaJammeh** refused to step down after losing the elections which eventually led to the winner Adama Burrow coming to power.
- It has sent its troops to other countries but never to Niger.

Closing thoughts

- **There is also the question of whether longstanding measures of economicsanctions** – such as those imposed by ECOWAS – can work, as these countries are also dealing with low economic growth prospects at the moment.
- **France, a former coloniser of Niger**, has cut off aid following the coup. Additionally, the presence of more than 2,000 troops from France and the US has also irked some locals, with the coup seeing anti-France graffiti and slogans.

2.13 INDIAN PHARMACOPOEIA RECOGNITION IN SURINAME

Context
- The Union Cabinet, chaired by the Prime Minister Shri Narendra Modi, was apprised of a Memorandum of Understanding (MoU) signed on 4th June, 2023 between the Indian Pharmacopoeia Commission (IPC), Ministry of Health & Family Welfare, Government of the Republic of India and Ministry of Health, Government of the Republic of Suriname for Recognition of Indian Pharmacopoeia (IP) in Suriname.

Details
- The Memorandum of Understanding will facilitate export of medical products leading to foreign exchange earnings. This would be a step towards an Atmanirbhar Bharat.
- **The Indian Pharmacopoeia (IP) is officially recognized by five (5) countries**: Afghanistan, Ghana, Nepal, Mauritius and the Republic of Suriname. The Ministry seeks to expand the nations which recognize the IP.

Highlights of the MoU
The parties recognize the importance of developing close cooperation and exchanging information in the field of the regulation of medicines in accordance with their respective laws and regulations and reach the following understandings:
- **to accept Indian Pharmacopoeia (IP)** as a book of standards for medicines in Suriname so as to ensure quality of medicines being manufactured and/or imported in Suriname;
- **to accept the Certificate of Analysis** issued by Indian manufacturers per IP and to do away with requirement of duplicate testing of the medicines in Suriname;
- **to get IPRS and Impurity standards** from IPC at reasonably low cost to be used during the quality control analysis;
- **to have better scope for development** of generic medicines and contributing to availability of affordable medicines in Suriname;
- **to promote an understanding** of pharmacopoeia in regulatory framework, requirements and processes;
- **to facilitate the exchange** of information and documentation relating to the development of monographs of IP;
- **to enhance the ability of regulatory authorities** in the provision of their services relating to or in connection with public health, **to meet the needs** of their respective population;
- **to explore opportunities for technical cooperation** in areas of mutual benefit in the development of monographs and future technologies.

International recognition of the Indian pharmacopoeia! Standards has several benefits to the Indian pharmaceutical sector. These include:
- It would boost the **export of Indian pharmaceutical products** to these countries as it would remove double regulation, duplication in testing and post importation checks. Indian drug exporters would thus, gain a competitive edge and trade would become more remunerative.
- Further, **importing nations would gain access** to quality Indian medical products at affordable prices.
- **Manufacturers in importing** countries would have better scope for development of generic medicines contributing to availability of affordable medicines to their citizens.

- The various reference standards and impurity standards would become available to these manufacturers at a reasonable cost.

Indian Pharmacopoeia Commission (IPC)

- It **is an Autonomous Institution of the Ministry of Health and Family Welfare**, Govt. of India. IPC is created to set standards of drugs in the country.
- **Its basic function** is to update regularly the standards of drugs commonly required for treatment of diseases prevailing in this region.
- It **publishes official documents for improving** Quality of Medicines by way of adding new and updating existing monographs in the form of Indian Pharmacopoeia (IP).
- **It further promotes** rational use of generic medicines by publishing National Formulary of India. IP prescribes standards for identity, purity and strength of drugs essentially required from health care perspective of human beings and animals.
- **IPC also provides IP Reference Substances (IPRS)** which act as a finger print for identification of an article under test and its purity as prescribed in IP.

About India-Suriname Relationship

Political	• India enjoys close, warm and friendly relations with Suriname, reinforced by cultural and people-to-people contacts bridged by Indian Diaspora's arrival dating back to 146 years. • **Establishment of diplomatic relations**: In 1976 the Indian Embassy opened in **Paramaribo in 1977** and the **Surinamese Embassy** in New Delhi in 2000.
Economy	• Indian export to Suriname consists of <u>boilers, machinery, iron & steel, electrical machinery & equipment, sound recorders, pharmaceutical products, textiles, vehicles, coffee, tea and spices, rubber, paper, tobacco, organic chemicals, furniture, carpets, ceramic products, footwear and printed books</u>; Indian import consists of wood, aluminum, textiles, <u>herbal products, garments</u>, spices, and electrical machinery • **Exports to India in 2018-19 US$:** 111.94 million, Imports from India 2018-19: US 1.34 million
Cultural	• Indian Cultural Centre in Suriname was opened in **1978 and pursued soft-power diplomacy** initiatives **including Hindi language, Kathak, Yoga and classical music**.
Indian diaspora	• Indian diaspora, which currently constitutes <u>27% of Suriname's population of about 5.68 lakhs (and some 50 Sindhi families), arrived in Suriname 146 years ago never</u> disconnected themselves with their roots. • Both India and Suriname have implemented the **MoU on the waiver of visa** for official and diplomatic passport holders.

Conclusion

- Convergence in the regulatory practices could help in increasing export of medicines from India and consequentially help in better employment opportunities for educated professionals in the Pharmaceutical sector.

2.14 INDIA-RUSSIA DEFENCE DEALS

Context

- Major defence deals with Russia, especially the S-400 deal, which have already seen delays due to the war in Ukraine continue to face uncertainty with no clarity on the revised schedule as efforts to resolve the payment crisis haven't fructified so far.

Details

- Three of the five S-400 regiments contracted under a $5.43 billion deal in 2018 have been delivered but the other two are delayed and there is no clarity on the revised schedule, multiple sources confirmed.
- While the two sides have been trying to settle payments through a Rupee-Rouble arrangement, it has failed to solve the crisis due to the huge trade imbalance and Rupees accumulating on the Russian side.

What does the S-400 Regiment consist of?
Can target aircraft, cruise missiles and ballistic missiles

40N6: Max. range of 400km
48N6: Max. range of 250km
9M96E2: Max. range of 120km
Max. intercept altitude: 56km
Max. target speed: 4.8km/sec
Mobile Command Post
Fire Control Radar
Launcher: Equipped with four missile canisters. Upto eight launchers in S-400 battery.
Source: Graphic News
THE HINDU

- The revised delivery schedule can be worked out once there is clarity on the payment schedule.
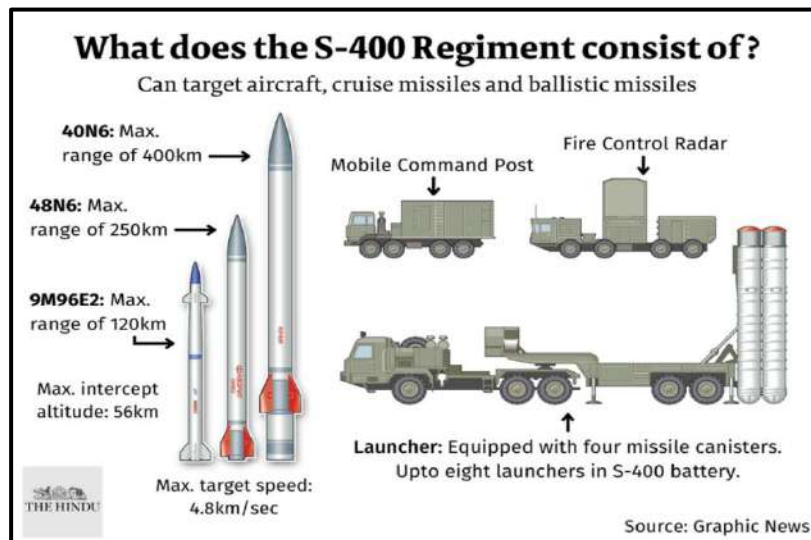
Issues of S-400 deal

- **India had contracted five S-400 regiments under a $5.43 billion deal**, or ₹40,291 crore as per conversation rate of ₹74.2 against the Dollar when it was signed in October 2018.
- Even then, its operationalisation got delayed as the sides sought to avoid payments in dollars as possible threat of U.S. sanctions under **CAATSA (Countering America's Adversaries Through Sanctions Act) loomed large**.
- **The Ukraine war has further compounded the problem**. The 'milestone payments' which are periodic payments made against deliveries have been delayed.
- As per a report of the **Parliamentary Standing Committee on Defence** tabled in March this year, the Indian Air Force (IAF) informed the committee that there is a **"major project"** where the "**deliveries have been stopped because of the war going on."**
- **They have given us in writing that they are not able to deliver it**. That is why the major part of projection has been reduced," an IAF representative informed the committee while appraising them regarding the sharp decline in Budget Estimates this year as compared to the last year's projection.
- Official sources had confirmed that the IAF was referring to the S-400 deal.
- **As per the revised Budget Estimates of 2022-23** too, the IAF had returned close to ₹2,370 crore which is part of committed liabilities but could not be completed.

For instance, from 2018 to 2021 the defence trade between India and Russia was worth around $15 billion as several big-ticket deals were concluded including S-400, stealth frigates, AK-203 assault rifles and emergency procurements in the backdrop of the Balakot air strike in 2019 and the 2020 stand-off with China in Eastern Ladakh.

About India-Russia Relations

Diplomatic relations	• The diplomatic relationship between India and Russia is characterized by a long-standing history of friendship and cooperation. • **The foundation of the bilateral ties betwe**en the two countries was laid during the Cold War era and has evolved into a Special and Privileged Strategic Partnership.

Historical background	• India and Russia have enjoyed close ties since the Soviet era. • **The Indo-Soviet Treaty of Peace, Friendship, and Cooperation** signed in 1971 formed the basis for the bilateral relationship. • The Soviet Union supported India during significant events such as the Indo-Pak wars and played a crucial role in India's defense and development.
Defense and security cooperation	• **Defense cooperation is a cornerstone** of the India-Russia relationship. • **Russia has been a key supplier of defense equipment** to India, including aircraft, tanks, submarines, and missiles. • The two countries engage in joint **military exercises** and share intelligence and counterterrorism cooperation.
Economic relations	• **Economic cooperation** between India and Russia covers various sectors, including energy, pharmaceuticals, infrastructure, and information technology. • **Bilateral trade has been growing steadily**, with both countries aiming to reach a target of $30 billion by 2025. • **Investment opportunities and joint ventures** are actively pursued to enhance economic ties.
Recent developments	• The **Special and Privileged Strategic Partnership** has witnessed further strengthening in recent years with regular high-level visits and exchanges. • **Areas of future cooperation** include high technology, innovation, pharmaceuticals, and joint manufacturing. • Efforts are being made to diversify the bilateral relationship beyond defense and energy sectors.

Closing thoughts

- There is a need for a more **"extensive Eurasian partnership involving the EAEU and China, India, Pakistan, and Iran"**.
- India can help Russia by providing the much-needed workforce in sectors like agriculture and construction without engaging in permanent settlement.
- Both countries must take advantage of policies like **'Make in India'**.

2.15   EXPANSION OF BRICS

Context

- The enthusiasm for BRICS in the West Asian region signals that it no longer sees its relationship with the world through the eyes of the United States.
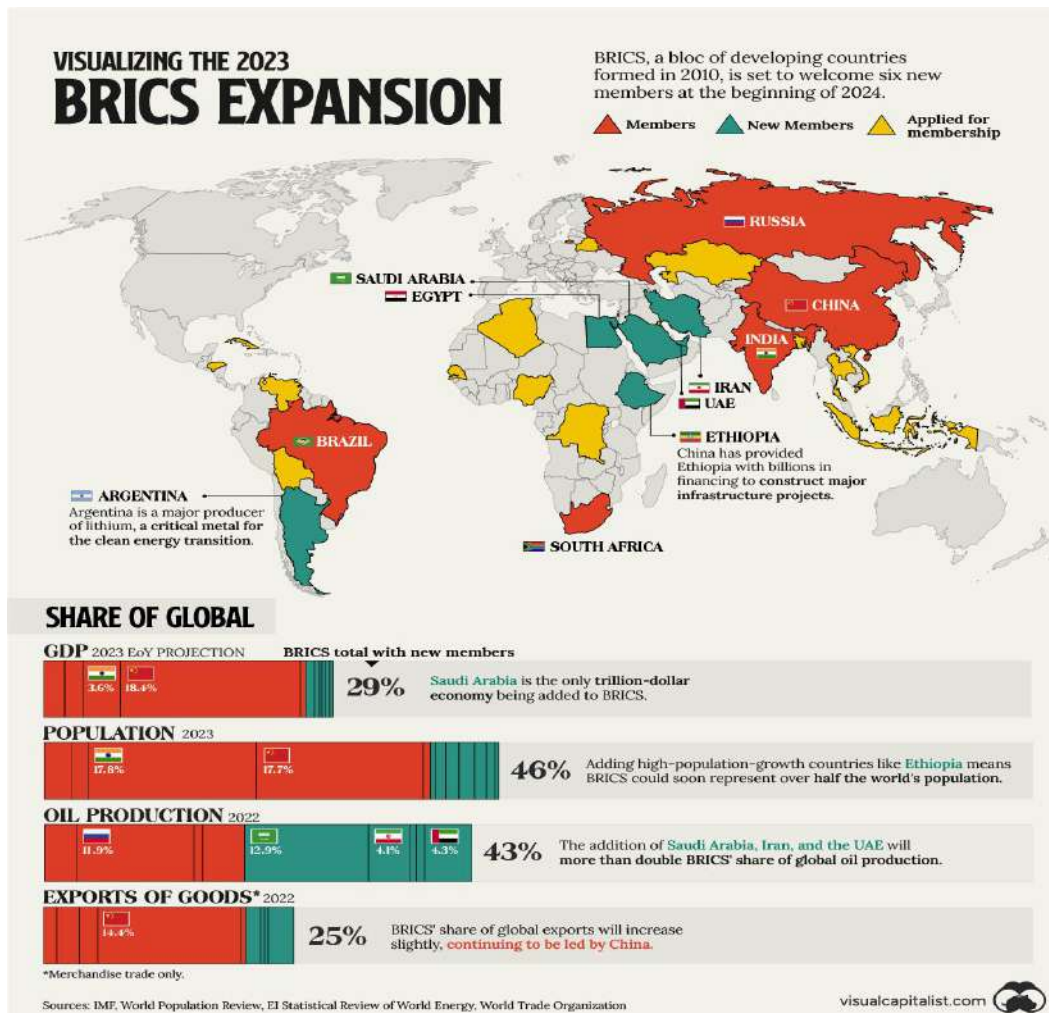
Details

- The BRICS bloc of developing nations agreed to admit Saudi Arabia, Iran, Ethiopia, Egypt, Argentina and the United Arab Emirates in a move aimed at accelerating its push to reshuffle a world order it sees as outdated.
- In deciding in favour of an expansion - the bloc's first in 13 years - BRICS leaders left the door open to future enlargement as dozens more countries voiced interest in joining a grouping they hope can level the global playing field.
- The expansion adds economic heft to BRICS, whose current members are China, the world's second largest economy, as well as Brazil, Russia, India and South Africa. It could also amplify its declared ambition to become a champion of the Global South.
- But long-standing tensions could linger between members who want to forge the grouping into a counterweight to the West - notably China, Russia and now Iran - and those that continue to nurture close ties to the United States and Europe.

Current Proportion

The BRICS brings together five of the largest developing countries in the world—Brazil, Russia, India, China, and South Africa and represents 41 percent of the global population, 24 percent of the global GDP and 16 percent of the global trade.

- BRICS is considering expanding its membership, and a growing number of countries, mostly from the global South, have expressed interest in joining.
- Several countries including the **United Arab Emirates, Saudi Arabia, Argentina, Iran, Egypt, Bahrain, Indonesia, and Kazakhstan** had shown their willingness to join the BRICS.
- **Around 40 countries had shown interest in joining BRICS** out of which 23 formally applied for the membership.
- Earlier, representatives from Iran, Saudi Arabia, the United Arab Emirates, Cuba, the Democratic Republic of Congo, Comoros, Gabon, and Kazakhstan attended a meeting in Cape Town for so-called "Friends of BRICS" talks. Egypt, Argentina, Bangladesh, Guinea-Bissau, and Indonesia participated virtually.

Significance of expansion

- **The countries invited to join reflect individual** BRICS members' desires to bring allies into the club.
- **Brazilian President Luiz Inacio Lula da Silva** had vocally lobbied for neighbour Argentina's inclusion while Egypt has close commercial ties with Russia and India.
- **The entry of oil powers Saudi Arabia and UAE highlights** their drift away from the United States' orbit and ambition to become global heavyweights in their own right.
- **Russia and Iran have found common cause in their shared struggle** against U.S.-led sanctions and diplomatic isolation, with their economic ties deepening in the wake of Moscow's invasion of Ukraine.

Need of Expansion

- An expansion of the BRICS bloc is undergoing since countries – see one thing in common: a desire to level the global playing field.
- **This is lacking because of the wealthy West's domination** of international bodies, such as the United Nations, the International Monetary Fund or the World Bank.
    o **The list of grievances is long**. Abusive trade practices. Punishing sanctions regimes. Perceived neglect of the development needs of poorer nations.
- **Amid widespread dissatisfaction with the prevailing world order,** the pledge of BRICS nations - currently Brazil, Russia, India, China and South Africa - to make the grouping a leading champion of the "Global South" has, found resonance.

READ: https://www.iasgyan.in/daily-current-affairs/brics-expansion#:~:text=in%20peace%20processes.-,BRICS%20EXPANSION,percent%20of%20the%20global%20trade.

About BRICS

About	• BRICS is an acronym for the grouping of the world's leading emerging economies, namely **Brazil, Russia, India, China and South Africa.**
Chairmanship	• The Chairmanship of the forum is **rotated annually** among the members, by the acronym B-R-I-C-S.
First Summit	• **The first BRIC Summit took place in 2009 in the Russian Federation** and focused on issues such as reform of the global financial architecture.
Recent Members	• **South Africa was invited to join BRIC in December 2010**, after which the group adopted the acronym BRICS. South Africa subsequently attended the Third BRICS Summit in Sanya, China, in March 2011.

Significance	• The BRICS seeks to deepen, broaden and intensify cooperation within the grouping and among the individual countries for more sustainable, equitable and mutually beneficial development.

Conclusion

- An expanded BRICS membership and the launch of a common currency would provide numerous advantages for India, including enhanced trade opportunities, reduced dependence on the US dollar, reduced transaction costs and strengthened regional cooperation.

2.16 CHABAHAR PORT

Context

- After years of negotiations, Delhi and Tehran are expected to sign a multi-year deal, allowing India to develop the Shahid Beheshti Terminal in the Chabahar port.

Details

- In 2016, India Ports Global Ltd (IPGL) and Arya Banader of Iran had signed a contract to develop the port.
- Currently, India and Iran sign one-year contract extensions for developing and running the terminal at Chabahar Port. However, India has been urging Tehran to commit to a longer-term pact, providing certainty for investment and development plans for the port designed by India. A long-term contract for 10 years may also provide for automatic renewal.
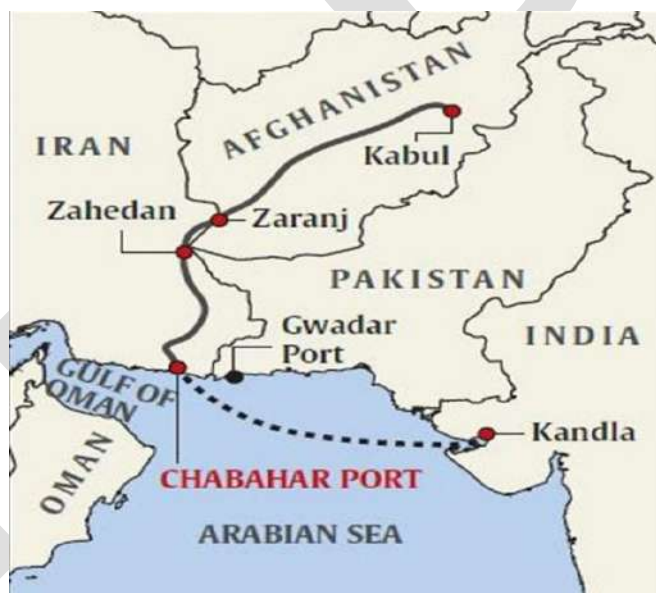
About Chabahar Port

- Chabahar, located in southeastern Iran, was envisioned as a gateway for India to access Central Asian markets.
- **It is the only Iranian port with direct access to the Indian Ocean**. Being close to Afghanistan and the Central Asian countries of Turkmenistan, Uzbekistan, and others, it has been termed the **"Golden Gate" to these landlocked countries**.
- **Chabahar is 700 km (430 mi) away from Zahedan**, the capital of the Sistan and Baluchistan province.
- The project's roots date back to 2003, when both nations agreed to its development during then-President Mohammad Khatami's visit to India.
  - However, the initiative faced obstacles due to Western sanctions on Iran's nuclear programme.
- In 2013, India pledged $100 million to develop the port, but matters progressed after the 2015 nuclear deal was struck between Iran and the Permanent Members of the UN Security Council, Germany and the European Union.

Significance of the Chabahar Port for India

Trade and transportation
- The first and foremost significance of the Chabahar port is the fact that India can bypass Pakistan in transporting goods to Afghanistan.

Connecting route
- Chabahar port will boost India's access to Iran, the key gateway to the International North-South Transport Corridor that has sea, rail and road routes between India, Russia, Iran, Europe and Central Asia.

Countering China
- Chabahar port will boost India's access to Iran, the key gateway to the International North-South Transport Corridor that has sea, rail and road routes between India, Russia, Iran, Europe and Central Asia.

Political sustainability
- Chabahar Port will ensure the establishment of a politically sustainable connectivity between India and Afghanistan. This is will, in turn, lead to better economic ties between the two countries.

Boost Import
- With Chabahar port being developed and operated by India, Iran also becomes a military ally to India. Chabahar could be used in case China decides to flex its navy muscles by stationing ships in Gwadar port to reckon its upper hand in the Indian Ocean, Persian Gulf and Middle East.
- With Chabahar port becoming functional, there will be a significant boost in the import of iron ore, sugar and rice to India.

Closing thoughts

- As geopolitical dynamics evolve, the collaboration between India and Iran over Chabahar Port reinforces their shared commitment to circumvent challenges and promote trade-led development.
- The recent discussions between PM Modi and President Raisi lay the foundation for realizing the port's transformative influence on regional trade, connectivity, and prosperity.
- The logic of geography and strategy make Chabahar an important node for India. It is a critical project for India's strategy towards the Indian Ocean, Eurasia, and Afghanistan.

READ: https://iasgyan.in/daily-current-affairs/chabahar-port-29

2.17   INSTC

Context

- In addition to registering historical records of freight transportation, the Islamic Republic of Iran Shipping Lines (IRISL) in the administration embarked on launching direct shipping lines to Venezuela, Africa and Syria and operating the Int'l North-South Transport Corridor.

Introduction

- The **International North–South Transport Corridor (INSTC) is a 7,200-km-long multi-mode network of ship, rail, and road routes for moving freight between India, Iran, Afghanistan, Azerbaijan, Russia, Central Asia and Europe**.

- **The route primarily involves** moving freight from India, Iran, Azerbaijan and Russia via ship, rail and road.
- **The objective of the corridor** is to increase trade connectivity between major cities.

Big Advantages for India

- The INSTC is the shortest trade route connecting India with Russia. A 2014 study by the Federation of Freight Forwarders' Association of India found that the INSTC was **30 percent cheaper and 40 percent shorter** than the traditional Suez route, reducing transit time to an average of 23 days for Europe-bound shipments from the traditional 45-60 days.
- **The 2021 blockage of the Suez Canal has further served to highlight the INSTC** as a necessary if not better alternative to the Canal.
  o Further, the corridor has the potential to turn partner countries into logistics and transit hubs, massively increase regional trade and development, and give India access to Central Asia's rich energy resources.
- **International sanctions on Iran were a major impediment to the INSTC's slow pace**. Another reason is funding. Unlike China's BRI, the INSTC has no one single source of funding but depends on partner states.
- This, however, also makes the INSTC an equal opportunity player, unlike the BRI, which has snared many member countries into China's debt trap.
- **For India, the INSTC has the potential to outflank China's BRI**. With the signing of the Joint Comprehensive Plan of Action (2015), India moved ahead with Chabahar.

Can Russia-Iran-India Get INSTC Going?

- **The war in Ukraine has opened up new opportunities for the INSTC**. Unprecedented sanctions on Russia have deepened cooperation with Iran. Both countries have recently signed an agreement for the construction of the Rasht-Astara Railway along the INSTC.
- **Secondly, the sanctions on Russia**, whose territory served as a transit zone for many Central Asian countries, as well as for China, has led to the rise of alternate trade routes like the Middle Corridor. China has also halted all BRI-related work in Russia.
- All **this has spurred greater commitment from Russia to accelerate infrastructure development** both on its territory, and eliminate legal and logistical hurdles that currently prevail along the corridor.
- **A session on the INSTC at the St Petersburg International Economic Forum** earlier this year concluded that freight traffic along the corridor will continue to grow to projections of 6.5 million tonnes by 2030.
- **The current Iranian administration** has vowed to complete the construction operation of the INSTC during its tenure. India also needs to stay the course. The corridor remains riddled with multiple issues like outdated infrastructure, tax, administrative and other barriers, and needs concerted effort by all parties concerned.

Closing thoughts

- India has shown its resolve at a time of great geopolitical flux. It has not caved into unilateral sanctions and is determined to engage with both Russia and Iran. Once completed the Persian Gulf and the Sea of Oman, which have direct access to free waters, will be connected to the North Sea and Caspian Sea littoral states via rail and road.

2.18 INDIA-CHINA BORDER ISSUE

Context

- As China released the 2023 edition of its so-called "standard map" incorporating disputed areas and including its claims over Arunachal Pradesh and the Aksai Chin region, India lodged a "strong protest" through diplomatic channels and said that such steps only "complicate the resolution of the boundary question".
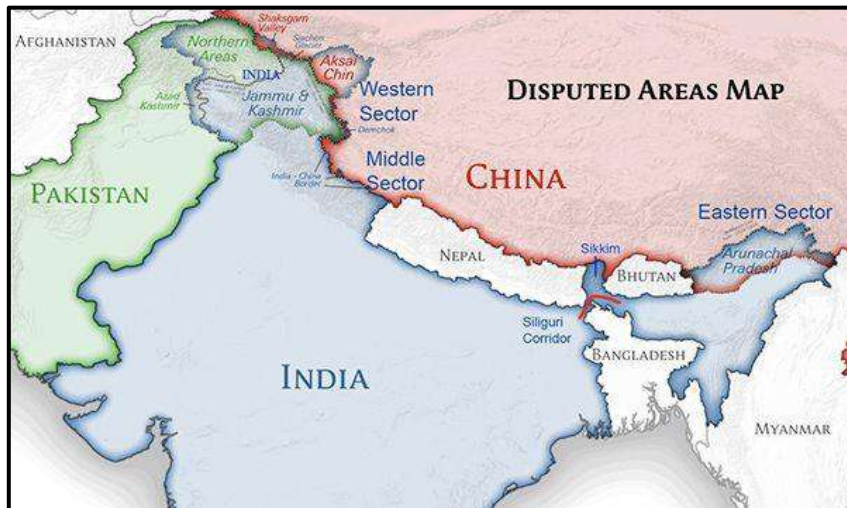
Details

- India has lodged a strong protest with China over a new map that lays claim to territory New Delhi says is Indian, the latest tension between the two Asian neighbours over their mutual border.
- New Delhi said two areas on a map released by Beijing's state-owned Global Times newspaper belong to India. One was India's northeastern state of Arunachal Pradesh, which China considers to be part of Tibet, and where the two countries fought a full-scale border war in 1962.

- The second was Aksai Chin, a high-altitude strategic corridor linking Tibet to western China.
- China claims Arunachal Pradesh in the eastern Himalayas to be a part of southern Tibet and, in April, released a map renaming 11 places in the state as being within "Zangnan", or southern Tibet in Chinese. Aksai Chin, a plateau in the western Himalayas, is claimed by India but controlled by China.

About India-China border issue

Disputed areas along LAC	• China claims about 90,000 sq km of India's territory in the northeast, including Arunachal, while India says 38,000 sq km of land in China-occupied Aksai Chin should be a part of Ladakh. • There are several disputed areas along the Line of Actual Control (LAC), including in Himachal, Uttarakhand and Sikkim.
Route cause	• The root cause lies in an ill-defined, 3,440km (2,100-mile)-long borderthat both countries dispute.Four states - Himachal Pradesh, Uttarakhand (erstwhile part of

	UP), Sikkim and Arunachal Pradesh and Union Territories of Ladakh (erstwhile state of Jammu & Kashmir) share a border with China.
	• The Sino-Indian border is generally divided into three sectors namely: Western sector, Middle sector, and Eastern sector.

Measures to be taken

Political Relations	• MoU was signed to open an additional route for Kailash Mansarovar Yatra through Nathu La. • India and China have also established a High Level Dialogue Mechanism on Counter Terrorism and Security • To facilitate exchanges between Indian states and Chinese provinces, States/Provincial Leaders Forum was established.
Economic relations	• India extended e-visa facility to Chinese nationals • Trade and Economic Relationship are shaped through various dialogue mechanism • Joint Economic Group led by the Commerce Ministers of both sides • Strategic Economic Dialogues led by the Vice Chairman of NITI Aayog and the Chairman of National Development and Reform Commission of China.
Cultural relations	• India and China have entered into an agreement on co-production of movies • Yoga is becoming increasingly popular in China. China was one of the co-sponsors to the UN resolution designating June 21 as the International Day of Yoga.

Closing thoughts

- India-China should stick to ethics of the Panchsheel (Five Principles of Peaceful Coexistence) and must strengthen coordination on international and regional affairs through more regular and high-level political engagement. Through enhanced physical connectivity and economic integration, both countries can act as an engine of growth for the entire subcontinent.

2.19   INDIA'S MOON LANDING: A BIG GEOPOLITICAL STEP

Context

- The successful lunar mission, coming on the heels of Russian failure, could accelerate a long-running space race.
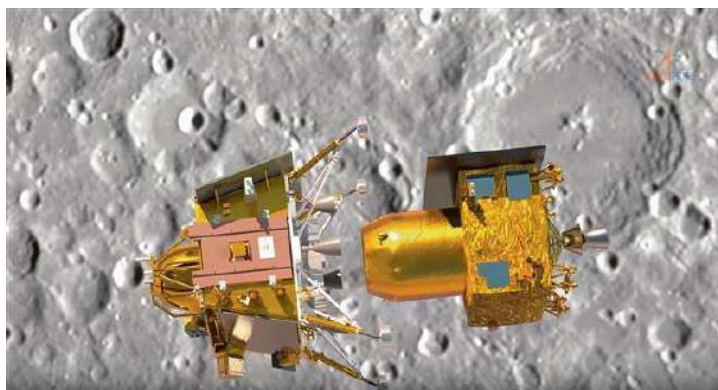
Details

- The highlights this week: India becomes the first country to land a spacecraft on the moon's south pole, Indian Prime Minister Narendra Modi and Chinese President Xi Jinping could have a long-awaited meeting at this week's BRICS summit, and Pakistan faces political uncertainty under a caretaker government.

India's Spacecraft lands on Moon's south pole

- India became just the fourth country to stage a soft landing on the moon, when the Chandrayaan-3 spacecraft successfully alighted on the lunar south pole. No other nation has made a landing on that part of the moon.

- The path of the Chandrayaan-3, which launched from southern India more than a month ago, has captivated the Indian public and dominated headlines for days.
- **The symbolism of India's moon landing is hard to overstate**: An aspiring power has achieved an unprecedented feat nearly 240,000 miles from Earth.
- **India's space program originated in the 1960s** and has launched hundreds of satellites. **In 2008, the Chandrayaan-1 mission** confirmed the presence of craters on the moon's south pole that scientists say contain ice. However, a previous attempt at a soft landing on the moon failed in 2019.

On the global stage

- India's goals of becoming a **permanent member of the U.N. Security Council** and **joining the Nuclear Suppliers Group** may stand unfulfilled, but it is now part of a much smaller group of countries that have been to the moon, alongside only China, Russia, and the United States.
- **And many aspirants**—including Israel, Japan, Russia, and the United Arab Emirates—have not succeeded in landing on the moon's south pole.
- **Beyond the symbolism**, the achievement can bring substantive benefits to India and the wider world.
- New Delhi's moon landing can **enhance ongoing space research that has contributed to the development of communication** and remote-sensing technologies.
- India's space research has also helped monitor underground water levels and predict weather patterns back home on Earth—which is especially significant in one of the countries most vulnerable to climate change.

Significance for India

- **The lunar landing could also boost India's economy by kickstarting private space exploration programs**. A senior official at India's Ministry of Science and Technology said that India's space sector could become a trillion-dollar economy.
- **Indian space experts also speak of how the Chandrayaan-3 mission** can accelerate efforts to fight climate change. The lunar mission involves research on helium-3, a helium isotope found in abundance on the moon that could serve as a renewable energy resource.
- However, the Chandrayaan-3 mission could **introduce a new phase of great power competition** by accelerating a long-running space race.

Relations with global powers

- **India and Russia—partners on Earth**—have competed to become the first country to land on the lunar south pole; a Russian attempt failed.
- **The presence of water, which could be refined into rocket fuel in the future**, suggests an opportunity for other countries to use the lunar south pole region as a base for deeper space exploration.

Closing thoughts

- Perhaps in anticipation of such competition, in 2020 the United States established the Artemis Accords, which aim to promote space cooperation through shared rules and principles. Many U.S. allies and partners have signed on, including India during Modi's visit to Washington in June. China and Russia have not. With geopolitical competition in space poised to intensify, it could certainly change the way those on Earth perceive the moon—and beyond.

2.20   INDIAN PRESIDENCY ON G20

Context
- The Presidency of the G20 may be a revolving one, but India is set to leave a lasting impression by putting key issues at the top of its agenda, and making progress on some of the most pressing matters facing the world economy.

About India's G-20 Presidency
- **India's G20 presidency has marked a significant milestone** in its global leadership role. With, India taking the presidency for the first time, it is steering discussions and initiatives among the world's major economies to address complex challenges.
- **With its diverse economy**, technological prowess, and commitment to sustainable development, India is poised to bring unique perspectives to the table.
- **During the presidency, India is focusing on various issues** like inclusive growth, digital innovation, climate resilience, and equitable global health access.
- **By leveraging its presidency**, India is fostering collaborative solutions that not only benefit its own population but contribute to the broader global well-being, reinforcing its spirit of **'Vasudhaiva Kutumbakam' or the 'World is One Family'.**

India's G-20 priorities
- India has identified a wide array of **cutting-edge priorities that are being deliberated by various G20working groups**, to help address the key challenges we face and to plan for a better future.
- **The first agenda relates to financing tomorrow's cities** and establishing them as the foremost engines of economic growth. While cities generate over 80% of global gross domestic product, unplanned and rapid urbanization constrain their economic potential.
- **It is estimated that by 2050**, nearly twice as many people will live in cities. To sustain their economic potential, cities need to become more livable through upgraded infrastructure and services, such as reliable water, transport, power, waste management, and affordable housing.
- **The second agenda where India can lead the way is in energy transition**. Enabling an orderly and just transition from carbon-intensive energy to renewable energy would not only help combat climate change, but also help bolster energy security, raise economic productivity and create jobs, improve environmental outcomes, and prune health costs. In other words, decarbonization is development.
- **The third agenda relates to health care**. The COVID-19 pandemic highlighted the compelling need for a united global approach to fortify health systems to effectively address emerging health crises. India's G20 Presidency is a medium of change towards more resilient, responsive, and sustainable health systems and to advance previously established G20 pandemic preparedness efforts.

About G-20

Established	• **Established in 1999**, the Group of Twenty (G20) is a consortium comprised of twenty of the world's largest economies.
Purpose	• The main purpose behind its inception was to create a platform where significant industrialized and developing economies could convene to engage in discussions about matters concerning global economic and financial stability.
GDP	• The G20 nations collectively account for approximately 85% of the global Gross Domestic Product (GDP), more than 75% of the worldwide trade, and approximately two-thirds of the global population.

Membership	• The G20, consisting of 19 individual nations (**Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Türkiye, United Kingdom, and the United States**) along with the European Union, collectively forms a prominent international assembly.
Theme	• The theme of the international summit is **"Vasudhaiva Kutumbakam" or "One Earth · One Family · One Future."** • It is derived from a famous ancient Sanskrit text, Maha Upanishad. The theme, which gives the message of global unity, is a perfect slogan for the international grouping. • It also highlights the concept of **LiFE and signifies environmentally sustainable and responsible choices.** These choices are pertinent not only at the individual level but also at national level.

How G20 Works?

- **As per the central government website** on the G20 Summit, the G20 was upgraded to the level of heads of state, and government in the wake of the global economic and financial crisis of 2007, and, in 2009, was designated the **"premier forum for international economic cooperation".**
- **The G20 Presidency oversees the G20 agenda** over a span of one year and takes on the role of hosting the Summit. In the year 2022, Indonesia assumed the G20 presidency. Following that, Brazil is set to take on the presidency for the upcoming year.
- **Within the G20, there are two concurrent tracks**: the Finance Track and the Sherpa Track. The Finance Track is led by Finance Ministers and Central Bank Governors, while the Sherpa Track is guided by Sherpas following the Finance Track.
- **The G20 process from the Sherpa side** is coordinated by the Sherpas of member countries, who are personal emissaries of the Leaders. Finance Track is led by Finance Ministers and Central Bank Governors of the member countries.

Conclusion

- G20 can help shape a **global health agenda focused on ensuring universal, affordable, and quality** health services. Giving priority to enhancing health emergency prevention and preparedness (with focus on One Health and linkages between climate change and health), strengthening cooperation in the pharmaceutical sector, and leveraging digital health innovations and solutions to aid universal health coverage, is critical.

2.21 MILITARY, DIPLOMACY AND INDIA'S NEIGHBOURHOOD FIRST POLICY

Context

- India should revisit its sub-continental 'Neighbourhood First Policy' and recast the policy towards its neighbours in light of its strategic concerns.

Details

- The policy was a clear break from the past. Most observers were of the opinion that the grouse which India's smaller neighbours were harbouring against its colossal "big brother" would be a thing of the past.
- The presence of the heads of states from all the neighbouring countries during Modi's swearing-in ceremony had all the makings of a magnanimous elder that would not only put its overbearing attitude towards its smaller neighbours on the back burner but would actually step up new vistas that would permit India's giantism to treat its neighbours as equals.

The 'Neighbourhood First Policy' is the anchor point of India's general foreign policy since independence in 1947. Subsequently, the Neighbourhood First Policy has evolved, was debilitated, and has been reformed under the various prime ministers of India. Based on preferences and perceptions about the South Asian neighbourhood, the Neighbourhood First Policy has been implemented differently.

Neighbourhood First Policy and its implications

- **It focuses on a diplomatic approach**. Top priority should be given to the relations of India with its neighbouring countries. India must resolve all the existing differences with its neighbours to develop strong relations with these countries.
- **Since the inauguration of his post as the Prime Minister of India**, Narendra Modi, within 2 years had travelled to a lot of neighbouring countries as it was necessary to improve the ties with these countries.
- **This policy also includes a reduction in the influence** of China in the South-Asian countries.

Need for the Policy

Historical reasons	• Due to certain historical reasons, the external boundaries of India still have demarcation issues with other countries. Apart from international political issues, there have been border disputes which need to be taken care of. • China is laying certain claims on the territories on which it is not possible to agree.
Changes in the approaches	• There is a serious problem that is faced by the foreign policy establishment that needs to be addressed. • There is contact between the political parties and their leaders with the other side of the border. • Hence, the neighbour policy of India towards other nations is more like the contact between the party in power and the neighbouring countries. • When there is a change in the government, it leads to a drastic change in the policy, making it difficult for a long term approach.
Strategies	• A constant nurturing and attention is needed to maintain a healthy relationship with the neighbouring countries. • India meets the neighbouring countries on the sidelines of the multilateral conferences, but it is necessary to have more visits to these countries. • The frequent visits would provide a momentum to the relationship among the neighbouring countries and also help to address the contentious issues.

Closing thoughts

- **While the people of India were doubting Modi's decision** to visit foreign countries, he was actually strengthening the relationship of India with these neighbouring countries. He has managed to visit a lot of countries since the inception of his post of the Prime Minister of India.
- **These visits have definitely yielded positive results** as India has extended assistance to its neighbours whenever such kind of assistance was required.
- **There is nothing particular in the neighbourhood-first policy** as it is just maintaining a positive relationship with its neighbour nation.

2.22   SHORT ARTICLES

Plan for peace in Ukraine

Context

- Saudi Arabia is preparing to host a summit to discuss Ukrainian President Volodymyr Zelenskyy's Plan for Peace in his country amid the ongoing Russian invasion.

Details:

- Officials from several countries would take part in the Saudi Arabian summit.
- The talks would take place on August 5 and 6, in the city of Jeddah, with some 30 countries attending.
- The efforts could culminate in a peace summit later this year where global leaders would sign up to share principles for resolving the war.
- Discussions will take place on the Ukrainian Peace Formula, which contains 10 fundamental points, the implementation of which will not only ensure peace for Ukraine but also create mechanisms to counter future conflicts in the world.
- Previously, Ukraine had described the 10-Point Peace Formula.

About 10-Point Peace Formula:

- Ukraine's President Volodymyr Zelenskiy has been vigorously promoting his 10-point peace plan, discussing it with U.S. President Joe Biden among others, and urging world leaders to hold a Global Peace Summit based on it.

The plan calls for:

- Radiation and nuclear safety, focusing on **restoring safety around** Europe's largest nuclear power plant, **Zaporizhzhia in Ukraine**, which is now Russian-occupied.
- **Food security,** including protecting and ensuring Ukraine's grain exports to the world's poorest nations.
- Energy security, with a focus on **price restrictions on Russian energy resources** and aiding Ukraine with restoring its power infrastructure, half of which has been damaged by Russian attacks.
- **Release all prisoners and deportees**, including war prisoners and children deported to Russia.
- **Restoring Ukraine's territorial integrity** and Russia reaffirming it according to the UN Charter, which Zelensky said is "not up to negotiations."
- **Withdrawal of Russian troops**, cessation of hostilities, and restoration of Ukraine's state borders with Russia.
- Justice, including **establishing a special tribunal** to prosecute Russian war crimes.
- **Prevention of ecocide**, the need for protection of the environment, with a focus on demining and restoring water treatment facilities.
- **Prevention of conflict escalation** and building security architecture in the Euro-Atlantic space, including guarantees for Ukraine.
- **Confirmation of the war's end,** including a document signed by the involved parties.

Dispute over Kuril Islands

Context

- Tokyo and Moscow have been locked in a dispute over the Kuril Islands for decades.

About Kuril Island Dispute

- The Kuril Islands dispute, known as the Northern Territories dispute in Japan, is a territorial dispute between Japan and Russia over the ownership of the four southernmost Kuril Islands.
- The four disputed islands, like other islands in the Kuril chain that are not in dispute, were unilaterally annexed by the Soviet Union following the Kuril Islands' landing operation at the end of World War II.

- The disputed islands are under Russian administration as the South Kuril District and part of the Kuril District of the Sakhalin Oblast.
- They are claimed by Japan, which refers to them as its Northern Territories or Southern Chishima, and considers them part of the Nemuro Sub prefecture of Hokkaido Prefecture.

About Kuril Islands:

About	• The Kuril Islands are a volcanic archipelago administered as part of Sakhalin Oblast in the Russian Far East. • The Kuril Islands are a chain of islands that stretch between the Japanese island of Hokkaido at their southern end and the Russian Kamchatka Peninsula at their northern end. • The islands separate the Sea of Okhotsk from the Pacific Ocean.
Composition	• There are 56 islands and many minor islets. • The Kuril Islands consist of the Greater Kuril Chain and, at the southwest end, the parallel Lesser Kuril Chain.
Formation	• The islands themselves are summits of stratovolcanoes that are a direct result of the subduction of the Pacific Plate under the Okhotsk Plate, which forms the Kuril Trench some 200 kilometers east of the islands.
Vegetation	• Vegetative cover ranges from tundra in the north to dense spruce and larch forests on the larger southern islands.
Highest Elevation	• The highest elevations on the islands are Alaid volcano (highest point: 7,674 ft) on Atlasov Island at the northern end of the chain.

Coups in Niger

Context

- People in Niger awoke to a divided country after mutinous soldiers claimed to have ousted the president.

Details

- President Mohamed Bazoum was elected in 2021 in the West African nation's first peaceful, democratic transfer of power since its independence from France in 1960. He thwarted a coup attempt days before he was sworn in.

- Threats to his leadership undermine the West's efforts to stabilize Africa's Sahel region, which has been overrun with coups in recent years.
- Mali and Burkina Faso have had four coups since 2020, and both are being overrun by extremists linked to al-Qaida and the Islamic State group.
- United States Secretary of State Antony Blinken visited Niger in March, seeking to strengthen ties with a country where extremists have carried out attacks on civilians and military personnel but the overall security situation was not as dire as in neighboring nations.

About the recent coup in Niger:

- The **mutinous soldiers**, who call themselves the **National Council for the Safeguarding of the Country**, took to state television and announced they had seized control because of the **deteriorating security and bad economic and social governance** of the nation's 25 million people.
- They said all institutions had been suspended and security forces were managing the situation and urged external partners not to interfere.
- The attempted coup was allegedly sparked by the head of the presidential guard, General Tchiani, whom the president had planned to relieve from his position, Niger analysts say.

What is a Military Coup?

- A military coup is a situation **when the military violently or non-violently overthrows an existing political regime**. It also goes by the terms, **'ousting,' 'overthrow,' 'putsch,' or 'takeover.'**
- No matter the term it bears, **it's typically illegal, and unconstitutional and involves the seizure of power by the military, political faction, or a dictator.**
- A coup is successful when the coup organizers seize and hold power for at least seven days and a coup in the works or unsuccessful coup is termed a 'coup attempt'.

Communication Interoperability and Security Memorandum of Agreement

Context

- The Maputo Protocol has a target of universal ratification in Africa by 2028. However, with just five years until the target year, there are still 12 countries that are yet to ratify this important legal instrument.

Details

- Pakistan's Cabinet has quietly approved the signing of a new security pact with the U.S., a move that indicates a fresh start in defence cooperation after years of distrust between the two nations and may open avenues for Islamabad to get military hardware from Washington.
- Through a circulation summary, the Cabinet gave its seal of approval to sign the Communication Interoperability and Security Memorandum of Agreement, known as the CIS-MOA, between Pakistan and the U.S.
- However, there was no official announcement from either side about the signing of the agreement. According to the report, Federal Minister for Information Marriyum Aurangzeb was approached but did not respond.

About CIS-MOA

About	- It is a foundational agreement that the U.S. signs with its allies and countries with which it wants to maintain close military and defence ties. - It also provides legal cover to the U.S. Department of Defence for ensuring the sale of military equipment and hardware to other countries.
Agreement	- The agreement, first signed between the Joint Staff Headquarters of Pakistan and the U.S. Department of Defence in October 2005 for 15 years, expired in 2020. - The two sides have now renewed that arrangement which covers joint exercises, operations, training, basing and equipment.

| Significance | • The signing of the CIS-MOA indicates that the U.S. might sell some military hardware to Pakistan in coming years, a source in Washington. |

India-Myanmar-Thailand Trilateral Highway

Context

• Around 70 per cent construction work on the ambitious India-Myanmar-Thailand Trilateral Highway has been completed.

Details

• India, Thailand and Myanmar are working on about 1,400-km-long highway that would link the country with Southeast Asia by land and give a boost to trade, business, health, education and tourism ties among the three countries.

• The minister did not provide details on the timeline for completion and operationalisation of the trilateral highway. The strategic highway project has been delayed. Earlier, the government was aiming to make the highway operational by December 2019.

About India–Myanmar–Thailand Trilateral Highway (IMT Highway)

About	• India–Myanmar–Thailand Trilateral Highway (IMT Highway), 1,360 km long route, is a highway under construction under India's Look East policy that will connect Moreh, India with Mae Sot, Thailand via Myanmar.
Significance	• The road is expected to boost trade and commerce in the ASEAN–India Free Trade Area, as well as with the rest of Southeast Asia.
Recent development	• India and ASEAN have plans to extend this route to Laos, Cambodia and Vietnam as this connectivity will generate annually, an estimated US$70 billion in incremental GDP and 20 million in incremental aggregate employment by 2025, and India has offered US$1 billion line-of-credit for the India-ASEAN connectivity projects.
Scope	• India has also proposed extending the highway to Cambodia, Laos and Vietnam. • The proposed approx 3,200 km route from India to Vietnam is known as the East-West Economic Corridor (Thailand to Cambodia and Vietnam became operational in 2015). • This highway will also connect to the river ports being developed along the way at Kalay (also called Kalaymyo) and Monywa on Chindwin River.

United Nations Population Fund (UNFPA)

Context

• The four-month-long project aims at promoting gender equality and shaping public opinion to end gender-based discrimination.

Details

• A project of the United Nations Population Fund (UNFPA) for gender sensitivity in Rajasthan has received support from the experts working for the elimination of customs promoting patriarchy.

• The four-month-long project aims at promoting gender equality and shaping public opinion to end gender-based discrimination.

• The UNFPA has signed an agreement with Haridev Joshi University of Journalism (HJUJ), Jaipur, for capacity building of its students on the issues related to gender norms, sexual violence and human rights.

• A two-day workshop on gender sensitivity, attended by 40 journalism students, in Jaipur over the week-end highlighted the subject with the emphasis on creating a more equal and just society.

About United Nations Population Fund (UNFPA)

About	• It is **a UN agency aimed at improving reproductive and maternal health worldwide**. • Its name was changed to United Nations Population Fund in 1987. However, the shortened term of UNFPA has been retained.
Working	• Its work includes developing national healthcare strategies and protocols, increasing access to birth control, and **leading campaigns against child marriage, gender-based violence,** obstetric fistula, and female genital mutilation.
Programs	• The UNFPA supports programs in more than 144 countries across four geographic regions: Arab States and Europe, Asia and the Pacific, Latin America and the Caribbean, and sub-Saharan Africa.
Established	• The agency began operations in 1969 as the United Nations Fund for Population Activities under the administration of the United Nations Development Fund. In 1971 it was placed under the authority of the United Nations General Assembly.
Founding member	• Around three-quarters of the staff work in the field. It is a founding member of the United Nations Development Group, a collection of UN agencies and programs focused on fulfilling the Sustainable Development Goals.

Interpol Global Academy Network

Context

- The network supports academic collaboration among law enforcement training institutions across the world.

Key details

- The Central Bureau of Investigation (CBI) Academy on Tuesday joined the Interpol Global Academy Network at a virtual event. The network supports academic collaboration among law enforcement training institutions across the world.
- The event was organised by the agency and the Singapore-based Interpol Global Complex for Innovation. The Letter of Acceptance was signed by Mohit Gupta, Deputy Inspector-General (Training), CBI Academy, and his counterpart at Interpol, Glenn Martindale, Director (capacity building & training directorate).
- The signing ceremony was held subsequent to the negotiations with Interpol in consultation with the Ministries of Home and External Affairs and the Department of Personnel and Training.

The CBI Academy had become the 10th member of Interpol Global Academy Network. According to the agency, over the years, it has emerged as a major police institution of the country and South Asia.

Role of CBI

- The CBI Academy has become the **10th Member of the Interpol Global Academy Network**.
- It is a step towards **CBI Academy's growing engagement with International Law Enforcement Institutions** enabling effective capacity-building and innovation activities.
- The corporation between CBI Academy and Interpol has **tremendous potential to enhance policing outcomes in India** and across the world. This collaboration will not only be **highly beneficial to police personnel in India** but also offer high-quality capacity building, capability development, and training opportunities to police personnel across the world.
- By forming part of the network, the CBI Academy **will further enhance its international visibility, provide valuable contributions to discussions of international and regional scope in the field of Law Enforcement Education and benefit from knowledge exchange with other members of the network**.

About Interpol Global Academy Network

About	• INTERPOL Global Academy Network was launched in 2019.

Aim	• Supporting INTERPOL in leading a global approach to Law Enforcement Training.
Execution	• It is led by INTERPOL's Capacity Building and Training Directorate.
Members	• The Network has members in all regions and supports academic collaboration amongst Law Enforcement Training Institutions across the globe.
CBI relation	• Interpol will collaborate with CBI Academy on the inclusion of CBI Academy Courses in the Network Catalogue of Continuing Education, the development and/or delivery of a Joint Training Programme and the co-ideation and development of Joint Research Projects.

Raisina Dialogue

Context

- Foreign Secretary Vinay Kwatra has told a Parliament committee that the Raisina Dialogue is now among the most significant global level think tank events in the world and it was Prime Minister Narendra Modi's presence at the event in 2016 which transformed it.

Details

- Raisina Dialogue is a permanent fixture in the international calendar for any think tanker you ask for. For any opinion global-maker you want, they all want to come for Raisina Dialogue.
- They want to come in large numbers," the foreign secretary told the committee, whose report was tabled in Parliament.
- Since 2015, this annual event is held by the Observer Research Foundation (ORF), which is an independent think tank.
- The foreign secretary added that "one thing that actually transformed the journey was when Prime Minister Narendra Modi attended and spoke at the Raisina Dialogue in 2016."
- Kwatra said after that, the entire attention, the entire framework and reference point of 'Raisina Dialogue' changed.
- He pointed out to the humble beginning in 2015, when the event had a sum total of only 100 people in the room, but "within a short period of eight years, today, is a centre piece of global think tank deliberations".

About the Raisina Dialogue

About

- The Raisina Dialogue is **India's flagship conference on geopolitics and geoeconomics** committed to addressing the most challenging issues facing the global community.

Concept of Raisina Dialogue

- The concept of Raisina dialogue is inspired by the Shangri-La dialogue **which is held every year in Singapore**.
- In the Shangri-La dialogue, the focus is **mainly to discuss the defence issue**. This is also known as Asia's premier defence summit. Whereas **Raisina dialogue is a broad-based term.**

The name

- The name **"Raisina Dialogue"** comes from Raisina Hill, an elevation in New Delhi, seat of the Government of India, as well as the Presidential Palace of India, Rashtrapati Bhavan.

Commencement

- It is **held annually since 2016.**

Organization

- It is **organized by the Ministry of External Affairs** in collaboration **with the Observer Research Foundation (ORF)** an independent think tank.

- This effort is supported by a number of institutions, organizations and individuals, who are committed to the mission of the conference.

Aim

- The Raisina Dialogue is **held to provide a platform for discussing important global issues** and fostering greater cooperation among nations.
- The conference aims to facilitate a constructive dialogue on a wide range of topics, **including security, economics, climate change, and technology.**
- The Raisina Dialogue also **serves as a platform for India to showcase its growing strategic and economic significance on the global stage.**

International Criminal Court

Context

- Russia imposes sanctions on ICC prosecutor for seeking Putin's arrest.

Details:

- Russia announced sanctions on the International Criminal Court (ICC) prosecutor, Karim Khan, and British ministers on Friday, August 18, 2023. The sanctions include a travel ban and an asset freeze.
- The ICC prosecutor is seeking the arrest of Russian President Vladimir Putin on war crimes charges related to the invasion of Ukraine. Russia is not a member of the ICC and has said that the warrant against Putin is "void".
- The sanctions against Khan are a retaliation for the ICC's investigation into alleged war crimes committed by Russian forces in Ukraine.
- The sanctions against the British ministers are a retaliation for the UK's support for Ukraine and its sanctions against Russia.

About International Criminal Court:

About	• It **is a fixed and stable international court which was established to investigate, prosecute, and try people charged for committing serious crimes**.
Working	• International Criminal Court was established to prosecute serious crimes done by individuals in cases where national courts are **unable to prosecute criminals or when the U.N. or individual state transfers the situation to the court. The first hearing of International Criminal Court was held in 2006.**
Power	• It has **power to prosecute individuals for the international crimes of genocide, crimes against humanity, war crimes, and crimes of aggression**.
Established	• International Criminal Court was entered into force on 1st July 2002. • International Criminal Court was established by the **Rome statute of International criminal Court 1988.**
Headquarters	• The International Criminal Court is situated in **The Hague, Netherlands**.

Comprehensive Nuclear-Test-Ban Treaty (CTBT)

Context

- UN General Assembly holds a high-level session to commemorate the International Day against Nuclear Tests. It is a good occasion to highlight again the need for the Comprehensive Nuclear-Test-Ban Treaty's (CTBT) universalisation and entry into force.

Details

- The Treaty is one of the key pillars of the international disarmament and non-proliferation architecture contributing to global peace and security. The Treaty's strong legitimacy and vital importance for our collective security is pointed out in UN Security Council Resolution 2310 and the annual UN General Assembly resolutions relating to the CTBT.

- The Comprehensive Nuclear-Test-Ban Treaty's entry into force has always been and remains a top priority for the European Union and its Member States, all of which have ratified the Treaty.
- The EU warmly welcomes the four additional ratifications since last year by Equatorial Guinea, São Tomé and Príncipe, the Solomon Islands, and Sri Lanka, bringing the total number of ratifications to 178 and constituting yet further steps towards the CTBT's universalization.

About Comprehensive Nuclear-Test-Ban Treaty (CTBT)

About	• It is the Treaty banning all **nuclear explosions - everywhere, by everyone**. The Treaty was negotiated at the Conference on Disarmament in Geneva and adopted by the United Nations General Assembly. It was opened for signature **on 24 September 1996.**
Organizations	• **The Treaty establishes a CTBT Organization (CTBTO),** located in Vienna, to ensure the implementation of its provisions, including those provisions for international verification measures.
Obligations	• **The CTBT bans any nuclear weapon test explosion** or any other nuclear explosion (i.e., true zero yield)**.** • **The CTBT is frequently associated with another key element** in the process of nuclear disarmament: a ban on the production of fissile material for anything other than verified peaceful use. • **Such a ban would impose a quantitative limit** on the amount of nuclear material available for weapons use.
Compliance	• **The Treaty provides for measures to redress a violation** of the Treaty and to ensure compliance, including sanctions, and for settlement of disputes. • If the Conference or **Executive Council determines** that a case is of particular gravity, it can bring the issue to the attention of the United Nations.
Withdrawal	• **Each State Party has the right to withdraw from the CTBT** if it decides that extraordinary events related to the subject matter of the Treaty have jeopardized the State Party's supreme national interests.

B20 Summit India 2023

Context

- The Prime Minister Shri Narendra Modi addressed the B20 Summit India 2023 in New Delhi today.

Details

- B20 Summit India brings policymakers, business leaders and experts from across the world to deliberate and discuss the B20 India Communique. The B20 India Communique includes 54 recommendations and 172 policy actions for submission to G20.
- Addressing the gathering, the Prime Minister emphasized the celebratory moment that was ushered in by the successful Chandrayaan Mission landing on 23rd August.

About B20 Summit:

About	• It is the official G20 dialogue forum with the **global business community**.
Working	• The B20 works to **deliver concrete actionable policy recommendations** to spur economic growth and development.
Theme	• **The three-day summit is being held from 25th to 27th August**. Its theme is <u>A.I.S.E – Responsible, Accelerated, Innovative, Sustainable and Equitable Businesses.</u> It is being attended by over 1,500 delegates from about 55 countries.
Established	• Established in 2010, B20 is among the most prominent Engagement Groups in G20, with companies and business organizations as participants.
Role	• **B20 Summit India brings policymakers**, business leaders and experts from across the world to deliberate and discuss the B20 India Communique. The B20 India Communique includes 54 recommendations and 172 policy actions for submission to G20.

Maitri Setu

Context

- The opening of the Maitri Setu connecting Sabroom in Tripura and Chittagong port in September will give India's northeastern region and landlocked countries like Bhutan and Nepal access to the Bay of Bengal.

Details:

- India and Bangladesh are set to strengthen its friendship with the upcoming operationalisation of the India-Bangladesh friendship bridge — known as Maitri Setu.
- According to reports, the inauguration of the third ICP at Sabroom is likely to be carried out virtually from New Delhi during Prime Minister Sheikh Hasina's planned visit to India at the beginning of September.
- This bridge has been constructed over the Feni River, which serves as the boundary between Tripura State in India and Bangladesh.
- Feni originates in the south district of the state which passes through Sabroom town on the Indian side, and meets the Bay of Bengal, after it flows into Bangladesh.
- This bridge has significantly reduced the distance between Sabroom and the Chittagong port (Bangladesh), now only 111 km apart.

About Maitri Setu

- Maitri Setu **(lit. friendship bridge)** is a 150-metre (490 ft) bridge **on the Feni River** that links Tripura in India with Chittagong port in Bangladesh.
- Thus, it provides a **shorter and more economical alternate land route between India's eastern and western states** compared to the longer route through Assam.

Significance:

Boost connectivity	• The Maitri Setu is but another project to boost connectivity in the Northeast and neighboring countries, including Myanmar and Bangladesh in the face of Chinese influence in the region.
Outreach and expansion	• **Access to the Bay of Bengal will also substantially bring down freight transportation** costs to the Northeast. As of now, the only option for freight transportation between the Northeast and the rest of India is through the Siliguri Corridor, popularly known as the Chicken's Neck.
Sipping and transportation	• **With the chain of ports along India's eastern coast, Indian naval ships** can now freely ply in the Bay of Bengal, which is at the centre of the Indo-Pacific region. This will help deter the presence of Chinese naval ships in these waters.
Sub-regional connectivity	• In terms of sub-regional connectivity, India is a party to the Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicle Agreement. • The Agreement was conceived after the **South Asian Association for Regional Cooperation (SAARC)** failed to agree on a regional motor vehicles agreement at a summit in Nepal in 2014, mainly because of opposition from Pakistan.

2.23   SNIPPETS

Stapled Visa

- A 'stapled visa' is a visa that is attached to a separate piece of paper instead of being stamped directly in the passport.
- The Chinese government began issuing 'stapled visas' to Indian citizens from Arunachal Pradesh in 2009.
- The Indian government says that the 'stapled visa' issue is a political tool that China uses to assert its claim over Arunachal Pradesh.

Ayush Visa category for Foreign Nationals

- Ministry of Home Affairs, Government of India has notified the creation of a new category of Ayush (AY) visa for foreign nationals for treatment under Ayush systems/Indian systems of medicine.
- The introduction of Ayush Visa fulfills the proposal for introduction of a special visa scheme for foreigners visiting India for treatment under Ayush systems/Indian systems of medicine like therapeutic care, wellness and Yoga.
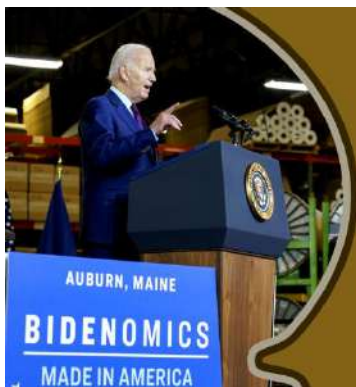
Bidenomics

- Bidenomics—is rooted in the recognition that the best way to grow the economy is from the middle out and the bottom up. It's an economic vision centered around three key pillars:
  - ★ Making smart public investments in America
  - ★ Empowering and educating workers to grow the middle class
  - ★ Promoting competition to lower costs and help entrepreneurs and small businesses thrive.

AUBURN, MAINE
BIDENOMICS
MADE IN AMERICA

2.24   1 MAINS & 5 MCQs

Q1. "ECOWAS is meant to be a region governed in accordance with the principles of democracy, rule of law and good governance. In this context discuss the objectives and role it plays in providing regional peace.

Introduction

- **ECOWAS' larger aims are to have a single common currency** and create a single, large trading bloc in areas of industry, transport, telecommunications, energy, financial issues, and social and cultural matters.
- **According to its website**, the vision of ECOWAS is the creation of a **"borderless region"** that is well-integrated.
- "ECOWAS is meant to be a region governed in accordance with the principles of democracy, rule of law and good governance.

Body

The Revised Treaty of ECOWAS states the objectives:

- **The harmonization and coordination of national policies** and the promotion of integration programmes, projects and activities, particularly in <u>food, agriculture and natural resources, industry, transport and communications, energy, trade, money and finance, taxation, economic reform policies, human resources, education, information, culture, science, technology, services, health, tourism, legal matters;</u>

  o The harmonization and coordination of policies for the protection of the environment;
- **The promotion of the establishment** of joint production enterprises;
- **The establishment of a common market**; The establishment of an economic union through the adoption of common pol in the economic, financial, social and cultural sectors, and the creation of a monetary union.
- **The promotion of joint ventures by private sector enterprises** and other economic operators, in particular through the adoption of a regional agreement on cross-border investments;
  o **The adoption of measures for the integration of the private sectors**, particularly the creation of an enabling environment to promote small and medium-scale enterprises;
- **The establishment of an enabling legal environment**; the harmonisation of national investment codes leading to the adoption of a single community investment code;
  o **The harmonization of standards and measures**; the promotion of balanced development of the region, paying attention to the special problems of each member state particularly those of landlocked and small island member states;
- **The encouragement and strengthening of relations** and the promotion of the flow of information particularly among rural

populations, women and youth organizations and socio-professional organizations such as associations of the media, business men and women, workers, and trade unions;

- o **The adoption of a community population policy** which takes into account the need for a balance between demographic factors and socio-economic development;
- **Any other activity that member states** may decide to undertake jointly with a view to attaining community objectives.

What kind of a role has ECOWAS played in the region so far?

- Beyond the goals of economic cooperation, **ECOWAS has attempted to quell military conflicts in the region.**
- **ECOWAS also operated a regional peacekeeping** operation known as ECOMOG, led by Nigeria in the 1990s and early 2000s, like in Liberia when forces were first deployed in 1990 during the deadly civil war and in Sierra Leone in 1997 when a democratically elected government was overthrown.

- **In 2017, it intervened in The Gambia after longtime President Yahya Jammeh** refused to step down after losing the elections which eventually led to the winner Adama Burrow coming to power.
- It has sent its troops to other countries but never to Niger.

Conclusion

- **There is also the question of whether longstanding measures of economic sanctions** – such as those imposed by ECOWAS – can work, as these countries are also dealing with low economic growth prospects at the moment.
- **France, a former coloniser of Niger**, has cut off aid following the coup. Additionally, the presence of more than 2,000 troops from France and the US has also irked some locals, with the coup seeing anti-France graffiti and slogans.

....

Q2. India has cordial relations with this country. Identify the country with respect to the below-given statements:

1. 2017 marked 20 years of our Strategic Partnership and 2018 marked 25 years since the re-establishment of diplomatic relations with this country.
2. With the help of the Indian Council for Cultural Relations (ICCR), an intensive program of cultural exchanges is organized throughout the country.
3. About 80% of the Indian community lives in the province of KwaZulu Natal, and about 15% in the Gauteng (previously Transvaal) area.

   Select the correct option using the code given below:
   (a) Eritrea
   (b) South Africa
   (c) Sudan
   (d) South Sudan

Q3. Which of the following is/are correct about CIS-MOA?

1. It is a foundational agreement that the U.S. signs with its allies and countries with which it wants to maintain close military and defence ties.
2. It provides legal cover to the U.S. Department of Defence for ensuring the sale of military equipment and hardware to other countries.

   Select the correct answer using the code given below:
   (a) 1 only
   (b) 2 only
   (c) Both 1 and 2
   (d) Neither 1 nor 2

Q4. The 10-Point Peace Formula was sometimes in the news, it is related to which among the following countries?

(a) Russia
(b) Ukraine
(c) USA
(d) China

Q5. Which of the following is/are correct about the Kuril Islands?

1. It is a territorial dispute between China and Russia over the ownership of the four southernmost Kuril Islands.
2. The islands separate the Sea of Okhotsk from the Pacific Ocean.

   Select the correct answer using the code given below:

   (e) 1 only
   (f) 2 only
   (g) Both 1 and 2
   (h) Neither 1 nor 2

Q6. In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:

Assertion (A): The Free Movement Regime is a mutually agreed arrangement between the two countries that allows tribes living along the border on either side to travel up to 16 km inside the other country without a visa.

Reason (R): It was implemented in 2018 as part of India's Act East policy at a time when diplomatic relations between India and Myanmar were on the upswing.

(a) A is true but R is false.
(b) Both A and R are true and R is the correct explanation of A.
(c) A is false but R is true.
(d) Both A and R are true but R is not the correct explanation of A.

ANSWERS: 2) B, 3) C, 4) B, 5) B, 6) D

3. ECONOMY

3.1   GI TAGS LIST UPDATED

Context

- The Geographical Indications Registry has awarded the Geographical Indication (GI) tag to seven distinct products from various parts of the country.

Details

- The products are: 'Jalesar Dhatu Shilp', 'Goa Mankurad Mango', 'Goan Bebinca', 'Udaipur Koftgari Metal Craft', 'Bikaner Kashidakari Craft', 'Jodhpur Bandhej Craft', and 'Bikaner Usta Kala Craft'.

Jalesar Dhatu Shilp

- Originated in Jalesar town, Uttar Pradesh.
- Involves intricate engraving and embossing of brassware.
- Reflects Mughal-era influence and Persian, Turkish, and Indian styles.

Goa Mankurad Mango

- Cultivated in Goa, especially Bardez taluka.
- Renowned for its sweet taste, juicy pulp, thin skin, and pleasant aroma.
- Traced back to the Portuguese era; introduced from Brazil.

Goan Bebinca

- Traditional layered cake from Goa.
- Made with layers of flour, eggs, coconut milk, sugar, and ghee.
- Baked in an earthen oven; popular during festive occasions.

Udaipur Koftgari Metal Craft

- Originated in Udaipur, Rajasthan.
- The technique involves decorating metal objects with gold/silver wires or strips.
- Applied to swords, daggers, jewellery boxes, trays, etc.

Bikaner Kashidakari Craft

- Embroidery craft from Bikaner, Rajasthan.
- Uses gold/silver threads for intricate designs on fabrics.
- Decorates garments, accessories, and more

Jodhpur Bandhej Craft

- Tie-dye craft from Jodhpur, Rajasthan.

- Patterns are created by tying and dyeing fabrics.
- Applied to various garments and materials.

Bikaner Usta Kala Craft

- Painting craft from Bikaner, Rajasthan.
- Involves using gold/silver foil to create intricate designs.
- Applied to various surfaces like wood, metal, marble, and more.

Geographical Indications (GI)

- GI is an intellectual property right protecting products from specific regions with distinctive qualities.
- Applicable to **agriculture, handicrafts, industry, and food.**
- GI tags in India are **valid for 10 years and can be renewed.**

Benefits of GI Tags

- The GI tag establishes a <u>unique brand identity and recognition for products</u>, making them stand out in the market. This differentiation enhances their market value and competitiveness, attracting consumers who appreciate their distinct qualities.
- The production of GI products generates employment opportunities for artisans, farmers, and other stakeholders involved in the process. The increased demand for these products **leads to higher income and livelihood opportunities** for these communities, contributing to the socio-economic development of the region.
- The GI tag encourages sustainable production practices that align with the unique characteristics of the region. This promotes the conservation of biodiversity, natural resources, and traditional knowledge, ensuring the long-term viability of these resources.
- GI products must adhere to **specific quality standards defined by their region of origin**. This ensures that consumers receive products

of consistent quality and authenticity, building trust and loyalty.

Steps Taken to Promote and Protect GI

- India enacted the Geographical Indications of Goods Act in 1999.The act establishes a legal framework, Geographical Indications Registry.
- Geographical Indications Cell coordinates activities under Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry
- Exhibition-cum-Sale Center at Goa Airport showcases GI products.
- **Logo and tagline launched for GI products**, creating a global identity.
- Bilateral agreements were signed to protect GI products internationally.
- Multilateral agreements like Lisbon Agreement and World Intellectual Property Organization (WIPO)safeguard GI globally.

Challenges in Leveraging GI Potential

- Both producers and consumers often lack an understanding of the concept and advantages of GI products, hindering effective utilization.
- **Insufficient facilities for quality testing, certification**, packaging, labelling, and marketing pose obstacles to the successful promotion of GI products.
- **Weak enforcement mechanisms** result in challenges like counterfeiting, infringement, and misuse of GI products, undermining their integrity.
- **Lack of coordination and collaboration** among various stakeholders, including

producers, government bodies, industry associations, and research institutions, hampers the holistic development of GI products.

Proposed Strategies for Progress

- **Increase awareness through targeted education campaigns** for producers and consumers, highlighting the significance and benefits of GI products.
- **Offer financial aid and technical assistance** to producers, enabling them to enhance the quality and standards of their products.
- **Strengthen the legal and institutional framework** for GI product registration, protection, and promotion both within India and internationally.
- Utilize online platforms, e-commerce, trade fairs, and exhibitions to boost the market visibility and accessibility of GI products.
- Encourage research and innovation endeavours to enhance the quality, diversity, and value addition of GI products, keeping them relevant and appealing.
- **Foster partnerships and collaboration** among various stakeholders involved in GI-related activities to create a harmonious ecosystem that supports the growth and development of GI products in India.

Must Read:

GI TAGS LIST UPDATED:

https://www.iasgyan.in/daily-current-affairs/gi-tags-list-updated

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3.2 RURAL INDIA: PROGRESS AND PROBLEMS

Context

- The NITI Aayog has recently released an updated Multidimensional Poverty Index (MPI) for India, which measures progress in three key dimensions: health, education, and standard of living.

Details

- The report indicates a significant **reduction in the proportion of the population in multidimensional poverty, dropping from 24.85% to 14.96% between 2015-16 and 2019-21,** resulting in about 135.5 million people moving out of poverty during this period.
- The Intensity of Poverty (extreme poverty) has also decreased from 47.14% to 44.39%, attributed to targeted development efforts by both Union and State Governments, along with other stakeholders.
- Rural areas have witnessed substantial positive changes, including increased availability of solid housing, widespread

- cellphone usage, greater ownership of motorbikes, and access to consumer goods.
- The poverty rate in rural areas decreased from 32.59% to 19.28% between 2015-16 and 2019-21, reflecting these developments.

Progress in Rural India

- Rural India has witnessed economic growth driven by various factors, including **agricultural reforms, infrastructure development, and increased connectivity.** The growth of non-farm rural industries and services has contributed to diversifying income sources.
- **Improved road connectivity, electrification, and access to basic amenities** such as clean water and sanitation have enhanced the quality of life in many rural areas. Government initiatives like the Pradhan Mantri Gram Sadak Yojana have played a significant role.
- The **proliferation of mobile phones and the internet has led to increased digital penetration in rural areas**. This has facilitated access to information, financial services, and government schemes.
- **Government schemes targeting rural development**, such as MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) and PM-KISAN (Pradhan Mantri Kisan Samman Nidhi), have provided direct support to rural households, alleviating poverty and enhancing livelihoods.

Problems in Rural India

- Despite progress, rural areas continue to face **agricultural distress** due to factors like unpredictable weather patterns, lack of modern farming techniques, and inadequate access to credit. Farmer suicides remain a grim reality in several regions.
- **Unemployment**, particularly among the youth, is a major concern. Lack of diverse job opportunities often leads to rural-to-urban migration, resulting in labour shortages and reduced agricultural productivity.
- **Access to quality healthcare and education services** remains a challenge in rural India. Limited healthcare facilities and inadequate

schools hinder the overall development of rural communities.

- Despite the decline in poverty rates, rural India is still home to a significant proportion **of poor and marginalized populations.** Income inequality and disparities in access to resources persist.
- **Unsustainable agricultural practices**, deforestation, and **lack of proper waste disposal** contribute to environmental degradation in rural areas. This can negatively impact the long-term sustainability of rural livelihoods.
- **Gender disparities** in rural areas are evident in areas like education, employment, and decision-making. Empowering women through education and economic opportunities remains a challenge.
- Issues like child marriage, lack of sanitation facilities, and inadequate nutrition continue to plague rural communities, affecting the overall well-being of residents.

Steps Taken to address the problems

- **MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) program** provides guaranteed employment to rural households, addressing unemployment and poverty while also contributing to rural infrastructure development.
- **Pradhan Mantri Gram Sadak Yojana** aims to improve rural connectivity by constructing all-weather roads, enhancing accessibility to markets, healthcare, and education.
- **The Digital India campaign** has worked to expand digital infrastructure to rural areas, increasing access to information, services, and financial inclusion.
- **PM-KISAN (Pradhan Mantri Kisan Samman Nidhi)** provides financial assistance to small and marginal farmers to enhance their income and livelihoods.
- **Swachh Bharat Abhiyan** has aimed to improve hygiene and sanitation in rural areas, promoting cleanliness and reducing health hazards.
- National Rural Livelihood Mission (NRLM) focuses on creating sustainable livelihood

opportunities through skill development, entrepreneurship, and self-help groups.

Steps need to be taken

- **Investing in modern farming techniques**, irrigation systems, and marketing infrastructure can lead to increased agricultural productivity. This, in turn, can raise the income of rural farmers and contribute to food security.
- **Encouraging rural non-farm industries**, agro-processing (value addition to agricultural products), and tourism can create diverse employment opportunities, reducing dependency on traditional farming alone.
- **Strengthening rural healthcare and education systems** ensures that residents have access to essential services. This contributes to improved overall well-being and human capital development.
- **Providing skill training aligned with market demands** can enhance the employability of rural populations. Additionally, it can foster entrepreneurship and lead to the creation of local businesses.
- **Expanding social welfare schemes** helps vulnerable populations cope with economic shocks. This can include direct cash transfers, food assistance, and healthcare coverage.
- **Improving digital literacy** enables rural residents to leverage technology for accessing information, markets, and financial services. This can bridge the digital divide and bring economic opportunities to remote areas.
- **Promoting sustainable agricultural practices**, afforestation (planting trees), and waste management helps protect the environment and natural resources for future generations.
- **Focusing on women's education**, health, and economic participation is crucial for overall development. Empowered women contribute to healthier families, better education outcomes, and improved economic prospects.
- **Involving local communities in planning and decision-making** ensures that development initiatives are tailored to the specific needs and context of each region. This approach fosters ownership and sustainability.
- **Strengthening local governance structures** improves service delivery and citizen engagement. When residents have a voice in local decisions, it enhances transparency and accountability.
- **Continuing to invest in rural infrastructure** such as roads, electricity, and water supply enhances connectivity and the overall quality of life. Access to these basic amenities can attract investment and improve living conditions.
- **Regularly assessing the impact of development initiatives** helps policymakers understand what works and what needs improvement. This data-driven approach allows for informed decision-making and adjustments to strategies.

Conclusion

- The strategies for rural development present a promising roadmap for addressing the progress and problems faced by rural India. By fostering agricultural innovation, economic diversification, healthcare and education improvements, digital inclusion, and community empowerment, a transformative path forward can be forged. A holistic approach that integrates these solutions will pave the way for a prosperous, sustainable, and inclusive rural India.

Must Read:

SOCIO-ECONOMIC PROGRESS ASSESSMENT IN INDIA: https://www.iasgyan.in/daily-current-affairs/socio-economic-progress-assessment-in-india

NATIONAL MULTIDIMENSIONAL POVERTY INDEX: A PROGRESS REVIEW 2023:
https://www.iasgyan.in/daily-current-affairs/national-multidimensional-poverty-index-a-progress-review-2023

3.3   INDIA'S FORMAL JOB CRISIS

Context
- The Employees' Provident Fund (EPF) scheme's data has been used by the Indian government to gauge formal job creation, but this approach has limitations.

Details
- The **EPF data mainly captures the number of enrolments**, but it **doesn't distinguish between regular contributors** (those with consistent contributions) and those with **irregular contributions**.
- The absence of comprehensive and publicly available labour and employment statistics beyond EPF data **limits the government's ability to accurately assess and address employment challenges.**
- The **lack of well-paid and stable formal jobs inhibits the expansion of India's middle class**, which is crucial for sustained economic growth. The middle class plays a pivotal role in driving consumption and contributing to economic development, as seen in China's growth trajectory.
- **Economic growth should ideally be accompanied by both the quantity and quality of jobs**. Focusing solely on the number of jobs (as indicated by EPF enrolments) without considering job quality, stability, and decent wages can lead to a skewed understanding of the employment landscape.
- To obtain a more accurate picture of formal job creation, the Indian government needs to adopt a comprehensive approach that combines data from various sources.

India's Formal Job Crisis
- India with its large population and diverse economy has long grappled with the challenge of generating sufficient formal jobs to accommodate its workforce.
- **Formal jobs, characterized by stable employment, legal protections, and benefits,** are crucial for fostering economic growth, reducing poverty, and improving the quality of life for citizens. However, India's formal job market has been plagued by various issues, leading to what can be termed a "formal job crisis."

Reasons for the Crisis
- Many economies, including India, have a significant informal sector, which can be difficult to integrate into the formal job market. **Informal jobs often lack social protections and benefits**, making the transition to formal employment a challenge for both workers and employers.
- **Complex labour laws and regulations can create uncertainty for employers**, leading them to avoid formal job creation to avoid legal complications and high compliance costs. Simplifying labour laws and ensuring clear guidelines can encourage formal job growth.
- A **mismatch between the skills possessed by job seekers and the skills demanded by employers** can lead to unemployment and underemployment. Addressing this issue requires investments in education and training that align with industry needs.
- The **slow pace of industrialization** can limit the creation of formal jobs in sectors with higher productivity and better wages. Developing industries and diversifying the economy can lead to more job opportunities.
- **Rapid population growth can strain the job market**, leading to an imbalance between job seekers and available positions. This highlights the importance of both job creation and family planning initiatives.
- **Globalization and outsourcing can shift job opportunities** to different regions or countries, affecting specific sectors and skill sets. Governments and industries need to adapt to changing global trends to maintain job stability.
- **Automation and technological advancements** can replace labour-intensive jobs, necessitating the reskilling and upskilling of workers to match the evolving demands of the job market.

Impact of the Crisis

- **High unemployment rates**, particularly among educated youth, can lead to a waste of human capital and skills. This not only affects the individuals who are unemployed but also has broader societal and economic implications. Unemployment can contribute to feelings of frustration, hopelessness, and disenchantment among the youth, potentially leading to social issues.
- When workers are employed in jobs that don't fully utilize their skills and education, it can lead to lower job satisfaction, decreased productivity, and slower career advancement. **Underemployment also prevents individuals from realizing their full potential,** which has negative consequences for both personal development and overall economic growth.
- The **informal sector often offers lower wages and lacks proper benefits and protections**. This contributes to income inequality, as formal sector jobs generally provide better wages, social security, and opportunities for skill development. Wage disparities can lead to social divisions and hinder social mobility.
- **High levels of unemployment and underemployment**, especially among the youth, can result in social instability and unrest. Frustration over the lack of opportunities can manifest in protests, demonstrations, and other forms of collective action. Social unrest can have a range of consequences, including disruptions to public order and strained government resources.
- The inability to generate sufficient formal job opportunities can **hinder economic growth**. When a significant portion of the population remains unemployed or underemployed, it dampens consumption demand and limits overall economic activity. This, in turn, can slow down economic development and reduce the country's potential for prosperity.

Key initiatives to address the crisis and promote economic growth

Skill Development Initiatives (Skill India):
The Skill India initiative focuses on enhancing the skills of the workforce to make them more employable in various industries. By providing training in both technical and soft skills, this program aims to bridge the gap between job seekers' skills and employers' requirements, reducing unemployment and underemployment.

Make in India:
This campaign aims to boost the manufacturing sector in India, to create formal jobs in labour-intensive industries. By encouraging domestic and foreign companies to establish manufacturing facilities in India, the program seeks to increase job opportunities and contribute to economic growth.

Ease of Doing Business Reforms:
Simplifying business regulations and improving the ease of doing business can attract investment and encourage the growth of industries. Streamlined processes and reduced bureaucratic hurdles can make it easier for businesses to start, expand, and thrive, ultimately leading to job creation.

Start-Up Ecosystem Support:
India's focus on nurturing a vibrant start-up ecosystem aims to foster innovation and entrepreneurship. Start-ups have the potential to create new industries and job opportunities, particularly in sectors driven by technology and innovation.

Labour Reforms:
Efforts to reform labour laws and provide greater flexibility to employers can encourage them to hire formal workers. Simplified labour laws can reduce compliance costs and legal complexities, making formal job creation more appealing for businesses.

Challenges to address the crisis

- While having well-designed policies are important, translating them into effective action can be challenging. **Bureaucratic hurdles, lack of resources, and inefficiencies in the implementation process** can hinder the desired outcomes of various initiatives.
- The **informal sector's large size and prevalence** in many economies, including India, pose challenges in transitioning workers into formal employment.

- Addressing the gap between the skills demanded by employers and those possessed by job seekers requires collaboration between the government, educational institutions, and industries. Investment in education and training programs that align with industry needs is essential to bridge this gap.
- **Labour laws and regulations need to strike a balance** between protecting worker rights and promoting formal job creation. Reforms to labour laws that provide flexibility to employers while ensuring fair treatment of workers are necessary to create a favourable environment for formal job growth.
- Rapid industrialization can be constrained by factors such as **limited resources, infrastructure deficits, and global competition**. Achieving rapid industrialization requires strategic planning, investments in infrastructure, and policies that attract both domestic and foreign investments.

Way forward

- **Continuous skill development and upskilling** are vital to align workers' capabilities with evolving market demands. By focusing on relevant and adaptable skills, individuals can enhance their employability and adapt to changing industries.
- **Balancing labour laws to protect workers' rights** while providing employers with flexibility can encourage formal job creation. Creating an environment of trust between employers and employees is crucial for sustainable growth.
- **Infrastructure development**, such as transportation, energy, and communication systems, not only attracts investments but also creates a ripple effect by boosting various sectors and generating formal job opportunities.
- **Micro, Small, and Medium Enterprises (MSMEs)** play a significant role in job creation. By providing them with access to finance, technology, and markets, governments can facilitate their growth and expansion.
- **Encouraging the development of a diverse range of industries** reduces dependence on specific sectors and creates a wider array of formal job opportunities across various skill domains.
- **Accurate and updated labour market data** is essential for evidence-based policy decisions. Regular monitoring of labour market trends can help identify emerging challenges and opportunities.
- **Establishing social safety nets**, such as unemployment benefits and skill development programs, can provide a safety net for workers during economic downturns or times of job loss.

Conclusion

- Addressing India's formal job crisis requires a multi-faceted approach involving policy reforms, investment in education and skill development, and the creation of an enabling business environment. Balancing the needs of workers, employers, and the economy as a whole is key to achieving sustainable formal job creation and fostering economic growth.

Must Read:

JOB CRISIS: https://www.iasgyan.in/daily-current-affairs/job-crisis

3.4   ESOPs (EMPLOYEE STOCK OPTION PLANS)

Context

- The recommendation made by the parliamentary panel to amend the Income Tax Act in relation to ESOPs (Employee Stock Option Plans) reflects an understanding of the unique role ESOPs play in fostering innovation, attracting talent, and conserving resources for startups and businesses.

Details

- The primary recommendation of the parliamentary panel is to **alter the timing of taxation for ESOPs**. Currently, ESOPs are taxed at two potential points: upon exercise (when employees purchase the shares) and at the time of sale. **The proposal suggests shifting the tax liability exclusively to the point of sale.** This change would alleviate the financial burden on employees and startups, allowing them to **defer tax payments until they realize actual gains through the sale of shares**.

Employee Stock Option Plans (ESOPs)

- Employee Stock Option Plans (ESOPs) are **a form of compensation that companies offer to their employees**, granting them the right to purchase a certain number of company shares at a predetermined price within a specified period.
- ESOPs are **commonly used by companies**, especially startups and technology firms, to attract, retain, and incentivize employees.

Features

- **ESOPs grant employees the opportunity to become shareholders in the company**. This aligns the interests of employees with those of the company, as their financial gains are directly tied to the company's performance and stock value.
- Employees typically **need to wait for a vesting period before they can exercise their stock options**. The vesting period could be based on years of service or other performance criteria. This ensures that employees remain with the company and contribute positively to its growth over a certain period before reaping the benefits.
- The exercise price, also known as the **strike price, is the fixed price at which employees can purchase company shares** when they decide to exercise their options. This price is determined at the time the options are granted and remains constant throughout the vesting period.
- After the vesting period, employees enter an exercise window, during which they can choose to buy the company shares at the predetermined exercise price. This window is time-limited, encouraging employees to decide within that timeframe.
- **ESOPs come with specific tax implications**. When employees exercise their options, the difference between the exercise price and the market value of the shares is treated as a taxable perquisite. Additionally, when employees eventually sell the shares, any capital gains are subject to taxation.

Significance

- ESOPs are used as a **tool to attract top talent**, particularly in industries where cash compensation might be limited. They also encourage employees to stay with the company to realize the value of their options.
- As **employees become shareholders, their financial interests become aligned with the**

company's success, motivating them to work towards its growth and profitability.

- ESOPs **cultivate a sense of ownership and belonging among employees**, fostering a stronger commitment to the company's objectives.

Challenges

- The tax treatment of ESOPs can be intricate and vary based on the jurisdiction and company structure.
- **Employees might face difficulties selling shares**, especially if the company is not publicly traded.
- Determining the value of company shares, particularly for private companies, can be subjective and may lead to disputes.

Way Forward

- **Simplifying the taxation of ESOPs** can indeed make them more appealing. Complicated tax structures can deter both companies and employees from participating. Streamlining tax regulations related to ESOPs could encourage wider adoption and greater understanding.
- **Allowing employees to sell shares**, especially in private companies, can make ESOPs more valuable. Enhanced liquidity options provide employees with the flexibility to realize the value of their shares even before the company goes public or gets acquired.
- **Offering tax incentives to startups that provide ESOPs can have dual benefits**. It can attract skilled talent to innovative and growing companies while also encouraging

these startups to adopt ESOPs as a way to reward and retain employees.

- **Educating employees** about the benefits, taxation implications, and potential risks associated with ESOPs is crucial. Many employees might not fully understand how ESOPs work or the potential value they can provide as part of their compensation package.
- **Maintaining transparency in ESOP processes** is essential for building trust between the company and its employees. Clear communication about how ESOPs are structured, the vesting schedule, and how they align with company goals can foster a positive relationship.
- Industry bodies and associations can play a role in advocating for favourable ESOP policies at the government level. Policies that support ESOPs can lead to broader adoption and a stronger connection between employees and the success of the company.

Conclusion

- The parliamentary panel's recommendation to tax ESOPs only at the time of sale of shares, rather than on notional gains or at the time of exercise, reflects a keen understanding of the challenges and opportunities that startups face. By aligning tax regulations with the unique dynamics of ESOPs, this change could promote startup growth, enhance talent acquisition, and support the overall business environment in India.

Must Read:

ESOP: https://www.iasgyan.in/daily-current-affairs/esop#:~:text=Employee%20Stock%20Option%20Plan%20(ESOP)%20grants%20employees%20the%20right%20to,the%20company%27s%20growth%20and%20success.

3.5   FLOATING RATE LOANS

Context

- The Reserve Bank of India (RBI) announced a framework for resetting interest rates on floating-interest loans, particularly home loans, which signifies a significant step towards enhancing consumer protection and transparency in the lending sector.

Details

- A floating-rate home loan is **a type of loan where the interest rate is not fixed and can change over the course of the loan tenure.** The interest rate is tied to market dynamics and is often linked to a benchmark rate. Borrowers typically choose a floating-rate home loan when they anticipate that interest rates will decrease in the future.

RBI's Proposed Framework

Advance Communication

- Banks are now mandated to **inform borrowers well in advance** about any impending changes to the tenure and/or equated monthly installment (EMI) of their home loans. This advance communication ensures that borrowers are aware of potential adjustments to their loan terms, giving them sufficient time to prepare for the financial implications.
- This provision **prevents banks from making changes to loan terms without the borrower's knowledge and consent,** contributing to a more transparent and accountable lending process.

Switching Options

- Lenders are required to offer borrowers the **flexibility to switch from a floating-rate home loan to a fixed-rate home loan** or even foreclose their loans at their discretion. This empowers borrowers to make choices that align with their financial circumstances and goals.
- The option to switch to a fixed-rate loan can **provide stability in a changing interest rate environment**, while the choice to foreclose

the loan offers borrowers the opportunity to close the loan ahead of schedule if they so desire.

Disclosure of Charges

- To ensure complete transparency, **banks must disclose any charges associated with exercising the switching options** (moving to a fixed-rate loan or foreclosing the loan) upfront to borrowers. This disclosure empowers borrowers to make well-informed decisions by considering not only the potential benefits of switching but also the associated costs.
- **Clear information about charges** prevents borrowers from facing unexpected financial burdens when making decisions about their loans.

Impact on Home Loan Borrowers

Informed Decision-Making

- Borrowers will now have **more comprehensive information** at their disposal when making decisions about their home loans. Advance communication from banks regarding possible changes to loan tenures or EMIs empowers borrowers to assess the potential impact on their finances. This knowledge **allows them to plan, make adjustments to their budgets, and be better prepared for any changes in their loan terms**. Informed decisions lead to greater financial stability and confidence.

Protection against Extended Tenure

- One significant advantage of the framework is its **protection against extended loan tenures without the borrower's consent.** This safeguard ensures that banks cannot unilaterally extend the repayment period, preventing borrowers from inadvertently paying more interest over an extended period. This protection maintains the borrower's control over the duration of their loan and prevents financial surprises.

Enhanced Flexibility

- The introduction of the option to switch to fixed-rate loans or foreclose loans offers borrowers **increased flexibility in managing their financial commitments.** This is particularly important in a fluctuating interest rate environment. Borrowers who foresee stability or want to secure a fixed payment can switch to a fixed-rate loan, providing predictability. Conversely, those in a position to pay off their loans sooner can take advantage of the foreclosure option to become debt-free faster.

Clarity on Costs

- Transparency in disclosing charges related to various loan options enables borrowers to make well-informed decisions. By understanding the costs associated with switching to a fixed-rate loan or foreclosing the loan, borrowers can weigh these costs against the benefits they hope to gain. This clear understanding of charges ensures that borrowers are not surprised by hidden fees and can make decisions that align with their financial goals.

Conclusion

- The RBI's transparent framework for resetting interest rates on floating-interest loans, like home loans, represents a proactive step toward consumer protection and empowerment. By requiring clearer communication, offering switching options, and disclosing charges, borrowers can make informed decisions tailored to their financial needs and goals. This move fosters a more transparent and accountable lending environment, benefiting both borrowers and lenders in the long run.

Must Read:

FLOATING RATE LOANS: https://www.iasgyan.in/daily-current-affairs/floating-rate-loans#:~:text=Floating%2Drate%20loans%2C%20also%20known,or%20other%20external%20market%20benchmarks.

SWITCH FROM FLOATING TO FIXED RATE REGIME:

https://www.iasgyan.in/daily-current-affairs/switch-from-floating-to-fixed-rate-regime

3.6	COTTON SECTOR IN INDIA

Context

- The cotton sector plays a pivotal role in India's economy, catering to both domestic and international textile industries. Recognizing its significance, the Indian government has taken various measures to support the growth and development of the cotton sector.

Major Steps and facilities introduced by the Government

- **National Food Security Mission (NFSM):** The Department of Agriculture and Farmers Welfare is implementing the cotton development program under NFSM in 15 major cotton-growing states. The program aims to increase cotton production and productivity through demonstrations, trials on high-density planting systems, distribution of plant protection chemicals and bio-agents, and national and state-level training.
- **Minimum Support Price (MSP) Formula:** To safeguard the economic interests of cotton farmers and ensure adequate cotton availability for the textile industry, the government introduced an MSP formula based on 1.5 times the cost of production from 2018-19.
- **MSP Operations by Cotton Corporation of India (CCI):** CCI is designated as the Central Nodal agency to undertake MSP operations when the prices of Fair Average Quality grade seed cotton fall below the MSP rates.
- **Branding of Indian Cotton "Kasturi Cotton India":** The government launched the brand name "Kasturi Cotton India" in 2020.

- **Technology Demonstration Project:** The Ministry sanctioned a special project titled "Targeting technologies to agroecological zones-large scale demonstrations of best practices to enhance cotton productivity" under NFSM for 2023-24. The project focuses on High-Density Planting System (HDPS), closer spacing, and production technology for ELS cotton through Public-Private Partnership (PPP) mode.
- **Textile Advisory Group (TAG):** The Ministry of Textiles constituted the Textile Advisory Group (TAG) to facilitate inter-ministerial coordination and represent stakeholders across the cotton value chain. TAG deliberates and recommends issues related to productivity, prices, branding, and more.
- **Cott-Ally Mobile App**: The app has been developed to enhance awareness among farmers about MSP rates, nearest procurement centres, payment tracking, and best farming practices.

Cotton Sector in India
- The cotton sector holds immense significance in India due to its historical, economic, and cultural importance. Cotton has been a key crop in the Indian subcontinent for centuries, with evidence of its cultivation dating back to ancient times.
- The British colonial rule further solidified India's role as a major cotton-producing region. Today, India is one of the largest cotton producers and exporters globally.
- Major Cotton producing states include **Gujarat, Maharashtra**, Telangana, and Andhra Pradesh.
- Cotton cultivation in India spans various agro-climatic zones, from the northern states like Punjab to the southern states like Andhra Pradesh. This diversity enables the country to produce cotton in different conditions, contributing to a stable supply.
- India cultivates a **range of cotton varieties to meet various requirements**. Hybrid cotton varieties are developed through crossbreeding to improve traits like yield, fibre quality, and pest resistance. Additionally, genetically modified (GM) cotton, primarily of the Bt variety, has been introduced to counter insect pests like the bollworm.

Significance
- The cotton sector plays a substantial role in India's economy by **contributing to the Gross Domestic Product (GDP)**. The revenue generated from cotton cultivation, processing, and related activities adds to the overall economic output of the country.
- The cotton sector is a major **source of employment in rural areas**, where a significant portion of the population relies on agriculture for their livelihoods. From planting and tending to crops to processing and marketing, the sector creates employment opportunities along the entire value chain.
- As a critical input for the textile and apparel industry, the **cotton sector influences the growth and performance of this sector**. The availability of quality cotton fiber affects the textile industry's production capacity, export potential, and overall competitiveness in the global market.
- **Cotton exports contribute to India's foreign exchange earnings** and enhance the country's presence in global trade. The export of both raw cotton and cotton products such as yarn and fabrics bolsters India's position in international markets.
- Cotton farming has a **positive impact on rural development**. It stimulates economic activities in rural regions, leading to better infrastructure, improved living standards, and increased access to education and healthcare facilities for local communities.

Challenges Faced by the Cotton Sector

Low Productivity:
Despite being a major cotton producer, India's yields per hectare are often lower than the global average. Enhancing productivity through improved agricultural practices, better seed varieties and efficient irrigation techniques is crucial for sustained growth.

Small Landholdings:
The prevalence of small and fragmented landholdings in India hampers the adoption of modern farming technologies and practices. The limited land area can also affect the scalability of cotton cultivation and overall efficiency.

Climate Change:
Changing weather patterns and extreme events caused by climate change, such as droughts and unseasonal rains, can disrupt cotton cultivation. These variations impact crop yields, fibre quality, and the overall stability of the sector.

Price Volatility:
Global cotton prices are subject to fluctuations due to factors like supply-demand dynamics and changes in trade policies. This volatility can impact the income of cotton farmers and cause financial instability in the sector.

Pests and Diseases:
Insects like bollworms and diseases like wilt and leaf curl virus can significantly damage cotton crops. Effective pest and disease management strategies are essential to minimize yield losses and protect farmers' incomes.

Quality Control:
Consistent cotton quality is essential for the textile industry to produce high-quality yarn and fabrics. Maintaining uniform fibre characteristics and minimizing contamination challenges the sector's competitiveness.

Way Forward

- **Investing in R&D** is crucial for developing cotton varieties that are resistant to pests and resilient to changing climatic conditions. This would lead to higher yields and better-quality cotton.
- **Encouraging farmers to adopt modern agricultural technologies** can greatly enhance productivity. This includes using precision agriculture techniques, mechanized farming equipment, and digital tools to monitor and manage crops effectively.
- **Providing training and extension services to farmers** ensures they are equipped with the knowledge and skills needed for optimal cotton cultivation. These services can cover pest management, irrigation techniques, and sustainable farming practices.
- **Upgrading storage, transportation, and processing infrastructure** is essential to minimize post-harvest losses. Proper storage facilities prevent deterioration, while efficient transportation ensures timely delivery to markets.
- **Implementing mechanisms to stabilize cotton prices** can protect farmers from sudden market fluctuations. Price stabilization funds or contracts that offer minimum price guarantees can help ensure a stable income for cotton growers.
- **Encouraging sustainable farming practices** not only preserves soil health and reduces environmental impact but also ensures the long-term viability of the cotton sector. This can involve promoting organic farming methods, reducing chemical use, and implementing efficient water management practices.
- **Supporting initiatives like organic cotton farming and indigenous cotton varieties** adds value to the cotton produced. Organic cotton is in demand due to its environmental benefits, and indigenous varieties can have unique qualities that attract niche markets.
- **Enabling direct market access** for farmers eliminates middlemen and ensures that farmers receive a fair share of the final product's value. This can be achieved through cooperative marketing systems, farmer-producer organizations, and online market platforms.

Conclusion

- The cotton sector in India has a rich history and plays a crucial role in the country's economy. While it faces challenges, there is immense potential for growth and development. With strategic interventions and a holistic approach, the cotton sector can achieve higher productivity, income generation, and sustainability, benefiting farmers, the textile industry, and the overall economy.

Must Read:

Cotton Industry UPSC:

https://www.iasgyan.in/blogs/cotton-industry-upsc

3.6   CONSUMPTION-BASED POVERTY ESTIMATES

Context

- A recent report by NITI Aayog has revealed a significant reduction in multidimensional poverty in India, with the percentage of the poor declining from 25% in 2015-16 to 15% in 2019-21. This improvement led to the lifting of approximately 135 million people out of poverty during this period.

Details

- The **Global Multidimensional Poverty Index (MPI) report of 2023, jointly released by the United Nations Development Programme (UNDP) and the Oxford Poverty & Human Development Initiative (OPHI),** also showcased a decline in the incidence of the multidimensional poverty index from 27.5% in 2015-16 to 16.2% in 2019-21.
- The Global MPI report recognizes India's substantial strides in diminishing multidimensional poverty between 2005/06 and 2015/16. However, it's noteworthy that poverty estimates based on consumption expenditure, employing methodologies such as the Tendulkar and Rangarajan Committee approaches, had already indicated reductions in the number of impoverished individuals over specific timeframes.
- While multidimensional poverty estimates hold value, they cannot replace the importance of National Sample Survey (NSS) consumption-based poverty ratios. Additionally, certain concerns regarding consumption expenditure surveys are highlighted, and the need for their correction is addressed.

Consumption-based poverty estimates

- Consumption-based poverty estimates are a widely used approach to assess poverty and well-being. This **method examines individuals' or households' consumption patterns as an indicator of their economic welfare.**
- By analyzing consumption patterns, **policymakers and researchers can gain valuable insights** into people's material conditions, facilitating informed decisions to address poverty and inequality more effectively.
- This approach **provides a comprehensive perspective on people's access to goods and services**, which is indispensable for crafting targeted policies and interventions that uplift those in need.
- Consumption-based poverty estimates in India are made using the National Sample Survey (NSS) data. The NSS collects data on household consumption expenditure. The poverty line is defined as the minimum level of consumption expenditure required to meet the basic needs of a household.

Committees and their methodologies

- **Lakdawala Committee (1969):** It was **one of the first committees in India tasked with estimating poverty**. It used a food-based approach to calculate poverty lines. The committee calculated the poverty line based on the cost of a minimum diet that provided a specific number of calories.
- **Dandekar-Rath Committee (1979):** It took a more comprehensive approach to estimating poverty. It incorporated both calorie-based and income-based approaches. The committee **recommended different**

poverty lines for rural and urban areas.

- **Tendulkar Committee (2009):** It introduced a new methodology for estimating poverty in India. It shifted the focus from a purely food-based approach to a consumption-based approach. The committee **suggested that poverty should be estimated based on a broader set of consumption items, not just food**. It also factored in the differing consumption patterns across states and regions.
- **Rangarajan Committee (2014):** It updated the poverty estimation methodology based on the changing consumption patterns and price levels. Like the Tendulkar Committee, it included both food and non-food items in the estimation. However, **it used different nutritional requirements and updated consumption patterns**.

Limitations and Criticisms of Consumption-based Poverty Estimates

- **Non-Monetary Dimensions:** The main criticism of consumption-based poverty estimates is that they focus solely on income or consumption levels, neglecting other critical dimensions of poverty such as access to education, healthcare, clean water, sanitation, and social services.
- **Single Measure of Consumption:** The use of a single measure of consumption might not accurately reflect the diverse consumption patterns and varying costs of living across different regions and communities. It could lead to underestimating or overestimating poverty levels for certain groups.
- **Infrequent Updates:** Poverty estimates based on periodic surveys may not capture rapid changes in living standards due to economic fluctuations or policy changes between survey periods. Prices of essential goods and services can change significantly over time.
- **Urban-Rural Disparities:** The poverty lines are often different for rural and urban areas due to differing consumption patterns and price levels. However, this distinction might not always accurately represent the living conditions in urban slums or remote rural areas.
- **Subjectivity in Nutritional Requirements:** The choice of nutritional requirements can affect the calculated poverty line. Different committees have used different calorie thresholds, leading to variations in poverty estimates.
- **Exclusion of Vulnerable Groups**: Certain marginalized or vulnerable groups might have specific needs and challenges that are not fully captured by a generalized poverty estimation methodology.
- **Income Inequality:** Consumption-based estimates may not fully capture income inequality, as two households with similar consumption levels might have different access to resources and opportunities.
- To address these limitations, efforts are underway to develop a more comprehensive measure of

poverty that considers multiple dimensions, such as the Multidimensional Poverty Index (MPI), which incorporates education, health, and standard of living indicators. Such measures aim to provide a more holistic understanding of poverty and guide more effective poverty alleviation strategies.

Must Read:

CONSUMPTION-BASED POVERTY ESTIMATES: https://www.iasgyan.in/daily-current-affairs/consumption-based-poverty-estimates#:~:text=CONSUMPTION%2DBASED%20POVERTY%20ESTIMATES&text=Context%3A%20According%20to%20a%20recent,of%20poverty%20during%20this%20period.

3.7 HOW TO MAKE UREA MORE EFFICIENT AS A FERTILISER

Context
- The Prime Minister of India has recently launched Urea Gold Fertilizer, to enhance the efficiency of Urea.

Urea Gold
- **"Urea Gold" is a new type of fertiliser** developed by the state-owned Rashtriya Chemicals and Fertilisers Ltd (RCF) in India.
- It is a **fortified version of urea, containing 37% nitrogen (N) and 17% sulphur (S).**
- The primary objectives of Urea Gold are to a**ddress sulphur deficiency in Indian soils and improve the nitrogen use efficiency (NUE) of urea**. Sulphur is particularly important for oilseeds and pulses, crops in which India is import-dependent.
- The gradual release of nitrogen due to the sulphur coating helps keep plants greener for a longer period, reducing the need for frequent applications.

Challenges with Urea Consumption
- Urea is the most widely used fertiliser in India, with consumption increasing significantly over the years.
- India's high consumption has led to concerns about the reliance on imports for raw materials and feedstock.
- The **nitrogen use efficiency (NUE) of urea is low**, with a substantial portion of applied nitrogen being lost to the atmosphere or leached into the ground.

Benefits of Fortification
- Coating urea with secondary nutrients (like sulphur) and micronutrients (zinc, boron, etc.) can **enhance nutrient efficiency and plant health.**
- The **coating process allows fertilisers to act as "carrier products"** for delivering these essential nutrients to crops.
- Trials have shown that coated fertilisers **can increase crop yields and improve nutrient utilisation**. For example, using sulphur-coated urea has been found to increase wheat yields and enhance nitrogen efficiency.

Challenges with Fortification
- While there are proven benefits to nutrient-fortified fertilisers, the pricing of such products remains a challenge.
- The **government's current subsidy rates for coated fertilisers might not be attractive enough** for companies to market these products effectively.
- There's a need to **create a pricing structure that encourages the use of coated fertilisers** without significantly burdening farmers.

Potential Solutions
- It is suggested that the **coating of fertilisers should be done at the factory itself to ensure uniform nutrient** distribution.
- To **promote the use of coated fertilisers**, the government could consider freeing maximum retail prices (MRPs) for these products.
- As regular urea and other basic fertilisers continue to be sold at subsidised rates, companies could charge a reasonable premium for fortified products.

Conclusion

- The introduction of "Urea Gold" and the idea of nutrient-fortified fertilisers present promising solutions to address nutrient deficiencies in Indian soils and improve fertiliser efficiency. However, pricing and subsidy structures need to be carefully managed to ensure these products are accessible and beneficial to farmers.

Must Read:

HOW TO MAKE UREA MORE EFFICIENT AS A FERTILIZER: https://www.iasgyan.in/daily-current-affairs/how-to-make-urea-more-efficient-as-a-fertilizer

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3.8 GUN JUMPING

Context

- The Competition Commission of India (CCI) has imposed a fine of ₹5 lakh on Platinum Trust and TPG Upswing for Gun Jumping, which is the act of consummating a merger or acquisition without obtaining prior approval from the CCI.

Gun Jumping

- Gun jumping is a term used to describe the **situation when parties to a merger or acquisition engage in activities that imply or suggest that the deal is already completed, before obtaining the necessary regulatory approvals**. This can include actions such as integrating operations, transferring assets, terminating contracts, or making public announcements.

- The **definition of gun-jumping may vary depending on the jurisdiction and the specific circumstances** of each case. However, some general examples of **activities that may constitute gun jumping are:**
  - o Coordinating prices, bids, output, customers, territories, or other competitive parameters with the other party.
  - o Exchanging sensitive business information with the other party that goes beyond what is necessary for due diligence purposes.
  - o Implementing changes in the management, governance, or organization of either party that affect their independence or decision-making autonomy.
  - o Making joint decisions or exercising control over the other party's business operations, such as hiring or firing employees, entering or terminating contracts, acquiring or disposing assets, or launching or discontinuing products or services.
  - o Making public statements or disclosures that imply that the deal is final or certain, such as announcing plans, strategies, or projections involving the combined entity.

Gun jumping can be severe and costly for both parties

- Fines and penalties imposed by antitrust authorities for violating merger notification and waiting period requirements. These can range from a few thousand to several million dollars depending on the jurisdiction and the severity of the violation.

- Injunctions or orders issued by courts or regulators to stop or reverse any actions taken in violation of antitrust laws. These can cause delays, disruptions, or losses for both parties and their stakeholders.

- Challenges or lawsuits filed by third parties who may be harmed by the transaction or its effects. These can result in damages, injunctions, or even the nullification of the deal.

- **Reputational damage and loss of trust from customers**, suppliers, investors, regulators, and the public. This can affect the parties' market position and prospects.

How can parties avoid gun-jumping?

- The best way to avoid gun-jumping is to **plan and adopt a compliance program that covers all aspects of the merger or acquisition process.**
- Conducting a thorough antitrust analysis of the transaction and its potential impact on competition in relevant markets. This can help identify any potential issues or risks that may require notification or clearance from antitrust authorities.
- **Establishing clear guidelines and protocols** for communication and information exchange between the parties during the pre-closing period. This can include setting up clean teams, confidentiality agreements, data rooms, firewalls, and other safeguards to prevent inappropriate or excessive sharing of sensitive information.
- Maintaining separate and independent business operations until the deal is closed

and approved by all relevant authorities. This can include preserving existing management structures, reporting lines, policies, procedures, and systems for each party.

- **Seeking legal advice and guidance from experienced antitrust counsel** throughout the merger or acquisition process. This can help ensure compliance with applicable laws and regulations and avoid any potential pitfalls or mistakes.

Conclusion

- Gun jumping is a serious antitrust violation that can jeopardize a merger or acquisition deal and expose both parties to significant legal risks and costs. Therefore, it is essential to be aware of the dos and don'ts of pre-closing conduct and follow best practices to ensure a smooth and successful transaction.

Must Read:

GUN JUMPING: https://www.iasgyan.in/daily-current-affairs/gun-jumping

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3.9   OFFSHORE WIND ENERGY IN INDIA

Context

- India has taken significant steps towards harnessing offshore wind energy as part of its renewable energy expansion strategy.

Offshore Wind Energy

- Offshore wind energy is the **generation of electricity from wind turbines that are installed in the sea or large bodies of water.** This method has several advantages over onshore wind energy, such as higher wind speeds, lower noise and visual impact, and less land use.
- The Indian government has taken notable steps to encourage offshore wind energy development. **In 2015, the National Offshore Wind Energy Policy was introduced to provide a regulatory framework for the sector**. This policy also offers incentives to attract private investments in offshore wind projects.
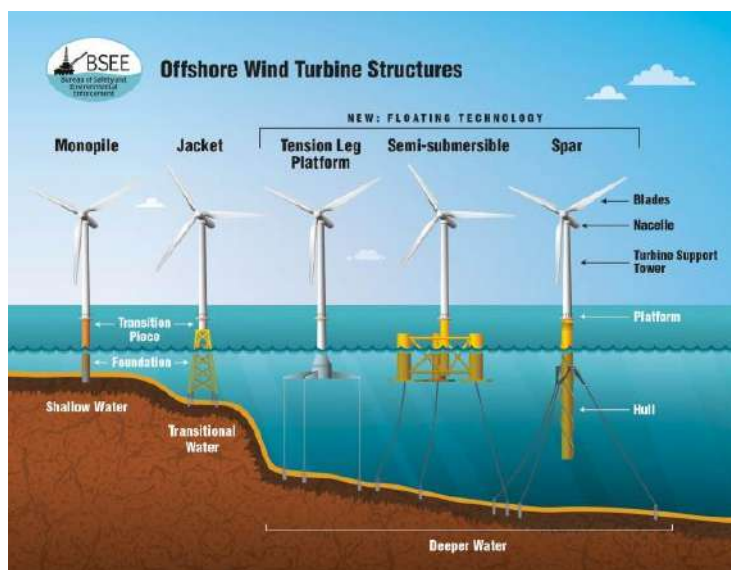
India's Potential

- India's coastline stretches over 7,500 kilometres, providing ample opportunities for offshore wind energy projects along its shores. India's Exclusive Economic Zone (EEZ) covers approximately 2.3 million square kilometres in the Arabian Sea and the Bay of Bengal. **This expansive maritime territory offers a substantial area for the deployment of offshore wind farms.**
- India experiences strong and consistent winds along its coastline, particularly in regions like Gujarat, Tamil Nadu, and Maharashtra. These high-wind areas are ideal for harnessing offshore wind energy.

Significance for India

- **India's energy demand** is continuously growing, driven by its rapidly expanding economy and population. Offshore wind energy can contribute significantly to meeting this demand sustainably.
- India has set **ambitious clean energy targets**, including a commitment to achieving 175 gigawatts of renewable energy capacity by 2022 and 450 gigawatts by 2030. Offshore wind energy can play a crucial role in achieving these targets while reducing carbon emissions.
- The development of offshore wind projects **can create a substantial number of jobs** in areas such as construction, maintenance, and operations, contributing to local economic development.
- Unlike onshore wind projects, **offshore wind farms do not face the same land use conflicts or constraints**, making them a viable option for expanding renewable energy capacity.
- As offshore wind technology continues to advance, it becomes more efficient and cost-effective. India can benefit from these advancements to develop its offshore wind sector
- India's expertise in offshore wind energy technology and project development **can potentially lead to exports of such technology and services to other countries**, contributing to its economy.

- Offshore wind energy has a **lower environmental impact** compared to some other forms of energy generation, particularly fossil fuels. It helps reduce air pollution and greenhouse gas emissions, contributing to India's environmental sustainability goals.

Challenges

- Offshore wind projects **require substantial initial investments** due to specialized equipment, infrastructure, and the logistics of transporting materials and personnel to offshore sites.
- India currently **lacks the necessary infrastructure** to support large-scale offshore wind energy development. This includes the need for dedicated ports, substations, and high-capacity transmission lines.
- The **regulatory environment for offshore wind energy is still evolving in India**. Delays and uncertainty in the permitting and approval process can deter developers from investing in offshore wind projects.
- There are **environmental concerns associated with offshore wind energy**, including potential noise pollution and bird strikes. Addressing these concerns is crucial to gaining public acceptance for offshore wind projects.

Way Forward

- The **government can provide financial incentives** to developers to offset the high initial costs of offshore wind projects. This could include tax incentives, grants, or low-interest loans to encourage private investment.
- Investment in essential infrastructure is paramount. The government should focus on **developing dedicated ports equipped for the manufacturing, assembly, and maintenance of offshore wind components**. Additionally, the establishment of a robust transmission infrastructure is essential for efficient electricity transmission and grid integration.
- **Simplifying and streamlining the regulatory environment** for offshore wind energy development is essential. Clear and

predictable regulations can significantly reduce delays and uncertainties for developers.

- **Collaboration between the government and developers** is necessary to address environmental concerns associated with offshore wind energy. Implementing mitigation measures, such as noise barriers and bird diverters, can help alleviate these issues.

Conclusion

- To advance offshore wind energy in India, it is essential to focus on technology development, policy support, infrastructure investment, capacity building, stakeholder engagement, and international collaboration. These measures will contribute to a cleaner and more sustainable energy future for the country.

Must Read:

OFFSHORE WIND ENERGY IN INDIA: https://www.iasgyan.in/daily-current-affairs/offshore-wind-energy-in-india

3.10 INDIA'S AGEING WORKFORCE

Context

- India has a large share of young people in its population, with many of them below the age of 30. However, a study of labour market data shows that India's workforce is ageing fast.

Details

- The Centre for Monitoring the Indian Economy (CMIE) reports that India's workforce has undergone a demographic shift in the last year. The workforce consists of all the employed people in the country, and it is divided into three age groups for this analysis:
  o 15 to 29 years old (youth)
  o 30 to 44 years old (prime working age)
  o 45 years and above (older workers)
- The CMIE data reveals that the youth's share in the workforce has dropped from 25.5% in 2019-20 to 21.9% by December 2020.
  o The prime working age's share has also decreased from 37.6% to 36.1%. On the other hand, the older workers' share has increased from 36.9% to 42%.
- This indicates that **India's workforce is aging, which contradicts the common belief that India is a young country with a huge pool of potential workers.**

Aging pattern of India's workforce

- **Urban workers:** Those aged 45 years and above make up 41.7% of urban workers, up

from 34.4%, while those below 30 years make up 23.2%, down from 28.4%.

- **Women workers:** Those aged 45 years and above make up 40% of women workers, up from 32.8%, while those below 30 years make up 22.5%, down from 27.2%.
- **Educated workers:** Those with graduate and post-graduate degrees aged 45 years and above make up 37% of workers, up from 29.4%, while those with graduate and post-graduate degrees below 30 years make up 24.8%, down from 31.3%.
- **Salaried workers:** Those aged 45 years and above make up 38.7% of salaried workers, up from 31.8%, while those below 30 years make up 23%, down from 29.7%.
- These trends suggest that the ageing of India's workforce is mainly due to higher job losses among the younger age groups, especially in urban areas, among women, among educated and skilled workers, and formal sector employees.

Implications for the Country

- India's ageing workforce may result in **lower growth potential as younger workers tend to be more productive and innovative**. Additionally, an ageing population may lead to a higher dependency ratio, which could strain the economy and reduce competitiveness in the global market.

- An **older workforce may require increased spending on healthcare, pensions, and social security benefits**, putting pressure on fiscal resources. This could affect public investment in other sectors and challenge the sustainability of existing social security schemes.
- With an ageing workforce, there might be reduced investments in education, skill development, and training for the younger generation, **potentially hampering India's future human capital development and productivity**. Inter-generational learning and knowledge transfer within organizations and sectors may also be affected.
- Older workers may require more healthcare services, impacting employers' responsibilities, workplace policies, and health insurance plans. Ensuring the well-being of ageing workers becomes crucial to maintaining their productivity.

Steps Taken by Government
- **Programs like "Skill India" provide training and up skilling opportunities** to help workers transition to new roles, reducing job displacement risks due to technological advancements.
- **Encouraging companies to retain and utilize the expertise of older workers** through flexible work arrangements, mentoring programs, and phased retirement options.
- **Extending the retirement age to benefit** from the skills and knowledge of experienced workers while considering health, social security, and opportunities for younger generations.
- **Initiatives like the Skill India Mission and Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** aim to improve employability and skill levels, bridging the skills gap and increasing job opportunities.
- **Extending social security benefits to informal sector workers** through schemes like Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM) and others.
- **Policies that promote active ageing**, such as raising the retirement age and providing tax

incentives for senior citizens, allow older individuals to continue working and contributing to the economy.

Key Challenges in Dealing with an Ageing Workforce
- The **need to create jobs for the young and educated workforce** entering the job market, focusing on policies that promote economic growth, entrepreneurship, and investments in high-skill sectors.
- **Ensuring decent wages, social security benefits**, safety standards, and labour rights, particularly in the informal sector, to retain skilled workers and improve overall working conditions.
- **Offering continuous education, skill upgrading,** and retraining programs for older workers to adapt to technological advancements.
- **Aligning education and training programs with industry demands**, promoting partnerships between educational institutions and businesses, and fostering entrepreneurship.
- Improving the quality of education and vocational training, updating curricula, and integrating practical skills training.
- **Bridging the gap between job seekers' skills and employer requirements** through industry-recognized certifications, internships, and apprenticeships.
- **Ensuring the sustainability of pension systems** and providing adequate support to retirees.

Strategies for Dealing with an Ageing Workforce
- **Creating inclusive work environments** that value contributions from all age groups, promoting collaboration and knowledge transfer.
- **Enhancing social security systems**, including health insurance and income support.
- Developing infrastructure, services, and policies catering to the needs of older individuals.

- Encouraging continuous learning throughout one's career to remain adaptable.
- **Offering flexible work options** to accommodate different work-life balances.
- Prioritizing health and well-being initiatives in the workplace.
- Creating platforms for collaboration and knowledge exchange.
- Addressing age-related issues in the workplace.
- Encouraging older workers to explore entrepreneurial ventures and mentoring roles.
- Investing in research and development to create new industries and opportunities.

Conclusion

- India has a great opportunity to leverage its young population, but it also needs to prepare for the challenges of an ageing workforce. This requires a comprehensive approach that covers skill development, flexible work arrangements, and supportive policies. By doing so, India can ensure a balanced and productive workforce across all age groups and make the most of its demographic dividend.

Must Read:

INDIA'S AGEING WORKFORCE: https://www.iasgyan.in/daily-current-affairs/indias-ageing-workforce

3.11 NORTH EAST SPECIAL INFRASTRUCTURE DEVELOPMENT SCHEME

Context

- The Cabinet has approved the continuation of the North East Special Infrastructure Development Scheme (NESIDS) for the period from 2022-23 to 2025-26 with an approved outlay of Rs. 8,139.50 crore.

North East Special Infrastructure Development Scheme (NESIDS)

- NESIDS focuses on **bridging infrastructural gaps in the region**, covering both physical and social infrastructure aspects.
- The primary objective is to promote inclusive development by addressing developmental gaps and fostering growth opportunities in the North East.

Components of NESIDS

- **NESIDS-Road Component:** The NESIDS-Road component primarily concentrates on the development of road infrastructure in the North Eastern States. The primary objective of this component is to enhance the connectivity and accessibility of the North Eastern States through the creation and improvement of road networks.

- **NESIDS-Other Than Road Infrastructure (OTRI) Component:** The NESIDS-OTRI component focuses on the development of various other forms of infrastructure in the North Eastern States. This includes areas such as water supply, power, education, and more. The objective is to address the broader infrastructure needs of the region beyond just roads, improving the overall quality of life and socio-economic development.

Features

- Operates as a **central sector scheme, with 100% funding from the Central Government**, ensuring consistent financial support.

- **Encompasses both physical and social infrastructure**, covering sectors like water supply, power, tourism, education, and health.

- Complements existing Central and State government schemes in the North East, providing additional funding for specific infrastructure gaps.

- **Direct beneficiaries are all eight North East Indian states**, tailored to address their unique development requirements.

- Funds are allocated following a normative allocation approach, ensuring planned and systematic resource distribution.

- **Supports ongoing projects** under the North Eastern Region's Non-Lapsable Central Pool of Resources (NLCPR) to enhance project effectiveness.

- **Adopts a performance-based approach**, redirecting funds from underutilized states to those demonstrating better project implementation.

- Funding is reserved for projects not supported by other central or state government schemes, preventing duplication and maximizing impact.

Significance

- Channels dedicated development efforts towards the North Eastern region, enhancing physical and social infrastructure.

- Improves power connectivity, water supply systems, and social welfare, leading to better quality of life.

- Promotes balanced growth and development, ensuring the North Eastern states contribute to the nation's progress.

Challenges

- **Challenging geographical terrain** complicates infrastructure project execution and accessibility.

- Developing a skilled workforce capable of managing projects is crucial but may face sourcing and retention challenges.

- **Balancing infrastructure growth with environmental sustainability** is essential.

- Efficient financial management for large-scale projects is crucial.

- **Engaging local communities and stakeholders** effectively requires coordination.

- Monitoring project progress and ensuring long-term maintenance is challenging in remote areas with limited resources.

Way Forward

- Create detailed development plans, prioritize projects, and allocate resources effectively.

- Establish a comprehensive skill development framework tailored to regional needs.

- Conduct thorough assessments before implementing projects and adhere to eco-friendly practices.

- Formulate clear agreements with private sector partners.

- Engage local communities early in project planning and incorporate their input.

- Implement a robust monitoring and evaluation system.

- Invest in building the capacity of relevant institutions.

- Maintain open and transparent communication.

- Remain flexible and adaptable to changing circumstances.

- Maintain a commitment to sustainable and inclusive growth.

Conclusion

- The newly issued detailed schemes' guidelines for both NESIDS and the Schemes of NEC will facilitate the achievement of their intended objectives in a transparent and accelerated manner. These schemes aim to enhance infrastructure and development in the North Eastern States, fostering growth, connectivity, and improved living standards in the region.

Must Read:

NESIDS: https://www.iasgyan.in/daily-current-affairs/nesids
SCHEMES FOR DEVELOPMENT OF NORTH-EAST: https://www.iasgyan.in/daily-current-affairs/schemes-for-development-of-north-east

3.12   BHARAT NEW CAR ASSESSMENT PROGRAMME

Context

- The launch of the Bharat New Car Assessment Programme (Bharat NCAP) is a significant milestone for road safety in India.

Key Highlights

- The Bharat New Car Assessment Programme (Bharat NCAP) was **launched by the Union Minister of Road Transport and Highways**, with the primary objective of enhancing road safety in India.
- **Inspired by the Global New Car Assessment Programme (Global NCAP),** which aims to promote global vehicle safety standards, Bharat NCAP is a voluntary program applicable to all passenger cars with a gross vehicle weight of up to 3.5 tonnes.
- Cars undergo rigorous testing and are subsequently assigned safety ratings ranging from one star to five stars, with five stars signifying the highest level of safety.
- **Tests under Bharat NCAP are conducted at the Automotive Research Association of India (ARAI) in Pune**, ensuring standardized and reliable evaluations. Importantly, the program is funded by the government of India, underscoring the government's commitment to improving road safety in the country.
- **Bharat NCAP places a specific emphasis on vehicles weighing up to 3.5 tonnes**, acknowledging the importance of safety for both vehicle occupants and pedestrians. The program's applicability extends to passenger vehicles with a maximum of eight seats, including the driver's seat, encompassing a wide range of cars, SUVs, and smaller commercial vehicles.

- The testing protocols for Bharat NCAP are meticulously defined in the Automotive Industry Standard (AIS) 197. This standard outlines the precise procedures and conditions under which crash tests and safety assessments will be conducted, ensuring consistency and reliability in the evaluation process.

- The **safety ratings awarded by Bharat NCAP take into account several critical factors:**
  - **Adult Occupant Protection:** This factor evaluates how effectively a vehicle protects adult occupants during a crash, considering aspects like structural integrity and the performance of safety features such as airbags.
  - **Child Occupant Protection:** Bharat NCAP assesses the effectiveness of child restraint systems and overall child safety measures within the vehicle, including the ease of installing child seats and the protection provided to child passengers.
  - **Safety Assist Technologies**: The presence and effectiveness of safety features such as airbags, anti-lock braking systems (ABS), electronic stability control (ESC), and other advanced safety technologies are considered in the safety star ratings. These technologies play a pivotal role in

accident prevention and occupant protection.

Significant implications and benefits

- Safety star ratings based on crash tests and assessments **enable consumers to make informed decisions when purchasing vehicles**. They can easily compare the safety performance of different car models and prioritize safety in their choices.
- Manufacturers striving for higher safety star ratings are **motivated to incorporate advanced safety features and improve the structural integrity of their vehicles**. This competition drives innovation and continuous improvement in vehicle safety standards.
- As manufacturers aim to meet the program's requirements, vehicles are equipped with enhanced safety features and better structural designs. This leads to vehicles that are better equipped to **protect both occupants and pedestrians during accidents.**
- Improved vehicle safety standards promoted by Bharat NCAP have a **direct impact on overall road safety**. Safer vehicles are less likely to be involved in severe accidents, reducing injuries and fatalities. This, in turn, contributes to **saving lives and reducing the societal burden of road accidents.**

- By encouraging the manufacturing of vehicles that meet global safety standards, Bharat NCAP aligns with India's ambition to become a global hub for automobile manufacturing. Safer vehicles produced in India gain a competitive edge in international markets, enhancing India's reputation in the automotive industry.
- At its core, Bharat NCAP is about protecting the lives of citizens. **By promoting safer vehicles, the program contributes to a substantial reduction in road traffic fatalities and injuries.** This aligns with the broader societal goal of safeguarding lives and creating a safer road environment for all road users.

Conclusion

- Bharat NCAP is a welcomed initiative that has the potential to significantly improve road safety in India. By empowering consumers, promoting competition among manufacturers, and raising awareness about safety, the program can contribute to a safer road environment and a reduction in road accidents and fatalities. Continuous support and refinement of Bharat NCAP will be vital to maximizing its positive impact on road safety in India.

Must Read:
BHARAT NCAP: https://www.iasgyan.in/daily-current-affairs/bharat-ncap

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3.13   SHORT ARTICLES

Purchasing Manager's Index (PMI)

Context

- The services sector in India experienced a significant surge in both domestic and global demand in July, leading to a sharp increase in a survey-based index known as the Purchasing Managers' Index (PMI).

Highlights of the Index

- This index, **prepared by S&P Global, reached a 13-year high** of 62.3. This surge in the services sector is seen as **a positive sign for India's economy,** with the results suggesting a

substantial contribution from the sector to the country's overall Gross Domestic Product (GDP) for the second fiscal quarter.

- The **services sector holds the largest share of India's Gross Value Added (GVA),** accounting for over 53%. In contrast, the manufacturing sector, which contributes around 18% to GVA, maintained its June level in July, according to S&P Global.
- The data for July indicated an **increase in input costs for Indian service providers, contributing to a higher rate of inflation, which reached a 13-month high**. These costs

were attributed to factors like food, labour, and transportation expenses.

- The survey also highlighted that **companies in the services sector continued to expand their workforce** by hiring a mix of part-time, full-time, permanent, and temporary staff. Although the rate of employment expansion was similar to the previous two months, the overall outlook for business activity remained optimistic among service providers.

Purchasing Managers' Index (PMI)

- The PMI is a survey-based measure that gauges changes in respondents' perceptions of key business variables compared to the previous month.
- It **provides information about current and future business conditions**, serving decision-makers, analysts, and investors.
- Separate PMI calculations are done for the manufacturing and services sectors, and a composite index is also generated. PMI is a numerical value between 0 and 100.

  o **A PMI score above 50 signifies expansion, below 50 denotes contraction**, and exactly 50 represents no change.
  o When the previous month's PMI is higher than the current month, it indicates economic contraction.

- PMI is closely followed as a **key indicator of economic health** due to the importance of the manufacturing and services sectors in driving economic growth.
- A high PMI reading suggests a robust economy, indicating that these sectors are performing well and contributing to overall growth. A low PMI reading suggests economic challenges, as the sectors might be struggling and negatively impacting overall economic performance.

Must Read:

PURCHASING MANAGERS' INDEX: https://www.iasgyan.in/daily-current-affairs/purchasing-managers-index-17

BHU-VISION

Context

- The launch of the automated soil testing and agronomy advisory platform, Bhu-Vision (also known as KRISHI-RASTAA Soil Testing System), marks a significant milestone in the field of agricultural technology.

Key Points

- Bhu-Vision is designed to be **portable and user-friendly**, allowing it to be easily transported and operated by individuals with minimal training.
- The device **connects to a cloud-based server and a mobile app** through IoT technology, enabling real-time data transmission and analysis.
- **Bhu-Vision performs 12 essential soil parameter tests in just 30 minutes**. It employs electrochemical sensors and colourimetric methods to measure parameters such as pH, electrical conductivity, organic carbon, nutrients (nitrogen, phosphorus, potassium),

secondary nutrients (calcium, magnesium, sulfur), and micronutrients (iron, zinc, boron).

- The **system generates a soil health card** that presents test results in a clear and user-friendly format. It also provides customized recommendations for fertilizer application and crop management based on factors like soil type, crop type, and yield goals.
- The soil health card can be accessed by farmers and stakeholders through both a mobile app and a web portal, making the information easily accessible and shareable.
- The mobile app allows users to store test data, track soil health history, compare results across different locations or seasons, and share information with others.

Significances

- Bhu-Vision empowers farmers to independently **assess their soil health without relying on external agencies** or intermediaries. This autonomy promotes informed decision-making.

- By providing accurate insights into soil health, the **system helps farmers avoid the wasteful use of fertilizers and other inputs**, saving them money and time.
- Precise and timely agronomic advice from the soil health card improves crop yield and quality, contributing to **increased income for farmers.**
- The system encourages **balanced nutrient management and conservation practices**, thereby promoting soil health and sustainability.
- Bhu-Vision's real-time, geo-referenced data on soil conditions across regions and crops aids research and development efforts, facilitating data-driven decision-making.

- By improving farm income and reducing input costs, the system plays a role in **enhancing national food security and agricultural growth.**
- The system's ability to **minimize fertilizer runoff and leaching reduces greenhouse gas emissions** and environmental pollution, aligning with sustainable agricultural practices.
- The Bhu-Vision system's combination of advanced technology, accurate testing, and user-friendly features makes it a powerful tool for transforming agriculture. Its potential to empower farmers, improve productivity, and promote sustainable practices aligns with the broader goals of modernizing and enhancing the agricultural sector.

Must Read:

BHU-VISION: https://www.iasgyan.in/daily-current-affairs/bhu-vision

Amrit Bharat Station Scheme

Context

- The Prime Minister of India inaugurated the ambitious project of transforming 508 railway stations in India through a virtual event. The project is part of the Amrit Bharat Stations scheme.

Key Points

- The project focuses on **transforming 508 railway stations** located in 27 states and union territories across India, covering all regions and zones.
- The estimated cost of the entire project is ₹24,470 crores. The **funding for the project involves collaboration between the Ministry of Railways and the Ministry of Housing and Urban Affairs.** Private sector entities, state governments, and local bodies are also expected to participate in the redevelopment process.
- The project is **based on the concept of 'City Centres,' where railway stations become hubs of urban activity and connectivity.** The redevelopment will include the **installation of modern amenities** like escalators, lifts, digital signage, CCTV cameras, Wi-Fi, waiting

lounges, food courts, and shopping areas. There will also be a focus on seamless inter-modal integration with other modes of transportation, well-designed traffic circulation, and guidance for passengers.
- The **design of station buildings will draw inspiration from local culture, heritage, and architecture**. This means that the stations will reflect the unique cultural identity of the regions they are located in. For instance, stations in Bihar will showcase the Mithila art form, and those in Kerala will highlight traditional architecture.
- The redeveloped railway stations **aim to provide enhanced passenger experiences, generate increased non-fare revenue through commercial activities,** improve safety and security with advanced surveillance systems, stimulate local economies by creating employment opportunities, and promote tourism and cultural diversity.
- The Amrit Bharat Stations scheme was **launched in December 2022 as a collaborative effort between the Ministry of Railways and the Ministry of Housing and**

Urban Affairs. The scheme involves active participation from the private sector, state governments, and local bodies in the redevelopment process.

- Overall, the project aims to transform railway stations into modern, efficient, and vibrant hubs that provide a positive travel experience for passengers, contribute to local economic growth, and showcase India's rich cultural heritage.

Must Read:
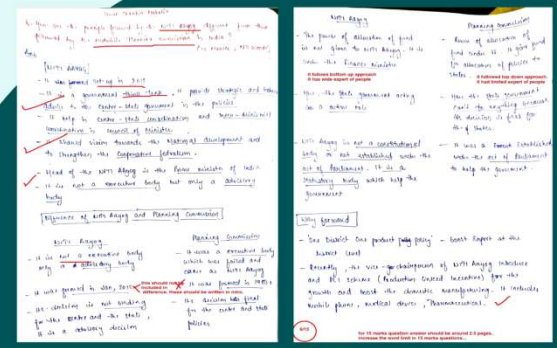
Agri Infrastructure Fund

Context

- The Agriculture Infrastructure Fund (AIF) has disbursed only 15% of its targeted amount of Rs 1 lakh crore within the first three years since its launch.

Key Points

- Agriculture Infrastructure Fund (AIF) was **introduced in July 2020 to support post-harvest infrastructure development and community farming assets**. It aimed to **provide loans, interest subvention, and credit guarantee assistance** to boost agricultural infrastructure till FY2025-26, with further support till FY2032-33.

- Only 15% of the Rs 1 lakh crore allocated for the Agriculture Infrastructure Fund has been disbursed within the first three years of the scheme's implementation. As of August 1, 2023, Rs 15,448 crore has been sanctioned for 27,748 projects, with 9.66% of the total allocation being utilized for completed projects.

- Among the states and Union Territories, **Madhya Pradesh (MP) has utilized the highest funding**, followed by Maharashtra and Uttar Pradesh. Some states like Tamil Nadu, Andhra Pradesh, Chhattisgarh, and others have lagged in fund utilization.

- The projects supported by the AIF include primary processing centres, warehouses, custom hiring centres, logistics facilities, sorting and grading units, cold stores, bio-stimulant production units, silos, and more.

- The **government aims to disburse the remaining funds by FY2025-26** and continue interest subvention and credit guarantee assistance. They plan to conduct programs, state conclaves, bank campaigns, and

workshops with stakeholders, and designate nodal officers for effective coordination and

communication.

Must Read:

AGRI INFRASTRUCTURE FUND: https://www.iasgyan.in/daily-current-affairs/agri-infrastructure-fund

National Digital Nagrik Forum

Context

- The Confederation of All India Traders (CAIT) has introduced the National Digital Nagrik Forum, an online platform dedicated to advocating for the rights of traders, consumers, and various segments of society.

Key Points

- The forum's primary objectives include **advancing the rights of traders and consumers**, promoting policies that boost the digital trade economy, and raising awareness about digital regulations.
- The forum aims **to enhance citizens' capacity to engage with digital innovations** through expert sessions and instructional materials.
- The Forum will **focus on five core themes**: Consumer Protection and Online Safety, Preventing Digital Cartelization and Fair Competition, Leveraging Emerging Technologies, Engaging with Diverse Stakeholders, Awareness Campaigns and Outreach.

- The Forum will **explore emerging technologies** such as blockchain and artificial intelligence **to assess their impacts on retail trade and safeguard consumer interests.**
- The forum will involve stakeholders from various sectors including corporate and non-corporate entities, MSMEs, farmers, consumers, experts, and technocrats.
- The Forum will conduct awareness camps, digital and physical dialogues, training sessions, and targeted outreach to the government, private sector, civil society stakeholders, policymakers, and others at the state level to achieve its objectives.
- This initiative by the CAIT reflects a concerted effort to ensure that digital trade is carried out fairly and transparently while safeguarding the interests of traders, consumers, and other stakeholders. It also underscores the importance of keeping up with emerging technologies and their implications for trade and consumers.

Must Read:

NATIONAL DIGITAL NAGRIK FORUM: https://www.iasgyan.in/daily-current-affairs/national-digital-nagrik-forum

Digital Payments Index

Context

- The latest data from the Reserve Bank of India (RBI) indicates that India experienced a notable 13.24% rise in digital payments during the fiscal year 2022-23.

Details

- The surge in digital payments is indicative of the ongoing efforts to promote digitalization, enhance financial inclusion, and drive the digital economy in India.This increase suggests a growing adoption of digital payment methods and a shift towards cashless transactions in the country.

Digital Payments Index (DPI)

- The **Digital Payments Index (DPI) introduced by the Reserve Bank of India (RBI)** in January 2021 serves as a valuable tool for assessing and measuring the progress of digital payments in India.
- The DPI was established with the **reference year of March 2018 as a benchmark** to evaluate the extent of digital payments adoption in the country.
- It is formulated using a range of indicators that reflect different dimensions of digital payments. **These indicators are categorized into five parameters, each with assigned**

weights, to provide a comprehensive assessment of the digital payments ecosystem.

- **Parameters and Weights:**
  - **Payment Enablers (25%):** Factors enabling access and use of digital payment services, including internet and mobile penetration, bank accounts, Aadhaar enrolment, etc.
  - **Payment Infrastructure – Demand-side Factors (10%):** Availability and usage of digital payment instruments by customers, such as debit cards, credit cards, prepaid payment instruments (PPIs), etc.
  - **Payment Infrastructure – Supply-side Factors (15%):** Availability and usage of digital payment acceptance infrastructure by merchants, including POS terminals, QR codes, etc.
  - **Payment Performance (45%):** Volume and value of digital payment transactions across various modes and channels, including UPI, IMPS, RTGS, NEFT, BBPS, etc.

  - **Consumer Centricity (5%):** Customer experience and satisfaction with digital payment services, encompassing grievances redressal, customer awareness, etc.

- The **DPI score is computed by normalizing the values of indicators** across periods using a min-max method and then aggregating them with assigned weights.

- The DPI is pivotal in assessing India's digital payments progress, offering insights to policymakers, regulators, and stakeholders. It aids in understanding trends, consumer behaviour, and the effectiveness of initiatives aimed at promoting digital transactions.

- By monitoring the DPI, the RBI can make informed decisions to drive a cashless economy, enhance financial inclusion, and ensure secure and efficient digital payments.

- In summary, the DPI serves as a comprehensive tool to monitor, evaluate, and promote the growth of digital payments in India. It aids in creating a well-informed, secure, and inclusive digital payment ecosystem that benefits both consumers and businesses.

Must Read:

DIGITAL PAYMENTS INDEX: https://www.iasgyan.in/daily-current-affairs/digital-payments-index

Mahila Samman Savings Certificate Scheme (MSSC)

Context

- As per information shared in Parliament, a total of 14.83 lakh accounts have been opened under the Mahila Samman Savings Certificate Scheme (MSSC), mobilizing Rs 8,630 crore.

Key Points

- The Mahila Samman Saving Certificate was introduced by the Union Finance Minister during the Budget Speech for the fiscal year 2023-24.
- It is a **small savings scheme** aimed at women and girls. The scheme is provided by the Indian Post Office and can be availed at any post office throughout India.

- It is a **limited-time offering, accessible for two years**, from April 2023 to March 2025.

- It provides a **maximum deposit limit of up to Rs. 2 lahks** in the name of women or girls for a period of two years, offering a fixed interest rate.

- The scheme is government-backed, meaning it carries **no credit risk.**

- The Mahila Samman Savings Certificate **can be opened only in the name of a girl child or woman**. A woman or the guardian of a minor girl child can initiate a Mahila Samman Saving Certificate account.

- The **minimum deposit requirement under the scheme is Rs. 1,000** in multiples of one hundred rupees. The **maximum deposit allowed is Rs. 2 lahks in a single account** or across multiple Mahila Samman Savings

- Certificate accounts held by the same account holder.
- A woman or the guardian of a girl child can open a second Mahila Samman Savings Certificate **account after a minimum gap of three months** from the opening of the existing account.
- It matures in two years, and the maturity amount will be paid to the account holder after this duration.
- The scheme allows for partial withdrawals. **Account holders can withdraw up to 40% of the account balance after one year from the account opening date.**

- The **scheme offers a fixed interest rate of 7.5% per annum**, compounded quarterly. This rate is notably higher than the interest rates on many bank Fixed Deposits (FDs) and other popular small savings schemes.
- The account can be prematurely closed in specific situations, including after six months of opening without providing a reason (with an interest of 5.5% provided), on the death of the account holder, or in case of compassionate grounds such as a life-threatening disease of the account holder or the death of the guardian. In such cases, the interest will be paid on the principal amount.

Must Read:

Mahila Samman saving Certificate (MSSC): https://www.iasgyan.in/daily-current-affairs/mahila-samman-saving-certificate-mssc

GST on Online Gaming Companies

Context

- The 28% Goods and Services Tax (GST) on online gaming, casinos, and horse racing is set to be implemented from October 1 this year, according to Union Finance Minister.

Key Points

- The Finance Minister mentioned that the GST Council recommended that the valuation of the supply of online gaming and actionable claims in casinos should be **based on the amount paid or payable to the supplier by the player (excluding the amount entered into games or bets out of winnings of previous games or bets).** This approach would avoid taxing the total value of each bet placed.
- Concerns raised by some states regarding the tax on the full amount, it was decided by the GST council that the **implementation of this tax structure would be reviewed after a period of six months.**
- To ensure compliance, a special monitoring cell under the Directorate General of GST Intelligence will be set up to monitor offshore gaming companies and ensure they pay taxes. Payment through virtual digital assets for these activities will also be considered for levying GST.

- **The higher 28% GST rate will increase the cost for players to engage in online gaming**. This could lead to players opting for offshore or illegitimate platforms to avoid GST, harming the legitimate industry. This could have negative consequences, such as gambling addiction and loss of government revenue.
- The government's intent behind the higher tax is to discourage gambling, especially among young individuals. The new tax structure has sparked concerns in the industry due to its potential to hinder growth, innovation, and foreign direct investment.

Online Gaming

- Online games, as defined by the Ministry of Electronics and Information Technology, are accessible over the Internet via computers or intermediaries.
- **India's gaming industry is projected to reach $5 billion by 2025**, with a growth rate of 28-30% annually. The real-money gaming segment generated over ₹10,000 crore in revenue in 2022.
- Online gaming companies **currently pay an 18% GST on Gross Gaming Revenue (GGR) or platform fees**, along with a 30% TDS on winnings.

Vivad Se Vishwas II

Context

- The Department of Expenditure, Ministry of Finance, has introduced the "Vivad se Vishwas II" scheme to accelerate the resolution of contractual disputes involving the government and government undertakings.

Key Points

- The Union Finance Minister announced the introduction of this **voluntary settlement scheme** with standardized terms in the budget 2023-24.
- The scheme's primary objective is **to provide a platform for settling contractual disputes that involve the government or government-controlled organizations**, where legal challenges have arisen against arbitral awards.
- It **offers settlement terms based on the level of pendency of the dispute**. These terms are offered to encourage the resolution of disputes and promote ease of doing business.
- Claims under the scheme can be submitted until 31st October 2023, providing a defined window for parties to avail of this resolution mechanism.

- The scheme **applies to all domestic contractual disputes** in which either the Government of India or an organization under its control is one of the parties.
- Contractors involved in contractual disputes will be offered settlement amounts based on the nature of the award and its pendency level:
  - For court awards passed on or before 30 April 2023, settlement amounts of up to 85% of the net awarded or upheld by the court will be offered.
  - For arbitral awards passed on or before 31 January 2023, settlement amounts of up to 65% of the net awarded will be offered.
- The **government e-marketplace (GeM) has established a dedicated webpage for the implementation of the scheme**. The platform will be used to exclusively process eligible claims, ensuring a transparent and efficient process.
- The "Vivad se Vishwas II" scheme is expected to streamline the resolution of contractual disputes involving the government and government undertakings, contributing to a more conducive business environment and faster dispute resolution.

Bharatnet

Context

- The Union Cabinet has approved ₹1.39 lakh crore for the BharatNet project, covering approximately 6.4 lakh villages.

Key Points

- BharatNet is among the largest rural telecom projects globally and has been implemented in a phased manner**, targeting all 2.5 lakh gram**

panchayats (GPs) for last-mile broadband connectivity.

- The project aimed at providing last-mile connectivity to rural areas across the country. It involves providing optical fibre-based connectivity to homes in all villages of the country.
- The initiative was **first approved by the Cabinet in October 2011** and has been **executed by Bharat Broadband Network**

(BBNL) as a special purpose vehicle (SPV). PhaseII was approved in 2017.

- To ensure successful implementation, the **project has partnered with village-level entrepreneurs (VLEs)**. The decision to involve local entrepreneurs in taking fibre connectivity to homes was made after a successful pilot project.

- The **project operates on a revenue-sharing model, with Bharat Broadband Network Limited (BBNL) and VLEs sharing 50% of the revenue. The monthly broadband plans start** from ₹399 and go up to ₹799, offering a minimum speed of 30mbps.

- As of now, approximately 1.94 lakh villages have been connected under the project, and the plan is to connect the remaining villages within the next 2.5 years.

- Overall, the BharatNet project aims to bridge the digital divide and provide essential connectivity to rural areas, facilitating access to information, education, healthcare, and various digital services for residents of these villages.

Must Read:

BHARAT NET PROJECT: https://www.iasgyan.in/daily-current-affairs/bharat-net-project

Self-Reliant India (SRI) Fund

Context

- The establishment of the Self Reliant India (SRI) Fund marks a strategic move to inject Rs. 50,000 crore as equity funding into select MSMEs with the capacity and promise to expand and transform into significant entities.

Key Points

- The Self Reliant India (SRI) Fund is a Rs. 50,000 crore equity fund that will **invest in MSMEs that have the potential to scale up and become global players in their respective sectors.**

- The SRI Fund aims **to provide long-term capital support to MSMEs** that are facing challenges due to the Covid-19 pandemic and the economic slowdown.

- The fund will help MSMEs to adopt new technologies, innovate, diversify and expand their markets.

- It will be **managed by a professional team of experts** and will follow a transparent and rigorous selection process to identify eligible MSMEs.

- The SRI Fund is expected to **create a multiplier effect on the economy** by generating employment, enhancing exports, increasing tax revenues and fostering a culture of entrepreneurship and innovation.

- The fund comprises Rs. 10,000 Crore from the Indian government and Rs. 40,000 Crore from Private Equity / Venture Capital funds.

- It will also contribute to the vision of Atmanirbhar Bharat, or self-reliant India, by strengthening the domestic capabilities and competitiveness of MSMEs.

Star Series Banknotes

Context

- The Reserve Bank of India (RBI) has addressed concerns related to banknotes featuring a Star (*) symbol on the number panel.

Star Series Bank Notes

- Star series banknotes have generated discussions on social media platforms due to the Star (*) symbol.

- RBI clarified that the **Star (*) symbol denotes a banknote used as a replacement for defective ones** within a pack of 100 serially numbered notes.

- The Star symbol is included in the number panel of a banknote when it serves as a replacement for defectively printed banknotes within a packet of 100 serially numbered banknotes.

- The "**Star series" numbering system was introduced by RBI specifically for replacing defectively printed banknotes** within packets of 100 serially numbered banknotes.

- Star series banknotes are **fully valid legal tender, holding the same value and acceptance as regular banknotes in circulation**. Their only distinction is the additional Star (*) symbol in the number panel, placed between the prefix.

MSME Rupay Credit Card

Context

- The Ministry of Micro, Small and Medium Enterprises (MSME), in collaboration with the National Payment Corporation of India (NPCI), has introduced the MSME RuPay Credit Card across India for Udyam registered MSMEs (Micro, Small, and Medium Enterprises).

Details

- The MSME RuPay Credit Card is launched as a pilot initiative and offers a streamlined payment solution to Udyam-registered MSMEs for covering various operational expenses related to their business. These expenses include digital payments, utility bill payments, tax and statutory payments, and more.

What is the MSME RuPay Credit Card?

- The MSME RuPay Credit Card is a card that can be used for various purposes related to business operations. For example, to make digital payments, pay utility bills, pay taxes and statutory dues, and more. The card is designed **to reduce dependence on cash transactions and increase the adoption of digital transactions.**
- The MSME RuPay Credit Card is **currently available only for Udyam-registered MSMEs.**

What are the benefits of the MSME RuPay Credit Card?

- The card is easy to use and offers a streamlined method to handle business-related expenses and payments.
- The card **covers a wide range of operational expenses that might incur in running a business**, thereby saving time and money.
- The card also **offers an interest-free credit period for business expenditures**, as per the policies of the bank that issues the card. This means that you can enjoy a grace period before you have to pay back the amount that you have spent.
- The MSME RuPay Credit Card is a great opportunity for Udyam-registered MSMEs to access a convenient and cost-effective payment solution for their business needs. By using the card, you can not only simplify your financial operations but also contribute to the growth and development of the MSME sector in India.

Must Read:

MSME RuPAY Credit Card: https://www.iasgyan.in/daily-current-affairs/msme-rupay-credit-card

Sorghum

Context

- Scientists from the United States Department of Agriculture (USDA) have developed advanced sorghum varieties to address the nutritional needs of mothers and children in sub-Saharan Africa.

More about the Study

- While sorghum is rich in protein, fibre, vitamin B, and some micronutrients, **it lacks sufficient vitamin A, iron, and zinc.** Deficiencies in these nutrients impact immune function and disease prevention, particularly in children. Scientists used biotechnological techniques to enhance the sorghum variety's nutritional profile, making it more suitable for food-insecure regions.
- The **new sorghum varieties are fortified with provitamin A and non-provitamin A carotenoids**. They also contain a more efficient phytase enzyme that aids nutrient absorption.

Sorghum

- It is widely **cultivated for its edible grains, which can be used for human consumption, animal feed, and various industrial applications**. It is grown in various regions around the world, particularly in **Africa, Asia, and the Americas.**
- Sorghum grains can be processed into flour, meal, or other food products. They are used in traditional dishes, bread, porridge, and other culinary preparations. It can also be used as animal feed and in the production of beverages like sorghum beer.
- It is a **good source of nutrients such as carbohydrates, fibre, protein, and various vitamins and minerals**. It's also **gluten-free**, which makes it suitable for people with gluten sensitivities.
- One of the remarkable features of sorghum is its ability to thrive in areas with limited water resources. It's often **referred to as a "drought-resistant" or "drought-tolerant" crop.**
- It is also being explored as a **potential feedstock for biofuel production** due to its high biomass and sugar content.
- It has **cultural and traditional significance in many societies**. It's often used in religious ceremonies, festivals, and rituals.
- It plays a vital role in food security, especially in regions prone to food scarcity and drought. It's adaptability and nutritional value make it an important crop for ensuring sustainable agriculture and addressing nutritional challenges.

Must Read:

SORGHUM: https://www.iasgyan.in/daily-current-affairs/sorghum-22

World Trade Statistical Review 2023

Context

- The World Trade Statistical Review 2023 released by the World Trade Organization (WTO), addresses recent international trade trends amidst significant global challenges affecting the world economy and supply chains.

Highlights of the Review Report

- The World Trade Statistical Review (WTSR) offers a comprehensive analysis of recent developments in international trade. **Produced annually by the World Trade Organization (WTO),** it serves as the organization's flagship statistical publication.

- It **provides comprehensive data on both merchandise and services trade**, offering breakdowns of geographical origins, product categories, and sectors. It also includes relevant information about crucial economic indicators such as GDP growth, commodity prices, and currency fluctuations.
- The report underscores the persistence of global trade growth despite crises like the COVID-19 pandemic, the Ukraine conflict, inflation, and monetary tightening. Trade is highlighted as a catalyst for economic recovery and resilience, although uncertainties remain due to risks like geopolitical tensions and financial instability.
- **In 2022, global trade in goods and services reached a total of $31 trillion**, exhibiting a substantial **13% year-on-year increase.** While goods trade rebounded to pre-pandemic levels in 2021, services trade achieved this recovery in 2022.
- Trade in commercial services exhibited significant growth, expanding by 15%, which surpassed the growth rate of merchandise trade. This growth was largely driven by the increasing prominence of digitally delivered services.
- **India secured the 18th position in merchandise exports and the 7th position in services exports**. China remained the top merchandise exporter, although its world export share decreased to 14%.

Account Aggregator Framework

Context
- The Securities and Exchange Board of India (SEBI) has introduced a proposal to enhance safeguards within the Account Aggregator (AA) framework in securities markets.

Account Aggregators (AA)
- Account Aggregators, **regulated as Non-Banking Finance Companies**, enable secure digital sharing of financial information between institutions under customer control, eliminating the need for physical document exchange and personal credentials sharing.
- Through a mobile-based process, individuals can securely share data for services like loans and money management. This consent-based sharing expedites processes like loan evaluations, making financial services more convenient.
- The network allows the **consolidation of financial data from various institutions into a single place**, aiding better financial management by providing comprehensive insights into spending, savings, and investments.
- Seamless data sharing empowers lenders and fintech firms to introduce novel loan products and personalized financial advice, leveraging a comprehensive understanding of individual financial behaviour.
- The network employs robust encryption mechanisms, minimizing data breach risks. It also facilitates credit assessment through reliable sources like GST or GeM, potentially reducing collateral requirements, and broadening options for financial product access.

Corporation Tax

Context
- The government's decision to reduce corporation tax rates in September 2019 led to a substantial revenue loss in subsequent fiscal years.

Details
- A corporation tax is a **direct tax imposed on the income of corporations, businesses, and companies**. It is a significant source of government revenue and plays a crucial role in funding public services and developmental activities.
- In the 2019-20 fiscal year, the government incurred a revenue loss of Rs 1,28,170 crore due to the reduction in the corporation tax rate from 30% to 22%.

- The provisional corporation tax revenues for the financial year 2022-23 amounted to over Rs 8.28 lakh crore, indicating a notable increase from the previous fiscal year's collection of over Rs 7.12 lakh crore in 2021-22. The collection figures for 2018-19 and 2019-20 were Rs 6.63 lakh crore and Rs 5.56 lakh crore, respectively.

New Tax Regime Details

- The new tax regime, introduced in September 2019, implemented a tax rate of 15% under Section 115BAB. This rate applied to newly incorporate domestic companies engaging in manufacturing, production, research, or distribution of articles or things manufactured. The provision aimed to incentivize fresh investments by offering a reduced tax burden.
  - The timeline for fresh investments was initially set until March 31, 2023, and later extended by a year to March 31, 2024.
- For all existing companies, manufacturing and non-manufacturing, the corporation tax rate was **slashed from 30% to 22%** (without surcharge and cess).

RBI's Observations and Insights

- RBI expressed concerns about the effectiveness of the new tax regime in stimulating the intended investment cycle.
- The RBI's Annual Report for 2019-20 noted that the **tax rate cut might not have resulted in the expected surge of investments**. Instead, the funds saved through reduced taxes may have been utilized for purposes such as debt servicing, accumulation of cash balances, and other current assets.
- The pattern suggests that the intended revival of capital expenditure (capex) did not materialize as envisaged.

Must Read:
CORPORATION TAX: https://www.iasgyan.in/daily-current-affairs/corporation-tax

North East Venture Fund (NEVF)

Context

- The Union Minister of Development of the North East Region stated in the Parliament that the North East Venture Fund (NEVF) initiated by the government has invested in 37 startups since its establishment in 2017.

Key Points

- Out of the 37 startups, 24 are from Assam, 6 from Manipur, 3 from Meghalaya, 2 from Arunachal Pradesh, and 1 each from Tripura and Sikkim.
- The startups supported by NEVF have led to the generation of 4,812 employment opportunities since FY18. Assam witnessed the highest job creation with over 4,000 job opportunities.
- NEVF was established with a target corpus of Rs 100 crore. The fund has received contributions from various entities, including Rs 30 crore from the North East Development Finance Corporation (NEDFi), Rs 25 crore from the Small Industries Development Bank of India, and Rs 45 crore from the Ministry of Development of the North East Region (MoDNER).
  - The contribution from **MoDNER was provided as an interest-free loan**, payable in a lump sum at the end of 15 years.
- In June 2023, the **government approved new guidelines for the scheme "Promotion of MSMEs in North Eastern Region (NER) and Sikkim.** The revised scheme will be implemented during the 15th Finance Commission Cycle (FY22-FY26) and aims to enhance the productivity, competitiveness, and capacity building of MSMEs in the NER and Sikkim regions.

Incremental Cash Reserve Ratio (CRR)

Context

- The Reserve Bank of India (RBI) has directed Indian banks to increase the Cash Reserve Ratio (CRR) for liquidity tightening.

Details

- RBI Governor announced that **banks must maintain an incremental CRR of 10% on the rise in deposits between May 19 and July 28.**
- He clarified that this measure is temporary and aims to absorb liquidity resulting from the return of high-denomination notes, which was previously announced in mid-May. The objective is to manage the liquidity overhang.

Incremental Cash Reserve Ratio (CRR)

- The Cash Reserve Ratio (CRR) is the **portion of a bank's deposits that it is required to keep with the central bank (like the RBI) in the form of cash reserves.** It is a tool used by central banks to control the money supply in the economy. By adjusting the CRR, the central bank can influence the liquidity available in the banking system.
- **Incremental CRR refers to an additional reserve requirement** imposed by the central bank on the incremental or additional deposits that banks receive within a specific period.

Purpose of Incremental CRR

- **Liquidity Management:** If there is excess liquidity in the banking system due to a sudden surge in deposits, the central bank might use the incremental CRR to mop up the excess liquidity and prevent inflationary pressures.
- **Monetary Control:** The central bank uses the CRR as a tool to control the money supply. By imposing an incremental CRR, the central bank can control the lending capacity of banks, which in turn affects the money supply in the economy.
- **Temporary Measure:** Incremental CRR is often a temporary measure taken by the central bank to address short-term liquidity imbalances or to manage a sudden influx of funds, as seen in the case of the return of high-denomination notes in India.

Impact on Banks and the Economy

- When banks are required to maintain a higher incremental CRR, they have to set aside a larger portion of their deposits as reserves with the central bank. **This reduces the amount of funds available for lending and investment activities**. As a result, it can lead to a decrease in credit availability and liquidity in the banking system. Conversely, when the central bank reduces the incremental CRR, it injects liquidity into the system, facilitating lending and economic growth.

Conclusion

- The concept of Incremental Cash Reserve Ratio (CRR) is a monetary policy tool used by central banks to manage liquidity and control money supply in the banking system. By requiring banks to hold a higher portion of incremental deposits as reserves, the central bank can effectively manage short-term liquidity imbalances and influence lending capacity. It's an important tool that central banks use to ensure stability and control in the financial system.

Accredited Agent for Health and Extension of Livestock Production

Context

- The Union Minister for Animal Husbandry and Dairying, launched the 'A-HELP' (Accredited Agent for Health and Extension of Livestock Production) programme and an Infertility Camp in the Narmada region of Gujarat.

Key Highlights

- These initiatives are a **component of the Pashudhan Jagrati Abhiyaan** under Inclusive Development. The overarching goal of the **Pashudhan Jagrati Abhiyaan is to empower farmers and address key concerns** related to livestock health, disease management, and animal infertility.
- **The 'A-HELP' program is centred around empowering women**. It achieves this by training women to become agents who actively contribute to various aspects of livestock management, including disease control, artificial insemination, animal tagging, and livestock insurance.
- The program serves as a noteworthy example of integrating the power of women into the livestock sector. This integration aligns with the broader vision of the Prime Minister, aimed at achieving socio-economic progress.
- The initiative encompasses a **range of activities such as workshops, awareness camps, seminars, and practical training sessions**. These activities are conducted by State Veterinary Universities in collaboration with State Animal Husbandry Departments.
  o These engagements are designed to disseminate essential knowledge related to disease control, appropriate nutrition, and timely medical interventions for livestock.
- The **initiatives benefit from collaborations with experts from Indian Immunological Ltd**. These collaborations enhance the effectiveness of the initiatives by providing farmers with necessary resources such as essential nutritional supplements, mineral mixtures, dewormers, and medicines.
- The initiatives adopt a holistic approach, combining the imparting of knowledge with the provision of tangible resources. This approach aims to empower the farming community and enhance the well-being of valuable livestock.

Must Read:

'A-HELP' (Accredited Agent for Health and Extension of Livestock Production):
https://www.iasgyan.in/daily-current-affairs/a-help-programme

Bio-Trace Minerals Project

Context

- Collaboration between the Technology Development Board (TDB) and M/s Chemlife Innovations Pvt. Ltd. for the "Commercialization and Manufacturing of Bio-Trace Minerals Used in Feed for Animals" project.

Key Highlights

- The **Project aligned with the goals of the National Livestock Mission,** focusing on enhancing livestock productivity, optimizing feed and fodder resources, and incorporating technology into livestock management.
- **Project Goals and Focus:** Aim to revolutionize the manufacturing of bio-trace minerals for animal feed, with a special emphasis on the livestock and poultry/dairy sectors. Leveraging innovative 'Accelerated Natural Bio Transformation' (ANBioT) technology and strategic utilization of pupa proteins.
- **Innovative Approach:** Introduction of a proprietary nutrient medium designed to facilitate chelation reactions under milder conditions, reflecting principles of environmental sustainability. Utilization of pupa proteins, abundant in hydroxy amino acids, as a strategic alternative to imported ligands, aligning with India's self-sufficiency objectives.
- **Product Development**: The developed product named 'MinBioZen' serves as a testament to the

- company's commitment to innovation and environmental stewardship. MinBioZen addresses the critical requirement for biotrace minerals (zinc, copper, manganese, iron, and selenium) essential for optimizing livestock health and growth.
- **Benefits:** Integration of bioavailability and stability in MinBioZen showcases the company's dedication to both innovation and environmental responsibility. By providing biotrace minerals, the product contributes to improved livestock health and growth, aligning with the broader goals of sustainable agriculture.
- In summary, the project's alignment with national goals, utilization of cutting-edge technology, and commitment to environmental impact highlight its significance in enhancing livestock well-being and supporting India's agricultural self-sufficiency.

Must Read:

BIO-TRACE MINERALS PROJECT: https://www.iasgyan.in/daily-current-affairs/bio-trace-minerals-project

Bond Yield

Context

- The U.S. bond market saw a decline in yields, this had a spillover effect on Indian bond yields, which tend to move in sync with U.S. yields.

Key Highlights

- **Bond yield is the annual income generated by a bond, expressed as a percentage of its face value.** It represents the interest income paid to bondholders and is sometimes referred to as the bond's "coupon rate."
- **Factors Affecting Bond Yield:**
  o **Bond yields move inversely to prevailing interest rates**. When interest rates rise, bond prices fall, and yields increase. Conversely, when interest rates fall, bond prices rise, and yields decrease.
  o Bonds issued by entities with lower credit ratings (higher default risk) typically offer higher yields to compensate investors for the added risk.
  o **Longer-term bonds generally offer higher yields than shorter-term bonds** to compensate investors for tying up their capital for a more extended period.
  o **Supply and demand in the bond market can influence yields**. High demand for bonds can push prices up and yields down, while low demand can have the opposite effect.
  o Rising inflation expectations can erode the real return on bonds, leading to higher yields to offset the loss of purchasing power.
- Bond yields are vital for investors, as they help determine the attractiveness of bonds relative to other investment options. Yields also play a crucial role in financial markets, impacting borrowing costs for governments and corporations.
- Bond yields are closely monitored by financial markets and policymakers as they can serve as **indicators of economic conditions and investor sentiment.** Central banks often use bond yields as a tool for implementing monetary policy.

Must Read:

BOND YIELD: https://www.iasgyan.in/daily-current-affairs/bond-yield-43

Dibang Project

Context

- The National Hydroelectric Power Corporation (NHPC) and RITES, a prominent transport consultancy and engineering firm, have signed a Memorandum of Understanding (MoU) to collaborate on the construction of the Dibang multipurpose project in Arunachal Pradesh.

Key Highlights

- The Dibang project is one of the largest hydroelectric projects in India. It is **located on the Dibang River in Arunachal Pradesh**. Once completed, it is expected to generate a substantial 2,880 MW of electricity, contributing significantly to India's clean energy production.
- The primary purpose of constructing the railway siding is to support the Dibang project's development. The siding will serve as an essential transportation infrastructure for the project, with two main functions:
    - The **railway siding will facilitate the efficient transport of construction materials and heavy equipment** required for the construction of the Dibang project. This will ensure a smooth and timely construction process.
    - Once the Dibang project is operational, the railway siding will also be utilized to transport the generated electricity from the project to the national grid. This transportation infrastructure is vital for distributing the clean energy produced by the project to consumers across the country.
- The **railway siding will be constructed at Pasighat in Arunachal Pradesh**. Pasighat's strategic location is expected to enhance the logistical efficiency of the project by providing access to the necessary transportation routes.
- The Dibang project represents a significant economic boost for Arunachal Pradesh. It **will create employment opportunities and generate revenue for the state.** Additionally, by adding 2,880 MW of clean energy to India's power generation capacity, the project contributes to the nation's energy security and sustainability goals.

Must Read:

DIBANG PROJECT: https://www.iasgyan.in/daily-current-affairs/dibang-project

Insurance Surety Bonds

Context

- The National Highways Authority of India (NHAI) has recently taken steps to promote the adoption of Insurance Surety Bonds in place of traditional Bank Guarantees for contracts related to its projects.

Key Highlights

- Insurance Surety Bonds are financial instruments where **an insurance company acts as a surety, guaranteeing that a contractor or party will fulfil their contractual obligations as specified in an agreement.**
- These bonds **involve three key parties**: the principal (contractor or party performing the obligation), the obligee (the party to whom the obligation is owed), and the surety (the insurance company providing the guarantee).
- These Bonds serve as a **form of financial security for contractual arrangements**. They ensure that the principal fulfils their contractual duties, and if they fail to do so, the surety steps in to provide compensation to the obligee.
- In many jurisdictions, including India, **government authorities have recognized Insurance Surety Bonds as an equivalent option to traditional Bank Guarantees** for purposes such as bid security and performance guarantees.
- **Advantages of Insurance Surety Bonds**
    - Surety bonds typically have **lower upfront costs compared to traditional methods** like Bank Guarantees. The premium paid for a surety bond is usually a fraction of the required bond amount.
    - Choosing surety bonds over bank guarantees can enhance liquidity for businesses. It frees up capital that can be utilized for various business needs, such as investment in growth opportunities or covering operational expenses.

o Surety bonds can have **longer terms, providing stability for both businesses and obligees.** This reduces the need for frequent renewals and administrative efforts.

Conclusion

* The adoption of Insurance Surety Bonds in NHAI contracts represents a forward-looking approach to contract security and financial management. It offers cost-effective, flexible, and liquidity-enhancing options for businesses and contractors, while also supporting India's infrastructure development goals and broader economic aspirations.

Must Read:

INSURANCE SURETY BONDS: https://www.iasgyan.in/daily-current-affairs/insurance-surety-bonds

Loanable Funds Theory

Context

* The term "Loanable funds theory" is in the news.

Key Highlights

* The loanable funds theory is a fundamental concept in economics that explains how interest rates are determined in the financial markets.
* The theory revolves around the **interaction of the supply and demand for loanable funds in the credit market**. The supply of loanable funds is provided by savers who are willing to lend their money, while the demand for loanable funds comes from borrowers seeking capital for various purposes.
* **Savers provide the supply of loanable funds** because they are willing to postpone their consumption and lend their money in exchange for interest**. Borrowers demand loanable funds** because they want to invest in projects or activities that offer returns higher than the interest rate they must pay.
* According to the theory, the **interest rate is the price that brings the supply of and demand for loanable funds into equilibrium.** In other words, it is the interest rate at which savers are willing to lend, and borrowers are willing to borrow.
* The theory predicts that changes in the supply and demand for loanable funds will impact interest rates. An increase in the supply of loanable funds, such as higher savings, tends to lower interest rates. Conversely, an increase in the demand for loanable funds, such as increased investment opportunities, tends to raise interest rates.

- The loanable funds theory has **important implications for various economic phenomena:**
  - An increase in the supply of loanable funds and a decrease in interest rates can stimulate investment and economic growth.
  - Fluctuations in the supply and demand for loanable funds can contribute to economic cycles, with expansions and contractions in borrowing and investment.
  - Changes in monetary policy, fiscal policy, or consumer savings behaviour can affect the supply and demand for loanable funds, leading to changes in interest rates.
- Policymakers, central banks, and financial institutions closely monitor the dynamics of the loanable funds market to make informed decisions about interest rates, lending practices, and economic stability.

Conclusion

- The loanable funds theory provides a foundational understanding of how interest rates are determined in a market economy. It highlights the crucial roles of savers and borrowers, the influence of supply and demand dynamics, and the broader economic implications of interest rate changes. This theory is a fundamental concept in macroeconomics and financial economics.

Must Read:

LOANABLE FUNDS THEORY: https://www.iasgyan.in/daily-current-affairs/loanable-funds-theory#:~:text=The%20loanable%20funds%20theory%20can,increased%20investment%20and%20economic%20growth.

3.14 SNIPPETS

Participatory-note

- Investment in the Indian capital markets through participatory notes (P-notes) surged to ₹1.13 lakh crore by June-end, reaching the highest level in 5 years, driven by stable macroeconomic fundamentals and a growing interest in Indian markets.
- Participatory Notes (P-Notes) are overseas derivative instruments tied to Indian stocks, allowing foreign investors to trade in Indian markets without SEBI registration.
- Issued by registered brokers and Foreign Institutional Investors (FIIs), P-Notes grant investors economic benefits without ownership or voting rights.
- There are several concerns including limited SEBI control, potential for unaccounted money, and money laundering.
- SEBI has taken actions to enhance oversight and reporting, requiring KYC norms and portfolio disclosures for P-Notes.

Gross Fixed Capital Formation

- Gross Fixed Capital Formation (GFCF) in India has notably risen from ₹32.78 lakh crore in FY 2014-15 to ₹54.35 lakh crore in FY 2022-23 (provisional estimates), signifying robust investment growth, as stated by the Union Minister of State for Finance in the Lok Sabha.
- It refers to the total investment made in acquiring new physical assets or fixed assets, including infrastructure, machinery, and buildings, which is crucial for economic development and growth.
- It indicates the extent of capital accumulation and productive capacity enhancement within the country's economy.
- With a contribution of 34% to the GDP during FY23, GFCF holds its highest share since the fiscal year 2012-13.

Hydroponics Farming

- Hydroponics farming is a method of growing plants without soil, using a nutrient-rich water solution to deliver essential minerals and nutrients directly to the plant roots.
- In hydroponics, plants are typically grown in an inert medium that provides support for the roots while allowing them to access water, nutrients, and oxygen. Common growing mediums include perlite, coconut coir, Rockwool, and vermiculite.
- Instead of obtaining nutrients from the soil, plants in a hydroponic system receive a nutrient-rich water solution directly. This solution contains a precise balance of essential nutrients that plants need to grow, such as nitrogen, phosphorus, potassium, and various trace elements.
- Hydroponic systems are designed to recirculate and reuse water, minimizing water waste. Water levels and nutrient concentrations are carefully monitored and adjusted to ensure optimal plant growth.
- Hydroponics farming has gained popularity in recent years due to its potential to address food security challenges, especially in areas with limited arable land and water resources. It also offers opportunities for sustainable agriculture and innovative approaches to crop production.
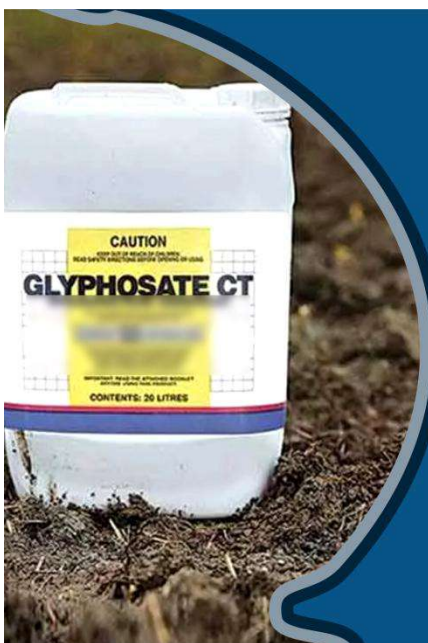
Herbicide Glyphosate

- Glyphosate is a non-selective herbicide, meaning it can kill a wide variety of plants. It's often used as a broad-spectrum weed killer in various settings, including agricultural fields, gardens, lawns, and industrial sites.
- It is frequently used in conjunction with genetically modified (GM) crops that have been engineered to be resistant to the herbicide. This allows farmers to spray glyphosate directly onto their fields to kill weeds while leaving the GM crops unharmed.
- The International Agency for Research on Cancer (IARC), which is part of the World Health Organization (WHO), classified glyphosate as "probably carcinogenic to humans" in 2015.
  - This classification was based on limited evidence showing that glyphosate can cause cancer in animals and some epidemiological studies suggesting a possible link between glyphosate exposure and non-Hodgkin lymphoma in humans.
- The safety of glyphosate continues to be debated among scientists, regulatory agencies, and advocacy groups. Some studies have supported the IARC's classification, while others have found no significant association between glyphosate and cancer.
- Due to the controversy surrounding glyphosate, many farmers and agricultural practitioners have been exploring alternative weed management strategies. These strategies may involve a combination of cultural practices, mechanical cultivation, biological control, and the use of other herbicides.

UDGAM Portal

- The Reserve Bank of India (RBI) has introduced a centralized web portal called UDGAM (Unclaimed Deposits – Gateway to Access inforMation) to simplify the process for the public in locating their unclaimed deposits across multiple banks from a single platform.
- The portal is designed to help users identify their unclaimed deposits or accounts and provides the option to claim the deposit amount or reactivate dormant accounts within their respective banks.
- The development of the portal is a collaborative effort involving Reserve Bank Information Technology Pvt. Ltd. (ReBIT), Indian Financial Technology & Allied Services (IFTAS), and participating banks.
- Initially, users can access unclaimed deposit details from seven banks on the portal, with the search feature expanding to cover more banks in phases by October 15, 2023.
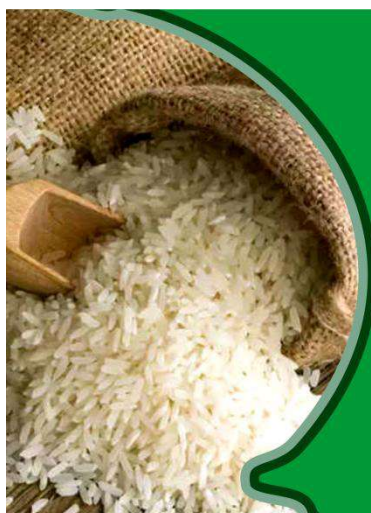
Export duty on parboiled rice

- The Indian government has imposed a 20% export duty on parboiled rice to address concerns related to rice exports and domestic supply and demand dynamics.
- The duty is intended to restrict the outflow of rice from the country and potentially stabilize domestic rice prices.
- The 20% export duty on parboiled rice is set to be in effect until October 15, allowing the government to assess the rice production situation for the kharif season.
- Depending on the kharif rice production data and market conditions, the government may consider further measures, including potentially banning exports of parboiled rice altogether.
- The imposition of the export duty is expected to impact rice prices, causing Indian parboiled rice to become more expensive due to the added duty.
  - This move could also have implications for global rice prices, particularly in regions like Southeast Asia, and may contribute to inflation in the rice market.

Magic Rice

- Chokuwa rice, also known as "Magic rice," is a significant and unique variety of rice in Assam's culinary heritage.
- It played a crucial role in the diet of the Ahom dynasty's troops, highlighting its historical importance in shaping regional culinary traditions.
- This rice is primarily cultivated in the fertile Brahmaputra region of Assam, benefiting from the region's favourable climate and soil quality.
- It is classified as semi-glutinous winter rice, falling under the category of Sali rice.
- The low amylose Chokuwa rice variety "Komal Chaul," is known for its soft and easily digestible texture.
- The rice undergoes a meticulous preparation process, including boiling, drying, proper storage, and soaking before consumption.
- It is popular for its nutritional advantages and ease of digestion, making it a preferred choice among health-conscious consumers.

3.15   1 MAINS & 5 MCQs

Q1. *How does India's ageing workforce affect its economy, and what are the main difficulties that the country has to deal with in this demographic transition? What are some possible solutions and actions that can help to overcome these difficulties and enhance the contribution of both young and old workers in the workforce?*

Answer

- India's ageing workforce is a challenge that needs to be addressed by policymakers, employers and workers alike. According to the United Nations, the share of people aged 60 and above in India's population will increase from 9% in 2020 to 19% in 2050. This means that the country will have to deal with a shrinking labour force, a rising dependency ratio and a growing demand for health and social services.

The ageing workforce affects the Indian economy

- **Decreasing labour force participation:** The ageing workforce is causing a decline in the labour force participation rate as older workers retire, and fewer young people are entering the workforce. This situation is placing a strain on the economy since there are fewer workers available to produce goods and services.
- **Increased dependency ratio:** The ageing workforce is also leading to an increase in the dependency ratio, which quantifies the ratio of non-working individuals (dependents) to those who are actively employed (producers). This translates to a higher number of people

depending on the working population for support.

- **Reduced economic growth**: The ageing workforce is contributing to a slowdown in economic growth because there are fewer workers actively contributing to the economy. This presents a significant challenge for India, which is striving to achieve robust economic growth to alleviate poverty and elevate living standards.

Primary difficulties India faces during this demographic transition encompass:

- **Lack of skilled workers:** The ageing workforce is causing a shortage of skilled labourers due to retirements among older workers and fewer young individuals entering the workforce with requisite skills. This poses a substantial challenge to India, as it necessitates a skilled workforce to remain competitive in the global economy.
- **Increased healthcare costs:** The ageing workforce is placing stress on the healthcare system because older individuals typically require more healthcare services. This stands as a major challenge for India, especially as it endeavours to offer affordable healthcare to its citizens.
- **Reduced social security benefits:** The ageing workforce is straining the social security system since there are fewer contributors. This poses a significant challenge for India, which must ensure its citizens have a secure retirement.

Actions that can enhance the contributions of both young and elderly workers in the workforce include:

- India should invest in education and training programs to ensure its workforce possesses the necessary skills for the 21st-century economy. This can address the shortage of skilled workers and boost overall workforce productivity.
- Attracting foreign investment can create jobs and stimulate economic growth, ultimately reducing the dependency ratio and making the economy more resilient in the face of an ageing workforce.
- India needs to reform its social security system to ensure sustainability and provide adequate benefits to citizens. This can alleviate the burden on the working population and secure retirement for citizens.
- Initiatives promoting healthy ageing can help reduce healthcare costs associated with an ageing workforce. Encouraging healthy lifestyles and ensuring affordable healthcare access are essential components of this strategy.

Conclusion

- India's ageing workforce has both immediate and long-term economic consequences, including decreased labour force participation, an increased dependency ratio, and reduced economic growth. To address these challenges, India can invest in education, attract foreign investment, reform its social security system, promote healthy ageing, encourage longer workforce participation, and support entrepreneurship. These measures can enhance the contributions of both young and old workers in the workforce and mitigate the negative effects of an ageing population on the economy.

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Q2. Consider the following statements in the context of the Geographical Indications (GI):

1. GI protection can be applied to a wide range of products, including agricultural, handicraft, industrial, or food items.
2. GI tags in India are typically valid for 20 years, after which they can be renewed to continue safeguarding the product's unique identity and reputation.
3. It contributes to generating employment and livelihood opportunities for producers and related stakeholders.
4. GI tags support the conservation of biodiversity, natural resources, and traditional knowledge of the region.
5. India has established a Geographical Indications Cell under the Department for Promotion of Industry and Internal Trade (DPIIT) to coordinate and monitor various activities related to GI products.

How many of the above statement is/are correct?
A) Only two
B) Only three

C) Only four
D) All five

Q3. Consider the following in the context of the Bhu-Vision:

1. It is a portable device that can be carried to any location and operated by anyone with minimal training.
2. It can perform 12 key soil parameter tests in just 30 minutes using electrochemical sensors and colourimetric methods.
3. The device generates a soil health card that displays the test results in a simple and user-friendly format.

   How many of the above statement is/are correct?
   A. Only one
   B. Only two
   C. All three
   D. None

Q4. Consider the following statements:

1. The National Digital Nagrik Forum was launched by the Ministry of Consumer Affairs, Food and Public Distribution.
2. The Agriculture Infrastructure Fund (AIF) was introduced in the budget 2023-24 to support post-harvest infrastructure development and community farming assets.
3. The Amrit Bharat Stations scheme was launched as a collaborative effort between the Ministry of Railways and the Ministry of Home Affairs.
4. Purchasing Managers' Index (PMI) is released and compiled by the Reserve Bank of India (RBI) every month.

   How many of the above statement is/are incorrect?
   A) Only one
   B) Only two
   C) Only three
   D) All four

Q5. Consider the following statements in the context of the Mahila Samman Saving Certificate (MSSC):

1. The Mahila Samman Saving Certificate was introduced by the Union Finance Minister during the Budget Speech for the fiscal year 2023-24.
2. It is a small savings scheme provided by the State Bank of India (SBI) and can be availed at any SBI branch throughout India.
3. It provides a maximum deposit limit of up to Rs. 5 lakh in the name of women or girls for a period of two years.
4. The minimum deposit requirement under the scheme is Rs. 10,000.

   How many of the above statements is/are incorrect?
   A) Only one
   B) Only two
   C) Only three
   D) All four

Q6. The Reserve Bank of India's Monetary Policy Committee (MPC) recently decided to maintain the policy repo rate at 6.5%, in this context consider the following statements.

1. Commercial banks have to pay a higher interest rate to borrow money from the central bank when the central bank increases the repo rate.
2. The RBI acts as the banker to the central and state governments.
3. The MPC consists of six members, including four officials from the RBI, and two external members appointed by the central government.

   Which of the following statements is/are correct?
   A) 1 and 2 only
   B) 2 and 3 only
   C) 1 and 3 only
   D) 1, 2 and 3

ANSWERS: 2) C, 3) C, 4) D, 5) C, 6) A.

4. DEFENCE & SECURITY

4.1   ETHNIC VIOLENCE IN INDIA

Context

- The Supreme Court has proposed the formation of a committee consisting of three former high court judges to address the ongoing ethnic violence in Manipur.

Details

- The committee will not only investigate incidents of violence but will also look into rehabilitation and other related issues, aiming to restore confidence in the rule of law.
- The Supreme Court had previously criticized the state police for their handling of incidents of ethnic violence and expressed concern over the slow and inadequate investigations, particularly in cases targeting women.

Ethnic Violence in India

- India is a diverse nation with a rich tapestry of ethnicities, cultures, languages, and religions. However, this **diversity has also been a source of tensions and conflicts** throughout its history. Ethnic violence in India can be traced back to colonial-era divisions, the partition of India in 1947, and various historical grievances that have persisted over time.

Factors contributing to ethnic violence

- **Unresolved historical conflicts and territorial disputes** can create a sense of injustice and resentment among different ethnic groups. These grievances can resurface during periods of political instability or when nationalist sentiments are stoked.
- **India's diverse religious landscape** has led to a complex web of religious identities, beliefs, and practices. These differences can become flashpoints for violence, especially when religious fundamentalism or extremism takes hold.
- **Socioeconomic inequalities can create a breeding ground for frustration and anger**, particularly when certain ethnic or religious groups feel marginalized and excluded from economic opportunities. Economic disparities can amplify existing tensions and contribute to unrest.
- **The exploitation of ethnic and religious divisions for political gai**n can be a dangerous game. When politicians play on identity-based sentiments to mobilize support, it can lead to polarization and heightened inter-group conflicts.
- **Differences in customs, traditions, and ways of life** can indeed lead to misunderstandings and conflicts. Cultural clashes may arise due to differing norms, values, or interpretations of social practices and these can escalate if not properly managed.

Impacts of ethnic violence

- Ethnic violence often results in tragic **loss of lives, leading to pain and suffering for families and communities**. The aftermath of violence can leave scars that persist for generations.
- Communities affected by ethnic violence may be forced to flee their homes, **leading to internal displacement** within the country or even **creating refugee situations** in extreme cases. This can **disrupt the lives** of those displaced and strain resources in host communities.
- Violence can **disrupt economic activities, damage infrastructure, and deter investments**. This disruption can hinder development efforts, particularly in regions prone to conflicts, and have long-term negative effects on the economy.
- The **erosion of trust and increase in hostility among different ethnic or religious groups** can lead to deep social divisions. These divisions can hinder social cohesion, weaken the sense of national unity, and fragment society along ethnic lines.
- The psychological toll of ethnic violence is significant. Not only do direct victims

experience trauma, but also witnesses and even entire communities can **suffer from anxiety, depression, and post-traumatic stress disorder**. Trauma can impact mental well-being for years.

Challenges

- **Deep-seated historical animosities** can create a cycle of mistrust and resentment that hampers reconciliation efforts. Overcoming these legacies requires acknowledging historical injustices and finding ways to address them while focusing on the future.

- The **manipulation of ethnic tensions for political gains** can perpetuate divisions and hinder sincere efforts towards peace. Political leaders must prioritize the well-being of the entire population over short-term gains to foster unity.

- **Cultural differences can indeed complicate communication and compromise**. Efforts to address ethnic tensions need to consider cultural sensitivities and ensure that approaches are respectful and inclusive of diverse perspectives.

- Addressing economic disparities is a complex and long-term endeavour that **requires sustained investment in education, employment opportunities, and social welfare programs**. Immediate economic solutions might not yield immediate results, making it important to communicate the long-term benefits.

- **Inadequate enforcement of laws** can create an environment where violence persists without consequence. Strengthening law enforcement and ensuring justice is served is crucial to maintaining faith in the justice system.

- Media has a significant role in shaping public perceptions. **Irresponsible reporting can sensationalize conflicts and exacerbate tensions.** Responsible and unbiased media coverage is essential to promote accurate understanding and reduce tensions.

Steps taken to ease ethnic tensions and promote social harmony:

- India's **Constitution guarantees equality and protection of rights to all citizens**, irrespective of their ethnicity. This legal foundation establishes a framework for unity in diversity.

- The **reservation system provides opportunities for historically marginalized groups** in education, employment, and politics, aiming to bridge economic and social gaps.

- **Cultural Diversity Promotion**, various cultural festivals, events, and initiatives celebrate the nation's rich diversity, fostering a sense of belonging among different communities.

- National Integration Council facilitates discussions among political leaders, intellectuals, and civil society representatives to address issues of national integration and communal harmony.

- **Community policing initiatives** that involve local communities help build trust, ensure fair law enforcement, and prevent unnecessary confrontations.

- State and local governments have initiated programs to encourage dialogue, cooperation, and understanding among different communities.

- Efforts have been made to **encourage responsible reporting** that avoids sensationalism and promotes balanced coverage of sensitive issues.

- Courts and alternative dispute resolution methods provide platforms for addressing inter-ethnic conflicts and disputes.

- Government schemes like "Jan Dhan Yojana," "Skill India," and "Digital India" aim to uplift marginalized communities by providing them with better access to financial services, skills, and technology.

- **Incorporating curricula that emphasize cultural diversity**, tolerance, and inclusivity helps nurture a more accepting and harmonious society.

- Campaigns promote unity, secularism, and respect for all religions and cultures to counter divisive ideologies.

- Laws against hate speech, discrimination, and incitement of violence help deter actions that may fuel ethnic tensions.

Steps to address and mitigate ethnic tensions and conflicts within a society

- **Open communication platforms** allow individuals from different backgrounds to voice their concerns and grievances. This helps bridge gaps and builds empathy, leading to a better understanding of each other's perspectives.
- **Ensuring that resources and opportunities are distributed fairly among all communities** reduces disparities and fosters a sense of belonging. This can lead to a stronger collective identity and shared future.
- **Targeted social and economic programs** can uplift marginalized groups by providing them with the tools, skills, and resources needed to improve their quality of life. Empowered communities are less likely to resort to violence or feel excluded.
- Educating individuals about the richness of cultural diversity helps break down stereotypes and prejudices. By celebrating differences and promoting tolerance, societies can create an environment of mutual respect.
- **Holding politicians accountable for their words and actions** ensures that they prioritize national unity over divisive agendas. Responsible political behaviour can play a significant role in defusing ethnic tensions.
- **Equipping law enforcement agencies to handle situations** impartially and professionally can help prevent the escalation of conflicts. Proper training emphasizes community safety and human rights.
- **Engaging local communities in policing efforts** builds trust between law enforcement and the public. Collaboration fosters a sense of ownership over security and can lead to more effective crime prevention.
- Educating media professionals about balanced reporting reduces sensationalism and the spread of misinformation. Ethical reporting can prevent the exacerbation of tensions through inaccurate or biased coverage.
- **Identifying and addressing potential conflicts** at an early stage is crucial. Swift and targeted interventions can prevent minor disagreements from escalating into larger conflicts.

Conclusion

- Addressing ethnic violence demands a multifaceted approach that encompasses dialogue, inclusive development, empowerment, and responsible governance. By fostering understanding, equitable growth, community involvement, and political accountability, India can aspire to a future of unity and harmony, transcending the barriers that have fueled ethnic tensions in the past.

Must Read:

Ethnic Cleansing: https://www.iasgyan.in/daily-current-affairs/ethnic-cleansing

VIOLENCE IN MANIPUR: https://www.iasgyan.in/daily-current-affairs/violence-in-manipur

4.2   ISSUES PLAGUING THE PARAMILITARY FORCES AND WAY AHEAD

Context

- Paramilitary forces launched counter-operations in Manipur to capture people responsible for recent violent incidents, including fatal hacking attacks.

Details

- The paramilitary forces (PMFs) are the **armed forces that assist the military and the police** in maintaining internal security, border management, disaster relief, and counter-insurgency operations. They include the Central Reserve Police Force (CRPF), the Border Security Force (BSF), the Indo-Tibetan Border Police (ITBP), the Central Industrial Security Force (CISF), the Sashastra Seema Bal (SSB), and the National Security Guard (NSG).
- The PMFs play a vital role in **safeguarding the sovereignty and integrity of India**, as well as protecting the lives and property of its citizens. However, they face several issues

that affect their morale, efficiency, and welfare.

Some of these issues are

- **Lack of parity with the military and the police** in terms of pay, allowances, promotions, pensions, and service conditions.
- **Overburdened with multiple and diverse tasks**, leading to fatigue, stress, and low motivation.
- Inadequate training, equipment, infrastructure, and medical facilities, especially in remote and hostile areas.
- High attrition rate due to voluntary retirement, resignation, or death in service.
- **Poor grievance redressal mechanism** and lack of representation in decision-making bodies.
- Human rights violations and allegations of excesses by the PMFs or against them.
- The impact of these issues is manifold. It affects the operational readiness, combat effectiveness, and discipline of the PMFs. It also erodes their public image and trust. It creates discontentment and resentment among the personnel and their families. It increases the risk of mental health problems, such as depression, anxiety, post-traumatic stress disorder (PTSD), and suicide.

Steps to improve the working conditions and welfare of the PMFs

- Implementing the recommendations of various committees and commissions on pay, allowances, pensions, and service conditions.
- **Enhancing the budgetary allocation** for modernization, procurement, and maintenance of equipment and infrastructure.
- Providing better training, accommodation, health care, insurance, and welfare schemes for the personnel and their families.
- Streamlining the recruitment, deployment, rotation, and transfer policies to ensure optimal utilization of human resources.
- **Establishing grievance redressal cells** and committees at various levels to address the complaints and suggestions of the personnel.

- Strengthening the accountability and oversight mechanisms to prevent human rights violations and ensure justice.
- However, these steps are not sufficient to overcome the challenges faced by the PMFs. There is a need for a holistic and long-term approach to reform and restructure the PMFs.

Possible ways forward are:

- **Creating a separate ministry or department** for the PMFs to ensure better coordination, supervision, and policy formulation.
- Reviewing and rationalizing the roles, responsibilities, and jurisdictions of the PMFs to avoid duplication, confusion, and conflict.
- **Developing a common cadre and uniformity** in recruitment, training, promotion, and service rules for all PMFs to ensure parity and integration.
- Enhancing the professionalization, specialization, and skill development of the PMFs to cope with emerging threats and challenges.
- Promoting a culture of respect, dignity, and human rights among the PMFs and their stakeholders.
- Encouraging greater participation and representation of women and minorities in the PMFs to ensure diversity and inclusiveness.

Conclusion

- Paramilitary forces grapple with challenges such as outdated equipment, inadequate training, and low morale. To address these issues, a holistic approach is crucial, including modernization efforts, enhanced training programs, improved welfare measures, and streamlined coordination with other security agencies. This strategic transformation will empower the forces to better ensure internal security, disaster response, and border management.

Must Read:

POLICE IN INDIA: ISSUES AND SOLUTIONS: https://www.iasgyan.in/blogs/police-in-india-issues-and-solutions

Assam Rifles: https://www.iasgyan.in/daily-current-affairs/assam-rifles-36
Armed Forces Special Powers Act (AFSPA): https://www.iasgyan.in/daily-current-affairs/armed-forces-special-powers-act-afspa-8

4.3   INDIA'S MARITIME SECURITY

Context

- China's assertive expansionism persists as it builds a naval base near Cambodia's Strait of Malacca, following a noted agreement with the Ream naval base, underscoring its growing military influence.

Details

- This move has potential strategic implications for India, as China's actions in the South China Sea could encircle India and impact its maritime security, trade routes, and ties with Indo-Pacific nations.

India's Maritime Security

- India is a country with a **long coastline of over 7500 km** and a vast Exclusive Economic Zone (EEZ) of over 2 million sq km. It also has several island territories in the Indian Ocean, such as the Andaman and Nicobar Islands and the Lakshadweep Islands. India's maritime security is therefore **vital for its economic, strategic and geopolitical interests.**
- It encompasses **both traditional and non-traditional threats**, such as piracy, terrorism, smuggling, illegal fishing, environmental degradation, natural disasters and cyber-attacks.
- It involves multiple stakeholders, such as the Indian Navy, the Coast Guard, the Ministry of External Affairs, the Ministry of Home Affairs, the Ministry of Shipping, the Ministry of Fisheries, the state governments and the private sector.
- It requires regional and international cooperation, as India shares its maritime boundaries with several countries, such as Pakistan, Bangladesh, Sri Lanka, Maldives, Indonesia and Thailand.
  - India is also a part of various multilateral forums and initiatives, such as the Indian Ocean Rim Association (IORA), the Indian Ocean Naval Symposium (IONS), the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), the ASEAN Regional Forum (ARF) and the Quad.

Significances for National Development and Global Role

- It enables India **to harness its blue economy potential**, which includes sectors such as fisheries, aquaculture, tourism, offshore energy, marine biotechnology and seabed mining.
- It **enhances India's energy security**, as India imports over 80% of its oil and gas requirements through sea routes. India has offshore oil and gas reserves in its EEZ and extended continental shelf.
- It **supports India's trade and commerce**, as over 90% of India's external trade by volume and 70% by value is carried by sea. India has several major ports and coastal economic zones that facilitate its maritime trade.
- It **strengthens India's strategic autonomy and influence**, as India seeks to maintain a favourable balance of power in the Indo-Pacific region. India projects its naval power through its aircraft carriers, submarines, surface ships and maritime surveillance assets.
- It **contributes to India's humanitarian assistance and disaster relief (HADR) efforts**, as India assists its neighbours and partners in times of natural calamities or emergencies. India participates in various joint exercises and operations with other countries to enhance its maritime capabilities and interoperability.

India has increased its defence budget allocation for the Navy and the Coast Guard. It has also modernised and indigenised its naval platforms and systems through initiatives such as Make in India and Atmanirbhar Bharat.

It has expanded its maritime domain awareness (MDA) network through satellites, radars, coastal surveillance stations, automatic identification systems (AIS) and information fusion centres. It has also established the Information Management and Analysis Centre (IMAC) and the Information Fusion Centre - Indian Ocean Region (IFC-IOR) to facilitate information sharing and coordination among various agencies.

It has enhanced its maritime diplomacy and engagement with other countries through bilateral dialogues, joint commissions, high-level visits, port calls, naval exercises and capacity-building programmes. It has also promoted the concept of SAGAR (Security And Growth for All in the Region) as its vision for the Indian Ocean region.

It has developed its island territories as strategic assets and hubs for connectivity, trade and tourism. It has also upgraded its infrastructure and facilities in these islands through schemes such as Sagarmala and UDAN.

It has implemented various laws and regulations to safeguard its maritime interests and rights. It has also ratified or acceded to various international conventions and agreements related to maritime issues

Steps taken to improve
Maritime Security

Challenges in ensuring maritime security

- It faces a **complex security environment in the Indian Ocean region**, which is marked by rising tensions, rivalries and competition among various actors. China's growing naval presence and assertiveness pose a major challenge to India's interests and influence in the region.
- It faces **resource constraints and capability gaps** in meeting its growing maritime requirements. India still lacks adequate naval assets, manpower, technology and infrastructure to effectively monitor and protect its vast maritime domain.
- It faces **coordination issues and policy gaps** among various stakeholders involved in maritime security. There is a need for greater synergy and integration among the civil-military agencies at the central-state levels as well as among the public-private sectors.
- It faces **legal issues and disputes** with some of its neighbours over maritime boundaries, sovereignty rights and jurisdiction. There is a need for a peaceful resolution of these issues through dialogue, arbitration or adjudication.
- It faces **environmental issues and threats** to its marine ecology due to climate change, pollution, overfishing and illegal activities. There is a need for sustainable management and conservation of marine resources and biodiversity.
- The way forward for India's maritime security lies in adopting a holistic, proactive and cooperative approach that balances its national interests and regional responsibilities.

Some of the possible measures are:

- India should **continue to invest in its naval modernisation and indigenisation programmes** to enhance its maritime capabilities and deterrence. It should also leverage its space, cyber and artificial intelligence technologies to augment its maritime domain awareness and operations.
- It should pursue a **balanced and inclusive maritime strategy** that engages with all the relevant actors in the Indian Ocean region. It should also promote a rules-based order and a common vision for the region that respects the sovereignty, security and development of all the countries.

- It should **strengthen its maritime partnerships and cooperation** with like-minded countries, especially the Quad members, to address the common challenges and opportunities in the Indo-Pacific region. It should also expand its outreach and assistance to the smaller and weaker countries in the region to enhance their maritime capacities and resilience.
- It should **develop its island territories as strategic outposts and economic hubs** that can serve as force multipliers and connectors for its maritime security and connectivity. It should also ensure the welfare and development of the local communities on these islands.
- It should implement its maritime laws and regulations effectively and enforce its rights and obligations under international law. It should also resolve its maritime disputes with its neighbours amicably and peacefully.
- It should **adopt a green-blue approach to its maritime security** that integrates environmental protection and economic development. It should also participate actively in global and regional initiatives to address climate change and marine pollution issues.

Conclusion

- In an era of evolving geopolitical dynamics and increasing maritime challenges, India's commitment to fortifying its maritime security emerges as a critical pillar of its strategic vision. Through modernization, diplomatic engagement, and cooperative initiatives, India strives to safeguard its economic interests, national security, and global influence while fostering regional stability in the maritime domain.

Must Read:

MARITIME SECURITY CHALLENGES: https://www.iasgyan.in/ig-uploads/pdf/rstv24.pdf

4.4   RESOLVING CENTRE-STATE ISSUES IN MANAGING INTERNAL SECURITY

Context

- The Supreme Court acknowledged the Manipur viral video case and instructed the Indian government and Manipur state government to take swift remedial, rehabilitative, and preventive measures.

Details

- India is a federal country with a strong central government and 28 states and 8 union territories. The Constitution of India assigns different roles and responsibilities to the centre and the states in various matters, including internal security. Internal Security refers to the protection of the country from threats such as terrorism, insurgency, communal violence, cyberattacks, etc.
- The centre and the states have to **work together to ensure the safety and security of the citizens and the integrity of the nation.** However, there are often conflicts and disputes between them over various issues related to internal security, such as:

  o Allocation of resources, personnel and equipment for security forces.
  o Sharing of intelligence and information among various agencies.
  o Coordination and cooperation in law enforcement and counter-terrorism operations.
  o Jurisdiction and authority over certain areas and subjects.
  o Implementation of laws and policies related to internal security.

- Resolving centre-state issues in managing internal security is a complex and multifaceted challenge in countries with federal structures like India. The relationship between the central government and state governments plays a crucial role in ensuring effective internal security measures while respecting the principles of federalism and maintaining the unity and integrity of the nation.

Significance of Internal Security for Stability and Prosperity

- Effective management of internal security **ensures the unity and integrity of the nation** by preventing internal conflicts and disturbances. It also fosters a sense of national identity and pride among the citizens.

- Maintaining law and order and addressing security threats **directly contribute to citizens' safety, well-being, and quality of life.** It also enhances public confidence in the government and its institutions.

- A secure environment attracts investment and fosters economic development, as businesses thrive in stable conditions. It also **enables the government to allocate resources for social welfare and infrastructure development**.

- A secure internal environment **bolsters a nation's credibility and ability to engage in positive foreign relations**, cooperation, and diplomacy. It also enhances the nation's image and reputation in the international arena.

- Effective internal security management **contributes to social harmony**, fostering an atmosphere of trust and cooperation among different communities and regions. It also prevents the spread of radicalization and extremism.

Steps taken to address the Security Challenges

- India has established central agencies like the National Investigation Agency (NIA) and the Central Reserve Police Force (CRPF) to address security challenges that extend beyond state boundaries. The NIA is responsible for investigating terrorism-related cases, while the CRPF is deployed for counterinsurgency and anti-naxal operations.

- **National Counterterrorism Centre (NCTC)** was proposed to enhance counterterrorism efforts by coordinating intelligence and operations. The NCTC would act as a single point of contact for all counterterrorism matters and would have the authority to conduct raids and arrests.

- **Various mechanisms exist for intelligence sharing** between central and state agencies to address security threats collectively. These include the Multi-Agency Centre (MAC), the Joint Intelligence Committee (JIC), the National Intelligence Grid (NATGRID), and the Crime and Criminal Tracking Network and Systems (CCTNS).

- **National Security Council (NSC) advises the central government** on matters related to national security and coordination among various security agencies. The NSC comprises the Prime Minister, the Home Minister, the Defence Minister, the External Affairs Minister, the Finance Minister, and the National Security Advisor.

- These steps reflect India's commitment to ensuring internal security and safeguarding its national interests. However, there is still scope for improvement in terms of enhancing coordination, capacity building, technology adoption, public awareness, and legal reforms. India must continue to strive for achieving a secure and prosperous future for itself and its citizens.

Challenges

- Lack of trust and communication between the centre and the states.
- Politicization and interference in security matters.
- Overlapping and conflicting roles and responsibilities of various agencies.
- Gaps and weaknesses in the security infrastructure and capabilities.
- Diversity and complexity of the security threats and challenges.

Steps need to be taken

- **Define clear roles and responsibilities** for both the central and state governments regarding internal security. This can help avoid overlapping jurisdictions and ensure efficient coordination.

- **Strengthening the institutional mechanisms** for dialogue and consultation between the centre and the states, such as the National

Security Council, the Inter-State Council, the Zonal Councils, etc.

- **Enhancing the capacity building and training** of the security forces at both levels, especially in areas such as intelligence, cyber security, forensics, etc.
- Improving the coordination and cooperation among various agencies at both levels, such as through joint operations, task forces, committees, etc.
- **Harmonizing the laws and policies related to internal security** at both levels, such as by adopting a common anti-terrorism law, a national policy on cyber security, etc.
- Developing a culture of mutual respect and trust between the centre and the states, by avoiding blame games, politicization and interference in security matters.

- **Develop a comprehensive national security policy** that outlines the overarching principles and strategies for managing internal security. This policy should provide guidelines for cooperation between the centre and states.

Conclusion

- Resolving centre-state issues in managing internal security in India is crucial for ensuring the peace and stability of the country. It requires a collaborative and cooperative approach that balances the interests and concerns of both levels of government. It also requires a vision and commitment that transcends partisan politics and narrow interests. Only then can India achieve its full potential as a secure and prosperous nation.

4.5 INFLUX OF ILLEGAL IMMIGRANTS FROM MYANMAR

Context

- The border between India and Myanmar has been a source of tension and turmoil for both countries, especially for the north eastern states of India that share a long and porous boundary with their neighbour.

Details

India's northeast and Myanmar

- The north eastern states of India, namely **Manipur, Mizoram, Nagaland and Arunachal Pradesh, have a close affinity with Myanmar** due to their ethnic, linguistic and religious ties. Many of the indigenous communities in these states have their roots in Myanmar or have kinship relations across the border.
- The border between India and Myanmar was drawn by the British colonial rulers in 1937, without much regard for the local sentiments and realities. The **border was further demarcated by the Radcliffe Line** in 1947, following the partition of India. However, the border remained largely unregulated and unguarded, allowing free movement of people and goods across it. The border also became a conduit for various insurgent groups

operating in both countries, which used it as a haven and a supply route.

Reason

- Myanmar has faced multiple military coups and periods of autocratic rule, leading to a **lack of political stability and uncertainty for its citizens.**
- **Deep-rooted ethnic and religious tensions** have driven certain communities to flee due to persecution and violence.
- **Widespread human rights abuses**, including forced labour, sexual violence, and extrajudicial killings, have forced people to escape oppressive conditions.
- **Myanmar's economy has struggled to provide livelihood opport**unities, leading individuals to migrate in search of better economic prospects.

Result

- The arrival of illegal immigrants places stress on host countries' resources, including healthcare, education, and employment opportunities.
- Unregulated movement across borders can **create security vulnerabilities**, with the potential for smuggling, human trafficking, and infiltration of extremist elements.

- An influx of immigrants can **strain local communities**, leading to competition for resources and potential cultural clashes.
- The presence of undocumented migrants can **disrupt local economies,** impact wages, and create challenges for managing informal labour markets.

Steps Taken by India

- India has **increased surveillance and deployment of security forces along its border** with Myanmar to curb illegal crossings.
- The Indian government has considered **setting up temporary shelter homes to provide humanitarian assistance** to displaced individuals.
- **Diplomatic channels have been utilized** to address the issue, emphasizing the need for Myanmar's cooperation in managing the flow of immigrants.

Challenges

- The India-Myanmar border is **long and difficult to monitor due to its rugged terrain**, making effective border control challenging.
- **Balancing security concerns with humanitarian obligations** is complex, as many immigrants are fleeing violence and seeking safety.
- Providing support to a large number of refugees can strain the resources and capacities of host countries.

Way Forward

- India and Myanmar should **enhance cooperation** to address the root causes of displacement, promote stability, and facilitate repatriation.
- Efforts should **focus on providing humanitarian aid to displaced individuals** and ensuring access to essential services like healthcare and education.

Must Read:

MYANMAR: https://www.iasgyan.in/daily-current-affairs/myanmar-35
Free Movement Regime (FMR): https://www.iasgyan.in/daily-current-affairs/free-movement-regime-fmr

- Invest in technology, infrastructure, and personnel to strengthen border security while facilitating legitimate travel and trade.
- **Collaborate with regional organizations** to develop comprehensive strategies for addressing displacement and conflict.
- International efforts should be directed towards supporting democratic reforms, human rights, and economic development in Myanmar to reduce the drivers of immigration.
- Addressing the issue requires a holistic approach, involving conflict resolution, economic development, and protection of human rights.
- Critically analyzing the issue of illegal immigration from Myanmar requires a nuanced understanding of the complexities involved, including the challenges faced by both host countries and displaced individuals. A balanced approach, focusing on security, humanitarian concerns, and regional cooperation, is essential for mitigating the impacts of the influx and seeking sustainable solutions.

Conclusion

- The influx of illegal immigrants from Myanmar underscores the deep-seated challenges arising from political instability, ethnic conflicts, and economic hardships. As host countries navigate security concerns, strained resources, and social tensions, a balanced approach that combines humanitarian aid, effective border management, and regional collaboration is vital. This multi-faceted issue demands sustained efforts to address its root causes, ensuring stability, security, and better prospects for both the displaced individuals and the countries they seek refuge in.

4.6   SURGE IN RANSOMWARE CYBER ATTACKS IN INDIA

Context

- Surge in ransomware and cyber attacks in India during the first half of 2023, according to the 2023 SonicWall Mid-Year Cyber Threat Report.

Key points from the Report

- While major economies like the US and the UK experienced a decline in ransomware attacks, India saw a significant increase of 133%, indicating that cybercriminals are targeting India more aggressively.
- Overall, there was a decline of 41% in ransomware attacks globally. However, other types of attacks saw an increase, including cryptojacking (399%), and encrypted threats (22%).
  - Cryptojacking is a form of cybercrime where malicious actors exploit the computing resources of devices to mine cryptocurrency without the owner's consent or knowledge.
- Cybercriminals are diversifying their tactics and targeting critical infrastructure. This makes the threat landscape more complex and requires organizations to reassess their security strategies.
- The rise in cyberattacks poses significant risks to India's economic ambitions, affecting industries from manufacturing to pharmaceuticals, which are increasingly digitizing their operations.
- Increased law enforcement activity, heavy sanctions, and victims' refusal to pay ransoms have contributed to the decline in global ransomware attacks. Threat actors are exploring alternative means of revenue.
- Threat actors are becoming more opportunistic, targeting schools, government entities, healthcare, and retail organizations at unprecedented rates. Prominent attacks are causing system downtime, economic losses, and reputational damage.
- Hackers are shifting to lower-cost, less risky attack methods with potentially high returns, such as cryptojacking. This trend explains the higher levels of cybercrime in certain regions.

The evolving threat landscape underscores the importance of robust cyber security measures for individuals, businesses, and governments. As cybercriminals adapt their tactics, organizations must stay vigilant, implement best practices in cybersecurity, and collaborate with experts to defend against these threats. Additionally, public awareness and education are essential to minimizing the risks posed by these types of attacks.

Ransomware Attacks

- Ransomware attacks involve **malicious actors encrypting victims' data and demanding a ransom payment in exchange for the decryption key.** These attacks have been on the rise globally due to their potentially lucrative nature. India, like many other countries, has experienced a surge in ransomware cyber attacks in recent years.

Impacts

- Businesses and individuals often end up **paying ransoms to regain access to their encrypted data**, resulting in financial losses.
- Ransomware attacks can **disrupt critical operations** of businesses, government institutions, and healthcare facilities, leading to downtime and loss of productivity.
- In some cases, attackers may **steal sensitive data before encrypting it.** If victims refuse to pay, attackers threaten to leak the data, leading to privacy breaches and potential legal consequences.
- Organizations that fall victim to ransomware attacks can **suffer reputational damage** due to data breaches, customer distrust, and public scrutiny.
- The **overall economy can be affected** as businesses face operational disruption and losses, leading to reduced economic growth.

Steps Taken by India

- India launched a **National Cyber Security Strategy** to bolster cyber security measures across government agencies, industries, and individuals.
- Government agencies and CERT-In (Computer Emergency Response Team-India) work to provide incident response support to organizations affected by cyber attacks.
- The government conducts **cyber security awareness campaigns to educate individuals and organizations** about the risks of cyber threats and best practices.
- Conducting regular cyber security drills helps organizations improve their incident response capabilities.

Challenges

- Many individuals and organizations still **lack awareness about cyber security practices**, making them easy targets.
- A **shortage of skilled cyber security professionals** hampers effective defence against sophisticated attacks.
- Cyber security regulations and standards can be fragmented, posing challenges in enforcing security measures.
- **Cybercriminals continuously evolve** their tactics, making it challenging for defences to keep up.

Way Forward

- Continued **investment in cyber security** infrastructure, training, and research is crucial to strengthen defences.
- Governments, businesses, and cyber security experts must **collaborate to share threat intel**ligence and develop effective countermeasures.
- Promoting cyber security awareness and providing training for individuals and organizations can help prevent attacks.
- **Strengthening cyber security regulations** and enforcing compliance can encourage organizations to adopt better security practices.
- Given the global nature of cybercrime, international cooperation is essential to track down and prosecute cybercriminals across borders.

Conclusion

- In recent times, India has witnessed a concerning surge in ransomware cyber-attacks, posing threats to businesses, government institutions, and individuals. The increasing sophistication of these attacks demands a proactive approach towards cyber security, including robust defence measures, public awareness campaigns, collaboration among stakeholders, and continuous adaptation to evolving threats. Addressing this surge is imperative to safeguarding economic stability, data integrity, and the overall digital ecosystem, reinforcing the need for a concerted effort in strengthening India's cyber security framework.

Must Read:

CYBERSECURITY: https://www.iasgyan.in/daily-current-affairs/cybersecurity-43-29#:~:text=The%20estimated%20cost%20of%20cyber,new%20users%20from%20rural%20areas.

AKIRA RANSOMWARE: https://www.iasgyan.in/daily-current-affairs/akira-ransomware

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4.7	UN CYBERCRIME TREATY

Context

- The ongoing negotiation of a major Cybercrime Convention with the potential to reshape international criminal law and enhance cross-border police surveillance powers.

Details

- A landmark document has been **released by the United Nations** that could have a significant impact on the future of cybercrime and cybersecurity. **The document, titled "Draft United Nations Convention on**

Cooperation in Combating Cybercrime", is the result of several years of negotiations among UN member states and other stakeholders.

- The draft convention **aims to establish a common framework for preventing, investigating, and prosecuting cybercrime**, as well as facilitating international cooperation and mutual legal assistance in this field.

- **It is not yet final and is subject to further revisions and consultations**. However, it represents a significant step forward in the global efforts to combat cybercrime and harmonize national laws and practices in this area.

Features of the Proposed Treaty

- The treaty **aims to encompass all emerging forms of cybercrime within its definition**, ensuring that it remains relevant as cybercriminal tactics evolve.

- It **seeks to criminalize a wide range of cybercrimes**, including computer fraud, data breaches, denial-of-service attacks, and the use of cybertools to facilitate other types of crimes.

- It intends **to establish provisions for international collaboration in investigating and prosecuting** cybercrimes, recognizing that cybercrime often transcends national boundaries.

- It incorporates safeguards to **protect human rights and fundamental freedoms**. These include considerations such as the right to privacy and freedom of expression.

Significance of the Treaty

- The proposed treaty holds substantial significance as the **first binding international instrument focused on cybercrime**. It addresses the global need for a unified legal framework to combat cybercrime effectively and bring cybercriminals to justice.

Key Issues in Treaty Negotiations

- The treaty **needs a carefully crafted definition that covers emerging cyber crimes** while avoiding the unintended criminalization of legitimate activities.

- **Clear boundaries must be established** regarding which cybercrimes are subject to the treaty's jurisdiction and how the treaty aligns with existing international cybercrime laws.

- A framework for international collaboration in investigating and prosecuting cybercrimes is essential. This encompasses sharing information, offering mutual legal assistance, and facilitating the extradition of cybercriminals.

- Embedding safeguards to protect **human rights and fundamental freedoms**, including **privacy and freedom of expression**, is vital to ensure the treaty's ethical implementation.

Challenges in Negotiating the Treaty

- Negotiations may face challenges in agreeing on a comprehensive yet specific definition of cybercrime that avoids overreach or ambiguity. Additionally, delineating which cyber crimes fall under the treaty's jurisdiction and which do not can be contentious.

- **Finding a balance between criminalizing cybercrimes and protecting human rights** and fundamental freedoms can be intricate. Ensuring that the treaty doesn't infringe upon these rights is vital.

- Gaining consensus from all United Nations member states on the terms of the treaty can be difficult due to differing legal systems, priorities, and cultural contexts.

Way Forward

- Continuing negotiations in good faith is the recommended approach for the UN Cybercrime Treaty. Seeking consensus that effectively addresses cybercrime while respecting human rights and the rule of law is paramount. Preventing the misuse of the treaty to violate human rights or undermine legal systems is a central concern.

Must Read:

DELHI DECLARATION ON CYBERSECURITY: https://www.iasgyan.in/daily-current-affairs/delhi-declaration-on-cybersecurity

4.8   GALLANTRY AWARDS

Context

- The President of India has sanctioned 76 gallantry awards to security forces personnel on the eve of the 77th Independence Day.

Key Highlights

- Gallantry Awards, established by the Government of India, **acknowledge acts of bravery and sacrifice by officers/personnel of the Armed Forces, lawfully constituted Forces, and civilians**. These awards are **announced twice a year, on Republic Day and Independence Day.**
- Gallantry Awards fall into two categories:
    o **Gallantry in the Face of Enemy**: Includes Param Vir Chakra (PVC), Mahavir Chakra (MVC), Vir Chakra.
    o **Gallantry Other than in the Face of Enemy**: Comprises Ashok Chakra, Kirti Chakra, Shaurya Chakra.
- In the post-independence period, Param Vir Chakra, Mahavir Chakra, and Vir Chakra were instituted on 26th January 1950 with retroactive effect from 15th August 1947. Later, the Ashoka Chakra Class-I, Class-II, and Class-III were renamed Ashoka Chakra, Kirti Chakra, and Shaurya Chakra respectively in January 1967.
    o The **order of precedence for these awards is Param Vir Chakra, Ashoka Chakra, Mahavir Chakra, Kirti Chakra, Vir Chakra, and Shaurya Chakra.**
- Each award has distinct features such as the design of the medal, ribbon colour, and bars to denote repeated acts of bravery.
- Gallantry awards, including some other Defence Distinguished Service awards, are presented to awardees/Next-of-Kins (NoKs) during the annual Defence Investiture Ceremony at Rashtrapati Bhawan. However, the **Param Vir Chakra and Ashoka Chakra are conferred during the Republic Day Parade at Rajpath.**
- **Eligibility:**
    o **For the Param Vir Chakra, MahaVir Chakra, and Vir Chakra**:Eligible categories include officers, men, women of all ranks in the Armed Forces, Reserve Forces, Territorial Army, and more. Matrons, Sisters, Nurses, and civilian personnel serving under these Forces are also eligible.
    o **For the Ashoka Chakra, Kirti Chakra, and Shaurya Chakra**: Eligibility covers officers, men, women of all ranks in the Army, Navy, Air Force, and other constituted forces. Nursing Services members and civilian citizens, including police personnel, are eligible.
- The **Ministry of Defence invites recommendations from the Armed Forces and the Union Ministry of Home Affairs twice a year,** around August for Republic Day and March for Independence Day. The recommendations are then evaluated by committees and submitted for approval.
- A Central Honours& Awards Committee, including the Raksha Mantri, Service Chiefs, Defence Secretary, and Home Secretary, evaluates recommendations. Once approved by the Prime Minister and the President, awards are announced on Republic Day and Independence Day.

Must Read:

GALLANTRY AWARDS:

https://www.iasgyan.in/daily-current-affairs/gallantry-awards-9

4.9   SHORT ARTICLES

Technology Development Fund (TDF) Scheme

Context

- Technology Development Fund (TDF) scheme has been successful in supporting 41 MSMEs and 20 startups so far.

Key Highlights

- The **Defence Ministry's Technology Development Fund (TDF) scheme, initiated in 2016** and **managed by the Defence Research and Development Organisation (DRDO),** falls under the Make in India program.
- The primary objective of the TDF scheme is **to promote the involvement of Micro, Small, and Medium Enterprises (MSMEs) and startups** in the indigenous design and development of various defence technologies.
- The scheme has received a total allocation of Rs 260 crore since its inception. As of the most recent data, 41 MSMEs and 20 startups have been supported under this initiative.
- The TDF scheme offers two main funding mechanisms:
  - **Reimbursement based on Milestones:** In this mechanism, the DRDO reimburses a share of the project cost to businesses in up to five instalments. The disbursement is contingent upon the successful achievement of predefined milestones.
  - **Advance Funding:** Businesses can receive advance funding for the project, up to a maximum of five milestones. This funding is also linked to the successful accomplishment of these milestones.
- Additionally, the government has taken steps to enhance collaboration between the defence public sector units (DPSUs) and services with the private industry, including MSMEs. The **Srijan portal was introduced** to facilitate this process by offering over 30,000 defence items for DPSUs and services to partner with the industry, particularly MSMEs, in the indigenization of defence production.
- The value of defence production achieved a significant milestone, surpassing Rs 1 lakh crore for the first time during the fiscal year 2022-23. This indicates the growing emphasis on domestic production and self-reliance in defence manufacturing.

Must Read:

Technology Development Fund (TDF) scheme:
https://www.iasgyan.in/daily-current-affairs/technology-development-fund-scheme#:~:text=Technology%20Development%20Fund%20(TDF)%20is,entire%20cost%20of%20the%20project.

Frigate Vindhyagiri

Context

- The President of India launched the Vindhyagiri, a Project 17A frigate, at the Garden Reach Shipbuilders and Engineers Limited (GRSE) in Kolkata on August 17.

Key Highlights

- The **Vindhyagiri is the sixth ship of the Project 17A frigates**, named after a mountain range in Karnataka.
- The **Project 17A program involves the construction of four ships** by Mazagon Dock Shipbuilders Limited (MDL) based in Mumbai and three ships by Garden Reach Shipbuilders and Engineers Limited (GRSE).
- These Project 17A frigates are a continuation of the Project 17 Class Frigates, also known as the Shivalik Class. They feature **improved stealth capabilities, advanced weapons and sensors**, and advanced platform management systems.
- This frigate is a tribute to the service of its predecessor, the INS Vindhyagiri, which was a Leander Class ASW Frigate. During its active service from July 1981 to June 2012, the original INS Vindhyagiri, the sixth and last ship of the Nilgiri class frigates, participated in various multinational exercises and conducted maritime surveillance, coastal patrol, and anti-piracy operations.
  - The new Vindhyagiri frigate symbolizes

India's commitment to its naval heritage and the development of indigenous defence capabilities.

- The Project 17A frigates were designed by the Indian Navy's Warship Design Bureau, with a significant portion (75%) of equipment and systems orders for these ships coming from indigenous firms, including Micro, Small, and Medium Enterprises (MSMEs). This emphasizes India's efforts to enhance its self-reliance and indigenous manufacturing in defencetechnology.

Must Read:

Frigate Vindhyagiri: *https://www.iasgyan.in/daily-current-affairs/frigate-vindhyagiri*

4.10 SNIPPETS

Neerakshi

- The 'Neerakshi' Autonomous Underwater Vehicle (AUV), collaboration between Garden Reach Shipbuilders and Engineers (GRSE) Ltd and AEPL, is designed for mine detection, disposal, and underwater surveys.
- User trials by the Indian Navy, Coast Guard, and possibly the Army are ongoing, with commercial launch anticipated within six months to a year.
- The AUV's capabilities range from mine detection to underwater surveys. GRSE aims to expand its ventures into autonomous sea surface vehicles, drones, and green propulsion for ships.
- The AUV prototype has an endurance of four hours and can reach depths of up to 300 meters, with plans for increased endurance.

Spike NLOS Missiles

- The Indian Air Force (IAF) has acquired Israeli Spike Non-Line of Sight (NLOS) anti-tank guided missiles, the missiles will be integrated with Mi-17V5 helicopters, allowing long-range strikes against targets behind mountains.
- The Spike missile developed by Rafael Advanced Defense Systems is a versatile anti-tank and anti-personnel weapon with a tandem-charge high-explosive warhead.
- Available in man-portable, vehicle-launched, and helicopter-launched variants, it is employed by defence forces in over 38 countries, including India, Israel, Germany, and the UK.
- With a range of up to 30 kilometres, it employs an electro-optical seeker and datalink for precise target engagement, allowing for adaptable warhead options for various combat scenarios.

Exercise Yudh Abhyas

- The 18th edition of the annual Indo-US joint training exercise "YUDH ABHYAS 22" held in Uttarakhand, aimed to exchange best practices and techniques between the Indian and US armies.
- Indian Army soldiers from the ASSAM Regiment participated in the integrated battle group operations, peacekeeping, and disaster relief efforts.
- The exercise includes Command Post Exercise, Academic Discussions, and Field Training Exercise covering various combat skills, aiming to enhance information exchange and skills sharing between the two armies.

Railway Protection Force (RPF)

- The Railway Protection Force (RPF) is an armed force under the Ministry of Railways, established by the Railway Protection Force Act 1957.
- Its purpose is to safeguard railway property and passenger areas. The RPF has the authority to search, arrest, and prosecute offences related to railway property, while arrests under other laws are handled by the Government Railway Police (GRP).
- RPF officers are part of the Indian Railway Protection Force Service (IRPFS), recruited through the UPSC Civil Services Examination.
- The Director-General of RPF is typically a senior IPS officer and recruitment for other posts like sub-inspectors and constables is conducted by the Ministry of Railways.
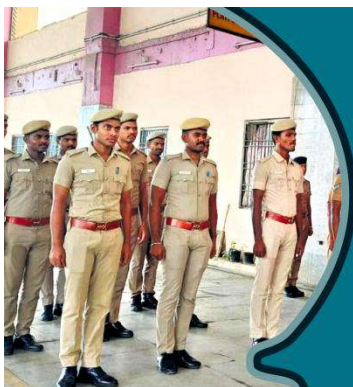
Government Railway Police (GRP)

- The Railway Protection Force (RPF) is an armed force under the Union Ministry of Railways, responsible for securing railway property, passenger areas, and passengers themselves.
- The Government Railway Police (GRP), part of the district police force, collaborates with RPF, aiming to prevent and detect crimes on railways, particularly focusing on heinous offences like rape and crimes against women.
- The GRP's duties encompass maintaining order at railway stations and on trains, and it is responsible for handling crime prevention and detection. While the GRP complements the RPF, jurisdictional divisions between state boundaries can lead to challenges in maintaining seamless coordination and a single chain of command in certain cases.
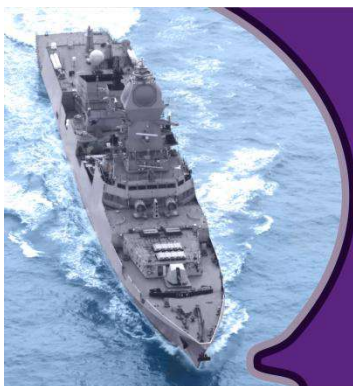
INS Visakhapatnam

- INS Visakhapatnam arrives in Muscat to enhance India-Oman maritime collaboration, addressing regional security challenges with joint efforts between the Indian and Royal Oman Navy.
- INS Visakhapatnam commissioned in 2021, is the lead P15B guided missile stealth destroyer showcasing India's shipbuilding prowess. Its motto 'YashoLabhasva' signifies determination for success.
- As part of the Western Naval Command Fleet, it's technologically advanced, equipped with BrahMos missiles, and indigenous systems.

Akira Ransomware

- The Computer Emergency Response Team – India (CERT-In) warned about the Akira ransomware, a potent threat targeting Windows and Linux devices.
- Akira encrypts data, adds a ".akira" extension, deletes backups, and exploits VPN services.
- It spreads via phishing, downloads, and insecure remote connections, demanding ransom and threatening data leaks. Protection measures involve backups, updates, security protocols, encryption, user education, and regular audits.
- CERT-In is India's cybersecurity agency under the Ministry of Electronics and Information Technology, focusing on incident response, analysis, and preventive services.
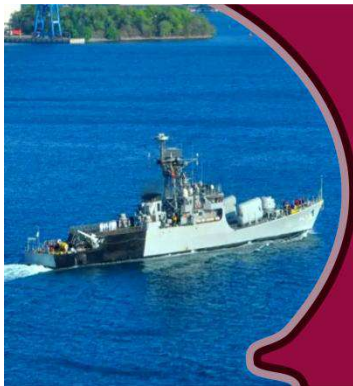
INS Khanjar

- Indian Naval Ship Khanjar arrives in Trincomalee, Sri Lanka, for an operational turnaround, strengthening ties. The visit includes mutual activities, professional exchanges, and sports events, promoting Indian Navy-Sri Lanka Navy cooperation.
- INS Khanjar is a Khukri-class corvette of the Indian Navy, equipped with modern weapons and sensors, serving in the Eastern Fleet.
- Built by Garden Reach Shipbuilders & Engineers, Kolkata, the class replaces older Petya II-class corvettes.
- Indigenous design and assembly by Mazagon Dock Limited and Garden Reach Shipbuilders, with about 65% indigenous content, including locally assembled diesel engines.

Finger Minutiae Record – Finger Image Record (FMR-FIR) modality

- To combat rising fraud related to the Aadhaar-enabled Payment System (AePS), India's UIDAI is leveraging artificial intelligence (AI) for fingerprinting and facial recognition.
- The AI-based Finger Minutiae Record–Finger Image Record (FMR-FIR) system detects cloned fingerprints during authentication.
- FMR captures fingerprint minutiae (unique features) for efficient matching, while FIR stores fingerprint images for detailed analysis and quality assessment in biometric systems.

Juice Jacking

- Charging mobile devices in public places like cafes or malls can lead to "juice jacking," a data theft risk.
- This involves infected USB charging stations compromising connected devices, potentially loading malware or stealing data. Attackers can tamper with cables or stations, gaining access to devices during charging.
- Protection measures include using personal chargers, avoiding public stations, utilizing USB data blockers, not unlocking devices while charging, and keeping software updated to prevent such attacks. Disabling auto-connect can also enhance security.
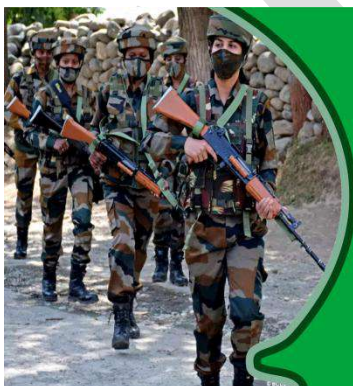
Assam Rifles

- The Manipur Police and the 9th Assam Rifles engaged in a dispute in Manipur.
- Assam Rifles, a central paramilitary force, safeguards the Indo-Myanmar border and enforces law in Northeast India.
- Originating in 1835 as Cachar Levy, it evolved into Assam Rifles in 1917, gaining a history of roles in World Wars, maintaining border security, and aiding civilians during emergencies.
- Administered by the Ministry of Home Affairs, it operates under Indian Army control.

CRPF

- The Central Reserve Police Force (CRPF) marked its 85th Raising Day on July 27, 2023.
- CRPF serves as India's largest central armed police force, aiding states in law enforcement, counter-insurgency, and election security.
- Established in 1939 as the Crown Representative's Police and restructured in 1949 as the CRPF, it operates under the Ministry of Home Affairs, playing a crucial role in maintaining order and security.

Zayed Talwar

- Exercise 'Zayed Talwar' is a bilateral naval exercise aimed at enhancing interoperability and synergy between the Indian Navy and the UAE Navy.
- INS Visakhapatnam and INS Trikand conducted the exercise in partnership with the UAE Navy at Dubai's Port Rashid.
- The exercise aims to enhance interoperability and synergy between the two navies through cross-training in tactics, techniques, and procedures while building stronger professional bonds.
- Both countries highlighted common challenges such as piracy, smuggling, human trafficking, and maritime security. They also emphasized joint Humanitarian Assistance and Disaster Relief (HADR) operations, further strengthening cooperation.

Ocean Shield-2023

- Russia has commenced the Ocean Shield 2023 naval drills in the Baltic Sea, involving military vessels, support ships, aircraft, and personnel.
- The Objective is to safeguard national interests, maritime communication, transportation, and coastal defence.
- The exercise aims to evaluate naval readiness and coordination for safeguarding critical areas and maritime interests, encompassing over 200 combat scenarios.

"David's Sling" Anti-Missile Defence System

- Finland to acquire high-altitude air defence capability advances as the US State Department approves the export of the US-Israeli David's Sling system.
- Finland opted for David's Sling to enhance air defence capabilities against various threats including rockets, cruise missiles, ballistic missiles, and drones.
- This makes Finland the first export customer for the system.

Tomahawk Cruise Missile

- Australia is investing $1.3 billion to acquire over 200 Tomahawk Cruise Missiles from the USA, driven by concerns regarding China's presence in the Indo-Pacific.
- The Tomahawk is an intermediate-range, subsonic cruise missile launched from Navy ships and submarines, offering deep strike capabilities with the option for conventional or nuclear payloads.
- Operating at low altitudes and highsubsonic speeds, its modular design facilitates the integration of diverse warheads and guidance systems.
- The missile has a length of 5.56m, a 2.67m wingspan, and weighs 1,315kg, with a 30-year lifespan.
- GPS navigation, satellite datalinks, Terrain Contour Matching (TERCOM), and Tactical Tomahawk Weapons Control System (TTWCS) aid its guidance, while an Advanced Electronic Support Measure (ESM) seeker enhances its effectiveness.
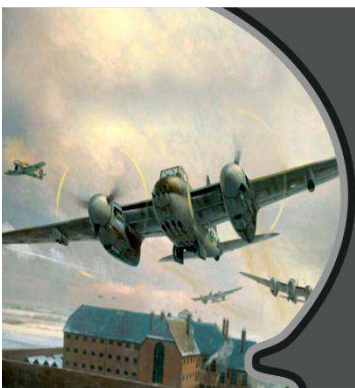
Operation Jericho

- In 1966, the Mizo National Front (MNF) led a growing separatist movement in the Mizo Hills, now Mizoram.
- The government's decision to deploy an additional Assam Rifles battalion there, along with existing forces, angered the MNF, prompting their 'Operation Jericho' to seize Aizawl and the region. They swiftly captured Aizawl.
- The government responded by launching ground operations, led by Brigadier Rustom ZalKabraji, The unit was sent to the Mizo Hills when the rebels took Aizawl.
- Despite rebel resistance, Brig Kabraji led ground operations, taking days to reach Aizawl. Other battalions advanced on different fronts to counter the rebels and restore control.

Astra Missile

- The indigenous LCA Tejas successfully test-fired the ASTRA beyond visual range (BVR) air-to-air missile near Goa, developed by the Defence Research and Development Organisation (DRDO).
- This missile is designed to engage aerial targets across different ranges and altitudes. With a length of 3.84 m, diameter of 178 mm, and weight of 154 kg, it uses a solid-fuel rocket motor to achieve a Mach 4.5 speed.
- The missile's range varies with 20 km in tail chase mode and 110 km in head-on chase mode. Its fire-and-forget feature eliminates the need for continuous aircraft guidance.
- The Astra missile is further fortified by its Electronic Counter-Countermeasures (ECCM) System, enhancing resistance against electronic countermeasures and enemy radar systems.

White Shipping

- White shipping information is the term used to describe the sharing of relevant data on the identity and movement of non-military commercial vessels.
  - These vessels range from small and large fishing boats, coastal crafts transporting people and goods, and merchant ships carrying different cargoes.
- Some of the benefits of white shipping information exchange are improved Maritime Domain Awareness (MDA), enhanced vessel tracking, coordinated security responses, reduced threat risks, and increased maritime safety.
- India has entered into white shipping agreements with several countries, such as the United States and Singapore, and is seeking similar agreements with more countries as part of its ongoing effort to develop an effective regional MDA.
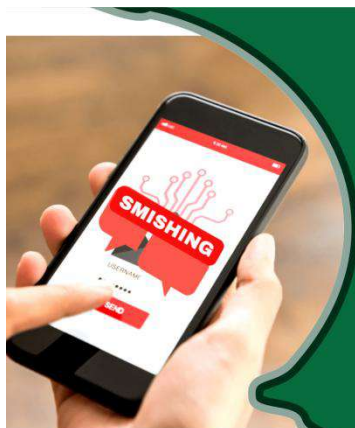
Smishing

- The Indian government has issued a warning about a new scam called 'Smishing'.
- Smishing is a type of phishing scam that uses text messages (SMS) to trick people into giving away their personal information or clicking on a malicious link.
- Smishing scams are often very convincing. Scammers may use the logos and branding of legitimate companies to make their messages look authentic.
  - They may also pose as government officials or law enforcement officers to create a sense of urgency.
  - The goal of these messages is to get users to click on a link in the message.
- The best way to avoid smishing scams is to be vigilant and cautious. Do not click on any links in text messages from unknown senders. These links may lead to malicious websites that can steal personal information or infect devices with malware.
- Malware is software that can harm your device or data, such as viruses, spyware, ransomware, or keyloggers.

Oron Aircraft

- The Oron aircraft is a state-of-the-art Intelligence, Surveillance, and Reconnaissance (ISR) mission aircraft developed by Israel.
- It is based on the Gulfstream G550 executive jet platform and has been extensively modified to carry a variety of ISR sensors, including electro-optical/infrared (EO/IR) cameras, radar, and electronic intelligence (ELINT) systems.
- The aircraft also has a long range and endurance, making it ideal for long-duration ISR missions.
- It can fly at an altitude of up to 40,000-50,000 feet and has a flight range of 1,000 km.
- It has real-time monitoring capabilities, which enable it to transmit data and imagery to ground stations and other platforms.
- It can accurately track multiple targets over large distances and challenging conditions, which enhances its effectiveness and accuracy.
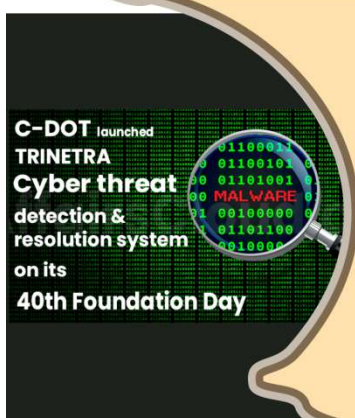
TRINETRA

- TRINETRA is a comprehensive cybersecurity solution launched by the Centre for Development of Telematics (C-DOT) to enhance the cybersecurity posture of organizations.
- It incorporates Security Information and Event Management (SIEM) capabilities, to collect, analyze, and correlate security-related data from various sources within an organization's IT infrastructure. It can identify potential security incidents or breaches in near real time.
- Security Orchestration and Automated Response (SOAR) automates the response to security incidents.
- It can automatically trigger predefined actions or responses to address cyber threats, including viruses, malware, ransomware, spyware, and more, minimizing manual intervention and response time.
- Data Loss Prevention (DLP) functionality helps in preventing unauthorized access or leakage of sensitive data. It can monitor and control data transfer to prevent data breaches, ensuring the protection of sensitive information.

Coil Gun

- The Chinese navy is testing a cutting-edge coil gun, an electromagnetic weapon capable of ultra-high-speed projectile launches.
- Coil guns use electromagnetic coils arranged along the barrel to propel ferromagnetic projectiles at extraordinary velocities.
- These weapons, also called Gauss guns, eliminate wear on components as the projectile remains suspended within the coil during launch.
- The Chinese coil gun achieved a remarkable feat, accelerating a 124kg projectile to 700 km/h in under 0.05 seconds.
- Compared to traditional artillery, coil guns offer faster launch speeds and cost-efficiency.
- Their applications may include advanced weapon systems, launching satellites, and high-speed missile deployments.

Exercise BRIGHT STAR-23

- An Indian Air Force (IAF) contingent participated in Exercise BRIGHT STAR-23, this marks the first-ever participation of the Indian Air Force (IAF) in the Exercise.
- It is part of a series of biannual combined and joint military exercises led by the United States and Egypt.
- The primary purpose of the Exercise is to enhance the ability of the U.S. military to support its allies in the Middle East in the event of a conflict.
- The Exercise was held at Cairo (West) Air Base, Egypt.
- Participating nations include contingents from the United States of America, Saudi Arabia, Greece, and Qatar, underscoring its multinational nature.
- The primary objective of the exercise is to practice and execute joint military operations, encompassing air, land, and naval forces.

Mahendragiri

- India's latest warship "Mahendragiri" launched at Mazagon Dock Shipbuilders in Mumbai on September 1.
- Mahendragiri is the seventh ship of the Project 17A Frigates, named after a mountain peak in the Eastern Ghats of Odisha.
- These warships are an advancement of the Project 17 Class Frigates (Shivalik Class), featuring enhanced stealth capabilities, advanced weaponry, sensors, and platform management systems.
- The ministry described Mahendragiri as a technologically advanced warship symbolizing India's commitment to its naval heritage and indigenous defence capabilities.
- The Project 17A ships have been designed in-house by the Indian Navy's Warship Design Bureau, with a focus on promoting 'Aatma Nirbharata' (self-reliance).
  - A significant 75% of equipment and systems for Project 17A ships have been sourced from indigenous firms, including Micro, Small, and Medium Enterprises (MSMEs).

AUSINDEX

- The AUSINDEX maritime exercise is a biennial event that brings together the Indian Navy and the Royal Australian Navy (RAN) for a series of joint drills.
- The 5th edition of the exercise took place from August 22-25, 2023, in Sydney, Australia.
- This joint exercise encompassed a wide range of complex operations across air, surface, and subsea domains to enhance interoperability and cooperation between the two naval forces.
- The exercises encompassed various scenarios, such as air defence, anti-submarine warfare, surface warfare, mine countermeasures, search and rescue, and theatre security cooperation.
- The exercise contributed to strengthening the strategic partnership between India and Australia and also fostered friendship and cooperation between the Indian Navy and the Royal Australian Navy.

4.11   1 MAINS & 5 MCQs

Q1. *What are the primary reasons for ethnic violence in India's northeastern states, and how has it impacted the region? What are the key challenges in addressing this issue, and what steps can be taken to pave a path towards a peaceful future?*

Answer

- The north eastern region of India is home to more than 200 distinct ethnic groups, each with its own language, religion, customs and traditions. The region's rich cultural diversity is a result of its historical isolation from the rest of India, as well as its interactions with neighbouring countries and regions. However, this diversity has also been a cause of political and social unrest, as various ethnic groups have demanded greater autonomy, recognition and rights from the central government and other dominant groups. The region has witnessed several insurgencies, secessionist movements, inter-ethnic clashes and human rights violations over the decades.

Key reasons for ethnic violence in the region

- **Historical and political factors:** The north eastern states have a long history of conflict, dating back to the British colonial period. This conflict has been exacerbated by the post-colonial political settlement, which has created a number of autonomous regions for different ethnic groups. These regions often have overlapping claims to territory and resources, which can lead to conflict.
- **Economic factors:** The north eastern states are some of the poorest and most underdeveloped regions in India. This poverty can lead to resentment and frustration, which can be exploited by those who seek to incite violence.
- **Social factors:** The north eastern states are also some of the most ethnically diverse regions in India. This diversity can make it difficult to build trust and understanding between different groups. In some cases, this can lead to discrimination and marginalization, which can also be a source of conflict.
- The ethnic violence in the north eastern states has had a devastating impact on the region. It has led to the loss of life, displacement, and destruction of property. It has also damaged the social fabric of the region and made it difficult to attract investment and development.

Key challenges in addressing ethnic violence in the north eastern states

- **Building trust and understanding between different ethnic groups:** This is essential to resolving the underlying causes of conflict. It requires sustained efforts by the government, civil society, and religious leaders.
- **Addressing the root causes of poverty and inequality:** This will help to reduce the resentment and frustration that can lead to violence. It requires investment in education, healthcare, and infrastructure.
- **Ensuring fair representation of all ethnic groups in government and decision-making bodies:** This will help to address the sense of marginalization that some groups feel.
- **Redressing historical wrongs:** This may involve providing compensation to victims of discrimination or violence.

Steps that can be taken to pave a path towards a peaceful future

- **Strengthening the rule of law:** This will help to deter those who seek to incite violence.
- **Promoting inter-ethnic dialogue and understanding**: This can be done through education, cultural exchanges, and community-based programs.
- **Investing in economic development:** This will help to create jobs and opportunities for all ethnic groups.
- **Holding perpetrators of violence accountable:** This will help to send a message that violence will not be tolerated.

Conclusion

- It's important to recognize that the situation in India's north eastern states is complex and requires a holistic approach involving political, economic, social, and cultural dimensions.

Building lasting peace will take time, effort, and sustained commitment from all stakeholders, including the government, civil society, and the international community.

....

Q2. The term "cryptojacking" was frequently seen in the news. What is cryptojacking?

A) A type of hacking that steals crypto currency wallets

B) A cybercrime involving the unauthorized mining of crypto currency

C) A form of phishing attack to steal crypto currency keys

D) A method of encrypting crypto currency transactions

Q3. The term "Neerakshi" was frequently seen in the news. What is Neerakshi?

A) An Indian warship

B) A type of submarine

C) An autonomous underwater vehicle (AUV)

D) A naval aircraft

Q4. The term "Akira" was frequently seen in the news, it is related to:

A) A popular video game

B) A cybersecurity threat

C) A new social media platform

D) A weather forecasting tool

Q5. The term "juice jacking" was frequently seen in the news, it is related to:

A) A new brand of energy drink

B) A cybersecurity threat associated with charging mobile devices in public places

C) A type of smartphone charger

D) A form of electric vehicle charging

Q6. The term "Smishing" was frequently seen in the news, it is related to:

A) A type of fishing activity near a river

B) A phishing scam using text messages (SMS)

C) A type of online gaming scam

D) A fitness app for smartphones

ANSWERS: 2) B, 3) C, 4) B, 5) B, 6) B.

5. ENVIRONMENT & ECOLOGY

5.1   NATIONAL FOREST POLICY

Context
- An article on various facets of national forest policy was published in PIB.

National Policy Initiatives in forestry sector
Pre-independence
- **Indian Forest Act of 1865: The foundation of scientific forestry was laid when Sir** Dietrich Brandis, a German forester was appointed as the **first Inspector General of Forests in 1864** and passing of the First Indian Forest Act in 1865. It was revised in 1878 & 1927 and provided for the formation of **Reserved and Protected Forests.**
- **Forest Policy of 1894:** The main thrust areas were to ensure the maintenance of adequate forest cover for the general well-being of the country, meet the needs of local people and after meeting local **needs maximize revenue collection.**

Post-independence
- **Forest Policy of 1952**: Large forest areas of **princely states and "zamindaris"** were taken and adoption of the Forest Policy of 1952 which recommended that 33% of the total land area of the country should be brought under Forest or tree cover.
- **Social forestry and forestry corporations:** In 1972, The National Commission on Agriculture recommended raising large-scale plantations in **degraded forest areas and through social forestry** in community and private lands, to meet the growing gap in timber and firewood requirements. .
- **Forest (Conservation) Act of 1980:** It made it mandatory for the states to take approval of the Government of India before the diversion of any forestland for **non-forestry purposes with a provision for compensatory afforestation** preferably on non-forest areas.
- **Ministry of Environment and Forests (MOEF):** In 1985, the subject of Forestry and Wildlife was shifted from the Ministry of Agriculture to a new Ministry of Environment and Forests (MOEF) to ensure more focused attention to emerging forestry issues.
- **Forest Policy of 1988:** The first policy decision for people's involvement in forest protection and management was taken in the resolution passed by the Central Board of Forestry in 1987.
- **National Forest Action Programme (NFAP):** It laid emphasis on livelihoods-based forest resource management, development & use by local people that would lead to self-reliance and sustainability.
- **Forest Development Agency (FDA):** In the year 2000-2001 MOEF initiated a new pilot scheme of undertaking integrated village afforestation and eco-development activities under a new set up named Forest Development Agency (FDA) to gradually cover nearly 0.175 million villages, situated close to forests.

Challenges
- About 41% of forest cover of the country is degraded and dense forests are losing both crown density and productivity due to grazing, fires and excess removal of biomass.
- *Fuel wood:* Fuel wood is mostly **gathered (85%)** and hence is free and is preferred to alternate fuels in rural areas. It is a non-monetized commodity and subject to overuse.
- *Fodder:* It is estimated that 30% of all supplies come from forest areas through lopping and grazing much beyond the carrying capacity of forest. This is a non-monetized free supply and is being over-utilized.
- *Non Wood forest products (NWFPs):* There is large-scale harvesting of medicin**al plants, gums, fruits, fibres, seeds et**c for local use and sale by village right holders. About 70% of the Indian population is estimated to be using traditional medicines (Ayurvedic).
- *Development:* Development projects are expanding and there is large-scale deforestation for the construction of roads, dams, irrigation projects etc. Ex. Issue of Panna tiger reserve submersion due to **Ken-Betwa river linking project.**
- *Loopholes in forest policies:* Forest conservation amendment act 2020 and EIA amendment act 2020 allows various government and strategic projects from the requirement of EIA rules.

The Way Ahead

- *Training and skilling:* Large-scale grass-root level training has to be organized for field-level **forest staff, local village leaders and NGOs** about capacity building and for assuming the added responsibility in the adoption of a participatory approach.
- *Silvicultural practices:* Developments of proper guidelines, for resources and need assessment for preparation of need-based micro plans along with implementation schedule, possible silvicultural options for multi-product management.
- *Sustainable harvesting:* NWFPs are the mainstay for the sustenance and quick economic returns for rural people, special attention is needed for NWFP development, sustainable harvesting and marketing.
- *Improving the financial position of JFM committees:* Financial power along with necessary funds should be given to the JFM committees for ensuring smooth working.
- *Institutional set-up:* Proper institutional set-up and standards will have to be developed for monitoring and evaluation of the work of JFM units.
- *Mandatory EIA and SIA:* Social impact assessments and Environmental impact assessments should be made mandatory for all projects.

Forest cover in India

India has 2.5% of the world's geographic area and 63.73 million ha of forest area. The country supports 16% of the planet's human population and 18% of the domestic animal population.

Forest Survey of India (FSI), Dehradun, an organization under the Ministry carries out the assessment of forest cover biennially, since 1987 and the findings are published in the India State of Forest Report (ISFR)

The total forest and tree cover of the country as per the ISFR 2021 assessment is 8,09,537 square kilometres which is 24.62% of the geographical area of the country.

The total forest and tree cover has increased by 2261 square kilometres as compared to the ISFR 2019 assessment.

Conclusion

- There is an urgent need for propagating these new and major shifts from the timber-oriented and custodial forestry practices to a *more socially, environmentally as well as local people-friendly process* of micro planning and management of forests through a JFM approach.

5.2   75 ENDEMIC BIRDS OF INDIA

Context

- 5% of birds in India are endemic as per the Zoological Survey of India publication.

About the study

- The study revealed that there are as many as 78 bird species which are found only in India.
- *Bird diversity:* There is a rich diversity of 10,906 bird species in the world, and of them, India is home to 1,353, Zoological Survey of India scientists. These 1,353 bird species account for 12.4 per cent of the global avian diversity.
- *Threatened birds:* According to the International Union for Conservation of Nature (IUCN) categorisation, 25 of the 78 bird species, which are found only in India, are classified as 'threatened.'
  - o Of the 25 'threatened' species, three are listed as **'critically endangered',** five as 'endangered', and 17 as 'vulnerable'. Eleven species are categorised as 'near threatened'.

- *Endemic birds:* Seventy-eight bird species are found only in the country's geographical region. On the occasion of the 75th Independence year, 75 such species have been focused.
- *Remarkable distribution patterns:* Twenty-eight bird species are restricted to the Western Ghats, 25 to the Andaman and Nicobar Islands, four to the Eastern Himalayas and one each to the Southern Deccan plateau and Central Indian Forest.

Endemic bird species not sighted in last few decades: Three bird species have not been included in the ZSI publication

- *The Manipur Bush Quail (Perdicula manipurensis)-* listed as 'endangered' by IUCN,
- *The Himalayan Quail (Ophrysia superciliosa)-* categorized as 'critically endangered, and
- *The Jerdon's Courser (Rhinoptilus bitorquatus)-* classified as 'critically endangered.'
- The Manipur Bush Quail was last sighted in 1907, while the Himalayan Quail and the Jerdon's Courser were last seen in 1876 and 2009 respectively.

> ### ENDEMISM AND ENDEMIC SPECIES
> Endemism is a term used in biology to talk about the distribution of a taxon limited to a small geographic area and which can therefore be found naturally in this place. In consequence, endemic species are those that live in a limited area, such as a mountain range, lake or island, among others.

Importance of Endemic Species in India's Biodiversity

- **Unique Adaptations and Ecological Significance:** The presence of endemic birds serves as vital indicators of the health and functionality of various habitats and ecosystems. Preservation of these species ensures the continued functioning of intricate ecological relationships.
- **Contribution to Ecosystem Services:** Endemic bird species play crucial roles in pollination, seed dispersal, insect control, and natural pest regulation.
  - For example, the Malabar Grey Hornbill, found in the Western Ghats, contributes to forest regeneration through seed dispersal.
  - The Nicobar Megapode, endemic to the Nicobar Islands, plays a unique role in nesting behavior, burying its eggs to hatch through natural heat.
- **Megadiversity:** A megadiverse country India is home to at least 70 % of the planet's terrestrial biological diversity and accounts for only around 10 % of the surface but is home to a massive number of endemic species.

Way ahead toads enhancing Conservation Efforts

Establishing Protected Areas and Habitats

- Creation and proper management of national parks and wildlife sanctuaries to safeguard critical bird habitats.
- Efforts to restore degraded habitats and establish ecological corridors to connect fragmented areas.

Sustainable Development Practices

- Promoting sustainable land use and resource management that balances development and conservation needs.
- Engaging with local communities to implement eco-friendly practices.

Involving Local Communities

- Collaborating with local stakeholders in decision-making processes and conservation initiatives.
- Providing economic incentives for communities to participate in conservation efforts.

Responsible Ecotourism

- Promoting ethical birdwatching and nature tourism that minimizes disturbances to bird habitats.
- Generating economic benefits for local communities and conservation projects.

Strengthening Research and Monitoring

- Conducting regular surveys to monitor population trends, distribution, and threats to endemic bird species.
- Utilizing scientific data to inform conservation strategies and adaptive management.

5.3 NEW IPCC ASSESSMENT CYCLE

Context

- New IPCC assessment cycle has been flagged off.

About the new (seventh) assessment cycle and process of assessment

- With the conclusion of fresh elections, the *IPCC began its seventh assessment cycle*, which like its predecessors would come to an end in the next five to seven years.
- The IPCC Chair and the bureau members will *select authors or experts,* who are nominated by governments and various other organisations, including international and intergovernmental, for the upcoming reports.

Sixth Assessment Cycle

- Kick started in 2015, the sixth assessment cycle, **the most recent one,** was concluded in March this year with the release of the synthesis report — a relatively non-technical summary of the previous report that came out during the cycle.

Current Status and Trends of climate change as per Synthesis report

- *Observed Warming and its Causes:* Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020.
- *Observed Changes and Impacts:* Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected.
- *Future Climate Change:* Continued greenhouse gas emissions will lead to increasing global warming, with the best estimate of reaching 1.5°C in the near term in considered scenarios and modelled pathways.
- *Cascading effects:* Risks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming. Climatic and non-climatic risks will increasingly interact, creating compound and cascading risks that are more complex and difficult to manage.
- *Overshoot:* Exceeding a **Warming Level and Returning Overshoot** entails adverse impacts, some irreversible, and additional risks for human and natural systems, all growing with the magnitude and duration of overshoot.

IPCC

- It was established in 1988 by the _World Meteorological Organisation (WMO) and the UN Environment Programme (UNEP)._
- It is an international body of scientists set up under the United Nations Framework Convention on Climate Change to produce scientific data to assist countries in policymaking on climate matters.
- The first assessment was released in 1990
- IPCC got a _Nobel Prize Award in 200._
- The IPCC doesn't conduct its research, but "assesses the thousands of scientific papers published each year to provide a comprehensive summary of what is known about the drivers of climate change, its impacts and future risks, and how adaptation and mitigation can reduce those risks."

Assessment reports

- IPCC publishes assessment _reports every 6 years._
- Assessment reports (ARs) are considered the most authoritative source of scientific knowledge on climate change.
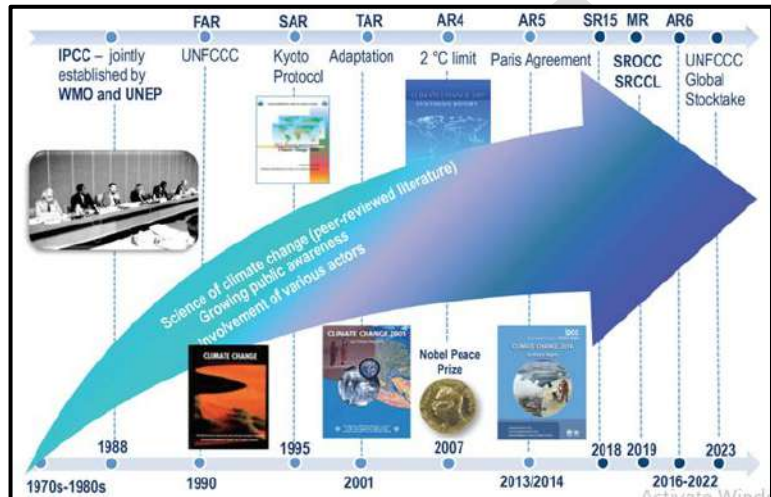
Way ahead

- _Near-Term Integrated Climate Action:_ Climate resilient development integrating adaptation and mitigation to advance sustainable development for all enabled by increased international cooperation including improved access to adequate financial resources, particularly for vulnerable regions, sectors and groups, and inclusive governance and coordinated policies is need of the hour.
- _Mitigation and Adaptation Options Across Systems:_ Rapid and far-reaching transitions across all sectors and systems are necessary to achieve deep and sustained emissions reductions and secure a liveable and sustainable future for all. These system transitions involve a significant upscaling of a wide portfolio of mitigation and adaptation options.
- _Carbon Budgets and Net Zero Emissions:_ Limiting human-caused global warming requires net zero CO_2 emissions. Projected CO_2 emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget by 1.5°C (50%).
- _Equity and Inclusion:_ Integrating climate adaptation into social protection programs improves resilience. Many options are available for reducing emission-intensive consumption, including through behavioural and lifestyle changes, with co-benefits for societal well-being.
- _Finance, Technology and International Cooperation:_ Finance, technology and international cooperation are critical enablers for accelerated climate action. Enhancing technology innovation systems is key to accelerating the widespread adoption of technologies and practices.

Conclusion

- Prioritizing equity, climate justice, social justice, inclusion and just transition processes can enable adaptation and ambitious mitigation actions and climate-resilient development. Adaptation outcomes are enhanced by increased support to regions and people with the highest vulnerability to climatic hazards.

5.4   BIG CATS CHALLENGE IN INDIA

Context

- The latest survey on tiger population publications indicates an **increase in the number of big cats** in Karnataka.

More on news

- According to the NTCA status report, Karnataka has th*e second-highest number of tigers (563) after Madhya Pradesh (785).* While authorities are happy with this development, there is also anxiety over the way forward.
- The minimum tiger estimates for Karnataka have been pegged at 435 by the State's Forest Department, and 563 by the NTCA.
- The National Tiger Conservation Authority (NTCA) said the Karnataka government's Mekedatu dam project could pose a threat to the Cauvery Wildlife Sanctuary. *Mekedatu connects the Biligiri Ranganathaswamy Temple (BRT) Tiger Reserve and the Male Mahadeshwara Hills (MM Hills)* wildlife division and is important connectivity.

Challenges

Poaching
Poaching of big cats is a serious issue in India. They are frequently targeted by poachers for their skins, bones and other body parts, which are often used in traditional medicine or as luxury items.

The illegal wildlife trade
The illegal wildlife trade is a major threat to big cat populations, with animals being captured from the wild and sold as pets or for use in entertainment.

Human-wildlife conflict
Human-wildlife conflict due to which wildlife is threatened by human activities is rampant in India. attacks by tigers on livestock or even humans, leading to retaliatory killings is among the issues that cause human-animal conflicts.

Inadequate Tiger corridors
There is a lack of tiger corridors for their free movement. Most tiger corridors have highways and other developmental projects leading to further conflict with humans.

Reduced carrying capacity
Many TRs in India have exceeded their carrying capacity. Ngarhole TR, Manas, and Bandhavgarh TR are some of them.

Developmental projects
Many developmental projects have affected tiger reserves. Ken Btwea river linking project affecting Panna TR, and the Makedatu project affecting Biligiri Ranganathaswamy Temple (BRT) Tiger Reserve are case points.

India's initiative to conserve big cats

- *Project Snow Leopard (PSL):* It was established in 2009 to promote an inclusive and participatory approach to the conservation of snow leopards and their habitat.
- *Project Tiger:* Project Tiger was launched by the Central government on April 1, 1973, in a bid to promote the conservation of the tiger. The programme came at a time when India's tiger population was rapidly dwindling.
- *Project leopard:* Rajasthan became first state to launch project leopard in 2017. The project work plan will be to mitigate man-leopard conflict, conserve leopard population by countering the threats the predators face.

- *International Big Cat Alliance (IBCA) :* Prime Minister Shri Narendra Modi launched the International Big Cat Alliance (IBCA) for the conservation of seven big cats namely the Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar and Puma harboring our planet.
- *Project Lion:* Project Lion is an Indian government initiative to conserve the Asiatic lion species that was announced on 15 August 2020 during the **74th independence day celebrations by Indian prime minister Narendra Modi.** It will be under the Ministry of Environment, Forest and Climate Change and is modelled on the lines of Project Tiger.

- *Cheetah Reintroduction plan:* In January 2022, environment minister Bhupender Yadav launched the action plan for reintroducing cheetahs in India, with an emphasis on Kuno National Park.

Bigs cats in India

India is home to the 'big five' cat species:

1. Bengal Tiger, Asiatic Lion,
2. Indian Leopard,
3. Snow Leopard,
4. The Indo-Chinese Clouded Leopard and
5. The world's smallest cat—the Rusty-spotted cat.

Way ahead for big cat conservation in India

- **Establishing a Framework and Governance Structure:** A well-defined framework and governance structure needs to be established to manage the big cat across the range of countries and states and enable smooth coordination.
- **Developing a Comprehensive Conservation Strategy:** A comprehensive conservation strategy needs to be formulated, taking into account the unique challenges faced by each big cat species and their habitats.
- **Promoting Knowledge Exchange and Capacity Building:** Knowledge exchange and capacity building among participating countries and states should be fostered. This should include sharing best practices,

technologies, and scientific research related to big cat conservation, as well as organizing training and capacity-building workshops for forest officials, policymakers, and other stakeholders.

- **Mobilizing Resources and Funding:** Participating countries and international organizations souls collaborate to mobilize resources and explore innovative financing mechanisms, such as public-private partnerships, to support conservation efforts.
- **Raising Public Awareness and Engagement:** Public awareness and engagement are essential for the long-term success of big cat conservation.
- **Monitoring and Evaluation:** Regular monitoring and evaluation of the conservation progress should be conducted to assess the effectiveness of conservation efforts and identify areas for improvement.

Conclusion

- To protect all big cats and ensure their continued survival, conservation efforts are necessary. These can include measures such as protecting and restoring habitat, enforcing laws against poaching and the illegal wildlife trade, and supporting research and monitoring programs. Additionally, education and awareness campaigns can play a vital role in helping to conserve big cats and their ecosystems.

5.5   INTERNATIONAL TIGER DAY 2023: INDIAN TIGER CONSERVATION

Context

- International Tiger Day 2023 was observed on July 29.

Significance of International Tiger Day 2023

- *Promoting global cooperation:* Tigers are found across various Asian countries, necessitating international collaboration to protect them effectively.
- *Curbing illegal wildlife trade:* International Tiger Day helps reduce demand for tiger products, contributing to the fight against illegal wildlife trade.
- *Addressing declining population:* The day highlights the alarming decline in tiger populations over the past century, emphasizing the urgency to take action to reverse this trend.

- *Showcasing conservation efforts:* International Tiger Day sheds light on various conservation initiatives worldwide, encouraging support and involvement from individuals and organizations.
- *Educating the youth:* By educating children about tigers and conservation, the day instils a sense of responsibility in the younger generation to protect wildlife and the environment.
- *Motivating individuals:* Awareness encourages individuals to take small but meaningful steps in their daily lives to support tiger conservation efforts and protect the environment.

Importance of tigers

- **_Ecological balance:_** Tigers serve as top predators in their ecosystems, playing a pivotal role in maintaining ecological balance by regulating prey species populations.

- **_Impact of keystone species:_** As keystone species, tigers have a profound impact on their environments, making their preservation crucial for overall ecosystem health and diversity.

International Tiger Day

- It is observed on July 29 each year and serves as a platform to raise awareness about the endangered tiger species.
- The day marks the 13th International Tiger Day.

History

- In the 2010 _Saint Petersburg Tiger Summit in Russia,_ multiple countries, including India, Russia, and China, pledged to protect tigers.
- Thirteen tiger range countries collaborated to form _Tx2, committed to doubling the tiger population by 2022,_ coinciding with the Chinese year of the tiger.
- Since then, this important day has been observed annually, rallying global support for the conservation of these iconic animals.

India's initiative to conserve tiger

- **Project Tiger:** Project Tiger was launched by the Central government on April 1, 1973, in a bid to promote the conservation of the tiger. The programme came at a time when India's tiger population was rapidly dwindling.

- **National Tiger Conservation Authority (NTCA):** The government reconstituted Project Tiger and established the National Tiger Conservation Authority (NTCA) in 2005.

- **Material and logistical support:** Funding support through the ongoing Centrally Sponsored Scheme of Project Tiger, is provided to tiger reserves for acquiring capacity in terms of infrastructure and material, to deal with tigers dispersing out of source areas.

- **Restricting habitat interventions:** Based on the carrying capacity of tigers in a tiger reserve, habitat interventions are restricted through an overarching TCP.

- **Standard Operating Procedure (SOPs):** The National Tiger Conservation Authority has issued three SOPs to deal with human-animal conflict, which are available in the public domain.

- **International Big Cat Alliance (IBCA) :** Prime Minister Shri Narendra Modi launched the International Big Cat Alliance (IBCA) for the conservation of seven big cats namely the Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar and Puma harboring our planet.

Management Effectiveness Evaluation (MEE) of tiger reserves in India, 2022

- The report titled Management Effectiveness Evaluation (MEE) of tiger reserves in _India, 2022 (Fifth Cycle) has been published._

- The report was prepared by the Dehradun-based Wildlife Institute of India and the National Tiger Conservation Authority.

- It has been prepared based on a detailed analysis of 51 tiger reserves following a framework prepared by the International Union for Conservation of Nature's World Commission on Protected Areas.

Findings Of the report

- _Periyar tiger reserve_ in Kerala stands out as the _best-performing tiger reserve_ with a MEE score of around 94 per cent, followed by Satpura in Madhya Pradesh and Bandipur in Karnataka.

- S_undarbans in West Bengal_, th_e only tiger forest in the world with mangroves,_ continued to be in the 'very good' category and got a rank position of 32nd.

- Dampa in Mizoram was found to be the poorest performing tiger reserve with barely 50 per cent marks, followed by Indravati in Chhattisgarh and Nameri in Assam.

- Action on key agendas like carbon capture and climate change, fund flow as well as village relocation has been identified as the weakest performing area for Indian tiger reserves.

Conclusion

- Tigers, classified as endangered in various regions, face grave threats to their existence, such as habitat loss and poaching.

International Tiger Day holds significant importance in raising awareness about the critical issues surrounding tiger conservation.

5.6 REUSE OF TREATED WASTEWATER IN AGRICULTURE

Context

- A document titled "Reuse of treated wastewater in urban/peri-urban agriculture in India" was released by NITI Aayog.

Importance of Use of TWW urban and peri-urban agriculture (UPA)

- *Resilient food supply:* UPA offers a fundamental strategy for building the resilience of a city's food supply.
- *Reducing distribution losses:* The use of TWW for irrigation in farm fields in the proximity of treatment plants, which were otherwise being irrigated from a much farther water source, can reduce distribution losses.
- *Walter saving:* The TWW could be clubbed with micro irrigation methods for horticulture crops. Thus, the actual saving on fresh water will be much more than the quantity of TUW used for irrigation.
- *To address micronutrient deficiency:* A majority of the states have soils deficient in macronutrients such as **NPK (nitrogen, phosphorous, potassium) and essential micronutrients** such as zinc. Nutrient-rich treated wastewater can be carefully used to address this issue to some extent and thus offset chemical fertilizer use to a certain degree.
- *Increase irrigation coverage:* According to FAO, 368 million ha of land are irrigated globally (AQUASTAT, 2020). Approximately 317 km3 of municipal wastewater generated every year could potentially irrigate close to 40 million hectares (with approx. 8,000 m3 per hectare), or 10% of all irrigated lands.

Challenges in managing wastewater

- Managing wastewater is quite challenging in India on account of a variety of reasons including mixing up of all kinds of u*sed water, lack of sewage networks, issues related to improper/lack of maintenance,* giving less importance than it deserves, and misconception on the abundance of freshwater availability and many more.

- *The gap in treatment capacity:* Owing to the gap in treatment capacity, only one-third of this sewage load, i.e. 26869 MLD, is being treated, which works out to be 9.81 BCM annually. This scenario is going to aggravate as the water demand grows.
- *The gap between installed capacity and actual utilization:* The treatment capacity is not growing at the same pace as that of urbanization, and there is a significant gap between installed capacity and actual utilization.
- *Inefficient sewage collection:* Lack of sewer network, issues in connectivity, problems associated with handling peak loads and improper maintenance affect the efficiency of sewage collection.
- *Public dumpling:* The treated wastewater (TWW), in almost entirety, is either discharged to the watercourses or being used for irrigating parks, lawns or public places.

Need for wastewater treatment

- *High ROI:* The benefits to society of managing human waste are considerable, for public health as well as for the environment. For every USD 1 spent on sanitation, the estimated return to society is USD 5.5 (UN WWD, 2017).
- *Inadequate reuse of wastewater:* Only a small fraction of treated wastewater is reused. As per CPCB, just less than 1000 MLD, which is about 3% of treated wastewater and 1% of wastewater generated, is being reused for some valuable purposes.
- *Groundwater pollution:* The untreated water finds its way to freshwater sources or aquifers and thus adding stress to freshwater availability.
- *Multiple benefits of Treated Wastewater:* Safe Reuse of Treated Wastewater (SRTW) is beneficial in curbing the issue of soil degradation and groundwater contamination, reducing human health hazards while dealing with contaminated water and consuming food items grown from untreated water and in

replacing or supplementing groundwater or surface water (or freshwater) irrigation.

Urban and peri-urban agriculture (UPA)
- **Definition:** FAO defines urban and peri-urban agriculture (UPA) as practices that yield food and other outputs through agricultural production and related processes (transformation, distribution, marketing, recycling etc), taking place on land and other **spaces within cities and surrounding regions.**
- **Stakeholders:** urban and peri-urban actors, communities, methods, places, policies, institutions, systems, ecologies and economies, largely using and regenerating local resources to meet changing needs of local populations while serving multiple goals and functions.

Way ahead
- *Use of GIS tools:* Since each State/UT and each STP's location has unique advantages and limitations, the reuse strategy should be formulated to suit the local conditions. Site-specific planning is essential to harness the full potential and to devise customized strategies to address challenges.
- *Application on a Priority basis:* The area deprived of irrigation should be the priority to irrigate using treated wastewater, then the areas not having sufficient water for irrigation.
- *Conjunction with drip irrigation:* Use in conjunction with the drip irrigation method is suitable since drip irrigation limits the direct contact with TWW as it is directly taken to the root zone area through pipe *networks, thereby reducing health risks to farmers to a great extent.*
- *Combining with precision farming/fertigation:* This could be combined with precision farming/fertigation methods where farmers can customize the fertilizer to suit the characteristics of output water quality from the treatment plants.
- *Irrigation barriers:* Irrigation barriers may be used to prevent contact between pathogens in TWW and humans who ingest irrigated food crops or may inhale aerosols produced during irrigation.

Conclusion
- The low percentage of wastewater that is being used by agriculture in a *planned manner and its unsafe application in most cases confirms the vast potential for improving and increasing the application* of used water (from municipal, industrial and agricultural sources) to meet the water demand for global food production.

5.7   CLIMATE CHANGE TRENDS DETECTED IN OCEAN ECOLOGY

Context
- Climate change is altering the color of the oceans, a new study says.

About the findings on the Impact of climate change on oceans
- The colour of the Earth's oceans has significantly altered over the past **two decades, most likely due to human-induced climate change.** Over 56 per cent of the oceans, more than the total land area on the planet, has experienced the shift in colour.
- Climate change and colour change are impacting the productivity of oceans. This could, in turn, affect how much carbon the ocean stores and how much food supply there is for fisheries.

- The most affected areas are the Tropical ocean regions, near the equator, where the water is turning from **blue to green.**
- Although the change in colour of the oceans doesn't impact marine life directly, it indicates that marine ecosystems are in a state of flux and they could completely go out of balance in the future, severely affecting ocean life and humans dependent on them.

Reason for change in colour
- **Ocean Pollution:** When the water isn't deep or clean, an ocean can appear to be of a different colour. For instance, along Argentina's coastline, where major rivers merge into the Atlantic Ocean, the ocean exudes a brown tint because of dead leaves and sediments spewing from the rivers.
- **Existence of phytoplankton in the upper layers:** In other parts of the world, the oceans

- appear green, which happens due to the existence of phytoplankton on the upper surface of the water.
- **Ocean stratification:** Ocean stratification is the natural separation of an ocean's water into horizontal layers by density, with warmer, lighter, less salty, and nutrient-poor water layering on top of heavier, colder, saltier, nutrient-rich water. **How is climate change impacting the world's ocean and ocean ecology**
- *Sea-level rise:* Latest data from the World Meteorological Organization shows that global mean sea-level reached a new record high in 2021, **rising an average of 4.5 millimeter per year** over the period 2013 to 2021.
- *Indiscriminate impact on tropical waters:* The Intergovernmental Panel on Climate Change (IPCC) says that mostly tropical waters, such as the western Tropical Pacific, the South-west Pacific, the North Pacific, etc, face substantially faster sea-level rise.
- *Increased extreme events:* The climate change has exacerbated extreme events such as deadly storm surges and coastal hazards such as flooding, erosion and landslides, which are now projected to occur at least once a year in many locations. Such events occurred once per century historically.
- *Marine heatwaves:* Marine heatwaves have doubled in frequency, and have become longer-lasting, more intense and extensive in the past decade.
- *Loss of marine biodiversity:* Rising temperatures has led to damage of coral reefs and mangroves that support ocean life, and migration of species to higher latitudes and altitudes where the water could be cooler.

Way ahead to protect our Ocean Ecology

Adopting sustainable practices:
There is an urgent need to change our ways of production and consumption by adopting sustainable practices in the blue economy.

Marine protected areas (MPAs):
There is a need to rapidly and efficiently protect most marine life by creating marine protected areas (MPAs).It is a globally accepted idea and yet so little of the Earth's surface area is currently protected. Less than 3% of the Ocean is currently protected from human activities.

Protection of blue carbon ecosystems:
Seagrass meadows and mangrove forests are two marine ecosystems considered as blue carbon ecosystems. They capture and store huge amounts of carbon. When these ecosystems are disturbed or damaged, they release carbon. If they are protected, they will continue to capture and lock carbon for a long period of time.

International efforts:
Although the protection of biodiversity has been on the global political agenda for decades, little has been put in place to counterbalance the devastating effects of human populations on the planet. Therefore There must a global plan of action and a binding agreement like Montreal protocol for ocean to protect Tropical waters.

Role of Governments:
Governments have a key role to play in bringing an effective and coherent policy mix to ensure the achievement of SDG 14, to conserve and sustainably use our ocean, seas, and marine resources, and the targets under the Convention on Biological Diversity. Policy instruments include regulatory, economic, and information and voluntary approaches should be taken.

Conclusion

- The excessive heat and energy warms the ocean, the change in temperature leads to unparalleled cascading effects, including ice-melting, sea-level rise, marine heatwaves, and ocean acidification. These changes ultimately cause a lasting impact on marine biodiversity, and the lives and livelihoods of coastal communities and beyond.

Prelims Pointers

Why is the colour ocean blue?

- This happens due to "*the absorption and scattering of light."* When the sunlight falls on deep and clear water, colours with longer wavelengths, such as red, yellow and green, are absorbed by the water molecules but blue and violet, which have a much shorter wavelength, are reflected back.

Role of phytoplanktons in Carbon capture and colour of oceans

- Phytoplankton are microscopic marine algae that contain the green-coloured pigment chlorophyll. The pigment helps them absorb sunlight, which they use to capture carbon dioxide from the atmosphere and convert it into sugars. Moreover, chlorophyll absorbs the red and blue portions of the light spectrum — or photosynthesis — and reflects green light.

5.8   EXPORT POLICY OF RED SANDERS

Context

- The Directorate General of Foreign Trade (DGFT) modified the export policy of Red Sanders.

More on news

- This step was taken in the exercise of powers conferred under the *Foreign Trade (Development & Regulation) Act,1992,* read with various provisions of the Foreign Trade Policy, 2023,
- The amendment modifies the policy conditions regarding Red Sanders (Pterocarpus santulinus).
- The amendment *restricted the export policy of Red Sanders wood exclusively sourced from Cultivation origin* obtained From Private Land (including Pattaland) and Confiscated Sources subjected to conditions.
- The updated export policy conditions *introduce new restrictions on Red Sanders wood export,* enforcing documentation and certain conditions for export licenses.
- The policy also sets an annual export *quota of 900 MT for Tamil Nadu f*or artificially propagated Red Sanders and prohibits the export of wild specimens of Red Sanders.
- The State Government is required to develop a digital platform for Red Sanders management, suggesting a more robust, transparent, and accountable system for tracking and regulating the trade of this valuable resource.

Importance of the move

- By introducing strict licensing conditions, annual quotas, and a zero export quota for wild specimens, the policy aligns with *sustainable resource management objectives.*
- This policy will ensure the protection of the **country's rich biodiversity.**
- It also ensures the sustainable growth of the Red Sanders wood industry.
- This move reflects the government's commitment to sustainable forestry practices and the preservation of natural resources.

About Red Sanders (Red Sandalwood):

- The species, Pterocarpus santalinus, is an Indian endemic tree species.
- *Geographical range:* Restricted in the Eastern Ghats. It is endemic to a distinct tract of forests in Andhra Pradesh
- *Protection Status:* '**Endangered' category** in the I**nternational Union for Conservation of Nature's (IUCN) Red List.**

Uses:

- known for their rich hue and therapeutic properties.
- Are high in demand across Asia, particularly in China and Japan, for use in cosmetics and medicinal products as well as for making furniture, woodcraft and musical instruments.

Threats:

- Over-exploitation and smuggling.
- The slow growth of the species and continued harvesting leaves no time for recovering naturally
- Cattle grazing and invasive species.

Conclusion

- The policy amendments issued by the DGFT represent a significant step in the regulation of Red Sanders wood export.

5.9   STATUS OF WILDLIFE SANCTUARIES AND NATIONAL PARKS

Context
- There are a total of 106 National Parks in India today.
- <u>State with maximum national parks:</u> Madhya Pradesh(11)
- <u>States and UTs with no national parks:</u> Punjab, Chandigarh, Dadra and Nagar Haveli and Daman and Diu, Delhi, Puducherry and Lakshadweep.

Fig: National parks in India

Fig: Wildlife sanctuaries in India

Status of wildlife sanctuaries in India
- There are 570 Wildlife sanctuaries in India today.
- <u>State/ UT with the highest number of wildlife sanctuaries</u>: Andaman and Nicobar Islands(97) and Maharashtra(49)
- <u>States or UTs with the least number of Wildlife sanctuaries:</u> Delhi, Puducherry, Lakshadweep(one each), All states have more than one wildlife sanctuary.

Issue of growing Human-animal conflicts around National parks & Wildlife sanctuaries
- <u>Encroachments:</u> People and wildlife are interacting more due to the encroachment of people in buffer zones leading to more human-wildlife conflict. Ex. agricultural and plantation in buffer zones.
- <u>Loss of habitats:</u> The loss of animal life and fragmentation of natural habitats as a result of development operations such as building roads and railroads across animal habitats makes animals move out of forests.
- <u>Land use changes:</u> The construction of buildings in forests and agricultural extension

have changed the natural habitat of animals, which has caused them to change their migratory paths. Ex. Illegal buildings through the Nilgiri elephant corridor.
- <u>Climate change:</u> Due to increased flooding, forest fires, and droughts animals are now being forced to abandon their natural habitats in search of food and shelter. **Ex. During monsoons, animals of Kaziranga National Park move to higher grounds due to rising water levels.**
- <u>Increase of Alien Invasive Species:</u> Animals' sources of food has reduced due to invasive plants such as **Prosopis juliflora and** Lantana camara. Herbivores thus have to leave the forests to graze on agricultural fields.

The important steps taken by the Govt. to minimize the human-animal conflict
- <u>Species-specific guidelines:</u> The Ministry released species-specific guidelines on 21.03.2023 for the mitigation of Conflicts such as Human –Elephant, -Gaur, etc, Conflict.

- **Guidelines to prevent human-animal conflict:** The Govt. has issued guidelines to States/UTs in 2022 for preventing and managing human-wildlife conflict including crop damage caused by wild animals.
- **Government advisories:** An advisory recommending coordinated interdepartmental action, identification of conflict hot spots, adherence to Standard Operating Procedures, the establishment of rapid response teams, etc has been formulated.
- **Increased payment of ex-gratia:** Govt. the increased payment of ex-gratia amount to victims of wild animal attack on death from Rs. 2.00 Lakh per person to Rs. 5.00 Lakh per person with an increase in the amount for ex-gratia in case of injury to humans as well.
- **Guidelines for linear infrastructure:** The Ministry has issued guidelines for the development of linear infrastructure in Wildlife and its adjacent areas to mitigate human–wildlife conflict.
- **Centrally Sponsored Schemes:** Financial assistance is provided to States under the Centrally Sponsored Schemes **'Development of Wildlife Habitats', 'Project Tiger' and 'Project Elephant'** for management of wildlife and human-wildlife conflict in and around protected areas.
- **Awareness programmes:** The Ministry provides support to State Governments to organize awareness generation, training and capacity-building programmes on human-wildlife conflict.

- Advanced technologies: Advanced technology like radio collaring, E-surveillance are also used in human-wildlife conflict mitigation.

Way forward

- **Safety measures:** There is a need to improve the safety of people and wildlife while simultaneously fostering cohabitation.
- **Alternative livelihoods:** There is a need to help communities near forests to lessen their dependence on forests, the government should promote socioeconomic development and offer them alternatives for sustainable livelihoods.
- **Training and awareness:** There is a need to train and create awareness among people living around forests about coexistence.
- **Maintaining a synergy:** A synergy among Human-wildlife conflict management, risk prevention, and strategic partnerships among governments, humanitarian, and conservation organizations needs to be developed.
- **Collaborative and multi-sectoral approach:** Collaborative, multisectoral, and trans-disciplinary strategies which take into account the connection among people, plants, animals and their shared environment.
- **Inclusion in SDG and CBD framework:** Human-wildlife coexistence needs to be incorporated into the SDG framework and make it an official goal of the Convention on Biological Diversity (CBD).

5.10   WORLD LION DAY

Context

- World Lion Day was observed globally on 10th August.

Why do we observe it?

- World Lion Day is observed annually on a global scale **to raise awareness about their conservation and protection.**
- The day educates people about the challenges faced by lions across the world and promotes efforts to conserve them as well as to celebrate these majestic big cats and their significance in ecosystems and cultures around the world.

History:

- World Lion Day was first established in 2013 by Big Cat Rescue, the world's largest accredited sanctuary dedicated to lions.
- Big Cat Rescue was co-founded by Dereck and Beverly Joubert, a husband-and-wife team.
- In 2009, the Jouberts approached "National Geographic" and formed a partnership with them to come up with the Big Cat Initiative (B.C.I.).
- In 2013, National Geographic and the Big Cat Initiative were brought under a single banner to protect the remaining big cats living in the wild and since then, World Lion Day is observed annually on August **10.**

Significance:
- World Lion Day plays a vital role in rallying support and action.
- It aims to ensure a future for these remarkable animals in the wild by shining a spotlight on lions and their conservation needs.
- There is an urgent need for their conservation hence, the day aims to educate people about the importance of lions in ecosystems and their cultural significance.

About Lions
- **Scientific name**: Panthera Leo.
- **The lion has two subspecies:** the **African lion (***Panthera leo leo***) and the Asiatic lion (***Panthera Leo persica***).**
- **Distribution and Habitat:**
  - Lions are extremely adaptable big cats, they can survive in a wide variety of habitats, including dry forests, thick bush, floodplains, and semi-arid desert areas.
  - Lions are spread across **sub-Saharan Africa** and a lesser population exists in the **Gir Forest National Park** in the state of Gujarat in India
- **Conservation Status:**
  - **IUCN Red List:**
    - ✓ **African Lion: Vulnerable (Globally)**
    - ✓ **Asiatic Lion: Endangered.**
  - **CITES status:** Appendix I for Lions of India, all other populations of the world are included in Appendix II.
  - **Wildlife (Protection) Act 1972:** Schedule I
- **Conservation Efforts in India:**
- **Project Lion**
- **Asiatic Lion Conservation Project**
- Presently, Kuno Project is being undertaken with a view to reduce the overcrowding at Gir.

Threats
- Lions are **now extinct in 24 of their former range states and 94% of their historic range.** They are facing numerous threats in the wild where these threats include
  - **Habitat loss through deforestation:** Change in land use from human pressure is leaving lion populations isolated, reducing their habitats and the habitats of their prey species.

- **Illegal Wildlife Trade**: **They have high values in the market. Used as a substitute for tiger bones, lion** parts and derivatives are perceived to hold medicinal and curative values and are used in traditional Asian medicines.
- **Threats of poaching:** They are poached for illegal trade and recreational activities.
- **Human-Wildlife Conflict:** As habitats shrink, lions are pushed into closer proximity with communities and livestock. Due to a lack of prey, lions are forced to feed on livestock, prompting retaliatory killings from humans.
- **Climate change:** Climate change affects various ecosystems causing famine, reductions in prey species, access to water, changes in migratory patterns and increases in human-wildlife conflict.

Way ahead
- The **park boundaries** need to be consolidated to prevent a human-lion clash.
- Much attention needs to be paid to the **protection of the Asiatic lions from poachers**.
- The **natural habitat** of Gir National Park also **needs to be protected**.
- Steps need to be taken to include the **residents within the field staff of the Gir Protected Area.**
- The **afforestation programs** that were earlier carried out in the grasslands and savannah areas of Gir need to be avoided as far as possible.
- Efforts should be made to **open up forest canopies** and to increase the range of the Gir Protected Area.
- Efforts should be undertaken to **relocate as many humans out of the protected area** of Gir as possible.

Conclusion
- The IUCN estimates that between 23,000 to 39,000 lions remain in the wild. However, other data from recent years suggests that that number may be closer to 20,000, as three-quarters of their population is in decline. Although lions are not currently endangered, population numbers will continue to decrease without proper conservation efforts.

5.11 AMAZON COOPERATION TREATY ORGANISATION

Context
- Amazon countries fail to agree on protection goals under Amazon Cooperation Treaty Organization (ACTO)

Points of contention
- **Disagreement over deforestation and degradation targets:** A clear joint goal, such as the protection of 80 per cent of the forest to avoid the tipping point, is absent in the declaration, as Colombia's proposal to protect 80 per cent of the **Amazon from deforestation and degradation by 2025** did not find support.
- **No commitment to stop drilling:** The leaders focused on "initiating a dialogue" on the sustainability of mining and fossil fuel-related activities. But there was no commitment by the countries to stop oil drilling in the region.
- **Funding challenges:** There is no indication of how much money members will invest to fund the declaration's proposed objectives or support minimum conservation standards.

Amazon Cooperation Treaty Organization (ACTO)
- It is an intergovernmental organization formed by the **eight Amazonian countries:** Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela, which signed the **Amazon Cooperation Treaty (ACT) signed on July 3, 1978.**
- It is "aimed at the **promotion of sustainable development of the Amazon Basin".**
- It is the only socio-environmental block in Latin America
- **Areas of work:**
  o Political-diplomatic, strategic, and technical, building synergies among governments, multilateral organizations, cooperation agencies, organized civil society, social movements, the scientific community, productive sectors and society as a whole.
- **Permanent Secretariat of ACTO:** Brasilia (Brazil)

Amazon Rainforest and its importance
- The Amazon Rainforest is the **largest rainforest in the world,** spanning nine countries in South America.
- It covers an area of over **5.5 million square kilometres, of which almost 60% is in Brazil**.
- It is famously known as the 'lungs of the world,' producing 20% of the Earth's oxygen and playing a crucial role in **regulating the planet's climate.**
- The rainforest is home to over one million Indigenous people.
- It supports millions of species of plants and animals, many of which are found nowhere else in the world.
- The forest is home to large medicinal plants and exotic fruits.

Threats in the Amazon forest
- **Agriculture:** Soybean production is the largest driver of deforestation in the Amazon. Clearing forests to create new agricultural land is often the easiest and cheapest solution for farmers.
- **Cattle ranching**: Cattle ranches are widespread and Brazil is one of the world's largest beef exporters, and to raise their cattle, ranchers need huge tracts of land.
- **Logging:** Logging for commercial purposes is another major cause of deforestation. Trees are cut down for timber used in furniture, paper, and other products.
- **Mining:** The demand for minerals like **gold and iron ore drives mining** in the Amazon. Mining activities are causing widespread destruction to the rainforest, including water pollution and soil degradation.
- **Human activity:** The growth of human populations in and around the Amazon is increasing pressure on the rainforest. Infrastructure development, such as roads, dams, and hydropower projects, is also contributing to deforestation.

The effects of deforestation in the Amazon
- **Displacement of Indigenous peoples:** When forests are cut down, homes, livelihoods, and the very existence of Indigenous people are threatened.
- **Loss of biodiversity:** When forests are destroyed, these animals lose their habitat, and many cannot survive. This, in turn, affects

the balance of the entire ecosystem, and the consequences can be far-reaching.

- **Negative impact on CBD's Global Biodiversity Framework:** Failure to have a consensus on deforestation could have implications on the overall goals and targets set under the Convention on Biological Diversity's Global Biodiversity Framework set in December 2022.

- **Dieback of the ecosystem:** If the combined deforestation and degradation of the Amazon

crosses a 20-25 per cent threshold, the forest could reach an irreversible point that may result in the dieback of the entire ecosystem.

- **Climate change:** The most significant impact of deforestation in the Amazon is its effect on the climate. A large amount of carbon dioxide will be released into the atmosphere as Amazon is the largest carbon sink in the world.

Convention on Biological Diversity's Global Biodiversity Framework	The Belem Declaration
- The **Kunming-Montreal Global Biodiversity Framework (GBF)** was adopted during the fifteenth meeting of the Conference of the Parties (COP 15). - Under this, member countries had agreed **to protect at least 30 per cent of land and sea by 2030.** **GEF is responsible for finding funds** for the implementation of GBF and a meeting in Canada will finalize the working of the Global Biodiversity Framework Fund. - The greater **role of biodiversity-rich countries, such as those in the Amazon region**, was emphasized during the negotiations.	- The Belem Declaration released during the **Amazon Summit recognises Indigenous knowledge as a condition for biodiversity conservation.** - It calls for ensuring the full and effective participation of Indigenous Peoples in decision-making and public policy formulation processes. - The Summit recognised a need for multiple forest economy solutions to counter the trend of agricultural commodities as the dominant economic model in the region. - The declaration promotes the **sustainable use of biodiversity resources in the Amazon.**

Way ahead

- **Increased government regulations:** The Brazilian government can create laws and regulations prioritizing sustainable agricultural activities and forestry practices. The government can also implement measures that penalize individuals and companies that engage in illegal deforestation.
- **Implementing nature-based solution:** Nature-based solutions such as the restoration of degraded lands through reforestation efforts, which involves **planting a diverse range of native tree species and allowing them to grow and regenerate over time** can help prevent further deforestation by creating a barrier between remaining forests and areas susceptible to land-use change.
- **Support indigenous communities:** A key method to prevent deforestation is through promoting sustainable development and providing economic i**ncentives for landowners who preserve forests.**
- **Supporting nonprofit organizations:** Supporting non-profit organisations that work towards protecting rainforests and plant trees helps reduce deforestation by purchasing land in the Amazon to protect it from logging and cattle ranching. Ex.Rainforest Trust, Amazon Watch, and Rainforest Alliance
- **Reduce beef and dairy consumption:** Cattle ranches are one of the biggest drivers of deforestation in the Amazon. To reduce deforestation, individuals can reduce their beef and dairy consumption by choosing plant-based alternatives. Ex. plant-based protein sources such as tofu, tempeh, and beans.

Conclusion

- Deforestation in the Amazon is one of the biggest ecological crises of our time. There is a need to establish a working group to discuss financial needs and the efforts needed to mobilize resources.

## 5.12   RISING METHANE AND EARTH'S CLIMATE TRANSITION

Context
- Rising methane could be a sign that Earth's climate is part-way through a **'termination-level transition'**

The methane record: 2006 to present
- Methane had risen fast in the 19th and 20th centuries but **plateaued by the end of the 1990s.** This rise was driven by **fossil fuel emissions**, especially from gas fields and coal mines.
- Then **in late 2006, the amount of methane in the air climbed fast.**
- Methane was about **0.7 parts per million (ppm)** of the air before humans began burning fossil fuels. **Now it is over 1.9 ppm and rising fast.**

What does the trend indicate?
- Methane is **both a driver and a messenger of climate change**. This might just be ordinary variability — a result of natural climate cycles such as El Niño.
- It may also **signal that a great transition in Earth's climate has begun.** For instance, sudden surges in methane marked the transitions from cold ice ages to warm interglacial climates.
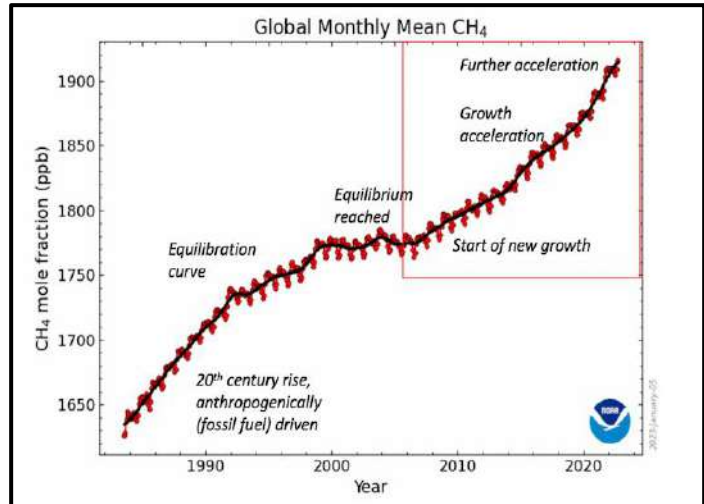
Reasons for increased methane emissions
- **Biological emissions:** Unlike the rise in carbon dioxide (CO_2), methane's recent increase seems to be driven by biological emissions, not the burning of fossil fuels.
- **Climate change:** Increasing rainfall has made wetlands wetter and bigger while rising temperatures have boosted plant growth, providing more decomposing matter and more methane.
- **Emissions from cattle lots**: Emissions from huge cattle lots in tropical Africa, India and Brazil may also be rising.
- **Landfills**: Rotting waste in landfills near megacities like Delhi is also an important source.

Methane sources
- Roughly **three-fifths of emission**s come from **fossil fuel use, farming, landfills and waste.**
- The remainder is from **natural sources**, especially **vegetation rottin**g in tropical and northern wetlands.

Threats of increased methane emissions
- **A potent greenhouse gas:** Methane is a much more potent greenhouse gas than CO_2 but it lasts slightly less than a decade in the atmosphere compared with centuries for CO_2.
- **Global warming**: The rate at which methane is increasing in the atmosphere has accelerated recently. Rising methane emissions threaten humanity's ability to limit warming to relatively safe levels.
- **Great flip in earth's climate:** The pattern of growth since late 2006 resembles how methane behaved during great flips in Earth's climate in the distant past.
- **Climate terminations**: In the past few million years, Earth's climate has flipped repeatedly between long, cold glacial periods, with ice sheets covering northern Europe and Canada and shorter warm interglacials. With each flip from **a glacial to an interglacial climat**e there have been sudden, **sharp rises in atmospheric methane, likely from expanding tropical wetlands.**

Evidence of Great Climate Shifting	Ways to stop methane's rise
• Tropical weather regions are expanding, • The far north and south are warming fast • Ocean heat is breaking records and • Extreme weather is becoming routine. • Loss of sea ice in the Arctic in summer • **Thinning or partial collapse of the ice cap**s in Greenland and West Antarctica, • **Reorganization of the Atlantic's ocean currents** and the poleward expansion of tropical weather circulation patterns.	• covering landfills with soil, • reducing crop-waste burning. • Feed additives for cattle, • new rice-farming techniques such as the System of rice intensification. • advanced approaches to oil and gas leak detection, • coal methane capture, and • Modern water and waste facilities

Conclusion

- Methane's signal is still unclear, but the question of the beginning of termination is unclear and more research needs to be done in this regard.

5.13 E- WASTE

Context

- Hindalco plans to invest ₹2,000 crore in copper and e-waste recycling facilities in India.

More about the proposals

- Plans to invest ₹2,000 crore in a copper and e-waste recycling facility is the **first-of-its-kind in India.**
- It also plans to invest another ₹2,000 crore in a project with Indian Railways for the **Vande Bharat trains.**

Importance of the investments

- **Address e-waste challenge:** Investment in copper recycling facilities will address the mounting challenge posed by e-waste.
- **Circular economy:** Bringing this cutting-edge technology to India marks a transformative step towards offering a tangible solution to the country's circular economy agenda.
- **Boost to the aim of doubling freight capacity:** Investment in railways will help India achieve the **Indian Railways' goal of becoming Net Zero in emissions while concurrently doubling freight capacity.**
- **Increased rail speed: India's first all-aluminium lightweight rake,** which enables higher speed, more payload per trip and will save over 14,500 tonnes of CO2 over its lifetime, will be introduced on Indian railways.

About Electronic Wastes (e-Waste)

- Electronic waste (e-waste), is a generic term used to **describe all types of old, end-of-life or discarded electrical and electronic equipment**, such as household appliances; office information and communications equipment, etc., which are powered by electricity.
- E-waste contains **both valuable and hazardous materials** that require special handling and recycling methods.

> **E-wastes in India**
> - More than **95 per cent of India's e-waste is recycled in the informal sector**.
> - The **first e-waste clinic for segregating, processing and disposal of waste from household and commercial units has been established in Bhopal, Madhya Pradesh**.
> - According to the Central Pollution Control Board (CPCB), **India generated more than 10 lakh tonnes of e-waste in 2019-20, which is an increase from 7 lakh tonnes in 2017-18.** Against this, the e-waste dismantling capacity has not increased from 7.82 lakh tonnes since 2017-18.

Issues in e-waste management

- **Loss of valuable materials:** There is improper handling leading to a significant loss of valuable materials.

- **Export of e-wastes:** At present, due to lack of advanced metal extraction and refining technologies domestically, a substantial volume of e-waste is exported to other nations.

- **Toxicity:** E-waste contains toxic elements such as Lead, Mercury, Cadmium, Chromium, Polybrominated biphenyls and Polybrominated diphenyl.
- **Effects on Humans:** Some of the major health effects include lung cancer, respiratory problems, bronchitis, brain damages, etc. due to inhalation of toxic fumes, exposure to heavy metals emitted from e-wastes.
- **Effects on Environment:** E-waste is an environmental hazard causing groundwater pollution, acidification of soil and contamination of groundwater and air pollution due to the burning of plastic and other remnants.

Initiatives for e-waste management

- **The Nairobi Declaration** adopted at COP09 of the Basel Convention aimed at creating innovative solutions for the environmentally sound management of e-wastes.
- **Rotterdam Convention, 2004 seeks** to promote exchange of information among Parties over a range of potentially hazardous goods such as e-wages which may be exported or imported.
- Under the **Environmental Protection Act 1986, the E-waste (Management and Handling) Rules, 2011 were enacted**
- The **E-Waste (Management) Rules, 2016 were** enacted which replaced the 2011 Rules. The Rules were amended in 2018
- CPCB has also issued guidelines **Environmentally Sound Management of E-waste (on Collection, Storage, Dismantling &** Segregation, Recycling, and Treatment & Disposal of E-Waste)

Way Forward

- **Role of informal sector:** There is a need for **better collection and extraction methodologies and inclusion of policies that** provide accommodation and validation for the informal sector to step up and help us meet our recycling targets in an environmentally sound manner.
- **Stakeholder engagement:** Increasing **collection rates requires** every actor to be involved such as producers or manufacturers, consumers, etc. The strict implementation of Extended producer responsibility is a way ahead.
- **Strengthen domestic legal framework:** There is a need to **strengthen the domestic legal framework to** address the issue of unregulated imports of e-waste.
- **Research and development:** Governments must **encourage and invest in research into the development of better environmentally-sustainable e-waste recycling techniques.**
- **Detailed assessment:** There is an urgent need for a **detailed assessment of the E-waste including** quantification, characteristics, existing disposal practices, environmental impacts.

For more reading on e-wastes please refer- https://www.iasgyan.in/ias-gazette-magazine/e-waste-36#:~:text=The%20problem%20of%20e%2Dwaste,recycled%20by%20the%20formal%20sector.

5.14   GREEN-LOGISTICS MARKET

Context

- A new report published by **Allied Market Research**, was titled "Green Logistics Market

Findings of the report on Green logistics market

- The global green logistics market was **valued at $1.3 trillion in 2022**, and is **projected to reach $2.9 trillion by 2032**, growing at a CAGR of 8.3% from 2023 to 2032.
- **Asia-Pacific currently dominates the green logistics market in 2022**. This was primarily due to China actively promoting green practices, and investing in EVs and clean energy sources.

- **Japan is a leader in green technology adoption**, while North America will be the second-largest market for green logistics in 2022.

About Green logistics

- The green logistics market includes **the adoption of green logistics solutions** using electric or hybrid vehicles, optimizing transportation routes, and implementing eco-friendly packaging.

Importance of green logistics

- **Reduced pollution:** Green logistics initiatives can help reduce pollution by **using cleaner fuels, more efficient vehicles, and recycled**

materials. According to a study by the World Economic Forum, the logistics sector is responsible for 2.7% of global greenhouse gas emissions.

- **Against climate change:** By adopting green logistics practices, India can help to reduce its carbon footprint and contribute to the fight against climate change.
- **Lower costs:** They help lower costs by reducing fuel consumption, maintenance costs, and waste disposal costs. A study by the Indian Institute of Management Bangalore found that green logistics practices can save companies up to 10% on their logistics costs.
- **Improved efficiency:** A study by the Confederation of Indian Industry found that green logistics practices can help reduce the average delivery time by 10%.
- **Increased customer satisfaction:** A study by the Boston Consulting Group found that 70% of consumers are willing to pay more for products that are delivered using green logistics practices.

Initiatives by India towards green logistics

- **Unified Logistics Interface Platform (ULIP):** ULIP is a government-led initiative that aims to reduce emissions from logistics operations by providing a platform for logistics companies to share information and collaborate on reducing emissions.
- **Use of electric vehicles in logistics:** Electric vehicles are a zero-emissions alternative to traditional fuel-powered vehicles. The government offers incentives to encourage their use.
- **PLI for Li-Ion batteries:** Recently approved Rs 25,000 crore PLI scheme for the production of lithium-ion cells to boost domestic manufacturing of green vehicles.
- **Gati-Shakti:** The Gati Shakti aims to create roads linked to railway lines that will further feed into major and minor ports, leading to the efficient movement of goods, especially from the frontiers.

Way ahead

- Implementation of **stringent environmental regulations** drives the growth of the green logistics market.
- Multiple **EV charging stations** promote electric fleet usage, advancing cleaner transportation.
- There is a need to move towards **embracing energy efficiency, renewable integration, and environmentally conscious technologies.**
- Large-scale **renewable projects** powering facilities, significantly reducing our carbon footprint.
- Central to a **sustainable supply chain ecosystem** is Circularity. Sourcing and repurposing recycled materials, adopting reusable packaging, and water conservation through practices like rainwater harvesting exemplify green commitments.

Case study

Leading by example, MLL (Mahendra Logistics) aims to **achieve net-zero electricity consumption by 2026,** employ **100% recycled pallets/packaging by 2028**, and introduce electric vehicles/LNG/Hydrogen Fuels to 70% of the LH fleet by 2030.

Conclusion

- Improving logistics performance has become a crucial factor in effectively integrating into **global value chains, sustaining economic growth, and boosting national competitiveness.** Various ways to address the issues of logistics operations include multiple approaches such as emissions control, waste management, energy efficiency, and sustainable sourcing.

5.15 DEBT-FOSSIL FUEL TRAP

Context

- An analysis, 'The Debt-Fossil Fuel Trap', published by the anti-debt campaigners Debt Justice and partners.

Findings of the report

Spending on debt:

- Developing and poor countries currently **spend 5 times more on repaying debt** from richer countries and private lenders, than on addressing the climate crisis and its impact.

Forced reliance on fossil fuels:

- They have been **forced to continue to rely on fossil fuels** to meet various economic exigencies like Covid-19.

Overinflated revenue:

- **Impossible to phase out fossil fuels and transition to renewable energy** due to often **overinflated revenue from fuel projects.**

Rise in debts:

- **External debt payments** have **gone up by 150% between 2011 and 2023**, reaching their highest levels in 25 years.

Cut in budget:

- **54 countries in a debt crisis** had to cut their public sending budgets during the pandemic to repay the loans.

Impact of Climate change:

- **Extreme weather events force these countries to borrow more money** as they lack adequate finances and resources for adaptation, mitigation and tackling loss and damage. Ex. **Dominica's debt as a percentage of GDP rose from 68% to 78% after Hurricane Maria in 2017.**

Fossil fuel extraction for debt repayment:

- **To deal with the mounting debts,** these countries have **turned to extracting more fossil fuels. Ex. Argentina is supporting fracking projects** in the Vaca Muerta oil and gas field in Northern Patagonia with the IMF's backing.

Lenders support fossil fuel extraction:

- **Richer countries and multilateral and bilateral lenders are financing fossil fuel projects,** often through loans, adding to debt burdens and keeping countries locked in fossil fuel production.

Case study

In Surinam, creditors like richer countries have been given 30% of oil revenue until 2050 which incentivises continued oil exploitation.

Key recommendations/way ahead

- **Debt cancellation plan:** Need a comprehensive debt cancellation programme for countries in need by all creditors, without economic conditions.
- **Energy transition:** The adoption of clean and renewable energy sources should be encouraged to reduce fossil fuel dependency.
- **Institutional support:** Rich countries and multilateral institutions should support countries that need to support these countries to free them from the debt-fossil fuel trap.
- **Sustainable Development:** Sustainable development strategies should be prioritized to ensure environmental protection and economic stability.
- **Spirit of SDG 7:** The spirit of SDG 7 to ensure affordable, reliable, sustainable and modern energy access for all must be kept alive.
- **Curb external support:** Multilateral finance and finance from rich countries should not be supporting fossil fuel extraction but rather should be aligned with Paris goals.
- **Climate finance and technology transfer:** Scaling up climate finance and technology transfer from the global north is need of the hour keeping in mind the common but differentiated responsibility and polluter pays principle.

5.16   RIGHT TO CLEAN ENVIRONMENT

Context

- Children have the right to a clean, healthy and sustainable environment, and governments must urgently act to ensure this: **UN report.**

About the right to a clean environment for children

- **The United Nations Committee on the Rights of the Child (UNCRC)** passed **General Comment No. 26.**

- Legal foundations to tackle environmental degradation and the effects of climate change on children's rights have been provided.

Impacts of Climate Change on Global Children:

- **Children's well-being:** WHO-UNICEF report 2020 warned of danger to children's well-being **resulting from climate change and environmental degradation.**
- **Displacement of children: 12 million children were displaced in 2022** alone due to climate change and resulting extreme weather events as per Lancet reports.
- **Multiple burdens of climate change:** A key driver of extreme poverty, inequality, malnutrition and child vulnerability to disasters is Climate change today.
- **Unequal development needs:** Especially children are vulnerable to climate change and extreme weather events as their developmental needs are unique and they often are excluded from the policy framework.
- **Global South:** Developing and poor countries of the Global South are the main recipients of climate change and its impacts fall squarely on the children.

Environment-related Laws in regard to the right to a clean environment in India:

- Wildlife (Protection) Act, 1972.
- Water (prevention and control of pollution) Act, 1974.
- The Forest (conservation) Act, 1989.
- The Air (Prevention and Control of Pollution) Act, 1981
- The Environment (Protection) Act, 1986.
- The National Green Tribunal Act, 2010.

Constitutional Provisions

- **Article 48-A:** The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.
- **Article 51A(g):** Every citizen must protect and preserve the environment.
- **Article 21 of the Indian Constitution states: 'No person shall be deprived of his life or personal liberty except according to procedures established by law.'**

Judicial pronouncements

- The right to a clean environment has been held to be implicit in the Right to life under Article 21 by the **Supreme Court in M.C Mehta v. Union of India.**

Way ahead as provided by the UNCRC

- Necessary measures need to be taken by member states **to protect the rights of children from climate change and harm caused as a result of businesses.**
- **Inclusive early warning systems** need to be developed to safeguard children from extreme weather impacts.
- **Grants rather than loans** should be provided to prevent the negative impacts of climate change on children's rights.
- Concerns related to **unequal allocation of finance regarding adaptation and loss and damage** issues **have to be addressed.**
- **Inadequate success** in achieving international climate goals threatens children. Countries should work towards **meeting Emissions Reduction targets.**

5.17   GEOENGINEERING

Context

- Geoengineering is not a quick climate fix, but a costly gamble.

About Geoengineering

- Geoengineering is the deliberate large-scale intervention in the Earth's natural systems to counteract climate change.

Three geoengineering techniques:

1. **Solar Radiation Management (SRM) or Solar Geoengineering**
- SRM techniques **aim to reflect a small proportion of the Sun's energy into space, to counter the temperature rise. Some proposed techniques include:**
  - **Albedo enhancement:** Increasing the reflectiveness of clouds or the land

surface so that more of the Sun's heat is reflected into space.

- o **Space reflectors:** Blocking a small proportion of sunlight before it reaches the Earth.
- o **Stratospheric aerosols:** Introducing small, reflective particles into the upper atmosphere to reflect some sunlight before it reaches the surface of the Earth.

2. **Greenhouse Gas Removal (GGR) or Carbon Geoengineering**

- Aims to remove carbon dioxide or other greenhouse gasses from the atmosphere, directly countering the increased greenhouse effect and ocean acidification. Some proposed techniques include:
  - o **Afforestation:** Engaging in a global-scale tree planting effort.
  - o **Biochar:** 'Charring' biomass and burying it so that its carbon is locked up in the soil.
  - o **Bio-energy with carbon capture and sequestration:** Growing biomass, burning it to create energy and capturing and sequestering the carbon dioxide created in the process.
  - o **Ambient Air Capture:** Building large machines that can remove carbon dioxide directly from ambient air and store it elsewhere.
  - o **Ocean Fertilisation:** Adding nutrients to the ocean in selected locations increases primary production which draws down carbon dioxide from the atmosphere.
  - o **Enhanced Weathering;** Exposing large quantities of minerals that will react with carbon dioxide in the atmosphere and storing the resulting compound in the ocean or soil.

Main Issues

- **When soaring temperatures, extreme weather and catastrophic wildfire**s hit the headlines, **policymakers search for quick fixes** to climate change. Ex. **The U.S. government**

awards projects that promise to pull carbon dioxide out of the air.

- **Invasive types of geoengineering are being explored** by policymakers towards the **deliberate, large-scale manipulation of Earth's natural systems.**
- Geoengineering is **not a permanent solution to global warming** or climate change. They are just a quick fix against climate change.
- **Techniques like Stratospheric Aerosol Injection** are controversial as the reflective effect of aerosols is cast off after some time, **which results in a net heating effect.**
- **Not enough evidence t**o prove how geoengineering can help in the long run against climate change.
- Injection of aerosol compounds into the stratosphere **might increase acid deposition on the ground and may contribute to ozone layer depletion.**

Way ahead

- Climate scientists should **explore geoengineering and its facades** to **determine its effectiveness and safety.**
- Political scientists need to **invest in debates and discussions** on implementing such an unprecedented planetary project.
- **Clean Energy Cess on fossil fuels** and the Clean Energy Fund should be used proactively as a tool to curb climate change.
- Rather than quick-fix solutions, **long-term fixes like renewable energy should be focused upon.**
- Climate finance through various means such as **carbon emission trading** should be promoted to ensure the flow of funds towards climate change.
- **Technology transfer** by the Global North to the vulnerable Small Islands and developing countries to effectively tackle climate change should be carried forward.

5.18   TIMBER AND FUEL WOOD SMUGGLING

Context

- Felling of Mango and Five Other Tree Species Banned In Himachal.

List of banned trees from felling

- Mango, Triyambal (Ficus species), Toon (Toona ciliata), Padam or Pajja (Prunus

cerasus), Ritha (Sapindus mukorossi) and Baan (Quercus leucotrichophora).

Legislative provisions related to tree felling in India

- **Indian Forest Act, of 1927** governs **issues of tree felling** and forest conservation in India.

- The Act broadly lays down that each state can make rules and regulations against tree felling.

Section 30 Of Indian Forest Act, 1927: The State Government may, by notification in the Official Gazette,

(a) **declare any trees or class of trees in a protected fores**t to be reserved from a date fixed by, the notification;

(b) declare that **any portion of such forest** specified in the notification **shall be closed** for such term, **not exceeding thirty years,** as the State Government thinks fit, and that the **rights of private persons, if any, over such portion shall be suspended during such terms.**

Section 33 of the Indian Forest Act, 1927

For acts in contravention of notification under section 30

Any person who-

- **fells any tree** reserved under section 30, or strips off the bark or leaves from, or otherwise damages, any such tree;

- permits cattle to damage any such tree; **shall be punishable with imprisonment** for a term which ma**y extend to six months, or with a fine** which may extend to five hundred rupees, or with both.

- Penalty for cutting down a tree: Rs.10,000 or 3 months imprisonment, extendable up to one year by the state acts.

Measures taken by the government

- Policies include the **Green India Mission, National Agro-Forestry Policy (NAP), REDD+ strategy, Joint Forest Management (JFM), the National Afforestation Programme and Compensatory Afforestation Fun**d transfer to states.

- **Green Highways (Plantations & Maintenance) Policy** aims to develop a 1,40,000 km-long treeline with plantations along both sides of national highways.

Way ahead

- Forest restoration such as **Compensatory Afforestation** should be aggressively applied.

- There is a need to **move away from monoculture plantations** which are promoted by many organizations including forest development corporations in the States.

- **Scientific techniques like Miyawaki** techniques to bring back forests are needed.

- More than 300,000 sq km of area is categorized as **open forests** with a tree canopy of 10-40%. These lands **must be used to revive forests.**

- **Policies against open cast mining** and efforts to protect the forests in the Northeast should be made.

Conclusion

- This step by the Himachal government will not only safeguard indigenous species but also play a pivotal role in wildlife preservation.

5.19   GUIDELINES ON ALTERNATIVES TO HHPS

Context

- The UN Environment Programme (UNEP) has published guidelines for evaluating alternatives to highly hazardous pesticides (HHPs).

About highly hazardous pesticides

- Pesticides that **cause severe or irreversible harm to health or the environment** may be treated as highly hazardous.

- **Around 80% of existing pesticides** are used by farmers in **crop production.**

- **An estimated 13%** are used in industry and by government authorities, while the **rest are used in domestic environments.**

- However, **only a small proportion of pesticides ranging between 6-10%** of **registered pesticides were HHPs.**

Impacts of HHPs

- HHPs pose an a**cute or chronic hazard to health and/or the environment** according to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

- **Water-soluble pesticides** upon dissolution in **water enter water bodies** including groundwater, lakes, streams and rivers and affect their biodiversity.

- **Fat-soluble pesticides** upon absorption in the tissues of animals enter the food chain by the process of **bioamplification.**

- The dissolved oxygen content of the water bodies declines and **Biological oxygen demand (BOD) increases** causing deaths of the aquatic flora and fauna.
- Pesticide overuse causes a **decline in the honeybee population** which affects the pollination process resulting in adverse impacts in the agricultural sector.
- **Soil microorganisms decline and soil oxygen carbon is affected** leading to soil degradation.

Way ahead

- Not only hazardous pesticides but **active ingredients, substandard and spurious pesticides need to be regulated**.
- **Representation of the stakeholders** like farmers, traders, civil societies, etc. should be ensured in the **Central Pesticide Board and the Registration Committee.**
- **Precautionary principle:** Any pesticides whether approved in other countries or not should go through a rigorous examination and trials before application in fields.
- **Indefinite grant of registrations** to pesticide companies should be **done away with.** The practice of re-registration-based performance should be done.
- **An independent Review and Monitoring Committee,** having experts from various fields like animal husbandry, agriculture, public health, etc. should review the pesticides and their impacts.

5.20 SHORT ARTICLES

Impact of Climate Change on Shaligrams

Context

- Shaligrams, worshiped by Hindus and Buddhists for over 2,000 years, are becoming rarer because of climate change.

What are Shaligrams?

- Shaligrams are ancient fossils of ammonites, a class of extinct sea creatures related to modern squids.
- **They originate from the Kali Gandaki River Valley of Mustang.**
- Shaligram stones are viewed primarily as manifestations of the Hindu god Vishnu.
- Damodar Kund is the glacial lake in Mustang that produces Shaligrams from high-altitude fossil beds.

Why are they worshipped?

- Shaligrams are kept in homes and in temples, where they are treated as both living gods and active community members.
- Because they are not human-made, but created by the landscape, they are believed to have an intrinsic consciousness of their own.

Mythology

- The mythology of Shaligrams is associated with two legends. The first is told in a series of three Hindu scriptures, the *Varaha, Padma and Brahmavaivarta Puranas.*
- The second legend is told in the Skanda Purana, which explains that Shaligrams are physically created by a type of celestial worm called the vajra-kita.

Impact of Climate Change on Shaligrams

- Climate change, faster glacial melting, and gravel mining in the Kali Gandaki are changing the course of the river, which means fewer Shaligrams are appearing each year.
- The Kali Gandaki is fed by *meltwater from the Southern Tibetan Plateau.* But with the glacier disappearing, the river is becoming smaller and shifting away from the fossil beds that contain the ammonites needed to become Shaligrams.

Carbon Capture and Storage

Context

- The UK government reaffirms its support projects for capture and storage as part of its efforts to reach net zero goals.

WHAT IS CCS?

- Carbon Capture and Storage systems are designed to capture emissions from heavy-emitting sectors, such as oil and gas refining and steel manufacturing, and store them underground.

There are two main types of carbon capture and storage.

- **Point-source carbon capture and storage (CCS):** It captures CO2 produced at the source, such as a smokestack.
- **Direct air capture (DAC):** It removes carbon dioxide (CO2) that has already been released into the atmosphere.
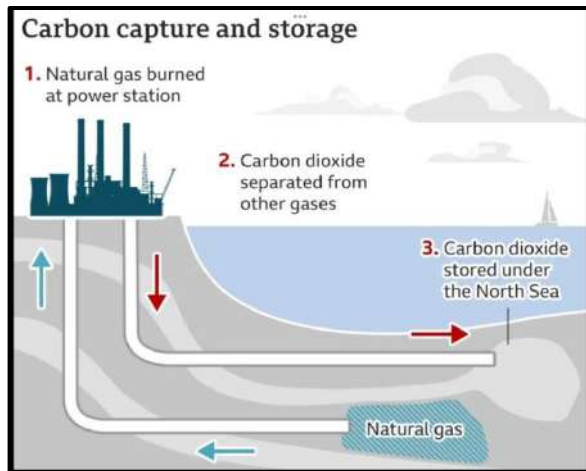
How does it work?

- **Capture:** CO2 has to be separated from other gasses produced in industrial processes or during power generation.
- **Compression and transportation:** Once captured it has to be compressed and transported to sites for storage often via pipelines.
- **Injection:** The CO2 is now injected into rock formations underground - typically 1 km (0.62 miles) or more under the ground for storage for decades.

Criticisms

- *Experience of failures:* Many projects however have failed to deliver the carbon savings promised. Ex. The world's largest commercial CCS project, Chevron Corp's (CVX.N) Gorgon project in Australia has struggled to hit capacity.

- *Questionable effectiveness:* The effectiveness of CCS to curb emissions as the technology is questionable as it enables fossil fuel companies to operate for longer.
- CCS's as a tool: Government can allow more oil and gas to be recovered from old fields **citing CCS's backing.**
- *High cost:* CCS's establishment involves high costs. Individual project costs vary from $20/tonne of CO2 to $150/tonne depending on the technology type and source of captured emissions.

Way Forward

- *Complementary efforts:* Initiatives such as reforestation, afforestation, and sustainable land management should complement CCS efforts to ensure natural carbon sequestration promotes biodiversity, and enhances ecosystem resilience.
- *Research and development:* There is a need for alternative and more advanced technology to ensure its effectiveness.
- *International Collaboration and Knowledge Sharing:* Countries around the must collaborate and share knowledge and expertise in CCS.
- International forums, research partnerships, and technology-sharing initiatives should be done to discuss the CCS technologies.
- *Government support:* National government must subsidize the manufacturers as well as small high-emitting industries to install these technologies as the cost of its adoption is too high.
- *Market-based mechanisms:* There is a need to align CCS's potential with Paris Agreement's market-based mechanisms like carbon trading through carbon credits.

> **Difference between CCS and Carbon Capture, Utilisation and Storage (CCUS)**
> CCUS instead of just storing the CO2 also reuses it in industrial processes such as plastics, concrete or biofuel manufacture.

Conclusion

- An inclusive climate strategy mandates both carbon capture technology adoption and proactive emission reduction to effectively address climate change. CCS can help the world to reach global climate targets set under the *2015 Paris Agreement on climate change and to achieve India's commitment to reduce the Emissions Intensity of its GDP by 45% by 2030.*

Hybrid EVs

Context

- In recent months, automakers have launched hybrid electric vehicles in India.

About Hybrid EVs

- A hybrid electric vehicle (HEV) uses an **Internal Combustion Engine(a petrol/diesel**

engine) and one or more electric motors to run.

- It is powered by the electric motor alone, which uses energy stored in batteries, by the ICE, or both.
- The powertrain of the HEV is more complex than a regular ICE-powered car as it has EV components and a conventional ICE.

Main breakthrough technologies in HEVs

Regenerative Braking

- Unlike an electric vehicle (EV), a hybrid electric vehicle **cannot be plugged in for the battery to charge.** Instead, the battery is charged with the help of regenerative braking and by the internal combustion engine.
- When we apply the brakes to slow down, this resistance slows down the wheel and simultaneously recharges the batteries.

Dual Power

- Power can come from the engine, motor, or both, depending on driving circumstances and whether the car is a full hybrid or mild hybrid.
- When starting, the driver turns the *ignition key or presses a button, activating the internal combustion engine*. The engine then runs in parallel with the electric motor.
- During acceleration, both power sources work together to provide optimal performance, and excess energy charges the battery.

Advantages of a Hybrid Car

- *Environmentally Friendly:* A hybrid vehicle runs on a twin-powered engine (gasoline engine and electric motor) that cuts fuel consumption and conserves energy.
- *Less Dependence on Fossil Fuels:* A Hybrid car requires less fuel to run, which means fewer emissions and less dependence on fossil fuels. This, in turn, also helps to reduce the price of gasoline in the domestic market.
- *Regenerative Braking System:* Each time you apply the brake while driving a hybrid vehicle, it helps you recharge your battery a little, which in turn eliminates the amount of time and need for stopping to recharge the battery periodically.
- *Automatic Start and Stop:* In hybrid cars, the engine is automatically shut off when the vehicle is idle and starts when the accelerator is pressed. This increases its efficiency.
- *Built From Light Materials:* Hybrid vehicles are made of lighter materials, meaning less energy is required to run them. The engine is also

smaller and lighter, which also saves a lot of energy.

Disadvantages

- *Less Power:* Hybrid cars have twin-powered engines. The combined power is often less than that of a gas-powered engine.
- *Expensive:* Hybrid cars are comparatively more expensive than regular petrol cars and can cost $5000 to $10000 more than a standard version.
- *Poorer Handling: I*ncorporating both a gasoline-powered engine and a lighter electric engine, hybrid cars require powerful battery packs, which increase weight and consume additional space within the vehicle.
- *Higher Maintenance Costs:* The presence of a dual engine and continuous technological improvements make it difficult for mechanics to repair the car, and the maintenance cost is also much higher.
- *Battery Recycling Is Very Expensive: A*lthough lithium is 100% recyclable, extracting it costs too much, and sometimes economic gain may not adequately justify the effort put into the recycling process.

Way ahead

- Government can devise strategies for transformative mobility for electric vehicles, electric vehicle Components and Batteries
- Creating a *Phased Manufacturing Program (PMP)* to localize production across the entire electric vehicle value chain.
- Coordination with key stakeholders in Ministries/ Departments/states to integrate various initiatives to transform mobility in India.
- Ensuring holistic and comprehensive growth of the battery manufacturing industry in India with initial focus on large-scale module and assembly plants on Gigascale manufacturing in future.
- Preparing roadmap for enabling India to leverage its size and scale to produce innovative, competitive multi-modal mobility solutions that can be deployed globally in diverse contexts

India's first Captive Breeding of the Himalayan Vulture

Context

- Himalayan vulture bred in captivity for the first time in India.

About the captive breeding programme

- The captive breeding was a joint project undertaken by the **Bombay Natural History Society (BNHS) and the Assam forest department.**
- It is the first instance of captive breeding of the Himalayan vulture (Gyps himalayensis) in India.
- It was the second instance, in the world where this species has been kept for breeding, while the **first was done in France.**
- **It was done at the Assam State Zoo, Guwahati.**

Other Species of Vulture found in India

- India is home to *9 species of Vulture* which are the Oriental white-backed, Long-billed, Slender-billed, Himalayan, Red-headed, Egyptian, Bearded, Cinereous and Eurasian Griffon.
- Only Bearded, Slender-billed, Long-billed, and Oriental white-backed are protected in the Schedule-1 of the Wildlife Protection Act 1972. Others are protected under 'Schedule IV' of the Act.

Threats of the Himalayan vultures

- Poisoning from diclofenac which is used as a drug/medicine for livestock.
- Destruction of Natural Habitats due to human activities such as deforestation, agricultural expansion etc.
- Lack of foods and Contamination of foods by Vultures.
- Electrocution by Power lines.

Initiatives taken by the government

- **'Vulture Captive Care facility:** Bombay Natural History Society in collaboration with the Haryana State Forest Department has taken up a project on conservation breeding

of vultures. A 'Vulture Captive Care facility' has been established at Panchkula.
- **Prohibition of Diclofenac:** The Ministry of Health has prohibited the manufacture of Diclofenac for animal use and restricted the packaging of multi-dose vials of Diclofenac to a single dose.
- **Establishment of vulture care centres:** The State Governments have been advised to set up vulture care centres for the conservation of three species of vultures.
- **National Action Plan (2006) on Vulture Conservation:** The Government of India has formulated a National Action Plan (2006) on Vulture Conservation. The Action Plan provides strategies for containing the decline of the vulture population through ex-situ, and in-situ vulture conservation.
- **Captive breeding:** Captive breeding centres at Zoos at Bhopal, Bhubaneswar, Junagarh and Hyderabad have also been **set up through Central Zoo Authority.**

Way ahead

- With more robust policies and enforcement of rules that are immediate, we can safeguard the remnant vulture populations in the country.
- With better practices, collective motive to chang**e human behaviour and the usage of safe drugs** for cattle treatment, we can save vultures from extinction.
- Understanding their habitat use, and even more importantly their behaviour while in certain habitats, like outside of protected areas, is thus critical for their conservation.
- It is vital to identify and remove threats near nesting and roosting sites, and to provide them with food and water.

Kuldiha Wildlife Sanctuary

Context

- The National Green Tribunal (NGT) has asked to consider the complaint of mining activities taking place in the eco-sensitive zone of Kuldiha Wildlife Sanctuary.

About The Kuldiha Wildlife Sanctuary

- **The Kuldiha Wildlife Sanctuary** is situated in the **Balasore district of Odisha, India.**
- The sanctuary is spread across 272.75 km in the **Chota Nagpur Plateau region.**
- It is linked with**Simlipal National Park** via the **Sukhupada and Nato hill ranges.**
- **Vegetation:** Moist deciduous forest
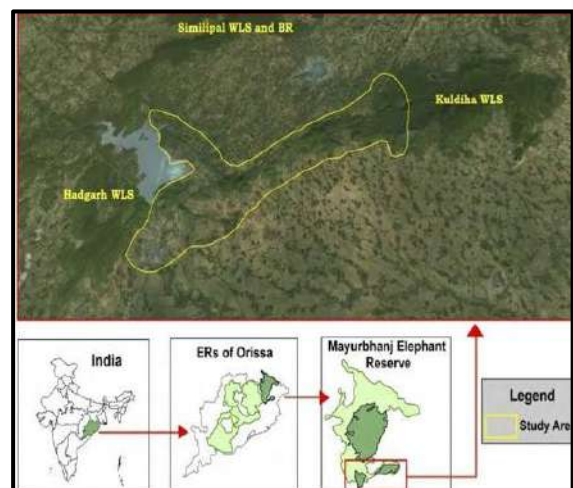
- **Establishment:** 4 January 1984.
- **Famous for:** the **Mayurbhanj Elephant Reserve** that spreads across Simlipal, Kuldiha and Hadagarh wildlife reserves.
- Locally in Kuldiha, the Mayurbhanj elephant reserve is known as the **Tenda Elephant Reserve.**

Illegal Trade of Red Sand Boa

Context
- 172 incidents of seizures of red sand boa recorded from 2016 to 2021: WCS-India report.

Findings
- **Legal trade prevalence states:** Covers 18 Indian states, 1 Union Territory, and 87 districts.
- **States with high incidents:** Maharashtra and UP record the highest incidents. Uttar Pradesh closely follows, where it happens near Nepal's border in districts like Bahraich, and Lakhimpur-Kheri.
- **Role of social media:** Social media, such as YouTube, aids illegal trade, with large no of sales-promoting videos.

About Sand boa
- **Scientific Name:** Eryx johnii
- It is a snake-like, **non-venomous species.**
- **Difference with snakes:** The tail is more or less as thick as the body which gives it a "double-headed" appearance.
- **The largest of the sand boa in the world**: Red Sand Boa Habit: Nocturnal
- **Distribution:** Whole of India excluding North-east states, North-Bengal and Indian islands.

Conservation Status:
- **IUCN Red List:** Near Threatened
- **CITES:** Appendix II.
- **Wildlife Protection Act of 1972:** Schedule IV.

Threats:
- Human settlements and developments.
- The pet trade and use in black magic.
- Poaching for medicinal benefits.

5.21   SNIPPETS

Iberian Wolf
- The Iberian wolf is extinct in Spain's Andalusia.
- The Iberian wolf is a subspecies of grey wolf.
- It inhabits the northwest of the Iberian Peninsula, which includes northwestern Spain and northern Portugal.
- Its scientific name is Canis lupus signatus.
- These form the largest wolf population in Western Europe.
- They are mainly carnivores.
- Its IUCN Conservation status is Vulnerable.
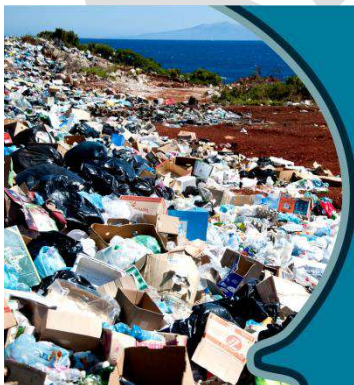
Plastic Overshoot Day
- India among the 12 countries responsible for 52% of the world's mismanaged plastic waste as per the Reports.
- Plastic Overshoot Day was first observed on July 28, 2023.
- The day is the point at which the amount of plastics exceeds the global waste management capacity.
- Plastic Overshoot Day is determined based on a country's Mismanaged Waste Index (MWI), which is the gap in waste management capacity and plastic consumption is called MWI.
- Three countries (followed by India) with the highest mismanaged waste — Mozambique (99.8 per cent), Nigeria (99.44 per cent) and Kenya (98.9 per cent) — belong to Africa, while India ranks fourth in the MWI.

Western Tragopan

- Western Tragopan (Tragopan-melanocephalus) has been facing habitat loss in parts of the country.
- It is Himachal Pradesh's State bird.
- Distribution: the northwest Himalayas from north Pakistan (Indus-Kohistan district) to India, including Kashmir and Himachal Pradesh, and the western parts of Uttarakhand.
- According to Himachal Pradesh Wildlife Wing's latest report, "Western Tragopan Biannual Report 2020-2022", the population of the bird, which was two in 2002, reached 45 individuals in 2022. Currently, it is 47.
- The International Union for Conservation of Nature (IUCN) Red Data list: Vulnerable' (VU).
- Its captive breeding is being done in Daranghati Wildlife Sanctuary.
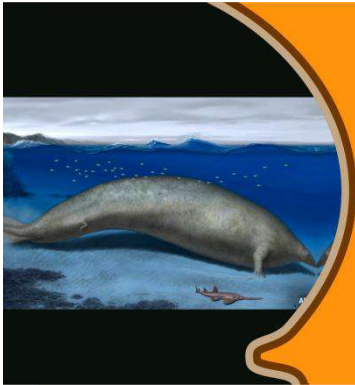
Perucetus colossus

- Perucetus colossus, whose fossils were discovered in Peru, may be the heaviest animal, heavier than the blue whale.
- It is an extinct whale dating to more than 38 million years ago.
- The combination of thickening and densification of bones called pachyosteosclerosis occurs in them making their bones unusually large and extremely dense.
- The characteristic of pachyosteosclerosis is absent in living whales, dolphins and porpoises. But it is present in sirenians, a marine mammal group that includes sea cows.
- P. colossus probably lived in shallow coastal areas.

Yellow-bellied Snake

- Yellow-bellied snake found in Bay of Bengal.
- It is a diurnal sea snake and primarily aquatic, living its entire life cycle at sea.
- They are carnivores (piscivores) and eat only fish.
- The side of the tail is like the paddle of a boat and the lower abdomen is yellow making it different from other reptile species.
- Due to the deadly poison of the snake the kidneys of the person will fail, then the heart and the color of the urine will be coffee brown.
- Scientific name: 'Pelamis platurus'.
- Conservation Status: IUCN Red List: Least Concern

Ban on ketoprofen and aceclofenac

- The Center has imposed a ban on two veterinary painkiller ketoprofen and aceclofenac drugs.
- ketoprofen and aceclofenac
- These are non-steroidal anti-inflammatory drugs (NSAIDs) which are frequently employed to relieve pain and inflammation in both humans and animals.
- When cattle or other livestock are treated with ketoprofen or aceclofenac, these drugs can be metabolized and converted into toxic compounds, such as diclofenac.
- Diclofenac is extremely harmful to vultures and can cause kidney failure and death when they consume the carcasses of treated animals.

Himalayan Vulture

- A joint captive breeding project undertaken by the Bombay Natural History Society (BNHS) and the Assam forest department carried out with the help of Assam State Zoo, was successful.
- The Himalayan vulture (Gyps himalayensis) or Himalayan griffon vulture is an Old World vulture native to the Himalayas and the adjoining Tibetan Plateau.
- The Himalayan vulture is a common winter migrant to the Indian plains
- It is one of the two largest Old World vultures and true raptors. It is listed as Near Threatened on the IUCN Red List.
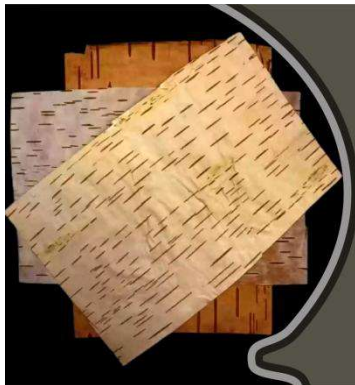
Bhojpatra

- Prime Minister highlights the importance of Bhojpatra calligraphy in helping them improve the economy of the Mana village in Uttarakhand.
- Bhojpatra, also called Himalayan Birch, is a deciduous tree found at a height of 3,000m or above.
- It has a white paper-like bark which was used in ancient times for writing Sanskrit scriptures and texts.
- Harshvanti Bisht, a Himalayan mountaineer, established the first high-altitude bhojpatra nursery established in 1993 at Chirbasa, just above Gangotri.
- Mana is a small village located in the Chamoli district of Uttarakhand was previously known as the Last Village of India but now known as the "First Indian Village". Bhojpatra calligraphy is practiced here.

Kaliveli Bird Sanctuary

- NGT withholds green nod granted for fishing harbors near Kaliveli bird sanctuary.
- Location: Nestled between the Bay of Bengal to the east and the Buckingham Canal to the west in Tamil Nadu.
- Declared as the 16th Bird Sanctuary in 2021.
- Geography: Mosaic of tidal mudflats, salt pans, and brackish water lakes and connection to the Bay of Bengal through the Uppu Kallu Creek.
- Fauna: Black-tailed Godwits, Eurasian Curlew, White Stork, Ruff, and Dublin.
- Significance: Second-largest brackish water lake in South India, only behind the Pulicat Lake and the resting place of migrant birds from Central Asia and Siberia.

Similipal Tiger Reserve (STR)

- The Odisha government has set up a joint task force (JTF) to protect the Similipal Tiger Reserve (STR).
- Simlipal is a tiger reserve in the Mayurbhanj district in the Indian state of Odisha.
- It is part of the Mayurbhanj Elephant Reserve, which includes three protected areas—Similipal Tiger Reserve, Hadagarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary.
- Simlipal National Park derives its name from the abundance of red silk cotton trees growing in the area.
- This protected area is part of the UNESCO World Network of Biosphere Reserves since 2009.
- Similipal is Asia's second largest biosphere and the country's only habitat in the wild that has the melanistic royal Bengal tigers.
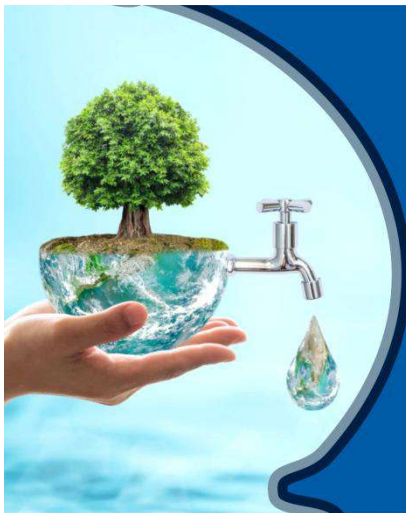
Water Neutrality

- NITI Aayog has released a Report on Water Neutrality for Indian Industry in association with Confederation of Indian Industries and CII-Triveni Water Institute for Standardization of the definition and approach.
- The term "water neutrality" was coined by Pancho Ndebele at the World Summit on Sustainable Development in Johannesburg in 2002.
- UNESCO-IHE 2008 Research Report defined water neutrality as a concept relating to reducing and offsetting the impacts of water footprints.
- This could be done by reducing water consumption and/or investing in projects that promote sustainable and equitable use of water.
- Compensation can be done by contributing to more sustainable and equitable use of water in the hydrological units.
- In case of any new development, total water use in the region after development must be equal to or less than the total water availability in the region.
- 'Water Neutral' may not only imply that freshwater use is reduced to zero, but rather that the negative economic, social, and environmental externalities are reduced to a large extent and that the remaining impacts are fully compensated.

Indian eagle-owl

- The Indian eagle-owl has recently been recognized as a distinct species, setting it apart from the Eurasian eagle-owl.
- It is one of the largest owl species found in India.
- Its nocturnal habits have contributed to limited knowledge about the species, making it a mysterious subject for researchers.
- They contribute to pest control in agricultural areas by preying on rodents, bandicoots, bats, and doves.
- Scientific name: Bubo bengalensis
- Habitat and Range: The Indian Eagle Owl is widely distributed across the Indian subcontinent, including India, Nepal, Pakistan, and Sri Lanka.
- Threats: habitat loss due to urbanization, agricultural expansion, and deforestation.
- Conservation Status: It is classified as a species of "Least Concern" by the IUCN

Seagrass Meadows

- Seagrass may play a pivotal role in the future of renewable energy.
- A seagrass meadow or seagrass bed is an underwater ecosystem formed by seagrasses which are saltwater plants found in shallow coastal waters and in the brackish waters of estuaries.
- Seagrasses are flowering plants with stems and long green, grass-like leaves.
- Seagrass can capture and store carbon dioxide at a rate up to 35 times faster than tropical rainforests.
- The energy stored in seagrass can be harnessed for use as biofuel.
- They provide a habitat for a diverse range of marine life, from tiny invertebrates to large fish and mammals.
- They also help to filter pollutants from the water and protect coastlines from erosion.

Takakia

- Takakia, a genus of moss that has survived for millions of years, is now threatened by climate change.
- Takakia is a rare genus of moss that adapted over millions of years to life at high altitudes.
- It falls in the family Takakiaceae within the division Bryophyta.
- Its features are a unique combination of features found in mosses, liverworts, and green algae.
- It only has two species and both of them are found together only in Tibetan Plateau.
- The most striking feature of Takakia is despite its rapidly evolving genome, its physical appearance has remained largely unchanged for over 165 million years, earning it the status of a "living fossil."

Kampala Declaration on Climate Change

- Context: 48 African countries agrees to adopt the Kampala Ministerial Declaration on Migration, Environment and Climate Change (KDMECC)
- Background: Originally signed by 15 African states in Kampala, Uganda in July 2022.
- First comprehensive Member States led action-oriented framework to address climate-induced mobility.
- Aim: to address the issue of climate change in Africa, which is one of the world's most vulnerable continents leading to migration due to more frequent and severe extreme weather events.
- Significance: Prititises all voices, including those of youth, women and persons in vulnerable situations.

Echidnas

- Echidnas sense electric fields and tolerate snow and have 'mating trains.
- Also known as spiny anteaters are monotremes (egg-laying mammals).
- Family: Tachyglossidae
- Features: Covered with fur, spines, a distinctive snout and a specialized tongue used to catch its insect prey (ant and termite).
- Distinctive feature: Platypus and the echidna are the only other living egg-laying mammal species.
- Habitat: Its ancestor was aquatic, but echidnas adapted to life on land.
- Geographical spread: Australia and New Guinea.

Kumbhalgarh Wildlife Sanctuary

- New Kumbhalgarh tiger reserve in Rajasthan to displace indigenous tribes.
- Location: On the fringes of the Aravalli mountain range in Rajasthan. Tribes: It is home to indigenous tribes like Bhil, Garasia and the nomadic Raika pastoralists.
- The bone of contention: No documented history of the tiger population in the Kumbhalgarh forest.
- Vegetation: Part of the Khathiar-Gir dry deciduous forests ecoregion.
- Fauna: Indian wolf, Indian leopard, sloth bear, striped hyena, golden jackal, jungle cat, sambhar, nilgai, chausingha, chinkara and Indian hare.
- Apex predator: Leopard.

Hollongapar Gibbon Sanctuary

- Primatologists have suggested rerouting a railway track passing through Hollongapar Gibbon Sanctuary dedicated to the western hoolock gibbon (Hoolock hoolock).
- Former name: Gibbon Wildlife Sanctuary or Hollongapar Reserved Forest but renamed in 1997.
- Main Fauna: the hoolock gibbons, India's only gibbons and the endangered Bengal slow loris, North-eastern India's only nocturnal primate.
- The smallest and fastest of all apes which inhabit tropical and subtropical forests in Southeast Asia.
- IUCN Red List: - a) Western Hoolock Gibbon: Endangered; b) Eastern Hoolock Gibbon: Vulnerable, Wildlife Protection Act of 1972:Schedule I

Rajaji National Park

- Rajaji is a paradise for wildlife lovers and nature seekers.
- Location: Lies between the Shivalik ranges and the Indo-Gangetic plains, in three districts of Uttarakhand: Haridwar, Dehradun and PauriGarhwal.
- Fauna: Broadleaved deciduous forests, riverine vegetation, scrubland, grasslands and pine forests.
- Rivers: The Ganga and Song rivers flow through the park.
- Fauna: Great Pied Hornbill, Himalayan Pied Kingfisher and the fire-tailed sunbird and has the largest population of elephants in Uttarakhand.
- This area is the first staging ground after the migratory birds cross over the Himalayas into the Indian subcontinent.
- Notified as a tiger reserve in 2015.
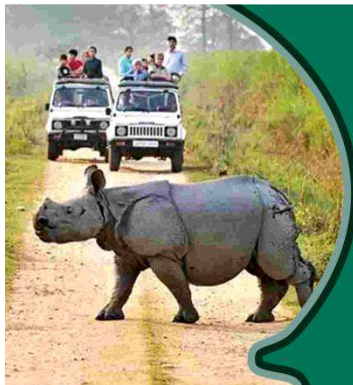
Kaziranga National Park

- Dr. Sonali Ghosh to be first woman field director of Kaziranga National Park.
- Home to more than 2200 Indian one-horned rhinoceros, which is approximately 2/3rd of their total world population.
- Single largest undisturbed and representative area in the Brahmaputra Valley floodplain.
- Location: On the edge of the Eastern Himalayan biodiversity hotspots – Golaghat and Nagaon district.
- Declared as a World Heritage Site by UNESCO In 1985.
- Declared as Tiger Reserve in 2006.
- Also recognized as an Important Bird Area by BirdLife International.
- Big four species: Rhino, Elephant, Royal Bengal tiger and Asiatic water buffalo.

KBR National Park

- Sewage seeps into Kasu Brahmanandha Reddy(KBR) National Park
- Location: Jubilee Hills and Banjara Hills in Hyderabad, Telangana, India.
- The Jubilee Hills are named after the Golden Jubilee of the formation of Andhra Pradesh state in 1956.
- Declared as a National park by the Andhra Pradesh state government in1998.
- The park consists of a palace complex,which belonged to Prince Mukarram Jah, a Nizam of Hyderabad.
- The Musi River is a tributary of the Krishna River and passes through it.
- Fauna: pangolin, small Indian civet, peacock, jungle cat and porcupines.
- Flora: Known for its rich variety of flowering plants, including trees, shrubs, climbers, herbs, grasses, and xerophytes. Ex. The Drosera flycatcher plant, aka sundew.
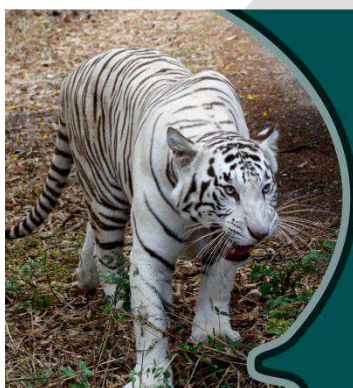
Bannerghatta National Park

- Forest guard shot at sandalwood thief in Bannerghatta national park.
- Location: Bangalore, Karnataka, in the Anekal range.
- Declared as a National Park in 1974, became a biological reserve in 2002, named the Bannerghatta Biological Park.
- First biological park in the country to have a fenced elephant sanctuary.
- India's first butterfly enclosure was inaugurated in 2000 at the park.
- River: Suvarnamukhi stream flows through the park.
- Vegetation: Dry Deciduous Scrub Forests, Southern Tropical Dry Deciduous Forests and Southern Tropical Moist Mixed Forests.
- Flora: Narcissus latifolia, Sandalwood, Schleichera oleosa, Neem, Tamarind, Bamboo, Eucalyptus etc.
- Fauna: Endangered Asian Elephant, Indian gaur, Tiger, Sambar deer, Spotted deer, Leopard, Wild dog, etc.

Q1. Discuss the legislative provision related to tree felling in India and ways the restore our forest in the light of the recent tree felling bans. (250 words)

Introduction
- Felling Of Mango and Five Other Tree Species was recently banned In Himachal.

List of banned trees from felling
- Mango, Triyambal (Ficus species), Toon (Toona ciliata), Padam or Pajja (Prunus cerasus), Ritha (Sapindus mukorossi) and Baan (Quercus leucotrichophora).

Legislative provisions
- **Indian Forest Act, of 1927** governs issues of tree felling and forest conservation in India.
- The Act broadly lays down that each state can make rules and regulations against tree felling.

Section 30 Of Indian Forest Act, 1927: The State Government may, by notification in the Official Gazette
a) declare any trees or class of trees in a protected forest to be reserved from a date fixed by, the notification;
b) declare that any portion of such forest specified in the notification shall be closed for such term, not exceeding thirty years, as the State Government thinks fit, and that the rights of private persons, if any, over such portion shall be suspended during such terms.

Section 33 of the Indian Forest Act, 1927
- For acts in contravention of notification under section 30

Any person who-
- **fells any tree** reserved under section 30, or strips off the bark or leaves from, or otherwise damages, any such tree;
- permits cattle to damage any such tree; **shall be punishable with imprisonment for a term which may extend to six months, or with a fine which may extend to five hundred rupees, or with both.**
- Penalty for cutting down a tree: Rs.10,000 or 3 months imprisonment, extendable up to one year by the state acts.

Way ahead
- Forest restoration such as **Compensatory Afforestation** should be aggressively applied.
- There is a need **to move away from monoculture plantation**s which are promoted by many organizations including forest development corporations in the States.
- Scientific techniques like **Miyawaki techniques** to bring back forests are needed.
- More than 300,000 sq km of area is categorized as open forests with a tree canopy of 10-40%. These lands must be used to revive forests.
- **Policies against open cast mining a**nd efforts to protect the forests in the Northeast should be made.

Conclusion
- This step by the Himachal government will not only safeguard indigenous species but also play a pivotal role in wildlife preservation.

....

Q2. Kampala Declaration relates to which of the following?
1. Climate change
2. Trade disputes
3. Base erosion and profit shifting
4. Border dispute resolution between India and Pakistan

Q3. Bannerghatta national park recently seen in the news is located in which of the following states?
A. Karnataka
B. Tamil Nadu
C. Kerala
D. Andhra Pradesh

Q4. Consider the following statements Kasu Brahmanandha Reddy (KBR) National park
1. It is located in Jubilee Hills and Banjara Hills in Hyderabad, Telangana, India.
2. The Musi River is a tributary of the Godavari River that passes through it.

3. Pangolins, small Indian civets, peacocks, jungle cat and porcupines are the main fauna here.

How many of the above statements is/are correct?

A. Only One
B. Only two
C. Only Three
D. None

Q5. Consider the following statements about Hoolock Gibbons:

1. They are the second smallest and fastest among apes which inhabit tropical and subtropical forests in Southeast Asia.
2. Both Western Hoolock Gibbon and Eastern Hoolock Gibbons are Endangered under IUCN red list.
3. They are protected under Schedule I of Wildlife Protection Act of 1972.

How many of the above statements is/are correct?

A. Only one
B. Only two
C. Only three
D. None

Q6. Consider the following statements about Echidnas:

1. It is the **only other living egg-laying mammal species**.
2. They are adapted to life on land.
3. They are found only in Australia.

How many of the above statements is/are correct?

A. Only one
B. Only two
C. All three
D. None

ANSWERS: 2) 1, 3) A, 4) C, 5) B, 6) A

6. SOCIAL ISSUES

6.1   WOMEN'S LABOR FORCE PARTICIPATION

Context
- In June, the Madras High Court held that home-makers are entitled to an equal share in household properties purchased by the husband.

Details
Women in Workforce in India:
- **The participation of women in the workforce in India has remained low.**
  - In 2019, 21% of women were either working or looking for work, compared to 32% in 2005.
- **India's female labour force participation (FLFP) rate is the lowest among the BRICS countries and is also lower than some of its neighbours in South Asia such as Sri Lanka and Bangladesh**.
  - Increasing FLFP in India is crucial not just to achieve economic growth but also to promote inclusive growth and achieve Sustainable Development Goals.
- India's population is among the youngest in the world. In 2020, the median age in India was about 29. Women and girls form a significant part of India's demographic dividend.
  - However, their inability to stay employed or, at times, takes up employment due to economic and social factors at both the household and macro level has been a challenge for the labour market and economy.
- More women in rural areas in the labour force Compared to Urban areas.
- **Gender wage gaps remain in every employment.**
- The migration of women for employment has increased in recent years.
- According to United Nations Women estimates, women make up a significant proportion of all healthcare workers and more than 80% of nurses and midwives.
  - **Women also form a significant proportion of the workforce in the education sector in India, especially in primary education and early childhood care.**
- The care service sector, which includes health, education, and other personal care services, is more labour-intensive than sectors such as manufacturing, construction or other service sectors where the employment potential gets affected due to factors such as the introduction of tools, technology and increased mechanization.

Challenges faced by Women Workforce in India:
- More women in the rural area in the labour force Compared to Urban areas.
- Gender wage gaps remain in every employment.
- **The double burden on women**: Balancing employment and domestic responsibilities (including household chores and caregiving).
- Safety concerns, Sexual harassment at workplace.
- Migration, Unfair Sex ratio, and Environmental degradation have added to women's vulnerability.
- **India is a male-dominated Society** in which the Economic, Political, Religious, Social and Cultural institutions are largely controlled by men.
  - Control over women's livelihood Choices and Sexuality has existed and evolved over Centuries through various discriminatory Social Practices and Institutions.
- **Despite laws, gender-based discrimination against women Continues in Indian Society**. Clearly shows the laws and gaps in their implementation.
- The structure of judicial remedies is still insufficient to serve the needs of women, Particularly Poor and marginalized women, in accessing justice.

- Development Programmes introduced to bring gender equality have produced mixed results.

- **Legislative Changes have faced resistance in their implementation due to Social, Cultural and religious customs.**

- There is no comprehensive policy support and there is a lack of effective implementation.

- There is a lack of match between the aspirations of more educated women and the quality and availability of jobs. Further, there is a lack of salaried opportunities available for women with moderate levels of education.

- Insufficient formal wages and poor job opportunities are other reasons for the decline.

- While social norms and family commitments are important issues, factors such as terms of employment, working conditions, mobility limitations, and hiring practices also make things difficult.

Measures taken by the government:

- To promote women's empowerment and safety to increase their participation in the workforce, **the Government has approved a new and comprehensive Umbrella Scheme for the safety, security and empowerment of women under the name 'Mission Shakti'.**

- The Mission Shakti includes the components such as;
  - National, State and District level Hubs for Empowerment of Women.
  - Women Hiplines, One Stop Centres.
  - Beti Bachao Beti Padhao, Sakhi Niwas (Working Women's Hostels).
  - Palna (crèches for children of working women) etc.

- The schemes of One Stop Centres and Universalization of Women Helpline are implemented by the Ministry of Women and Child Development to support women facing violence or distress of any kind which may adversely affect their participation in the workforce.

- **Working Women Hostels** for ensuring safe accommodation for women working away from their place of residence.

- **National Crèche Scheme** to provide daycares facilities to children of the age group of 6 months to 6 years of working women who are employed.

- The Government, with the aim to provide a safe and secure work environment to women at their workplace and to increase their participation in the workforce, has also enacted **'the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013' (SH Act).**

Suggestions to increase Women's Workforce

Need to Integrate Policy of Work, Livelihoods, Earnings and Poverty, Re-think and Integrate Macroeconomic Policy with Social Policy

Convergence with programs for adult education, literacy, advanced skill training and higher education.

Using tax policies to incentivize women into the labour market on both the demand and supply side.

Communication and Behavioural Change.

Support Services for Entry and Continuation: eg- child care facilities, migration facilities, forums for informal and formal mentorship and connections.

Infrastructure and norms play a crucial role in impeding women's sentry and sustenance in the workforce. The gender-sensitive infrastructure included full-time creches for children, affordable and safe working women's hostels, and basic public provisions such as piped water, hygienic washrooms at public places and safe public transport for enabling women to access decent and dignified livelihood opportunities.

6.2   MOB LYNCHING

Context

- The Supreme Court on Friday issued notices to the Centre and police chiefs of six states on a public interest litigation (PIL) alleging rising incidents of cow vigilantism and mob lynching against Muslims.

- *Mob lynching is a form of collective violence in which a group of people attacks and kills a person or a group of people, often based on their identity, beliefs, or actions. It is not a new phenomenon in India, but it has become more frequent and visible in recent years, especially with the rise of social media and fake news.*

- Mob lynching has become a serious problem in India, where it has claimed hundreds of lives in recent years. The victims of mob lynching are mostly from marginalized communities, such as religious minorities, Dalits, Adivasis and women.

Details

Reasons for Mob lynching in India:

Caste discrimination

- Caste is a system of social hierarchy that divides people into different groups based on their birth, occupation, and status. **Caste discrimination** is still prevalent in many parts of India, despite being outlawed by the constitution.

- **Some cases of mob lynching** are driven by caste prejudice or resentment, often targeting lower-caste people or those who challenge the caste order.

- The victims are often accused of violating caste norms, such as inter-caste marriage, land disputes, or social mobility.

Communal hatred and religious intolerance

- Many cases of mob lynching are **motivated by communal hatred and religious intolerance**, often fueled by rumours, fake news, or hate speech.

- For example, in 2015, a man was lynched by a mob in Dadri, Uttar Pradesh, over allegations of cow slaughter and beef consumption.

- In 2017, a teenager was stabbed to death by a mob on a train in Haryana, after being accused of being a "beef-eater". In 2018, two men were lynched by a mob in Assam, over suspicion of being cow thieves.

Lack of effective law and order

- One of the main reasons for mob lynching is the **lack of effective law and order** in many parts of India. Many times, the police fail to prevent or stop mob violence, either due to negligence, complicity, or fear. Sometimes, the police arrest the victims instead of the perpetrators.

- **The judicial system is slow in delivering justice** to the victims and punishing the culprits. As a result, the mobs feel emboldened to take the law into their own hands and act with impunity.

- The police and the judiciary are often unable or unwilling to prevent or punish mob violence, either due to **corruption, incompetence, or political pressure.**

Impacts of Mob lynching

- **Mob lynching violates the human rights and dignity** of the victims and their families, who often do not get justice or compensation for their losses.

- **It creates a climate of fear and insecurity** among the vulnerable groups, who face constant threats and harassment from the mobs.

- **It undermines the rule of law and democracy**, as the mobs take the law into their own hands and challenge the authority of the state and its institutions.

- **It erodes the social fabric and harmony**, as it fuels communal hatred and violence, and widens the gaps between different groups.

- **It hampers economic development and progress**, as it disrupts the normal functioning of society and affects the livelihoods and opportunities of many people.

Anti-lynching laws

- Some states, such as Rajasthan, Manipur, West Bengal, and Madhya Pradesh, have enacted or proposed anti-lynching laws that define mob lynching as a specific offence and prescribe harsh penalties for it.
- These laws also provide for compensation and rehabilitation of the victims and their families, as well as accountability of the police and public officials for any negligence or failure in preventing or controlling mob lynching.

Educational institutions

- Some educational institutions, such as the National Law School of India University (NLSIU), have introduced courses and workshops on mob lynching and human rights for their students and faculty.
- These courses aim to sensitize the participants about the causes, consequences, and legal aspects of mob lynching, and to equip them with the skills and knowledge to combat it.

6.3   RISING PSYCHIATRIC CASES IN CAPFS

Context

- The Ministry of Home Affairs informed the Rajya Sabha that the total number of psychiatric patients in the Central Armed Police Forces (CAPFs) has increase an almost 38 per cent spike in reported psychiatric cases.

Details

- According to Rai, 3,864 cases were reported in CAPFs in 2021. "There were a total of 1,470 psychiatric patients in CRPF in 2020, 1,506 in 2021 and 1,882 in 2022.
- In BSF, there were 1,073 patients in 2020, 1,159 in 2021 and 1,327 in 2022, while Assam Rifles had 351 patients in 2020, 509 in 2021 and 530 in 2022.
- In CISF, there were 289 patients in 2020, 244 in 2021 and 472 in 2022.

Causes of Mental health issues in uniformed forces

Service-related issues

- In areas like Kashmir and Bastar, operations are mainly counter-insurgency, with a large amount of the collateral being locals.
- The CAPF in specific, is perpetually posted in hostile areas, without any alternating between peace and hostile postings.

- In a situation where these troops are posted for months in such areas, with little ambit for leave and little to no contact from home, the possibility of increased mental health issues is high.

Domestic issues

- The Union Home and Defence Ministry similarly state that family issues, domestic problems and marital discord are some of the leading causes of suicide.
- It is interesting to note that most issues of service related stress are deflected by the forces into the domestic sphere, for which the institutional structure at large is not responsible.

Institutional issues

- **The Central Sector Scheme 'National Means-cum-Merit Scholarship Scheme'** was launched in **2008**, after A communication gap between officers and their soldiers is emerging, and a lack of sensitivity on the officer level, especially towards the needs of soldiers as both individuals and as a collective group, is being realised.
- This lack of sensitivity discourages soldiers from sharing their issues and grievances with senior officers.

Measures taken by the Indian state to address this issue

- The Ministry of Defence has stated that the Armed Forces have taken various steps to create what they term a "healthy/appropriate environment".

- **These include the formation of Military Psychiatry Treatment Centres** at INHS5 Ashwini, Mumbai as well as the establishment of Mental Health Centres in Mumbai, Visakhapatnam, Kochi, Port Blair, Goa and Karwar.

- **The army has begun to conduct activities** like yoga and meditation routinely. The Army and Airforce have also established a MansikSahayata (Mental Health) Helpline for professional counselling.

- **Mental health awareness** is being created across the forces during pre-induction meetings as well.

- The government has also begun to provide better and greater facilities for personnel, both in conflict zones and peace zones.

- **There has been an improvement in the quality** of ration or food supplies provided, and uniforms.

- Subsequently, it has begun to build more housing projects so that more personnel can live with their families and construct more defence aided schools, where their children can receive a quality education at lower costs.

- **These include transparent transfer policies**, and an improved promotion and financial benefit system as well as better leave policies.

- **Regular interaction with senior officers to find and address grievances**, adequate rest and relief, especially in the regulation of duty hours, improvement of living conditions by providing recreation, entertainment, sports and communication facilities; and better rehabilitation of retired CAPF personnel are some of the other means that are being used.

Way forward

- The forces also need to sensitise and modernise themselves alongside the developments within the larger society. Gender dysphoria and homosexuality are still looked at as mental disorders.

- **In 2017, a sailor was discharged from the Indian Navy** after having undergone gender re-assignment. When the Navy became aware of her surgery, they had her transferred to the psychiatric ward for six months.

- **Despite homosexuality being decriminalised by the Supreme Court in 2018**, the Chief of the Indian Army, General Bipin Rawat was quoted saying that "hum logon ke yahan nahi chalega" (this will not work in our organisation) in the context of inclusion of the LGBTQ+ community within the forces at a policy event in early 2019. For him, homosexuality was "unacceptable.

- **The stigma that mental health is associated** with, needs to be removed and all personnel need to be made comfortable with identifying and addressing issues of mental health.

- **The forces also need to recruit more Mental health** specialists and depute them to high-stress areas so that they are readily available to the troops. Research into preventing and better addressing stress and mental health issues also need to be encouraged and prioritised.

Conclusion

- The risk of development of stress and other mental health issues remains consistently higher with the Indian Armed Forces and Central Armed Police Forces, the cases of suicide and fratricide signal to the ongoing war within the minds of the troops.

- It is in this space that it becomes imperative to wake up to the idea of mental health and to prioritise it like physical health.

- Further, the stigmatisation of mental health needs to be discouraged, and a larger conversation needs to start both within the armed forces and the Indian society at large.

6.4 URBANISATION AND ASSOCIATED ISSUES

Context

- Urbanisation is the process of transformation that occurs as a society evolves from predominantly rural to predominantly urban areas.
- **Urbanisation is the process of transformation that occurs as a society evolves from predominantly rural to predominantly urban areas.**
- Furthermore, urbanisation is not just about the physical expansion of cities but also encompasses social, economic, and cultural transformations.
- It involves the migration of individuals from rural to urban areas in pursuit of employment opportunities, improved living standards, access to better education and healthcare facilities, and a more cosmopolitan lifestyle.
- *Urban refers to areas characterised by **high population density**, **advanced infrastructure, and diverse, typically non-agricultural economic activities.** These areas typically have **a concentration of buildings, housing complexes, commercial establishments, and social amenities.** Urban areas are distinct from rural areas, which are characterised by lower population density, agricultural activities, and limited infrastructure.*

Details

The Indian Census identifies two categories of 'urban' areas:

1. **Statutory towns** — those which have urban local bodies like municipal corporation, municipality or municipal committee.
2. **Census towns** — All those places satisfying the following 3 criteria:
   a) Population of atleast 5000 persons.
   b) Minimum population density of 400 persons per sq. km. and
   c) 75 per cent of the male workforce is employed in the non-agricultural activities.

The urban system is characterised by several important features that distinguish it from rural areas, as follows:

Population Density

- Urban areas are characterised by high population density, with a large number of people residing in relatively small geographical areas.
- This density leads to the concentration of social, economic, and cultural activities, promoting interaction and exchange.

Diverse Economic Activities

- Urban systems are centers of economic growth and diversification. They offer a wide range of employment opportunities across various sectors such as manufacturing, services, finance, technology, and creative industries.
- The presence of diverse economic activities attracts people seeking better job prospects.

Infrastructure and Services

- Urban areas typically have better-developed infrastructure compared to rural areas. This includes transportation networks, communication systems, water supply, sanitation, electricity, healthcare facilities, educational institutions, and recreational amenities.
- These amenities are crucial in attracting and sustaining urban populations.

Social Heterogeneity

- Urban areas are characterised by social diversity and cultural heterogeneity. They serve as melting pots of different ethnicities, languages, religions, and lifestyles.
- This diversity fosters social interaction, multiculturalism, and the exchange of ideas, leading to vibrant urban communities.

Urban Planning and Governance:

- Effective urban planning and governance are essential for the functioning and development of urban systems.
- Urban planning involves the systematic allocation of land for various purposes, ensuring the provision of infrastructure and

public services, and addressing issues like housing, transportation, and environmental sustainability.

- Regarding the process of urbanisation, aspirants must know that is a vast topic. They just need to be clear with the concepts. So, urbanisation is a dynamic and complex process that involves the shift of population and economic activities from rural to urban areas.

It can be summarized in the following stages

Migration:

- People migrate from rural areas to urban centers in search of employment opportunities and improved living conditions.
- This rural-urban migration is influenced by factors such as industrialisation, globalisation, agricultural changes, and demographic trends.

Urban Growth:

- As migration continues, urban areas experience population growth, resulting in the expansion of cities and towns.
- This growth can occur through natural increase (births exceeding deaths) and net migration (in-migration exceeding out-migration).

Infrastructure Development:

- Urbanisation necessitates the development of infrastructure and services to cater to the growing population.
- This includes the construction of roads, transportation systems, housing, schools, hospitals, and utilities like water supply and sanitation.

Economic Transformation:

- Urbanisation drives economic transformation by attracting investments, fostering entrepreneurship, and facilitating the growth of industries and services.
- Urban areas become hubs of economic activity, generating employment opportunities and driving economic development.

Social and Cultural Changes:

- Urbanisation brings about social and cultural changes as people from diverse backgrounds come together.
- This includes changes in lifestyles, social norms, family structures, and the adoption of new cultural practices and identities.

Closing thoughts

- Indeed, it is accurate to assert that the process of urbanisation in the modern world can be traced back to the Industrial Revolution and the broader phenomenon of modernisation.
- The Industrial Revolution, which originated in Europe during the 18th century, brought about significant technological advancements, transforming societies from agrarian-based economies to industrialised ones.
- This shift resulted in the growth of factories, the rise of manufacturing industries, and the concentration of economic activities in urban areas.

6.5   MANUAL SCAVENGING

Context

- The sinister practice of manual scavenging continues to haunt India even almost 76 years after gaining independence.
- *Manual scavenging is a term used mainly in India for manually cleaning, carrying, disposing of, or otherwise handling, human excreta in an insanitary latrine or in an open drain or sewer or in a septic tank or a pit.*

Details

Constitutional provisions against manual scavenging in India:

- Human dignity is an inalienable right which forms a part of the fundamental right to life **(Article 21– Maneka Gandhi vs. Union of India) as per the Constitution of India.**
- 'Dignity' has been construed to include equal treatment and protection of the law, and equal respect. It is a unanimously accepted right, validated by **Articles 1, 22, and 23 of the Universal Declaration of Human Rights**.

- The following is a list of provisions under the Indian Constitution which is supposed to cater to the rights of equality, respect, and dignity before the law.
  - o **Article 14** is about equality before the law which should not be denied to any individual in India.
  - o **Article 15** provides that no discrimination is permitted based on the place of birth of a person, race, religion, caste, and sex. Manual scavengers, however, face discrimination because of their caste all their lives.
  - o **Article 16** of the Indian Constitution, in matters of public employment guarantees equal opportunity to all its citizens.
  - o **Article 17** has provision for the abolition of untouchability, it is guaranteed under this constitutional provision to all.
  - o **Article 19(1)(g)** gives every citizen the right to practice any profession or to carry on any occupation, trade or business of their choosing.
  - o **Article 21** guarantees the protection of life and personal liberty to all the citizens living in India.
  - o Apart from these, some other rights which safeguard the manual scavengers as SC or ST, under the Indian Constitution are **Article 46 and Article 338.**

Laws pertaining to Manual Scavenging in India

Protection of Civil Rights Act, 1955 (Revised)

- Protection of Civil Rights Act, 1955 (Revised) which was applicable in 1977 abolished untouchability and made it a cognizable and non-compoundable offence. To convert poor urban household dry latrines into flush latrines, integrated low-cost sanitation schemes were authorized.

Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993

- This Act banned the employment of manual scavengers and made it a cognizable offense, making it the responsibility of the State, citizens and the organisations to maintain sanitary toilets.

Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013

- India banned the practice under the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 (PEMSR).
- The Act bans the use of any individual for manually cleaning, carrying, disposing of or otherwise handling in any manner, human excreta till its disposal.
- In 2013, the definition of manual scavengers was also broadened to include people employed to clean septic tanks, ditches, or railway tracks.
- The Act recognizes manual scavenging as a "dehumanizing practice," and cites a need to "correct the historical injustice and indignity suffered by the manual scavengers."

Recommendations

Education

- Education plays a very important role here, Dr Bheem Rao Ambedkar has said- *Cultivation of mind should be the ultimate aim of existence.*
- In India, children of poor workers are not much educated. As they don't have sufficient funds for the education, they are forced to drop school/college and join the same line of employment.
- As a proposal, the government should give grants to every child a sum of money for passing every final semester exam (in government schools). This will motivate students to study more and also they will gather some amount which will be helpful for them.

Social awareness

- Nagar Palika, NGOs, Health Officers, and Social Communities should create awareness among the manual scavenger community regarding health issues, hygiene practices, and sanitization processes.
- Small workshops, events etc should be organised to thank this community and celebrate their honor of respect.

- Moreover, the general public should be aware of legal implications regarding employment of manual scavenging. Once, anybody is arrested for employing any manual scavenger, an example will be set for the rest of the society. On the other hand sanitization workers should be also aware of their rights and laws to protect them from being exploited.

Rehabilitation and rejuvenate of Manual Scavengers

- It is very necessary to shift these workers to other jobs. More employment should be created and this community should be prioritised. When this community will be shifted towards other opportunities it will not only help to earn money but also to raise living standards.
- This employment not only affects the health of the workers but also destroys the life of their families. By providing them different opportunities to earn, it will also raise the living standards of their families.

Closing thoughts

- *I like the religion that teaches liberty, equality and fraternity, this beautiful line is said by Dr. Bheem Rao Ambedkar.*
- The man who not only inspired to abolish discriminatiion but also known as The Father of Indian Constitution. His only dream was to give freedom to every citizen of India. But the question is whether all the citizens are free in this country?
- **He quotes that:** Freedom of mind is the real freedom. A person whose mind is not free though he may not be in chains, is a slave, not a free man. One whose mind is not free, though he may not be in prison, is a prisoner and not a free man.

6.6 CASTEISM

Context

- A new book by researcher and member of the Gomantak Maratha Samaj that traces its roots to Bahujan women who served at temples and had Brahmin men as patrons, reflects on the earliest liberators of caste and sexual oppression.
- *Caste, as defined by the council, is a "rigid social stratification characterized by hereditary status, endogamy, and social barriers sanctioned by custom, law, or religion."*
- *According to the council, caste-based discrimination exists in Seattle, and the new law would prohibit "such caste-based discrimination against persons."*

Details
Caste System in India

- **Caste is an institution uniquely** associated with the Indian Subcontinent. While Social arrangements Producing Similar effects have existed in other parts of the world, the exact form has not been found elsewhere.
- Although the caste system is an institution **Characteristic of Hindu Society**, Caste has spread to the major non-Hindu Communities of the Indian Sub-Continent.

- **Varna-based division of the Society** into brahmana, Kshatriya, vaishya and Shudra, though this excludes a Section of the Population Composed of 'Outcastes', foreigners, Slaves, Conquered Peoples and others.
- **In its earliest Phase**, the Caste System was not very elaborate or very rigid, and they were not determined by birth. Movement across the Categories seems to have been Common. It is only in the Post-Vedic Period that Caste became a rigid institution.

Characteristics of Caste

- **Caste is determined by birth**, Caste is never a matter of Choice. One Can Never Change one's Caste, leave it, or choose not to join it.
- **Membership in a Caste involves strict rules about marriage**. Caste groups are "endogamous", i.e. marriage is restricted to members of the group.
- **Caste membership** also involves rules about food and food-Sharing. What kinds of food may or may not be eaten is prescribed.

- **Castes are arranged** in a hierarchy of rank and Status.
- **Castes also involve Subdivisions** within themselves, Castes almost always have Sub-Castes and Sometimes Sub-Castes may also have Sub Sub-Castes.
- **Castes were traditionally linked to occupations**. A Person born into a Caste Could only Practice the occupation associated with that Caste.

Caste System at present

- **Development of the Country and the growth of Private industry also affected Caste indirectly through Interdependence**. The modern industry created all kinds of new jobs without considering Caste rules.
- **Urbanization and Conditions of Collective living in the Cities made it difficult for the Caste-Segregated Patterns of Social interaction**.
- Modern educated Indians are attracted to the liberal.
- **Prejudice against the untouchables remained quite Strong and not absent from the City,** though not as extreme as it could be in the village.
- Endogamy, or the Practice of marrying within the Caste, remained largely unaffected by modernization and Change. Even today, most marriages take place within Caste boundaries, although there are more inter caste marriages.
- **Democratic Politics has been deeply affected by Caste. Caste remains Central to electoral Politics**.
- Since the 1980s we have seen the emergence of Caste-based Political Parties. During the initial stage, Caste Support was decisive in winning elections. But the situation got very complicated as Parties Competed with each other for Caste Support.
- Land reforms and Fragmentation of land took away Economic rights from the upper Castes which affected their social status.
- Landowners depended on the lower Castes for tilling and tending the land.
- **Constitutional values and rights promoted equal opportunities for all, and also affirmative actions were taken to ensure the development of marginalized sections.**

6.7   COMMUNALISM AND COMMUNAL VIOLENCE

Context

- Violence that erupted Monday in Nuh in Haryana's Mewat region during a procession led by the Bajrang Dal and Vishwa Hindu Parishad.

About Communalism and Communal violence

- It is the **result of an attitude that Sees one's group as the only legitimate group, with other groups being seen as inferior, illegitimate and opposed.**
- It is generally related to religion, but **there is no relationship between faith/religion and Communalism**.
  - A Communalist may or may not be a religious person, and Religious believers may or may not be Communalists.
  - The key factor is the attitude towards those who believe in other kinds of identities, including other religion-based identities.
- **One of the features of Communalism is its Claim that religious identity overrides everything else**. Whether one is poor or rich, whatever one's occupation, Caste or Political beliefs, it is religion alone that Counts. All Hindus are the same as are all Muslims, Sikhs and So on.
  - This rules out the Possibility that Hindus, Muslims and Christians who belong to Kerala, for example, may have as much or more in common with each other than with their Co-religionists from Kashmir, Gujarat or Nagaland.
  - **Landless agricultural labourers may have a lot in common even if they belong to different religions and regions.**
- **The core Ideology is that people who follow the same religion have Common Interests**e.

they have the Same Political, Economic and Social interests.

- o In a multi-religious society like India, these Common interests of one religion are dissimilar and divergent from the Interests of the follower of another religion.
- Communalism is an ideology on which Communal Politics is based.
  - o **Communal violence is the result of Communal ideology.**

Concerns associated with it

- **Every religious community has faced this violence** to a greater or lesser degree, although the Proportionate impact is far more traumatic for minority Communities.
- **Many from the younger generation lack the Right Information/Knowledge, and fake messages, Insensitive or irresponsible News channel debates and social media posts influence their thinking and divert them in the wrong direction.**
  - o Unemployment and Poverty also play an important role in promoting the maniac of Communalism.
- **Social media has become infamous for the Spread of Communal hatred**. It provides an almost instant transfer of Provoking material.
- **Real Sufferers are the Poor,** they lose their house, their near and dear ones, their lives, their livelihood, etc.
  - o Sometimes Children will lose their Parents.
- Threat to the Indian Constitutional values, which Promotes Secularism and religious tolerance.
- **Threat to the unity and integrity of the Nation.**
- It promotes only the feeling of hatred, dividing Society into Communal lines.
- It is a barrier to socio-economic development.
- It is against the rule of law, against human rights.
- **Covered by International Media, giving India a bad image and can hurt tourism and also a foreign investment.**

- It takes many years for the People and the affected regions to come out of the traumas of Such violence, having a deep impact on their mental and psychological health.
  - o Whole life, they **live in fear and feel emotionally broken and insecure.**

Steps need to be taken

- **Disputes and conflicts are common in a diverse society**, as every group has different interests and sometimes their interest goes against the interest of other groups. No matter how much Government and people try to avoid this situation, we have to face it because it is bound to happen.
  - o Therefore we must **focus on building a mechanism through which we could solve it peacefully and democratically** so that every person in the society feels safe and secure under the prevailing social structure.
- A group or committee with the representative of every diverse group will ensure that the grievances of the people would be **addressed through a democratic process of debate and discussion.**
- **Organising Cultural programs and celebrating festivals together** would help people to understand the culture of different groups and this would promote respect for other's cultures and also develop tolerance among different groups.
- **Education is the best tool to deal with this issue**, as today's children are future citizens, so we should introduce the learning of Kindness, compassion, empathy, teamwork, unity, diversity, culture, etc at the school and college level.
  - o Only an **Inclusive and liberal education system** would ensure the value of tolerance and democracy in our society.
- Focus needed on social/attitudinal change.
- **Strengthening administration and governance to ensure public confidence in state institutions.**
- Holding Social media platforms accountable.
- **Identify districts, sub-divisions and villages** where instances of Communal hate

speech/violence have been reported in the recent past.

- **Broadcast on radio, television and other media platforms** about the serious consequences of Communal hate speech/violence.

Closing arguments

- We need to remember that we also have a long tradition of religious Pluralism and Peaceful Co-existence in the past. This is prominent in the devotional Songs and Poetry of the Bhakti and Sufi movements.
- Intolerant citizens violating the freedoms of fellow citizens have no right to be 'Indians' as it goes against the Core values and ethos of India, Core Indian values and ethos have no place for intolerance due to which all the major religions of the world are flourishing in India.

6.8 WOMEN'S SAFETY

Context

- The case triggered nationwide protests and led the Karnataka government to introduce policies focusing on women's security.

Details

- On December 13, 2005, a woman BPO employee of a multinational IT firm left her Bengaluru residence for a late-night shift at work.
- Not only did she not reach her office, but in the next few hours the 28-year-old was raped and her life snuffed out by the very person in whom she had placed her trust – Shiva Kumar, a cab driver hired by her office.
- The incident led to widespread outrage and became an eye-opener when it came to the safety of women who worked night shifts in IT and other firms. Well before the Nirbhaya case in the National Capital, this 2005 rape-murder shook the nation, jolting the Karnataka government to usher in new policies for women's security.

Challenges in addressing women Safety

- **Lack of Reporting**
- **Slow Criminal Justice System**
- Inadequate Implementation of law
- Poor Gender Sensitization of law enforcing agencies like Police, Judiciary etc
- **Various Social factors like level of education/illiteracy, Poverty, Social Customs and values, religious beliefs, mindset of the Society**
- Exclusion by Technology

- **Lack of infrastructure Such as Safe Spaces for women, Safe transport Systems, Proper toilets make it a dangerous Place for women and girls.**
- Hostile Environment of investigation to victims of Sexual violence.
- Social Conceptions of Shame and victim-blaming
- **Much of Sexual violence happens within marriage, and marital rape is not a Crime.**

Steps taken by the Government

- **Beti Bachao Beti Padhao,** to address the declining Child Sex Ratio.
- **Scheme for Adolescent Girls** aims at girls in the age group 11-18, to empower and improve their social status through nutrition, life skills, home skills and vocational training
- **Pradhan Mantri Mahila Shakti Kendra scheme**, to promote community participation through the involvement of Student Volunteers for the empowerment of rural women
- **Rashtriya Mahila Kosh (RMK)** to provide micro-credit to poor women for various livelihood support and income-generating activities at concessional terms
- **Swadhar Greh** to provide relief and rehabilitation to destitute women and women in distress.
- **Ujjawala,** a Comprehensive Scheme for the prevention of trafficking and for rescue, rehabilitation, reintegration and repatriation of victims of trafficking for commercial sexual exploitation.

- **Working Women Hostels** for ensuring safe accommodation for women working away from their place of residence.
- **One-Stop Center and Women Helpline** are being implemented to facilitate access to an integrated range of services including medical aid, police assistance, legal aid/ case management, psychosocial counseling and temporary support services to women affected by violence.
- **Panic Button** on Mobile Phones, **Emergency Response Support System** Set up under Nirbhaya Fund.
- **Inclusion of Acid Attack as disability**
- **Dowry Prohibition Act**, 1961, Penalizes Giving & taking.
- **SABLA Scheme**, Providing life Skills and Supplementary nutrition to out of School girls - Working Women Hostel.
- **Sexual Harassment electronic-Box (SHe-Box)**

- **National database on Sexual offenders,** include name, address, Photograph and fingerprint details of those Convicted in Sexual assault Cases

Closing thoughts
- G20 EMPOWER platform's three priority areas are to convert these dialogues to action through the following approaches.
- Promoting women's entrepreneurship is among India's most important growth and equality priorities. It is a powerful vehicle that can speed up India's journey of becoming a $5-trillion economy. Moreover, it is one of the most significant factors that will help raise household incomes, alleviate poverty, and help us achieve the 2030 United Nations Sustainable Development Goals (SDGs), especially SDG-5 on gender equality.

6.9   INDIA'S UNEMPLOYMENT RATE

Context
- India's overall unemployment rate fell in July as rural areas saw increased demand for agriculture labor with the onset of monsoon rains.

Details
- Rural unemployment rate fell to 7.89%, from 8.73% in June, while urban unemployment rate ticked up, to 8.06% from 7.87% in the same period
- The total joblessness rate fell to 7.95% in July, from 8.45% in June, according to data released by private forecaster Centre for Monitoring Indian Economy. Rural unemployment rate fell to 7.89%, from 8.73% in June, while urban unemployment rate tick.
- Rural joblessness rate typically falls in July due to increased demand for laborers for farming work. Unemployment rate ticks up again in August after the sowing is done, past data showed.

Findings of the recent PLFS:
- The unemployment rate was 6.6% for men and 9.4% for women. It was 9.3% and 11.6%,

respectively, in July-September 2021. The unemployment ratio is defined as the percentage of persons unemployed among the persons in the labour force.
- The worker-population ratio (WPR) also witnessed a marginal increase compared with last year's. The WPR is defined as the percentage of employed persons in the population.
- The WPR in urban areas for persons aged 15 and above stood at 44.5% in July-September 2022, an increase from 42.3% in the corresponding period in 2021. It was 43.9% in April-June 2022. The WPR among men was 68.6% and 19.7% among women. It was 66.6% and 17.6%, respectively, in 2021.
- The labor force in rural India fell by five million, the data showed. Labor force participation rate in urban areas also fell, indicating broader weakness in the economy.

About PLFS:
- The **National Statistical Office (NSO)** under the Ministry of Statistics of Programme and Implementation (MoSPI) conducts the PLFS for rural and urban areas.

- The Periodic Labour Force Survey (PLFS) was designed with two major objectives for the measurement of employment and unemployment.
- The first was **to measure the dynamics in labour force participation** and employment status in the short time interval of three months for only the urban areas in the Current Weekly Status (CWS).
- The second one was, for both rural and urban areas, to measure the labour force estimates on key parameters in both usual status (ps+ss) and Current Weekly Status.

6.10 FINANCIAL ILLITERACY

Context

- Over the past decade, the super-rich and large corporations have been able to borrow at record low interest rates.

Details

- This influx of easy money has shored up markets for yacht-backed-loans and securities, dividends, share buy-backs, and merger and acquisition deals.
- Meanwhile, those not deemed "creditworthy" find themselves barred from credit, the powerless witnesses of ever surging rents and living costs.
- Time and again, the financial sector has flooded certain parts of the economy while other parts remained parched.

About Financial Literacy

- *Financial literacy is the ability to understand and effectively use various financial skills, including personal financial management, budgeting, and investing. When you are financially literate, you have the foundation of a relationship with money, and it is a lifelong journey of learning.*

Key points

- **The term "financial literacy"** refers to a variety of important financial skills and concepts.
- People who are financially literate are generally less vulnerable to financial fraud.
- A strong foundation of financial literacy can help support various life goals, such as saving for education or retirement, using debt responsibly, and running a business.
- Key aspects to financial literacy include knowing how to create a budget, plan for retirement, manage debt, and track personal spending.
- Financial literacy can be obtained through reading books, listening to podcasts, subscribing to financial content, or talking to a financial professional.

Understanding Financial literacy

- From about 2000 to 2022, financial products and services have become increasingly widespread throughout society.
- Whereas earlier generations of U.S. residents may have purchased goods primarily in cash, various credit products are popular today, such as credit and debit cards and electronic transfers.
- A 2021 survey by the Federal Reserve Bank of San Francisco revealed that 28% of all payments were via credit card, with only 20% being made in cash.
- Given the importance of finance in modern society, lacking financial literacy can be very damaging to an individual's long-term financial success.
- Even so, research shows that financial illiteracy is very common, with the Financial Industry Regulatory Authority (FINRA) attributing it to 66% of Americans.

Scope of Financial Literacy

- Although many skills might fall under the umbrella of financial literacy, popular examples include household budgeting, learning how to manage and pay off debts, and evaluating the tradeoffs between different credit and investment products.
- These skills often require at least a working knowledge of key financial concepts, such as compound interest and the time value of money.

- Other products, such as mortgages, student loans, health insurance, and self-directed investment accounts, have also grown in importance.
- This has made it even more imperative for individuals to understand how to use them responsibly.
- Financial literacy can cover short-term financial strategy as well as long-term financial strategy, and which strategy you take will depend on several factors, such as your age, time horizon, and risk tolerance.
- Financial literacy encompasses knowing how investment decisions made today will impact your tax liabilities in the future.
- This also includes knowing which investment vehicles are best to use when saving, whether for a financial goal like buying a home or for retirement.
- This is not to add the novelties in finance such as e-wallets, digital money, buy now/pay later, P2P lending, and other new financial products that can be convenient and cost-effective but require potential consumers to be educated to assess them adequately to their advantage.

Benefits of Financial Literacy

Financial literacy can prevent devastating mistakes:
- Floating rate loans may have different interest rates each month, while traditional individual retirement account (IRA) contributions can't be withdrawn until retirement.
- Seemingly innocent financial decisions may have long-term implications that cost individuals money or impact life plans. Financial literacy helps individuals avoid making mistakes with their personal finances.

Financial literacy prepares people for emergencies:
- Financial literacy topics such as saving or emergency preparedness get individuals ready for the uncertain.
- Though losing a job or having a major unexpected expense are always financially impactful, an individual can cushion the blow by implementing their financial literacy in advance by being ready for emergencies.

Financial literacy can help individuals reach their goals:
- By better understanding how to budget and save money, individuals can create plans that set expectations, hold them accountable to their finances, and set a course for achieving seemingly unachievable goals.
- Though someone may not be able to afford a dream today, they can always make a plan to better increase their odds of making it happen.

Financial literacy invokes confidence:
- Imagine making a life-changing decision without all the information you need to make the best decision. By being armed with the appropriate knowledge about finances, individuals can approach major life choices with greater confidence realizing that they are less likely to be surprised or negatively impacted by unforeseen outcomes.

Conclusion
- Financial literacy is the knowledge of how to make smart decisions with money. This includes preparing a budget, knowing how much to save, deciding favorable loan terms, understanding impacts to credit, and distinguishing different vehicles used for retirement. These skills help individuals make smarter decisions and act more responsibly with their personal finances.

6.11   POOR INFRASTRUCTURE

Context
- The distance from Makhim to the nearest hospital was approximately 20 km, but due to the poor condition of the roads, reaching the hospital became a life-threatening ordeal.

Details

- The Kheroni Model Hospital in West Karbi Anglong has come under intense scrutiny and public outrage after a pregnant woman, CherlitaBepiyi, delivered her baby midway to the hospital due to the lack of proper road infrastructure and absence of medical assistance.
- The incident has shed light on the dire situation faced by expectant mothers in the region, sparking demands for immediate action and accountability.

Key findings

- Infrastructure development is critical for improving India's manufacturing competitiveness and achieving higher growth.
- Timely execution of projects within budgeted costs will be the key challenge, even if funding is available for economically viable projects.
- Power generation and transmission are improving, but transportation infrastructure capacity constraints continue to limit corporate performance and investments.
- Successful infrastructure development can provide a boost to many sectors, including steel, cement, auto, real estate, and others.
- Despite India's significant infrastructure investments (about 35% of GDP), the government estimates that it requires US$1.5 trillion in infrastructure investments over the next decade.
- But even this would likely only help bridge the infrastructure deficit rather than create room for future growth.

  For India, investments in infrastructure equal to 1% of GDP will result in GDP growth of at least 2% as infrastructure has a "multiplier effect" on economic growth across sectors.

Key Opportunities and Challenges for Infrastructure

	Key opportunities	Key challenges
Roads	Government is leading spending to rebuild confidence. Some pickup in the pace of participation by private contractors (some as engineering, procurement and construction).	High congestion. Roads carry 65% of freight and 80% of passenger traffic. Weak dispute-resolution mechanism. Contractors suffering poor financial health from past losses.
Railways	Largely government-led spending, now focusing on improving infrastructure. Progress in development and funding of dedicated freight corridor.	Inordinate delays keep railroads from being preferred despite being cheaper (China ferries over 3x freight for a similar route network). Tariff disputes for few PPP (public-private partnership) metro projects may discourage private investments.
Ports	Some government investments for capacity expansion and modernization, such as the "Sagarmala" project. High growth and margins for private ports.	Long lead time for overcoming capacity constraints at government- owned major ports. Last-mile connectivity issues and lack of inland waterways. Low containerization level. China's sixth-largest port has container traffic that's higher than India's total.
Airports	Sustained high passenger traffic growth. Efforts to improve regional connectivity.	High concentration, with Mumbai and Delhi accounting for more than 40% of national traffic. Weak financial health of many airlines, including government-owned Air India. Low freight traffic (China has 10x freight and 4.4x passenger traffic).

Future measures

- India needs resolute commitment to infrastructure development, and in our opinion, that will require flexible policies and the ability to manage timely execution on an unprecedented scale.
- Private sector investments will flow as the government's willingness to make projects commercially viable and to share the risks of the projects (like land acquisition) becomes clearer.
- Otherwise, the private sector will be left to grapple with risks that it has been unable to manage or price appropriately in the past.
- In addition, many experienced developers are still trying to overcome financial problems from earlier underperforming or stranded projects.
- Infrastructure development in India is as much a prerequisite for maintaining current growth as it for driving higher future growth.
- Resolving land acquisition issues and implementing the GST are two big national reforms that could have significant positive impact on infrastructure development, economic growth and improvement in India's manufacturing competitiveness.

Closing thoughts

- India's domestic-focused economy is less vulnerable--though not immune--to global economic shocks, so we expect it to register relatively higher growth.
- Falling interest rates, benign commodity prices, and government rhetoric about improving the business climate are already generating interest from domestic and foreign investors. India remains an attractive investment destination given global economic sluggishness.
- Initial hesitation to invest can be allayed if the government can match its rhetoric with action and demonstrate an ability to execute much-needed infrastructure projects, provide stable and supportive policies, and--most important--focus on economically feasible projects.

6.12   NATIONAL SOCIAL ASSISTANCE PROGRAMME (NSAP)

Context

- Around Rs 79 crore has been transferred to ineligible beneficiaries under the Ministry of Rural Development's National Social Assistance Programme (NSAP) between 2017 and 2021, an audit by the Comptroller and Auditor General of India (CAG) has revealed.

Details

- Of this, Rs two crore was paid to beneficiaries even after their deaths, added the audit report tabled in parliament on August 8, 2023.
- At the same time, many eligible beneficiaries were likely to have been excluded from the welfare programme either due to non-maintenance of Below Poverty Line (BPL) lists or due to states not carrying out periodic surveys to identify eligible beneficiaries.
- **India launched NSAP to provide social security** to the destitute population living below the poverty line and vulnerable groups in 1995.
- **The programme includes five sub-schemes, of which three** — Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS) and Indira Gandhi National Disability Pension Scheme (IGNDPS) — are pension schemes.

The sub-schemes are as follows

Indira Gandhi National Old Age Pension Scheme (IGNOAPS)

- The eligible age for IGNOAPS is 60 years. The pension is Rs.200 p.m. for persons between 60 years and 79 years.
- For persons who are 80 years and above the pension is Rs.500/ - per month.

Indira Gandhi National Widow Pension Scheme (IGNWPS)

- The eligible age is 40 years and the pension is Rs.300 per month.
- After attaining the age of 80 years, the beneficiary will get Rs.500/ - per month.

Indira Gandhi National Disability Pension Scheme (IGNDPS)

- The eligible age for the pension er is 18 years and above and the disability level has to be 80%.
- The amount is Rs.300 per month and after attaining the age of 80 years, the beneficiary will get Rs 500/ - per month .
- Dwarfs will also be an eligible category for this pension.

National Family Benefit Scheme (NFBS)

- 20000/ - will be given as a lumpsum assistance to the bereaved household in the event of death of the bread - winner.
- It is clarified that any event of death (natural or otherwise) would make the family eligible for assistance.
- A woman in the family, who is a home maker, is also considered as a 'bread - winner' for this purpose.

- The family benefit will be paid to such surviving member of the household of the deceased poor, who after local inquiry, is found to be the head of the household.
- For the purpose of the scheme, the term "household' would include spouse, minor children, unmarried daughters and dependent parents. In case of death of an unmarried adult, the term household would include minor brothers/ sisters and dependent parents.
- The death of such a breadwinner should have occurred whilst he/ she is more than 18 years of age and less than 60 years of age. The assistance would be given to every case of death of the breadwinner in a family.

Annapurna Scheme

- 10 kgs of food grains (wheat or rice) is given per month per beneficiary. The scheme aims at providing food security to meet the requirements of those eligible old aged persons who have remained uncovered under the IGNOAPS.

About National Social Assistance Programme (NSAP)

About	• NSAP stands for National Social Assistance Programme. NSAP was launched on 15th August 1995.
Objectives	• National Social Assistance Programme is a social security and welfare programme to provide support to aged persons, widows, disabled persons and bereaved families on death of primary bread winner, belonging to below-poverty-line households.
Components	• **The NSAP at its inception in 1995 had three components namely:** • National Old Age Pension Scheme (NOAPS, • National Family Benefit Scheme (NFBS) and • National Maternity Benefit Scheme (NMBS). The National Maternity Benefit Scheme (NMBS) was subsequently transferred on 1st April, 2001 from the **Ministry of Rural Development to the Ministry of Health and Family Welfare**. • On 1st April, 2000 a new Scheme known as Annapurna Scheme was launched. This scheme aimed at providing food security to meet the requirement of those senior citizens who, though eligible, have remained uncovered under the NOAPS. • In February 2009, two new Schemes known as Indira Gandhi National Widow Pension Scheme (IGNWPS) and Indira Gandhi National Disability Pension Scheme (IGNDPS) were introduced. • **Presently NSAP comprises of five schemes, namely –** • Indira Gandhi National Old Age Pension Scheme (IGNOAPS), • Indira Gandhi National Widow Pension Scheme (IGNWPS),

	• Indira Gandhi National Disability Pension Scheme (IGNDPS), • National Family Benefit Scheme NFBS) and • Annapurna.
Significance	• The National Social Assistance Programme (NSAP) represents a significant step towards the fulfilment of the Directive Principles in Articles 41 and 42 of the Constitution recognizing the concurrent responsibility of the Central and the State Governments in the matter. • In particular, Article 41 of the Constitution of India directs the State to provide public assistance to its citizens in case of unemployment, old age, sickness and disablement and in other cases of undeserved want within the limit of its economic capacity and development.

6.13 HANDBOOK ON COMBATING GENDER STEREOTYPES

Context
• The Supreme Court recently launched a 30-page handbook, **'Combating Gender Stereotypes',** which aims to empower judges and the legal fraternity to recognise, comprehend and challenge clichéd concepts regarding women and their issues.

Details
• Chief Justice of India D.Y. Chandrachud's foreword is a humble acceptance that "words or phrases used in legal discourse [by lawyers and judges] reflect archaic ideas with patriarchal undertones".
• Veena Gopalakrishnan, partner (labour and employment) at Trilegal, a leading law firm, feels the handbook "calls out the biases that continue to permeate our language and thoughts, including of the legal community".

ALTERNATIVE TO STEREOTYPE-PROMOTING LANGUAGE

'ADULTERESS' Woman who has engaged in sexual relations outside of marriage
'AFFAIR' Relationship outside of marriage
'BASTARD' Non-marital child or, a child whose parents were not married
'BIOLOGICAL SEX' / 'BIOLOGICAL MALE' / 'BIOLOGICAL FEMALE' Sex assigned at birth
'CARNAL INTERCOURSE' Sexual intercourse
'CHILD PROSTITUTE' Child who has been trafficked
'CONCUBINE' / 'KEEP' Woman with whom a man has had romantic or sexual relations outside of marriage
'DUTIFUL WIFE' / 'FAITHFUL WIFE' / 'GOOD WIFE' / 'OBEDIENT WIFE' Wife

'EVE TEASING' Street sexual harassment
'HOUSEWIFE' Homemaker
'FEMININE HYGIENE PRODUCTS' Menstrual products
'UNWED MOTHER' Mother
'VIOLATED' (e.g. 'he violated her') Sexually harassed / assaulted or raped
'MISTRESS' Woman with whom a man has had romantic or sexual relations outside of marriage
'PROSTITUTE' Sex worker
'PROVIDER' / 'BREADWINNER' Employed or earning
'PROVOCATIVE CLOTHING / DRESS' Clothing / dress
'SEX CHANGE' Sex reassignment or gender transition
'SPINSTER' Unmarried woman

• "It is a great tool not just for judges and the legal community but for everyone to rethink the language we use and reconsider traditional ideas and perceptions that continue to be sexist, patriarchal and misogynistic,"

Highlights of the handbook
• According to the handbook, the term 'eve teasing' should be referred to as 'street sexual harassment', 'forcible rape' should be identified as 'rape', and the different labels such as 'career woman', 'chaste woman', 'easy virtue', 'fallen woman', 'harlot', 'western woman', 'Indian woman', 'slut', 'seductress', 'whore', 'woman of loose morals' should be mentioned as 'woman'.

Addresses stereotypes
• The handbook also addresses stereotypes grounded in presumed 'inherent characteristics' of women.
• It dispels notions that all women are inherently emotional and lack decision-making abilities, challenging the misconception that every woman is naturally kind, compassionate and fond of bearing children.

Opens link to a self-assessment tool

- The handbook also provides an open link to a self-assessment tool for readers to identify and learn about their own biases.
- This is important because despite our conviction of being fair and impartial, biases subconsciously nestle within due to our background, experiences, education, upbringing, etc.

About Gender stereotyping

- *A gender stereotype is a generalized view or preconception about attributes or characteristics, or the roles that are or ought to be possessed by, or performed by, women and men.*
- *A gender stereotype is harmful when it limits women's and men's capacity to develop their personal abilities, pursue their professional careers and/or make choices about their lives.*
- Gender stereotyping refers to the practice of ascribing to an individual woman or man specific attributes, characteristics, or roles by reason only of her or his membership in the social group of women or men.
- Gender stereotyping is wrongful when it results in a violation or violations of human rights and fundamental freedoms.
- **Examples include:**
  - Not criminalizing marital rape, perceiving that women are the sexual property of men; and
  - Failing to investigate, prosecute and sentence sexual violence against women, believing that victims of sexual violence agreed to sexual acts, as they were not dressing and behaving "modestly".

READ: https://www.iasgyan.in/daily-current-affairs/handbook-to-eliminate-gender-stereotypes-from-law

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6.14 UGC REGULATIONS, 2023

Context

- The UGC has placed two draft guidelines - Recognition and Grant of Equivalence to Qualifications obtained from Foreign Educational Institutions Regulations 2023.

» WHAT DRAFT REGULATIONS SAY

- These varsities will have the **freedom to decide on admission criteria** and fee structure
- The commission has advised keeping the fees **"reasonable and transparent"**
- The foreign institution **shall have the autonomy to recruit faculty/staff from India/abroad**
- The varsity to ensure that the **foreign faculty stay at the campus for a reasonable period**

WHAT IT ENVISAGES
The regulatory framework allowing the entry of higher-ranked foreign varsities will provide an international dimension to higher education, enable Indian students to obtain foreign qualifications at affordable cost, and make India an attractive global study destination

FUNDS AND FUNDING

- Cross-border movement of funds and maintenance of foreign currency accounts, **mode of remittance, repatriation, and sale of proceeds shall be as per the Foreign Exchange Management Act (FEMA)**

- The operation of foreign HEIs shall not be contrary to the sovereignty and integrity of India, **the security of the state, friendly relations with foreign states, public order, decency, or morality**

- **An audit report shall be submitted annually to the commission** certifying that the operations of the FHEIs in India are in compliance with the Act and related rules, the draft said

WHO ARE ELIGIBLE
Two categories can apply. Universities that have secured a position within the top 500 of overall or subject-wise global ranking or a reputed institution in its home jurisdiction

The new National Education Policy (NEP) has envisioned that top universities in the world will be facilitated to operate in India. For this, a legislative framework facilitating such entry will be put in place, and such universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India
— M Jagadesh Kumar, UGC chairperson

Details

- The commission has also drafted norms for recognising qualifications obtained from schools affiliated to foreign boards as well as from offshore campuses of a foreign higher educational institutions.
- The norms come at a time when foreign universities are in the advanced stages of setting up campuses in India's GIFT city and Indian universities are collaborating with institutions abroad to offer dual or joint degrees.

Highlights of the draft guidelines

- The UGC informed that many foreign universities have reached **stages of setting up campuses in Bharat's GIFT city.** On the other hand some Bharatiya universities are **collaborating with foreign universities** to offer joint degrees.
- According to the ministry of education, **the national education policy 2020** recommends several reforms in Bharatiya higher education and intends to promote Bharat as a *"global study destination",* providing quality education at affordable cost and attracting a greater number of international students.
- UGC said that in order to **facilitate the mobility of students in a seamless manner**, UGC has drafted enabling regulations to provide a robust and transparent mechanism for recognising foreign qualifications and granting equivalence to such qualifications.
- **The proposed equivalence certificate will certify the parity of qualification between a foreign qualification** and the qualification awarded by an Indian board or university at the same level.
- UGC said that they extends an invitation to all **stakeholders, encompassing educational institutions, students, academicians, and the wider community, to provide inputs, comments, and feedback**.

Significance of the new guidelines

- **One-liner:** The University Grants Commission (UGC) has drafted guidelines for granting equivalence and for recognition of degrees obtained from foreign universities.
- **Restrictions:** It also restricted degrees obtained through distance and online mode as well as through any franchise agreement.
- **Norms drafted:** The commission has also drafted norms for recognising qualifications obtained from schools affiliated to foreign boards as well as from offshore campuses of a foreign higher educational institution.
- **The timing:** The norms come at a time foreign universities are in the advanced stages of setting up campuses in India's GIFT city and Indian universities are collaborating with institutions abroad to offer dual or joint degrees.
- **Duration:** While the guidelines state that the minimum duration of the programme should be similar to that of a corresponding programme in India, in case the duration varies, the UGC will consider minimum credit requirements that should be the same in both institutions.
- **Mobility of students:** In order to facilitate the mobility of students in a seamless manner, the UGC will maintain a dedicated online portal to receive applications to grant equivalence to qualifications obtained from foreign educational institutions.
- **Bottom line:** According to the UGC regulations, the equivalence certificate will also be accepted by the universities in India for the purposes of admission or employment.

About University Grants Commission (UGC)

About	• It is a **statutory body** set up by the **Department of Higher Education, Ministry of Education**, Government of India in accordance with the **UGC Act 1956** and is charged with coordination, determination, and maintenance of standards of higher education in India.
Background and establishment	• The University Grants Committee was **formed in 1945**, which took upon the **responsibility of supervision of three Central Universities of Aligarh, Banaras, and Delhi.**
Headquarters	• The headquarters are in **New Delhi,** and it has six regional centers in Pune, Bhopal, Kolkata, Hyderabad, Guwahati and Bangalore.
Mandate	• It provides recognition to universities in India, and disbursements of funds to such recognized universities and colleges. • UGC also conducts the **National Eligibility Test (NET)** for the appointments of teachers in colleges and universities.

READ: https://www.iasgyan.in/daily-current-affairs/ugc-recognition-and-grant-of-equivalence-to-qualifications-obtained-from-foreign-educational institu#:~:text=The%20UGC%20stated%20that%20through,its%20verdict%20to%20the%20applicant.

6.15   TOXIC FEMININITY VS TOXIC MASCULINITY

Context

• Different perspectives of the concept shed light on different facets of societal gender dynamics.

Details

• While feminist perspectives emphasise the impact of gender expectations on women, alternative understandings claim it to be a tool for women to dominate others while appearing weak and powerless.

Background:

• The origins are interlinked to the concept of toxic masculinity, a term coined by Shepherd Bliss during the mythopoetic men's movement in the 1980s.

Concept

• The concept of toxic femininity gained popularity in the 2010s with feminist writers and scholars explaining how it confines women to traditional and stereotypical expectations of women's behaviour.

• Meanwhile, anti-feminist and conservative interpretations of the term are once again back in the spotlight, with the recent worldwide box-office success of Barbie.

About Toxic masculinity

• *According to sociologist Michael Flood, the term entailed the worst aspects of stereotypically masculine attributes," including "violence, dominance, emotional illiteracy, sexual entitlement, and hostility to femininity."*

• Feminists adopted this term to characterise homophobic and misogynistic speech and violence perpetuated by men, initially focusing on marginalised men from low-income backgrounds.

• However, it gained prominence in describing the sexist and toxic behaviour of powerful elite men, particularly since the #MeToo movement in 2016.

About Toxic femininity

• *From a feminist perspective, toxic femininity arises from societal gender expectations imposed on women. Women who conform to the stereotype of being quiet, submissive, and accepting of male domination embody toxic femininity, which perpetuates the silent acceptance of men's aggression as a means of survival.*

- This phenomenon can be seen as internalised misogyny, compelling women to adhere to societal norms that keep them subservient.
  o Similar to how fathers may pass down toxic traits to their sons, mothers can inadvertently perpetuate stereotypical gender roles in the next generation of women.
- Women are taught to remain passive, to never assert themselves in public spaces, tolerate sexist remarks and jokes, and even endure domestic violence.
- Scholars argue that toxic femininity enables toxic masculinity by reinforcing the power dynamic, as women's submission allows men to treat them as possessions.

Alternative perspectives view toxic femininity as a tool wielded by women to gain power within a patriarchal structure

- In this interpretation, women engage in manipulation, jealousy or use their position as victims to dominate others while appearing weak and powerless.
- This perspective positions toxic femininity as a counterpart to the negative traits associated with toxic masculinity.

READ:https://www.iasgyan.in/daily-current-affairs/toxic-femininity-vs-toxic-masculinity

- Further, conservatives employ this interpretation to undermine femininity and use it to shift blame onto women for the toxic behaviour exhibited by men, contending that men's actions are merely responses to the toxic traits of women.
- For example, the prevalence of articles on "handling a crazy woman" illustrate how this concept has been manipulated within a patriarchal structure to blame the victim.

Conclusion

- Toxic femininity as a concept with diverse interpretations sheds light on different facets of societal gender dynamics. While feminist perspectives emphasise the impact of gender expectations on women and the perpetuation of subservience, alternative understandings claim it to be a tool of power for women within patriarchal structures.
- However, it is essential to recognise that these interpretations may inadvertently uphold the gender binary and oversimplify the complex interplay of gender with other aspects of identity.

6.16   POVERTY

Context

- The transition of 135 million people out of multidimensional poverty is certainly creditable.

Details

- 'India lifts 135 million people out of multidimensional poverty' is the talking point in the media and prime-ministerial pronouncements since mid-July, giving the impression that India has trumped poverty.

Steady decline, large pool:

- *As per the UNDP multidimensional poverty index (MPI) reports, the poor people in India were 645.7 million in 2005-06, 370.5 million in 2015-16, and 230.7 million in 2019-21.*

- **The number of MPI poor reduced by 275.6 million** between 2005-06 and 2015-16, and by 139.8 million between 2015-16 and 2019-20. The poverty reduction in both the periods was remarkably similar at about 27.5-28 million per annum.
- **The NITI Aayog report** does not highlight the number of remaining MPI poor in India. The UNDP report does. There were 270.7 million (over 16.39 per cent of India's population) multi-dimensionally poor in 2021.

Three measures of poverty:

- Poverty, in simple terms, is the **inability of a person or a household to consume adequate goods and services** to attain a minimum standard of living. Poverty can be measured in

terms of — consumption, income, and deprivation.

- **The consumption method** measures the consumption of requisite goods and services directly. India last measured consumption in 2011-12 (the 68th round of national sample survey).

- **The income method** determines the monetary value of the requisite consumption of goods and services to arrive at the poverty cut-off.

- *India's income poverty estimates were last worked out in 2012. As per the World Bank income poverty cut-off of $2.15 per capita in 2017 PPP terms, equals Rs 44.4, 10 per cent of India's population was poor in 2019.*

- **The UNDP measures poverty based on 10 'deprivations'** persons/households face, organised in three groups of health, education, and standard of living. The Indian MPI adds two more deprivations. About 16.39 per cent (14.96 per cent as per the Indian MPI report) of India's population was poor in 2019-21.

Challenges

- The government runs numerous programmes to overcome poverty, which can be clubbed into broadly three types.

- **The first type targets a specific deprivation** — like a free food programme targets nutritional deprivation. Many of these programmes have successfully eliminated the deprivation concerned — like the Jan-Dhan programme has eliminated the lack of a bank account.

- **Some programmes have not made a desirable difference** — like giving free food for 810 million Indians has failed to make a difference to nutritional deprivation in India.

- The second type of programme delivers cash or a cash equivalent directly to **individuals/households** — like the **PM KISAN delivers Rs 6,000** to each farm household.

  o The beneficiaries may or may not spend the cash to meet a deprivation.

- **The third type of programme** is an **indirect delivery programme**. The government-run schools to provide education to poor students and the government hospitals for those who cannot afford access to private healthcare are ready examples of this type of depriving targeting.

- The challenge here is that governments function in a **highly compartmentalised manner** where they do not aggregate the benefits delivered through these various programmes at the household level.

Way forward

- The most reliable method of measuring **individual/household income, consumption, deprivation**, and the delivery of government benefits is to collect the requisite data for each household.

- The irony here is that the **government spends lakhs of crores of rupees on poverty programmes**, but does not see merit in spending a few thousand crores of rupees to bring a universal household data collection system!

- **A comprehensive system of annual universal household survey** will help the government and people in getting reliable information about each household and its **income, consumption, deprivation, and poverty** status.

- With data inferred from this reliable information, the government will be able to accurately identify the poor and their deprivations, and design and **implement general and customised poverty-alleviation programmes** for all the genuine poor.

READ: https://www.iasgyan.in/daily-current-affairs/consumption-based-poverty-estimates

6.17 NAMASTE SCHEME

Context

- The Government had formulated a scheme "National Action Plan for Mechanized Sanitation Ecosystem (NAMASTE)" and it was in the news.

Details

- Although, with the efforts under Self Employment Scheme for Rehabilitation of Manual Scavengers (SRMS) and other efforts of the Government, the menace of manual scavenging has been almost eliminated, a number of sewer/septic tank related deaths due to hazardous cleaning of sewers and septic tanks, are reported in the press from time to time.
- Such cases are taken up with the concerned State Government for payment of compensation of Rs.10 lakh as per Supreme Court orders.
- Thus, the main problem these days is hazardous cleaning of Sewer and Septic tanks and non-observance of safety precautions due to which precious human life is lost.

Interventions of NAMASTE Component

- **Profiling of SSWs:** NAMASTE envisages profiling of the **Sewer/Septic Tank Workers (SSWs).** List of SSWs would be obtained from the concerned ULBs and thereafter detailed profiling of the SSWs would be undertaken through profiling camps.
- **Extending Health Insurance Scheme Benefits**: For providing a safety net to identified SSWs and their families, they will be covered under the **Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)**.
- **Livelihood Assistance:** The Action Plan will promote mechanization and enterprise development. National **Safai Karamcharis Finance & Development Corporation (NSKFDC)** will provide funding support and capital subsidy to the Manual Scavengers, sanitation workers and their dependents to procure sanitation related equipment and vehicles under **Swachhata Udyami Yojana (SUY) to make them "Saniprenure".**
- **Identified manual scavengers and their dependents** will be provided skill development training for a period upto two years with monthly stipend of Rs.3000/-.
- **Convergence of Programmes of MoSJE & MoHUA**: The safety of SSWs is a joint responsibility of MoSJE and MoHUA. Hence, the intent of NAMASTE is to strengthen convergence amongst both Ministries for governance and implementation of the NAMASTE components.
  o **The Action Plan leverages the available financial allocations** of existing SRMS, Swachh Bharat Mission (SBM), Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM) and NSKFDC and brings in a focused approach to provide occupational, social and financial safety nets to the SSWs.
- **IEC Campaign**: Massive campaigns would be undertaken jointly by the ULBs & NSKFDC to spread awareness about the interventions of NAMASTE.
  o **Electronic and print media** and hoardings at prominent locations shall be used for the campaign in local language and English/Hindi. Maximum use of social media during the publicity would be ensured.
- **MIS and Website**: There will be strong MIS implementation and monitoring with the help of dedicated website for NAMASTE.

About National Action Plan for Mechanized Sanitation Ecosystem (NAMASTE)

About	• It is a joint project of Department of Drinking Water and Sanitation, **Ministry of Social Justice and Empowerment** and **the Ministry of Housing and Urban Affairs (MoHUA).**
Aim	• To create an enabling ecosystem that recognizes Sewer and Septic Tank workers (SSWs) as one of the key contributors in operations and maintenance of sanitation infrastructure (Sewer and Septic Tanks) thereby **providing sustainable livelihood and enhancing their occupational safety** through capacity building and improved access to safety gear and machines.
Coverage and Outlay	• It is to be implemented in all **4800+ ULBs of the country**, during the next three years upto **2025-26** with an outlay of around Rs **350.00 crore**.
Implementation	• The **National Safai Karamcharis Finance and Development Corporation (NSKFDC)** is the implementing agency for NAMASTE.

READ: https://iasgyan.in/daily-current-affairs/national-action-plan-for-mechanized-sanitation-ecosystem-namaste-scheme

6.18   SHORT ARTICLES

Gender Inclusion Fund (GIF)

Context
- National Education Policy, 2020 provides for setting up a Gender Inclusion Fund (GIF) especially for girls and transgender students to provide them equitable quality education.

Details:
- **The National Education Policy (NEP), 2020** focuses on **'Equitable and Inclusive Education'** which reverberates the idea that no child should be left behind in terms of educational opportunity because of their background and socio-cultural identities.
- It has taken into account the concerns of the **Socio-Economically Disadvantaged Groups (SEDGs)** which includes female and transgender individuals.
- **In addition, NEP prescribes to approach gender as a cross-cutting priority** to achieve gender equality in education with the partnership of states and local community organizations.

About the Gender Inclusion Fund (GIF):
- National Education Policy, 2020 provides for setting up a Gender Inclusion Fund (GIF) **especially for girls and transgender students to build the nation's capacity to provide equitable quality education for all girls** as well as transgender students.
- **The objectives of NEP for equitable and quality education for girl children** are being met through specific provisions under **Samagra Shiksha 2.0** by allocating dedicated resources for Socio-Economically Disadvantaged Groups (SEDGs).
- Under Samagra Shiksha, various interventions have been targeted for providing quality education to girls, which include opening of schools in the neighbourhood to make access easier for girls, free uniform and text-books to girls up to class VIII, additional teachers and residential quarters for teachers in remote/hilly areas, appointment of additional teachers including women teachers, stipend to CWSN girls from class I to class XII, separate toilets for girls, teachers' sensitization programmes to promote girls participation, gender-sensitive teaching-learning materials including text books etc.

Naya Savera Scheme

Context
- The Ministry implemented 'Naya Savera' scheme ('Free Coaching and Allied' scheme)

to assist students/candidates belonging to the six notified minority communities.

About the scheme:

- Ministry of Minority Affairs implemented **'Naya Savera' scheme ('Free Coaching and Allied' scheme).**
- **Aim**: To assist students/candidates belonging to the six notified minority communities **namely Sikh, Jain, Muslim, Christian, Buddhist and Parsi** by way of special coaching for qualifying examinations for admission in technical/professional courses and competitive examinations for recruitment to Group Á, 'B', & 'C' services and other equivalent posts under the Central and State Governments including public sector undertakings, banks and railways.
- The scheme was **implemented across the country through empaneled Project Implementing Agencies (PIAs)**.
- Since inception, minority students/candidates have benefited under Naya Savera Scheme.
- The duration of the coaching period under the scheme **was from 3 months to 2 years depending upon the coaching programme allocated to the PIAs**. The scheme has been discontinued w.e.f. 2022-23.

PM Yasasvi Scheme

Context

- Ministry of Social Justice and Empowerment is implementing an umbrella scheme namely PM Young Achievers Scholarship Award Scheme for Vibrant India (PM –YASASVI) for OBC and others.

About the scheme

About	• This is an umbrella Scheme formulated for OBC, EBC and DNT Students by clubbing the existing Scholarship Schemes and Hostel Scheme.
Sub-Schemes	There are five sub-Schemes under the Scheme. • Pre-Matric Scholarship for OBC, EBC and DNT Students • Post-Matric Scholarship for OBC, EBC and DNT Students. • Top Class School Education for OBC,EBC and DNT Students • Top Class College Education for OBC, EBC and DNT Students • Construction of Hostel for OBC Boys and Girls.
Ministry	• Ministry of Social Justice and Empowerment, Government of India has formulated the scheme.
Aim	• To award scholarships to eligible candidates belonging to Other Backward Class (OBC), Economically Backward Class (EBC), and De-Notified, Nomadic & Semi Nomadic Tribes(DNT/SNT) categories.
Benefits	• Scholarships ranging from Rs 75,000 to Rs 1,25,000.
Eligibility	• The annual income of parents/guardians from all sources should not exceed Rs. 2.5 lakhs. • Students studying in Class IX and Class XI identified Schools across India. • The award of scholarships is at two levels: • For students who are studying in Class IX • For students who are studying in Class XI
Selection	• Selection of candidates for the award of scholarships under the scheme is through a written test called YASASVI ENTRANCE TEST.
Testing Agency	• National Testing Agency has been entrusted with the responsibility of conducting the YASASVI ENTRANCE TEST.

Atal Vayo Abhyuday Yojana

Context

- Ministry of Social Justice and Empowerment is implementing Integrated Programme for Senior Citizens (IPSrC), a component of the scheme of Atal Vayo Abhyuday Yojana(AVYAY).

Key details:

- The Department of Social Justice and Empowerment is implementing Integrated Programme for Senior Citizens (IPSrC), a component of the scheme of Atal Vayo Abhyuday Yojana (AVYAY), under which grant-in-aid is provided to Non-Government/Voluntary Organiszations for running and maintenance of Senior Citizens' Homes, Continuous Care Homes, etc., to provide facilities, like, shelter, nutrition, medicare and recreation free of cost to the indigent senior citizens.
- During the last two years, a total of ₹165.50 Crore has been released to the implementing organizations in the country.
- During the last 3 years, a total of ₹28.35 lakh have been released to the implementing organization in the State of Bihar.

About the Atal Vayo Abhuday Yojana

About	• Atal Vayo Abhyuday Yojana (AVYAY) is a comprehensive initiative aimed at ensuring a dignified life for senior citizens in India. • This scheme recognizes and appreciates the valuable contributions made by the elderly to society and seeks to ensure their well-being and social inclusion.
Renaming	• The National Action Plan for Senior Citizen (NAPSrc) was renamed and named as Atal Vayo Abhyuday Yojana (AVYAY) and a new scheme was launched in April 2021.
Launch	• Atal Vayo Abhyuday Yojana (AVYAY) was launched by the Ministry of Social Justice and Empowerment.
Role	• Atal Vayo Abhyuday Yojana (AVYAY), an integrated scheme for senior citizens, provides financial assistance to eligible organizations for running care homes for senior citizens.
Significance	• Atal Vayo Abhyuday Yojana (AVYAY) is a testament to the government's commitment to the well-being and empowerment of senior citizens in India.

Akhil Bharatiya Shiksha Samagam

Context

- Delhi Public School Indirapuram commemorated the 3rd anniversary of the National Education Policy 2020 by actively engaging in the 'Akhil Bharatiya Shiksha Samagam'.

Key details

- The event, orchestrated in collaboration with the Ministry of Skill Development and Entrepreneurship,was convened by the Ministry of Education.
- It brought together prominent educational institutions from across the nation, creating a platform for participation and discussion, according to an official release.

- The session explored important education elements like active pedagogy, core capacity and life skill development, 21st-century skills, experiential learning, holistic progress tracking, fostering critical and higher-order thinking in students, and integrating vocational education, the release mentioned.

About Akhil Bharatiya Shiksha Samagam

- The Akhil Bhartiya Shiksha Samagam will include sixteen sessions, in which discussions will be held on themes including Access to Quality Education and Governance, Equitable and Inclusive Education, Issues of Socio-Economically Disadvantaged Group, National Institute Ranking Framework, Indian knowledge System, Internationalisation of Education, among others.

- In the run-up to the third anniversary of the NEP to be commemorate, the heads of institutes of higher learning and officials of Skill Development institutes shared the achievements and the highlights of the journey of implementation of NEP so far with the media.
- About 2000+ institutions have been allocated targets, including institutions of national repute such as IITs, IIITs, NITs, and central universities. ISM Dhanbad and IIT Guwahati have already started training in Assistant Mine Surveyor, Green House Operator, Self Employed Tailor, Social Media Associate job roles.

Pradhan Mantri Uchchatar Shiksha Abhiyan (PM-USHA)

Context

- An MoU with the Centre mandates National Education Policy implementation; some Opposition-ruled States against MoU, given that PM-USHA scheme has 60:40 funding split between Centre and States, with no extra money for NEP reforms.

Details:

- Kerala, Tamil Nadu and West Bengal are among 14 States and Union Territories which are yet to sign a crucial Memorandum of Understanding (MoU) with the Union Education Ministry, which mandates the implementation of the National Education Policy in order to avail funds worth almost ₹13,000 crore for the next three years, under the Centre's flagship scheme for State-run higher education.
- Officials from several Opposition-ruled States told The Hindu that they have raised concerns about the MoU, given that 40% of the Pradhan Mantri Uchchatar Shiksha Abhiyan (PM-USHA) budget must be borne by the States themselves, and no extra funds have been earmarked for NEP reforms. The Centre says it holding discussions to iron out differences with dissenting States.

About the scheme

- PM-Uchchatar Shiksha Abhiyan (PM-USHA), is a **centrally sponsored scheme** of the Government of India executed through the Ministry of Education.
- The scheme aims to work with over 300 HEIs including the state universities, its affiliated colleges to raise the quality of education.

Objectives

- The key objectives of PM-USHA are to **improve access, equity and quality in higher education** through planned development of higher education at the state level.
- The objectives also include creating new academic institutions, expanding and upgrading the existing ones, developing institutions that are self-reliant in terms of quality education, professionally managed, and characterized by greater inclination towards research and provide students with education that is relevant to them as well the nation as a whole.

The broad activities of the TSG-PM-USHA include but not limited to

- Providing technical support to the National Implementing Bodies for appraising State Higher Education Plans (SHEP),
- Liaising with states to fill gaps in the SHEPs as necessary,
- Providing the strategic support to conduct Research and Evaluation of the PM-USHA Scheme,
- Building capacities of all the stakeholders for the successful implementation of the PM-USHA Scheme,
- Coordination/ monitoring of activities, organizing meetings, seminars, workshops, studies, visits, managing media outreach activities and any other capacity building programs for effective implementation of the PM-USHA Scheme,
- Logistic support as may be required in connection with implementation of the PM-USHA Scheme,
- Providing other support as may be required from time to time, to the national

implementing bodies for implementing PM-USHA and

- Any other issues that needs to be addressed as per the needs and objectives of the scheme.

6.19   SNIPPETS

MASI Portal
- National Commission for Protection of Child Rights (NCPCR) has developed an application 'MASI' - Monitoring App for Seamless Inspection.
- Function: It allows for real-time monitoring of the Child Care Institutions (CCIs) and their inspection mechanism across the country.

MASI APP

6.20   1 MAINS & 5 MCQs

Q1. Mob lynching is a serious social problem in India, where people are killed or injured by violent mobs based on rumours, prejudices or personal enmity. Critically examine.

Answer
- Mob lynching is a form of collective violence in which a group of people attacks and kills a person or a group of people, often based on their identity, beliefs, or actions. It is not a new phenomenon in India, but it has become more frequent and visible in recent years, especially with the rise of social media and fake news.

Challenges
- Lack of a clear and comprehensive legal definition of mob lynching and its various forms and causes.
- Absence of a specific law to deal with mob lynching and to provide adequate protection and compensation to the victims and their families.
- Inadequate implementation and enforcement of existing laws and guidelines by the police and the judiciary, often due to political interference, communal bias, or fear of reprisal from the mob.

- Weaknesses in the criminal justice system, such as delay in investigation, prosecution and trial, low conviction rate, lenient punishment and lack of witness protection.

To overcome these challenges and ensure the effective steps are suggested
- Strengthening the existing laws and guidelines, such as the Supreme Court's directions in the Tehseen Poonawalla case (2018) that mandates preventive, remedial and punitive measures by the state authorities to curb mob lynching.
- The police should act promptly and impartially to prevent mob violence, register FIRs, arrest the perpetrators, and provide protection to the victims and witnesses.
- The government, civil society, media, and educational institutions should launch campaigns and programs to educate the people about the ill effects of mob lynching, the legal consequences of participating in such acts, and the importance of respecting diversity and tolerance.
- Mob lynching in India is a serious issue that has claimed many lives and violated human rights. Some steps taken by the government and civil society to prevent mob lynching

include enacting laws, creating helplines, raising awareness and promoting communal harmony.

....

Q2. Consider the following statements about Gender Inclusion Fund (GIF):

1. It is especially for girls and transgender students to build the nation's capacity to provide equitable quality education for all girls as well as transgender students.
2. The objectives of NEP for equitable and quality education for girl children are being met through specific provisions under Samagra Shiksha 2.0.

   Which of the statements given above is/are correct?
   (a) 1 only
   (b) 2 only
   (c) Both 1 and 2
   (d) None of the above.

Q3. Consider the following statements about Naya Savera' scheme:

1. It is implemented by the Ministry of Social justice and empowerment.
2. The scheme was implemented across the country through empaneled Project Implementing Agencies (PIAs).

   Which of the statements given above is/are correct?
   (a) 1 only
   (b) 2 only
   (c) Both 1 and 2
   (d) None of the above.

Q4. Consider the following statements about Atal Vayo Abhyuday Yojana:

1. It stands as a testament to the government's commitment to the well-being and empowerment of senior citizens in India.
2. The Ministry of health has been working towards creating an inclusive and equitable society for all its citizens.

Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) None of the above.

Q5. Consider the following statements about PM-USHA scheme:

1. It is a central sector scheme of the Government of India executed through the Ministry of Education.
2. The objectives also include creating new academic institutions, expanding and upgrading the existing ones, developing institutions.
3. The scheme aims to work with over 300 HEIs including the state universities, its affiliated colleges to raise the quality of education.

   Select the correct option using the code given below:
   (a) One only
   (b) Only two
   (c) Only three
   (d) None

Q6. Consider the following statements about University Grants Commission (UGC):

1. It is a statutory body set up by the Department of Higher Education, Ministry of Education, Government of India.
2. It provides recognition to universities in India, and disbursements of funds to such recognized universities and colleges.

   Which of the above statements is/are correct?
   (a) 1 only
   (b) 2 only
   (c) Both 1 and 2
   (d) None of the above.

ANSWERS: 2) C, 3} B, 4) A, 5) B, 6) C

7. SCIENCE & TECHNOLOGY AND HEALTH

7.1   NATIONAL DEEP TECH START-UP POLICY

Context

- The office of the Principal Scientific Adviser to the Government put out a draft National Deep Tech Startup Policy (NDTSP) for public comment.

Key details

- The policy seeks to bolster research and development in deep tech start-ups, which work on fundamental and technical problems, unlike firms that monetise technology with distinguished business models, the draft says.
- The policy also seeks to find approaches to provide financing to deep tech start-ups at critical moments, such as before they go to market with their products or ideas.
- Additionally, the policy seeks to simplify the intellectual property regime for such start-ups, ease regulatory requirements, and proposes a slew of measures to promote these firms.
- For instance, the NDTSP suggests that an Export Promotion Board be created to ease barriers of entry for Indian deep tech start-ups into foreign markets, and that clauses to ease such market access be included in foreign trade agreements.

It aims to strengthen India's position in the global deep tech value chain, focusing on areas such as semiconductors, Artificial Intelligence (AI), and space tech. The policy specifically targets deep tech start-ups that work on fundamental and technical problems, unlike those that focus solely on monetizing technology through business models.

- **The draft policy highlights the need** to support deep tech start-ups, which focus on solving fundamental and technical challenges, unlike firms that leverage technology with innovative business models.
- **The policy also identifies ways to provide funding** to deep tech start-ups at crucial stages, such as before they launch their products or ideas in the market.

Demands of the policy focuses on the following issues

Bolstering Research and Development:

- The policy seeks to support research and development activities in deep tech start-ups to foster innovation and technological advancements.

Financing Support:

- The policy aims to provide financing assistance to deep tech start-ups at critical stages, such as before they launch their products or ideas into the market.

Simplifying Intellectual Property Regime:

- The policy proposes to streamline the intellectual property regime for deep tech start-ups, making it easier for them to protect their innovations and inventions.

Easing Regulatory Requirements:

- The NDTSP suggests measures to ease regulatory burdens for deep tech start-ups, enabling them to navigate administrative processes more efficiently.

Promotion Measures:

- The policy suggests the creation of an Export Promotion Board to facilitate the entry of Indian deep tech start-ups into foreign markets and encourages the inclusion of provisions for market access in foreign trade agreements.

Attracting Global Talent:

- The policy includes resource-intensive approaches to attract international talent, providing networking opportunities and incentives for experts interested in contributing to India's deep tech ecosystem.

Inter-Ministerial Deep Tech Committee:

- To address the different aspects of deep tech and its supply chains that fall under various ministries, the policy recommends the creation of an "Inter-Ministerial Deep Tech Committee" to review and coordinate the requirements for a thriving deep tech ecosystem.

International Engagement:

- The policy emphasizes the need for a coordinated and comprehensive approach to engaging with international partners and multilateral institutions to safeguard India's interests in deep tech development and manufacturing.

Closing remarks

- Overall, the NDTSP aims to foster a vibrant ecosystem for deep tech start-ups in India, promoting innovation, technological advancements, and international collaboration to ensure India's competitiveness in the global deep tech landscape.

7.2   GOOD MANUFACTURING PRACTICES

Context

- Good Manufacturing Practices (GMP) which were revised in 2018, bringing them on par with World Health Organisation (WHO) standards.

Details

- Companies with a turnover of over Rs 250 crore will have to implement the revised GMP within six months, while medium and small-scale enterprises with turnover of less than Rs 250 crore will have to implement it within a year.
- The decision is important as only 2,000 of the 10,500 manufacturing units in the country were found to be compliant with the global WHO-GMP standards.
- According to officials, this will lead to at least 11 specific changes in the manufacturing process on the ground, including introduction of a pharmaceutical quality system, quality risk management, product quality review, and validation of equipment.

About Good Manufacturing Practices (GMP)

*Good Manufacturing Practices (GMP) is a set of guidelines and standards aimed **at ensuring the quality, safety, and consistency of pharmaceutical, food, and other regulated products** during their manufacturing process. GMP guidelines are established by **regulatory authorities to protect the health of consumers** and to ensure that the products are manufactured in a controlled and standardized manner.*

Concepts of GMP:

- **The concept of GMP originated in the 1940s** when the World Health Organization (WHO)

introduced the first GMP for the production of biological products such as vaccines and sera.

- **The need for GMP was further highlighted** by several incidents of substandard and contaminated drugs that caused serious adverse effects and deaths among patients.
- **In 1969, when the World Health Assembly recommended t**he first version of the WHO Certification Scheme on the quality of pharmaceutical products moving into the global market.
- **It accepted the WHO GMP as an integral part of the Scheme**. Since then, WHO has revised and updated its GMP guidelines several times to reflect the advances in science and technology and to harmonize with other international standards**.**

Features of GMP

Quality Management System:

- This is the framework that defines the policies, objectives, responsibilities, and procedures for ensuring product quality. A quality management system ensures that products meet their intended specifications and quality standards.

Documentation and Record Keeping:

- This is the process of creating, maintaining, and storing records of all manufacturing activities and operations. Documentation and record-keeping provide evidence of compliance with GMP and enable traceability and accountability.

Personnel Training and Qualification:

- This is the process of providing adequate training and qualification to personnel who

are involved in the manufacturing process. Personnel training and qualification ensure that personnel are competent to perform their assigned tasks and follow GMP requirements.

Premises and Equipment:

* These are the physical facilities and devices that are used for manufacturing. Premises and equipment should be designed, constructed, maintained, and cleaned according to appropriate standards to prevent contamination and cross-contamination of products.

Challenges Faced by India in Implementing GMP

Lack of awareness and training:

* Many manufacturers, especially small and medium enterprises (SMEs), are not fully aware of the benefits and importance of GMP. They also lack adequate training and skills to implement GMP properly.

High cost and complexity:

* Implementing GMP involves high cost and complexity for many manufacturers. They have to invest in upgrading their infrastructure, equipment, technology, documentation, etc.

* They also have to comply with multiple regulations from different authorities at the central and state levels.

Resistance to change:

* Some manufacturers are reluctant or resistant to change their existing practices and adopt GMP. They may perceive GMP as an unnecessary burden or interference in their business operations.

Lack of enforcement and monitoring:

* The enforcement and monitoring of GMP compliance is weak and inconsistent in India. There is a shortage of qualified inspectors and auditors who can conduct regular and effective inspections and audits.

* There is also a lack of coordination and cooperation among different regulatory agencies at the central and state levels.

Closing remarks

* The Indian government has set a deadline for pharmaceutical companies to adopt the revised Good Manufacturing Practices (GMP) in line with World Health Organization (WHO) standards. This is a positive move that will benefit both the industry and public health.

7.3   PHARMACY (AMENDMENT) BILL, 2023

Context

* The Pharmacy (Amendment) Bill, 2023 was introduced in Lok Sabha on August 03, 2023.

Details

* The Lok Sabha on August 7 passed the Pharmacy (Amendment) Bill, 2023, which was introduced on August 03.
* The Bill amends the Pharmacy Act, 1948 which regulates the practice and profession of pharmacy.

About the bill

* **Registration under the Pharmacy Act, 1948** is mandatory to practice pharmacy in India.

* The Bill looks at the insertion of new section 32C, which provides a special provision relating to persons registered or qualified under the Jammu and Kashmir Pharmacy Act, 2011.
* The Bill notes that anyone who is registered as a pharmacist under the Jammu and Kashmir Pharmacy Act, 2011 or possesses qualifications prescribed under the 2011 Act will be deemed to be registered as a pharmacist under the Pharmacy Act, 1948.
* This will be contingent upon the person submitting an application for registration within a year of the amendment coming into force and paying a prescribed fee.

The proposed Section 32C stipulates the following key points:

- **Individuals registered under the Jammu and Kashmir Pharmacy Act, 2011** or possessing qualifications (medical assistants or pharmacists) prescribed under the same act will be automatically considered registered under the Pharmacy Act, 1948.
- **This transition will be subject to the condition** that an application be submitted within a period of one year from the commencement of the Pharmacy (Amendment) Act, 2023.
- **The application process entails the payment** of a specified fee and compliance with the prescribed procedure, as determined by the Government of the Union territory of Jammu and Kashmir and the Administration of the Union territory of Ladakh.

Background and Need for the Amendment

- The Union health ministry emphasizes that the implementation of the Jammu and Kashmir Reorganisation Act, 2019, led to the repeal of various acts, including the Jammu and Kashmir Pharmacy Act, 2011.
- This act, which regulated the pharmacy profession in the region, was replaced by the Pharmacy Act, 1948."

However, certain ambiguities arose due to notifications issued regarding registration transitions

- Notifications in 2020 indicated that individuals already registered under the **Jammu and Kashmir Pharmacy Act, 2011** or possessing approved qualifications could be considered registered under the **Pharmacy Act, 1948,** provided they applied within a specified timeframe and paid the relevant fee.
- This created confusion regarding whether individuals who possessed approved qualifications but could not register earlier or students undergoing approved courses at the time of enactment were eligible for registration.

Collaboration and Drafting of the Amendment

- **To address these uncertainties, the proposed changes were formulated in consultation with various stakeholders:**
  - The Ministry of Home Affairs collaborated with the Department of Health and Medical Education of the Government of the Union Territory of Jammu and Kashmir and the administration of the Union Territory of Ladakh.
  - Both Union territories submitted the draft amendment Bill after thorough review and vetting by their respective Departments of Law, Justice, and Parliamentary Affairs.

Conclusion

- The Pharmacy (Amendment) Bill, 2023, thus stands as a collaborative effort aimed at ensuring a smoother transition for pharmacists from the Jammu and Kashmir Pharmacy Act, 2011, to the broader provisions of the Pharmacy Act, 1948.
- This move seeks to harmonize the registration process, eliminate ambiguities, and provide clarity to all stakeholders involved.

7.4   MENTAL HEALTHCARE AND ITS MANAGEMENT REPORT

Context

- According to National Mental Health Survey 2015-16, around 150 million Indians affected by some type of mental illness.

Details

- There is a shortage of around 27,000 psychiatrists in India, a parliamentary committee has urged the Union health ministry and the National Medical Commission (NMC) to augment post-graduate

and equivalent seats for the discipline in medical colleges across the nation.

- According to the department-related Parliamentary Standing Committee on Health and Family Welfare, there are just around 9,000 psychiatrists in the country even though nearly 15 percent of adults — as highlighted in the National Mental Health Survey-1 (NMHS) 2015-16 — require active intervention for one or more mental health issues.

What is mental healthcare management?

- The official definition refers to a style of care that involves educating patients and their support systems about managing their healthcare journey more effectively.
- Rather than simply treating a disease, as would traditionally happen under a "case management" model, mental healthcare management emphasizes prevention, education, and social support systems.
- In this way, management of care can be led by healthcare teams but implemented by individuals outside of standard healthcare systems.
- This more comprehensive route reduces the burden on healthcare teams while increasing public health.

The challenges

- While most healthcare workers agree that mental healthcare management is an effective and necessary measure for their patients, there have historically been a few challenges to implementing these services. They are as follows:
  o **Lack of access to mental healthcare providers**. There are still very few mental health practices available. This makes it hard for physicians to build relationships with mental health providers and prevents physicians from referring patients to them.
  o **Small practices lack resources**. With limited resources, small practices are unable to adopt mental health services into their practice. This makes it very difficult to offer mental healthcare management and the management of other conditions and diseases.
  o **The burden of mental health falls on other care providers.** This is because of the factors mentioned above. When this happens, appropriate care can fall through the cracks or be mismanaged.

Concluding Remarks

- Acknowledging the extent of the issue would be the first step towards addressing the mental health crisis in the country. The next and most pertinent step – given the socioeconomic groups largely affected by the crisis – would be to take initiative towards making mental healthcare more accessible, with targeted interventions for vulnerable groups.

7.5   STEM CELL MANUFACTURING MARKET

Context

- Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028" by IMARC Group, finds that the global stem cell manufacturing market size reached US$ 12.3 Billion in 2022**.**

Details

What is Stem Cell Manufacturing?

- **Stem cells are unique, multifaceted cells** that develop into different cell types, including muscle, blood, and brain cells.
- **They are commonly obtained from** blood, bone marrow, embryo, umbilical cord, and placenta. They are cultured and multiplied in laboratory settings, providing an abundant supply for various applications.

- They are **extensively researched** for their efficacy in treating multiple conditions, such as neurodegenerative diseases, diabetes, and heart disease.
- They are **cryopreserved to maintain their viability** and are extensively used for human disease modeling, drug discovery, gene therapy, and tissue engineering. Besides this, they help decrease the need for organ donations and reduce the time patients spend on transplant waiting lists.
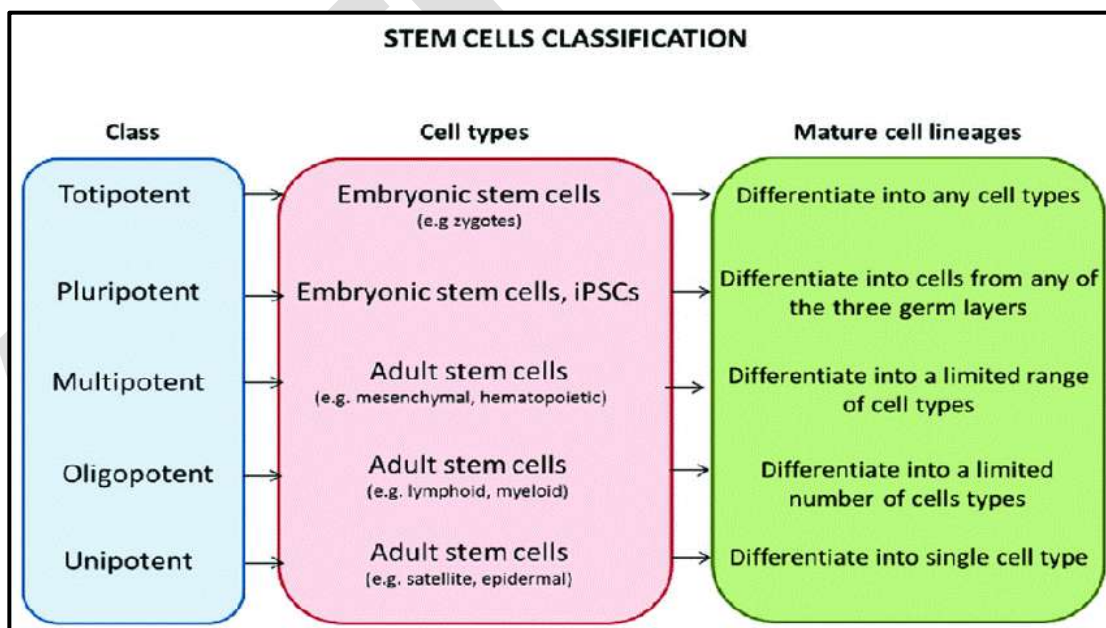
Stem Cell Manufacturing Market Trends and Drivers:

- **The rising prevalence of chronic and degenerative diseases** worldwide represents one of the key factors catalyzing the demand for efficient stem cell manufacturing processes.
- **Additionally, the increasing awareness about the potential of regenerative medicine** and the growth of the global aging population, who are more susceptible to chronic illnesses, is favoring market growth.

- Apart from this, **advancements in biotechnology** are leading to improved manufacturing techniques.
- Furthermore, **continuous investments in research and development (R&D)** activities, coupled with growing governmental support for stem cell studies, are offering a favorable market outlook.
- Moreover, the emergence of **induced pluripotent stem cells** is positively influencing the market.

Stem Cell Transplantation

- **About:** Stem cell transplantation (SCT), sometimes referred to as bone marrow transplant, is **a procedure in which a patient receives healthy stem cells to replace damaged stem cells.**
- **Engraftment:** After the stem cells are infused into the patient's bloodstream, they travel to the bone marrow and begin the process of forming new, healthy blood cells including white blood cells, red blood cells and platelets. This process is called "engraftment."

STEM CELLS CLASSIFICATION

Class	Cell types	Mature cell lineages
Totipotent	Embryonic stem cells (e.g zygotes)	Differentiate into any cell types
Pluripotent	Embryonic stem cells, iPSCs	Differentiate into cells from any of the three germ layers
Multipotent	Adult stem cells (e.g. mesenchymal, hematopoietic)	Differentiate into a limited range of cell types
Oligopotent	Adult stem cells (e.g. lymphoid, myeloid)	Differentiate into a limited number of cells types
Unipotent	Adult stem cells (e.g. satellite, epidermal)	Differentiate into single cell type

7.6   DIGITAL PERSONAL DATA PROTECTION BILL 2023

Context
- The Digital Personal Data Protection Bill, 2023, was passed in the Lok Sabha in a voice vote, amid continuous sloganeering from the Opposition benches.

Details
- The Bill sets out requirements for firms collecting data online, with exceptions for the Government and law enforcement agencies.
- The Bill, now headed to the Upper House, also amends the Right to Information Act, 2005 to remove public interest exemptions on disclosing personal information.

About the Bill:
- The Bill **defines personal data as any data that can identify an individual, such as name, address, phone number, email, biometric data, etc.** It also categorises some personal data as sensitive personal data, which includes financial data, health data, sexual orientation, religious or political beliefs, etc.
- The Bill requires entities that **collect and process personal data** to obtain consent from the individuals and follow certain principles of data protection, such as purpose limitation, data minimisation, accuracy, storage limitation, etc.
- The Bill also **establishes a Data Protection Authority (DPA)** to oversee and enforce the provisions of the Bill and impose penalties for violations.

Some of the main issues raised by the critics are

Government Exemptions and Data Access
- Critics are concerned that the **bill grants the government wide-ranging exemptions from data protection obligations**. The government's ability to access personal data without consent for reasons such as national security, public order, sovereignty, and integrity of India raises privacy and civil liberty concerns. The power to mandate entities to provide anonymized or non-personal data for policy-making or research purposes might also lead to **potential misuse of data.**

Cross-Border Data Transfer
- The bill's provisions for **the cross-border transfer of personal data have been criticized for lacking clear criteria and mechanisms for approval or agreement**. Requiring one copy of personal data to be stored in India may pose challenges for global entities, leading to operational complexities and increased costs. The absence of well-defined guidelines for transferring data outside India raises uncertainties about data flows and compliance.

Individual Rights and Remedies
- While the bill grants individuals certain rights over their data, critics argue that **these rights are subject to exceptions and limitations that could undermine their effectiveness.** For example, the right to erasure is not absolute and can be denied under specific circumstances. The bill's provisions also do not offer a robust mechanism for individuals to seek compensation or redressal for harm caused by data breaches or misuse.

Addressing Emerging Digital Age Challenges
- Critics have pointed out that the **bill may not adequately address the challenges posed by emerging technologies and practices in the digital age.** Aspects like artificial intelligence, big data analytics, social media platforms, and online profiling may require specialized considerations to ensure adequate protection of personal data. Incorporating principles like privacy by design and default from the beginning stages of system and process development is seen as crucial to safeguard privacy.

What other data protection models have been adopted elsewhere?

EU's General Data Protection Regulation (GDPR)

- The GDPR is considered a gold standard for data protection, emphasizing user consent, transparency, and robust enforcement mechanisms. It empowers individuals with control over their data and holds businesses accountable for data breaches.
- While the **Indian bill draws inspiration from the GDPR**, it has been criticized for providing more exemptions for the government and lacking the same level of accountability for public authorities.

U.S. Data Protection Model

- The U.S. approach focuses on protecting individual liberties from government intrusion. It allows data collection as long as individuals are informed, but critics argue that it lacks comprehensive privacy principles.
- Unlike the Indian bill, the U.S. lacks a unified data protection framework and mainly relies on sector-specific regulations. This can result in fragmented and inconsistent protection.

China's Data Protection Laws

- China's recent data protection laws, such as the Personal Information Protection Law (PIPL) and Data Security Law (DSL), grant individuals certain rights over their data and impose penalties for mishandling data.
- **Similar to the Indian bill, China's laws have been criticized for giving the government extensive powers to regulate data and companies.** The Indian bill's provision for government control and exemptions has raised concerns about its alignment with China's approach.

Conclusion

- These are some of the examples of data protection models that have been adopted or proposed by different countries and regions. However, there is no one-size-fits-all solution for data protection, as each model reflects the specific context, culture, values, and objectives of its jurisdiction. Therefore, it is important to evaluate the merits and drawbacks of each model and learn from the best practices and experiences of others, while also considering the unique needs and challenges of one's own country or region.

7.7   ANUSANDHAN NATIONAL RESEARCH FOUNDATION BILL

Context

- The Lok Sabha on Monday passed the Anusandhan National Research Foundation Bill to set up a national agency to fund research across universities in the country.

Details

- The Lok Sabha on Monday passed the Anusandhan National Research Foundation Bill to set up a national agency to fund research across universities in the country.
- Science and Technology Minister Jitendra Singh had introduced the Anusandhan National Research Foundation Bill-2023 on Friday in the Lower House.

About the bill:

The bill seeks to set up a Rs 50,000-crore fund, with a sizeable contribution from the private sector by tapping into the corporate social responsibility (CSR) funds, to "seed, grow and promote" research and development (R&D) and foster a culture of research and innovation throughout India's universities, colleges, research institutions, and R&D laboratories.

- The Anusandhan National Research Foundation Bill 2023 seeks to **establish a new body, the Anusandhan National Research Foundation (NRF), to promote and fund research and innovation in science, technology, engineering and social sciences.** The NRF will replace the existing Science and Engineering Research Board

(SERB), which was created by the Science and Engineering Research Board Act 2008.

- o The Bill states that the SERB Act will be repealed and the SERB will be dissolved upon the commencement of the NRF Act.
- The Bill aims to **create a robust research ecosystem in India by supporting researchers** across disciplines and institutions, fostering collaboration and excellence, and enhancing the quality and impact of research outcomes.

Functions of NRF

- **Prepare short-term, medium-term, and long-term roadmaps** and formulate programs for research and development (R&D) in natural sciences, engineering and technology, environmental and earth sciences, health and agriculture, and scientific and technological interfaces of humanities and social sciences.
- Facilitate and finance the growth of R&D and related infrastructure in universities, colleges, and research institutions through grants, fellowships, scholarships, awards, prizes, etc.
- **Support translation of research into capital-intensive technology** by providing financial assistance for proof-of-concept development, prototyping, testing, validation, scaling up, etc.

- **Encourage international collaboration** by facilitating the exchange of researchers, students, faculty members, etc. and participating in joint research projects with foreign institutions.
- **Encourage investments in the Foundation by private and public sector** entities by creating an enabling environment for philanthropy, corporate social responsibility, endowments, etc.
- Undertake an annual survey of scientific research, outcomes, and spending in India and benchmark them with global standards.

Conclusion

- The Governing Board may also appoint a Chief Executive Officer, who should be of the rank of an Additional Secretary, or above, and who will be responsible for the day-to-day administration and management of the Foundation.

7.8   NATIONAL MEDICAL COMMISSION'S NEW GUIDELINES

Context

- The comprehensive guidelines touch on topics such as doctors' use of social media, whether they can refuse treatment in certain cases, the medicines that are to be prescribed and their continuous professional development.

Key details

- Doctors may refuse treatment to abusive, unruly, or violent patients and relatives. Doctors must prescribe generic medicine. And, they may use social media only to educate and not solicit patients.
- These are some of the guidelines for the professional conduct of registered doctors of modern medicine recently notified by the ethics and medical registration board under

the country's apex regulator National Medical Commission (NMC).

- The over 60-page guidelines have provisions ranging from what medical degrees a doctor can mention on their prescription pads to the kind of advertisements they can put out, the records they must keep, and the way they treat patients through teleconsultation.
- The guidelines warn against receiving commissions from pharmacies or diagnostic laboratories or attending conferences sponsored by the pharmaceutical industry.

About the guidelines

- The guidelines further **underscore the importance of rational drug prescription**, discouraging the unnecessary use of

medications and irrational combinations of fixed-dose tablets.

- **To ensure transparency and accuracy**, prescriptions provided by RMPs and medications dispensed by pharmacies should explicitly state the drug's generic name, according to the NMC directive.
- The rationale behind these directives, according to the NMC, is to reduce healthcare costs for the population by advocating the use of generic drugs, **which are often 30 to 80% cheaper than branded counterparts.**

Provisions

Curb on sponsorships

- The guidelines warn against receiving commissions from pharmacies or diagnostic laboratories or attending conferences sponsored by the pharmaceutical industry.

Right to refuse treatment

- Doctors may refuse treatment to abusive, unruly, or violent patients and relatives.
- Such patients should be referred for further treatment elsewhere

Use of social media by doctors

- Doctors may provide information or make announcements online, but the information *should be verifiable and not mislead people.*
- The doctors have been asked not to discuss the specifics of the treatment of their patients or post their scans online.
- Doctors have also been asked to refrain from sharing testimonials by patients or images and videos of cured patients.
- *No doctor can deny birth control measures or abortions* due based on religious beliefs.
- The guideline also forbids doctors from "purchasing" likes, followers, or any fees to boost their profile on search algorithms.
- Doctors should not participate in telemedicine platforms that provide ratings, reviews, and promotions of certain doctors by any means.

Prescriptions

- Doctors have been asked to *write prescriptions in legible, capital letters.*

- Doctors have been asked to prescribe only generic medicines, except for cases where medicines have a *narrow therapeutic index* – drugs where a small difference in dosage may lead to adverse outcomes – and other exceptional cases.

A generic drug is defined as a drug that is comparable to brand/reference listed product in dosage form, strength, route of administration, quality and performance characteristics, and intended use.

A branded generic drug is one which has come off patent and is manufactured by drug companies and sold under different brand names.

These drugs may be less costly than the branded patent version but costlier than the bulk-manufactured generic version of the drug. There is less regulatory control over the prices of these branded generic drugs.

Telemedicine guidelines also list the type of drugs by the type of consultation provided. For example,

- **list O,** with over-the-counter medicines such as cough suppressants, some pain medicines, and antacids among others, can be prescribed for any kind of online consultation whether through messages, telephone calls, or video calls.
- **List A** are drugs that can be prescribed only after a video consultation.
- **List B** are drugs that can be prescribed after any type of consultation but only for follow-up patients.

What do the guidelines say about doctors' right to refuse treatment?

What is Continuous Professional Development (CPD) and what do the guidelines say?

- The guidelines say that with *constantly evolving medical practices,* new diseases emerging like Covid-19, new technologies coming in, along with a more aware patient base means that doctors must keep re-training.

- Doctors should have *studied 30 credit points in their relevant fields* at the time of renewal of their license every five years.
- The doctors have been asked to undertake these sessions every year, ideally for six credits a year but at least three credits.
- *Not more than 50% of this training should be online.*
- Even professors at medical college hospitals have to undergo such training despite staying in touch with academics.

There are several issues with prescribing generic medicines.

- First, *medical stores generally do not stock them* because the profit margins are narrow for generics. This would mean my patients will have to go from shop to shop looking for these medicines that might cost just Rs 50, not a big spend for people going to private clinics and hospitals.
- Second, if the generic version *is not available then the responsibility of substitution is then shifted to pharmacists.* This would promote only the brands that have good profit margins.
- Third, the *quality* of all generic medicine is not the same.

What do the guidelines say about doctors participating in conferences?

- The previous guidelines are from a time when social media was not prevalent. Now, *doctors are on social media platforms* discussing developments in their field, sharing knowledge, or putting out educational material. All of this is still allowed but the new guidelines ensure that a patient's privacy is not violated, and their scans do not end up online. This was much needed.
- The guidelines are progressive and are looking out for *patient privacy.*
- For the first time, the regulator has made it mandatory for doctors to continue to learn throughout their active years.
- Issue of high prices of drugs due to None being -*prescription of generic* drugs would be addressed.

Closing remarks

- The guidelines say doctors or their families should not receive any gifts, travel facilities, hospitality, cash or monetary grants, consultancy fee or honorariums, or access to entertainment or recreation from pharmaceutical companies, their representatives, commercial healthcare establishments, medical device companies, or corporate hospitals under any pretext. This restriction does not apply to the salaries of doctors working for such companies.

7.9   ERADICATING LYMPHATIC FILARIASIS BY 2027

Context

- India is committed to eradicate Lymphatic Filariasis by 2027, surpassing the global target by three years, Union Health & Family Welfare Minister Mansukh Mandaviya said while inaugurating the second phase of the Annual Nationwide Mass Drug Administration (MDA) initiative.

Details

- To amplify the initiative's reach, Mandaviya underscored the importance of awareness campaigns at local levels, such as villages and panchayats.
- Stressing the significance of diligent medicine consumption, he recommended it be done under the watch of healthcare professionals to ensure efficacy.
- The event also saw the Union health minister launching the National Guidelines for Clinical Management of Dengue and Chikungunya Fevers for 2023.

ENHANCED STRATEGIES FOR ELIMINATION OF LYMPHATIC FILARIASIS

About Lymphatic Filariasis

- *Filariasis is a disease caused by a* <u>**chronic mosquito-borne parasitic infection.**</u> *Chronic infection can lead to swelling of the extremities, hydroceles, and testicular masses.*
- *It is the second-largest cause of permanent deformity and disability behind leprosy worldwide.*
- *Lymphatic filariasis is a neglected tropical disease that causes significant morbidity in the developing world.*
- *The* <u>**Global Programme to Eliminate Lymphatic Filariasis is providing mass drug administrations (MDA)**</u> *to populations in endemic areas in a push to eradicate this disease.*

Etiology

- **Causes-** Three species of nematode parasites: Wuchereriabancrofti, Brugiamalayi, and Brugiatimori
- **Vectors-** Aedes, Anopheles, Culex, Mansonia, and Ochlerotatus.

Epidemiology

- It affects 120 million people in 72 countries worldwide, mostly in the tropics and subtropical climates of Asia, Africa, the Western Pacific, South America, and the Caribbean.
- *Four countries in America are endemic:* Haiti,
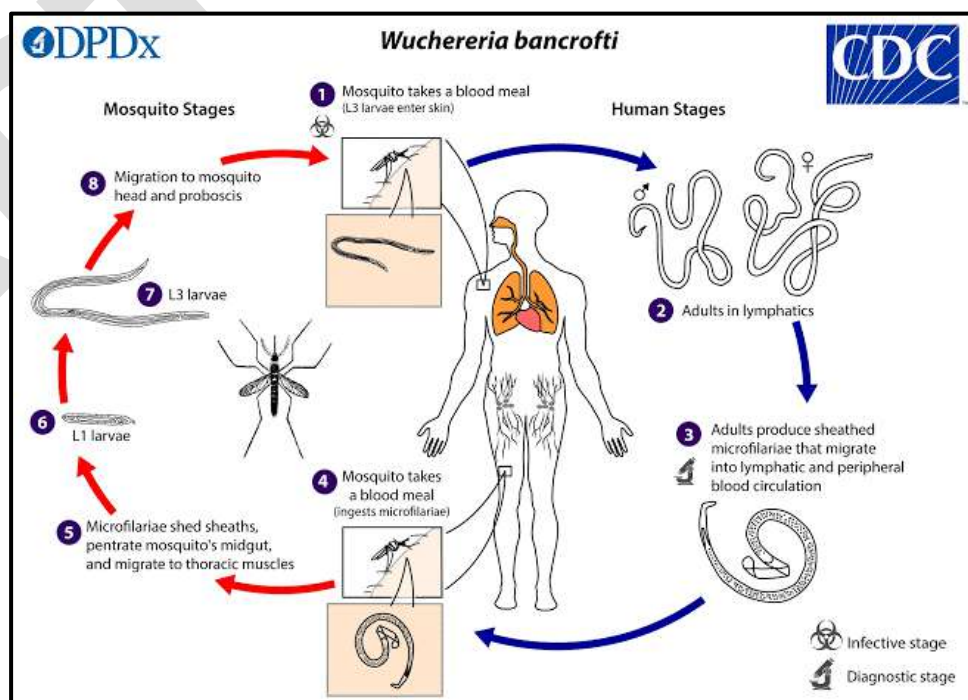
Dominican Republic, Guyana, and Brazil.

- One-third of children in endemic regions are asymptomatically infected with W. bancrofti.
- Half of the patients infected are in their 30s or 40s, and there is a 10:1 predilection for men to women.

Major problems and challenges for disease control

- Although there is now greater international momentum for lymphatic filariasis elimination, several important issues remain to be resolved, before the disease can be eliminated from India.
- **These includes uncertainty about the required coverage and duration** of annual treatment to achieve elimination and its relation to endemicity levels and vector/parasite complexes.
- **There is an urgent need for appropriate tools**, procedures and criteria for monitoring and evaluating the impact of elimination programmes. It is also becoming increasingly important to be able to predict and demonstrate the public health and socioeconomic impacts of the elimination efforts (especially for areas where interruption may not be easily/completely achieved).
- **The available interventions have significant limitations**. The current drugs require repeated annual treatment and there is a need for the development of macrofilaricidal / curative drugs.
- **Drug resistance may become a critical issue** after prolonged mass treatment with the current drugs. Therefore there is a need for early detection of resistance to drugs and replacement drugs.
- The major challenge with the currently available drugs is that *the interruption of transmission requires very high treatment coverage (probably > 85% of the total population)* to achieve elimination.
- Current approaches to drug delivery do not achieve this (*only 40-60% get treated* if mass treatment is executed by regular health services).
- There is an urgent need for more effective drug delivery strategies for lymphatic filariasis

elimination that are adapted to regional differences and variations in health sector development.

Measures taken in India

- After a pilot project in Orissa from 1949 to 1954, the *National Filaria Control Programme (NFCP)* was launched in the country in 1955, to delimit the problem, to undertake control measures in endemic areas and to train personnel to man the programme.
- The main control measures were mass *DEC administration, antilarval measures in urban areas* and indoor residual spray in rural areas.
- The revised program was launched in 1996-97 in 13 districts in seven endemic states namely Andhra Pradesh, Bihar, Kerala, Orissa, Uttar Pradesh, Tamil Nadu and West Bengal, where MDA was undertaken.
- India is committed to *eliminating Lymphatic Filariasis by 2027,* three years ahead of the global target through mission mode, multi-partner, multi-sector, targeted drive for which we have drawn up the roadmap".

Way ahead

- **Adequate time must be allocated for studying the populations** and devising effective health promotion techniques in collaboration with local health authorities and respected figures in the area. Such feedback is crucial.
- **Visiting villages at least once before** the start of the campaign to introduce it, meeting with village elders and establishing rapport, and returning to repeat and announce the campaign date may be effective strategies.
- Efforts shouldn't merely be focused on medication but also on **curbing disease transmission via mosquitoes.** Enhanced synergy between state and central governments is the need of the hour.

- **Community engagement** plays a pivotal role. Ex. Health initiatives like the Ni-kshay Mitra spotlighted the impact of grassroots involvement in health missions.
- The "**Whole of Government**" and "**Whole of Society**" **approach** is pivotal to successfully eliminating the disease.
- Awareness campaigns at local levels, such as villages and panchayats are pivotal.
- Second phase of the Annual Nationwide Mass Drug Administration (MDA) initiative. National Guidelines for **Clinical Management of Dengue and Chikungunya** Fevers for 2023.

Closing remarks

- India contributes to 41 % of global lymphatic filariasis. As a signatory to 50th World Health Assembly resolution on global elimination of lymphatic filariasis in 1997, India must intensify the efforts to eliminate filariasis. The single dose mass therapy with DEC has been found to be as effective as 12 day therapy as a public health intervention. Very high treatment coverage (probably > 85%) is required to achieve interruption of transmission and elimination. Hence, there is an urgent need for more effective drug delivery strategies that are adapted to regional differences in India.

7.10 NATIONAL PHARMACEUTICAL PRICING AUTHORITY (NPPA)

Context

- Drug price regulator National Pharmaceutical Pricing Authority (NPPA) on Wednesday fixed the retail prices of 44 new drug formulations in its 115th meeting.

Details

- The regulator also notified the changes in bulk drugs and formulations, monitored the prices of non-scheduled drugs and formulations, and oversaw the implementation of the provisions of the Drugs (Price Control) Order (DPCO).
- The maximum price of sugar, pain, fever, infection and heart medicine, including multi-vitamin and D3, has been fixed in the meeting.
- However, Troikaa Pharmaceuticals' 250mg/ml 'Paracetamol Injection' is currently exempted. In addition, companies will be able to take GST from the customer only if they have paid it.
- All stakeholders, retailers and stockists, will have to inform about the change in prices in 15 days. If a company fails to do so, action under the Essential Commodities Act will be taken against companies.

Significance of National Pharmaceutical Pricing Authority

- It was highly important during the epidemic because by stabilizing the prices of drugs and medical equipment, the general populace could afford and access them.
- It forces the drug supplier to price drugs at MRP and no higher.
- The NPPA makes sure of this and limits the price to make a select few critical medications widely accessible to the public since certain medicines and drugs are crucial and they should be offered to them at a low cost.
- The National Pharmaceutical Pricing Authority makes sure that the costs of some essential medications are fixed so that every country resident may easily afford and have access to them.

Price fixation of the retail price of new drugs with ingredients that have become off-patent or about to become off-patent

- The present working of retail price *fixation by applying a 50% reduction* is as provided under Para 5(3)(i) of DPCO, 2013.
- Department of Pharmaceuticals (DoP) issued a notification amending the DPCO, 2013 to include provisions by which the retail price of new drugs with ingredients that have become off-patent or about to become off-patent will

be arrived at by *reducing fifty per cent of the price calculated as per the provisions of the price control order.*

- A similar provision has also been notified by the DoP for the revision of the ceiling price of the scheduled formulation after the *expiry of a patent issued under the Patents Act, of 1970.*

- As per the order, after one year from the date on which the retail price was fixed the Order

or the *date on which the price to the retailer of at least one company was fixed under the regulation is captured in the pharmaceutical market database,* whichever is later, the retail price for the subsequent manufacturers shall be fixed as per sub-paragraph (1) of Paragraph 4.

About National Pharmaceutical Pricing Authority

Department	• The National Pharmaceutical Pricing Authority was set up as an attached office of the Department of Chemicals and Petrochemicals, which is now the Department of Pharmaceuticals, on 29th August 1997.
Established	• It was established, inter alia, to fix/ revise the prices of controlled bulk drugs and formulations and to enforce prices and availability of the medicines in the country, under the Drugs (Prices Control) Order, 1995.
Function	• The organization is also entrusted with the task of recovering amounts overcharged by manufacturers for controlled drugs from consumers.
Monitor	• It also monitors the prices of decontrolled drugs in order to keep them at reasonable levels.

How are drug prices regulated?

- Periodically, the Health Ministry collaborates with experts to create the National List of Essential Medicines (NLEM). This list includes medications vital for treating prevalent conditions and falls under price control through the Drug Price Control Order (DPCO).
- The NPPA, a part of the Indian Government, was established to regulate drug prices. It enforces pricing and availability of medicines as per the Drugs (Prices Control) Order, 1995. NPPA also recovers overcharged amounts from consumers and monitors prices of unregulated drugs to ensure affordability.

7.11   AI AND ENVIRONMENTAL INTERSECTION

Context

- Artificial intelligence is an exciting and fast-changing technology. But it has a big CO2 footprint and is being used to boost activities that make climate change worse.

Details

- The field of artificial intelligence is booming, thanks in part, to the hype surrounding new tools like ChatGPT.
- The chatbot, owned by Microsoft-backed company OpenAI, has captured the public imagination with its ability to converse, write code, and compose poetry and essays in a surprisingly human way.

- It's also spurred a race among tech giants to release similar, more sophisticated products.
- Investment in artificial intelligence is growing rapidly. The global AI market is currently valued at $142.3 billion (€129.6 billion), and is expected to grow to nearly $2 trillion by 2030.
- AI systems are already a big part of our lives, helping governments, industries and regular people be more efficient and make data-driven decisions. But there are some significant downsides to this technology.

AI and Environmental Intersection

- The realm of artificial intelligence (AI) has ushered in a technological revolution with vast implications across various sectors.
- Concurrently, the urgency of addressing environmental concerns, including climate change, pollution, and resource depletion, has surged.
- As AI continues to evolve, its intersection with environmental issues presents both potential solutions and challenges that warrant exploration.

Positive Impacts of AI on the Environment

Providing Real-time analysis

- AI can be used to get information in real-time and even get future predictions of natural occurrences, such as changes in glacier mass, sea level rise, CO2 atmospheric concentration, and more. AI can be a vital environmental indicator that can help us make our planet a better place to live.

Measuring environment footprints

- AI can make a difference by measuring and calculating products' environmental and climate footprints. It can help in making businesses the most informed and effective decisions related to the footprint of products.

Tracking air quality

- AI can help monitor air pollution and even give insights into the impact of real-time air quality that can help people take protective measures. This can accelerate global environmental action by providing accurate data.

Biodiversity Conservation

- AI technology assists in monitoring and safeguarding biodiversity.
- **Cameras, drones, and sensors equipped with AI algorithms are employed for wildlife tracking and habitat preservation.**
- The analysis of vast ecological datasets facilitates the identification of critical habitats, aiding conservation efforts and contributing to species preservation.

Waste Management and Recycling

- AI-driven robotics and computer vision revolutionize waste management systems.
- Robots capable of identifying and sorting recyclable materials streamline recycling processes, minimizing landfill waste.
- **AI-powered solutions contribute to a circular economy by enhancing waste recovery and reducing the environmental impact of discarded materials.**

Environmental Monitoring and Disaster Management

- The **amalgamation of AI, remote sensing technologies, and IoT devices enables real-time environmental monitori**
- From tracking deforestation patterns to predicting natural disasters, AI enhances early warning systems.
- Rapid response and informed decision-making during emergencies minimize the impact of disasters on ecosystems and communities.

Negative Impacts and Challenges

Electronic Waste Disposal

- The e-waste produced by AI technology poses a **serious environmental challenge**. E-waste contains hazardous chemicals, including lead, mercury, and cadmium, that can contaminate soil and water supplies and endanger both human health and the environment.
- **By 2050, the World Economic Forum (WEF)** projects that the total amount of e-waste generated will have surpassed 120 million metric tonnes.

Impact on Natural Ecosystems

- AI applications like driverless automobiles and delivery drones pose a threat to animals and natural environments. Automation fuelled by AI may result in greater consumption as well as increasing waste in certain sectors, such as the e-commerce industry, which has normalised the rapid and frequent delivery of goods.

Lack of Transparency and Accountability

- The shadowy realm of AI development and utilisation breeds a lack of transparency and

accountability regarding its environmental impact.

- Certain companies put their financial well-being and competitive edge ahead of any potential negative effects that AI technologies may have on the environment.
- Users find it challenging to completely appreciate their environmental footprint due to the complexity of AI systems.

Ethical Considerations

- The expansion of AI technologies raises ethical questions regarding job displacement and social impacts. **Environmental sectors are not immune to these concerns, as automation and AI-powered solutions could reshape the workforce landscape.**
- Ethical frameworks should encompass considerations of environmental justice and equitable access to benefits.

A multifaceted strategy is needed to reduce AI's impact on the environment

- **First and foremost, energy consumption may be considerably decreased** by funding the study and creation of energy-efficient hardware and AI algorithms.
- **By optimising their hardware and algorithms**, AI systems can achieve similar efficiency with less energy consumption.
- **Promoting ethical AI design standards**, including avoiding pointless data collection and making sure end-of-life considerations are taken into account, is also essential.
- **A culture of openness and responsibility must be promoted as well**. To evaluate their environmental impact, stakeholders must prioritise providing pertinent data on AI models and data sources.
- **To ensure the ethical creation**, use, and disposal of AI technologies, governments and regulatory agencies should adopt precise standards and restrictions. Collaboration between businesses, academics, and policymakers is also essential.
- **Researchers should create solutions** that prioritise technological breakthroughs and environmental sustainability by promoting

multidisciplinary research and knowledge exchange.

AI-Driven Circular Economy

- The prospect of a circular economy is bolstered by AI's optimization capabilities. AI-driven product design, waste reduction, and efficient recycling processes contribute to minimizing resource consumption and promoting sustainable consumption patterns.

Smart Cities and Climate Resilience

- AI-powered urban planning holds promise for creating climate-resilient cities. By analyzing data on urban heat islands, flood-prone areas, and transportation patterns, AI assists in designing green infrastructure and energy-efficient urban systems.

Interdisciplinary Partnerships

- The complexity of environmental challenges necessitates collaboration among AI experts, environmental scientists, policymakers, and NGOs. Synergizing diverse expertise fosters holistic solutions that tackle multifaceted environmental issues.

Way forward

- **AI technologies can help improve renewable energy systems**, optimise agriculture, reduce waste, and monitor environmental conditions.
  - However, there are also risks associated with the use of AI, including the potential for increased natural resource extraction, exacerbation of environmental injustices, and job displacement.
- **To maximize the positive impact of AI** on the environment and society, it is important to prioritize responsible and ethical AI development and deployment.
  - This includes engaging with diverse stakeholders to ensure that AI is developed and used in ways that prioritize sustainability, equity, and justice.
- It also requires investing in the **research and development of AI technologies** that prioritise environmental sustainability and social equity, and ensuring that these technologies are accessible to all.

- **Ultimately, the use of AI to address environmental challenges** is just one part of a larger effort to transition to a more sustainable and equitable society.
- However, by approaching AI development and deployment with **caution and consideration of the potential risks and benefits**, we can help to ensure that AI is used to benefit the environment and all people.

Concluding Remarks

- As digital consumption increases, e-waste is a primary concern of today's society. A report by UN Global states that by 2030, e-waste will grow to almost 75 million metric tonnes. Therefore, reducing consumption and recycling electronic products as much as possible is essential. Additionally, consumers must repair those products that can be fixed.
- AI offers a variety of benefits for addressing the current climate issue, but it's challenging to overlook the possible negative consequences on the environment. Technology-related industries have a reputation for being innovative and creative, and they must use these skills to address the issues posed by Artificial Intelligence.

7.12   NUTRITION AND TB

Context

- According to the findings of the Reducing Activation of Tuberculosis by Improvement of Nutritional Status (RATIONS) trial, improved nutrition can reduce the incidence of all forms of TB by up to 40 per cent.

Details

- According to the findings of the Reducing Activation of Tuberculosis by Improvement of Nutritional Status (RATIONS) trial, improved nutrition can reduce the incidence of all forms of TB by up to 40 per cent, and of infectious TB by up to 50 per cent among those in contact with patients suffering from infectious lung TB.
- It also found that early weight gain among underweight patients with TB could reduce risk of mortality by up to 60 per cent, as it ensured higher treatment success.
- The findings of the studies by the Indian Council of Medical Research (ICMR), in collaboration with the National TB Elimination Programme and National Institute for Research in Tuberculosis, Chennai, have been published in The Lancet and The Lancet Global Health Journals.

Importance of the finding

India had an estimated 3 million cases of tuberculosis and 494,000 (4.94 lakh) TB deaths among HIV-negative people in 2021, according to the study.

The National Strategic Plan for Tuberculosis Elimination in India has targets of an 80 per cent reduction in incidence and a 90 per cent reduction in tuberculosis mortality by 2025.

- **The study is the first of its kind** in the world and the question was can nutritional intervention reduce TB incidence.
- **These findings, which come at a time when the Centre** is seeking to eliminate TB by 2025, can have implications at the policy implementation level.
- **The study offers the first evidence** of how nutritional support reduces the risk of mortality among TB patients.
- **The results of the trial are significant** as it shows that improved nutrition in family members has worked at the community level.
- **The studies are significant** because under-nutrition has now emerged as the leading risk factor for TB globally and simple dietary interventions have been found to be effective.
- **The findings shed light** on how we can tackle TB in the future.

WHO and government's initiatives

On the occasion on World TB Day, the World Health Organization (WHO) is announcing the expanded scope of the WHO Director-General's (DG) Flagship Initiative on tuberculosis over the period from 2023 to 2027 to support fast-tracking progress towards ending TB and achieving Universal Health Coverage (UHC) by 2030.

- The national strategic plan 2017-2025 sets the target of India reporting no more than *44 new TB cases or 65 total cases per lakh population by 2025.*
- Under the *national programme to eliminate TB by 2025*, TB patients are given monthly nutritional support of Rs 500 through direct benefit transfer for the duration of their treatment.
- The programme also aims to reduce the mortality to *3 deaths per lakh population by 2025.*
- Under the *Ni-Akshay Mitra programme*, volunteers can provide monthly nutrition kits to their "adopted" patients.
- More accurate molecular diagnostic tests like *CB-NAAT and TureNat* have been developed to test and detect TB cases.
- 79 line probe assay laboratories and 96 liquid culture testing laboratories have been set up for the diagnosis of multi and extremely drug-resistant TB.
- World Health Organisation's *End TB strategy* calls for an 80% reduction in the number of new cases, a 90% reduction in mortality, and zero catastrophic cost by 2030.

Prevalence of TB in India

- India accounts for 28% of all TB cases in the world, according to the Global TB Report 2022.
- There were 21.3 lakh cases detected in 2021 as compared to 18.05 lakh cases in 2020. The numbers are still lower than the 24.04 lakh cases reported before the pandemic in 2019, according to data from the government's Ni-kshay portal.
- In India, three million new TB cases and 4,94,000 deaths were reported in 2021, representing 27 per cent of the global TB

incidence and 35 per cent of deaths, according to the WHO Global Tuberculosis Report, 2022.

Improvements in treatment protocols

- Preventive efficacy with shorter rifamycin-based TPT regimen, both in HIV-positive and HIV-negative individuals are similar as monotherapy or in combination with isoniazid with clear advantages of better adherence due to the shorter duration, fewer adverse events and at least 20% greater treatment completion rate.
- Isoniazid based regimen will continue to have a role when rifamycins cannot be used e.g. in CLHIV ü Treatment options recommended for TPT once active TB has been excluded under NTEP include 6H and 3HP with weight band wise doses suggested with specific applicability to various target populations.
- All CLHIV/PLHIV who had successfully completed treatment for TB disease earlier should receive a course of post-treatment TPT.
- The standard dose of pyridoxine when used prophylactically for prevention of neuropathy among patients taking isoniazid is 10 mg/day in children and 25 mg/day in adults. In adult PLHIV, the dose would be 50 mg/day.
- TPT should not be withheld if pyridoxine is not available. Alternatively, multi-vitamins/ B-complex formulations with the requisite prophylactic dose of pyridoxin available within the general health system may be considered.
- There is no evidence of significant association between development of bacterial resistance to TB drugs and use of isoniazid or rifamycin for TPT.

Newer vaccines in the pipeline

- Trials are underway to test the effectiveness of a *vaccine called Immuvac,* which was initially developed to prevent leprosy, preventing TB.
- The vaccine developed using Mycobacterium indicus pranii has antigens – the portions of a

pathogen against which antibodies are developed – similar to those of leprosy and TB bacteria.

- Researchers are also testing the _vaccine candidate called VPM1002_, which is a recombinant form of the BCG vaccine modified to express the TB antigens better.

Way ahead

- A good nutritional package that provides a substantive amount of calories, proteins and micronutrients should be given to the household members of TB patients.
- The government needs to take stock of where the bottlenecks are. There is no point in pouring more money into a failing system.

- Any investment in _diagnostic treatments is irrelevant if people fighting TB are living on an empty stomach._ It affects the poorest populations and almost every family is in financial distress due to medical costs and lost wages.
- This distress can worsen food insecurity. A broader approach is needed to prevent TB, and it should include food support for those in close contact with the patient as they are also at high risk of contracting the disease.

7.13   GENOME-EDITED MUSTARD

Context

- Indian scientists have developed the first ever low-pungent mustard that is pest and disease-resistant. It is based on CRISPR/Cas9 gene editing, while being non-GM and transgene-free.

Key details

- Oilseeds yield not only oil for cooking and frying. Their so-called meal – the residual cake after extraction of oil from the seeds – is a protein-rich ingredient used in livestock, poultry and aqua feed.
- India's most significant domestically-grown oilseed is rapeseed-mustard.

Its share in the country's production of vegetable oils has been **_estimated at 42.6% (more than soyabean's 19.2%) and in that of meal at 30.3% (next to soyabean's 38.9%),_** _as per the US Department of Agriculture's data for the marketing year ending September 2023._

About Breeding for Canola-quality mustard

- A lot of effort in the past two decades – including by scientists at Delhi University's Centre for Genetic Manipulation of Crop Plants (CGMCP) and the Indian Council of Agricultural Research – has gone into the

breeding of rapeseed-mustard lines of so-called Canola quality.

Provisions
Cultivation

- The dry seeds from the **normal mustard (Brassica juncea)** cultivated in **India contain 120-130 parts permillion (ppm or mg/kg) of glucosinolates**.
- This is as against the sub-30 ppm levels in canola seeds. By lowering the glucosinolate content to the same dry seed weight concentration, the scientists have bred mustard lines whose oil and meal match the standard of canola-quality rapeseed (Brassica napus) in terms of pungency.

About Mustard

- **Mustard seeds have high levels of glucosinolates**, a group of sulphur and nitrogen-containing compounds contributing to the characteristic pungency of their oil and meal.
- **While that limits the oil's acceptability among consumers** – especially those preferring cooking medium having less strong flavour and odour – the problem is even more with the meal.

- **Rapeseed meal is unpalatable to poultry and pigs**, while having to be mixed with fodder grass and water for giving to cattle and buffaloes.
- **Besides reducing their feed intake, high glucosinolates** are also known to cause goiter (swelling of neck) and internal organ abnormalities in livestock.

Challenges in Traditional Mustard Varieties

- <u>Pungency:</u> Traditional mustard varieties contain high levels of glucosinolates, sulfur and nitrogen-containing compounds that contribute to the characteristic pungency of mustard oil and meal.
- <u>Palatability</u>: High glucosinolate content limits the acceptability of mustard oil among consumers who prefer milder flavors and odors in cooking mediums.
- <u>Feed Quality:</u> Rapeseed meal, the byproduct of oil extraction, is used in livestock and poultry feed. High glucosinolates make the meal unpalatable for certain animals and can lead to reduced feed intake, goiter, and organ abnormalities.

Why is this work important?

- **India is a huge importer of edible oils.** These imports were valued at $20.84 billion (Rs 167,270 crore) during the fiscal year ended March 2023, while meeting over 60% of the country's consumption requirement.
- **Given the massive foreign exchange outgo on account of imports**, there is a dire need to boost domestic oilseeds production through focused breeding for improving crop yields, pest and disease resistance, and product quality.
- **Mustard and soyabean are India's most widely-cultivated** oilseed crops, planted annually on 9 million and 12.5 million hectares area respectively.
- **Its higher average oil extractable content** (38% versus 18% for soyabean) makes mustard the bigger "oilseed" crop, while a

source of both fat for humans and protein for animals.

- **GM hybrid mustard and the new GE low-seed high-leaf glucosinolate lines** are major plant breeding advancements – from Indian scientists – that can go some way towards bringing down the dependence on imported vegetable oils.

Genome Editing Approach

1. <u>**CRISPR/Cas9 Technology**</u>: The CRISPR/Cas9 gene-editing tool is utilized to modify the glucosinolate transporter (GTR) genes in mustard plants.
2. <u>**Targeted Mutations**</u>: Ten out of the twelve GTR genes are edited in the high-yielding Indian mustard variety 'Varuna'.
3. <u>**Nucleotide Sequence Alteration**</u>: Using the Cas9 enzyme, specific nucleotide sequences are altered in the DNA, rendering the encoded proteins non-functional.
4. <u>**Role of Glucosinolates:**</u> Glucosinolates are synthesized in leaves and pod walls, and their accumulation in seeds depends on GTR genes' functionality.
5. <u>**Enhanced Resistance**</u>: The edited lines exhibit defense responses against fungal pathogens and insect pests similar to or better than the wild-type mustard.

Closing remarks

- The development of low-pungent, pest and disease-resistant mustard through CRISPR/Cas9 gene editing marks a significant advancement in India's agriculture sector. This innovation addresses the challenges of glucosinolates in traditional mustard varieties, offering benefits such as improved palatability, enhanced feed quality, and increased crop yields.
- Moreover, the distinction between GM and GE crops and the evolving regulatory framework highlight the safe and sustainable nature of this scientific breakthrough.

7.14   3D-PRINTING

Context
- India's first 3D-printed post office was virtually inaugurated by Union Minister Ashwini Vaishnaw in Bengaluru's Cambridge Layout.

Details
- To carry out 3D printing, one needs a personal computer connected to a 3D printer. All you need to do is design a 3D model of the required object on computer-aid design (CAD) software and press 'print'. The 3D printer does the rest of the job.
- **Multinational company Larsen & Toubro Limited** built the post office with technological support from IIT Madras under the guidance of Professor Manu Santhanam, Building Technology and Construction Management Division, Department of Civil Engineering.

Background
- **Invented in the 1980s**, 3D printing burst into the mainstream around the 2010s, when many thought it would take over the world.
- **The technology, however, at the time was expensive**, slow and prone to making errors. In recent years, some of these flaws have been done away with, making 3D printing more prevalent than ever before.
- **For instance, it's being used in automotive and aerospace** sectors to make parts of cars and rockets respectively.

What is 3D printing?
3D printing, also known as additive manufacturing, is a process that uses computer-created design to make three-dimensional objects layer by layer. It is an additive process, in which layers of a material like plastic, composites or bio-materials are built up to construct objects that range in shape, size, rigidity and colour.

- Unlike conventional manufacturing methods that involve material subtraction, 3D printing is additive.
- It **employs materials like plastics, composites**, or bio-materials to gradually create objects with precision in shape, size, rigidity, and color.

Principles of 3D printing
- **Layer-by-Layer Construction:** Unlike traditional subtractive manufacturing, which involves removing material from a larger block, 3D printing builds objects layer by layer, adding material to create the final product.
- **Digital Design:** A 3D model of the object is created using computer-aided design (CAD) software. The digital design is then sliced into thin horizontal layers, which serve as a blueprint for the printer.
- **Material Deposition:** Various materials, including plastics, metals, ceramics, and even biological tissues, can be used as the "ink" for 3D printers. The printer deposits material layer by layer, following the design specifications.

Advantages of 3D Printing
Flexible Design
- 3D printing allows for the design and print of more complex designs than traditional manufacturing processes. More traditional processes have design restrictions which no longer apply with the use of 3D printing.

Rapid Prototyping
- 3D printing can manufacture parts within hours, which speeds up the prototyping process. This allows for each stage to complete faster.
- When compared to machining prototypes, 3D printing is inexpensive and quicker at creating parts as the part can be finished in hours, allowing for each design modification to be completed at a much more efficient rate.

Print on Demand

- Print on demand is another advantage as it doesn't need a lot of space to stock inventory, unlike traditional manufacturing processes. This saves space and costs as there is no need to print in bulk unless required.

Minimising Waste

- The production of parts only requires the materials needed for the part itself, with little or no wastage as compared to alternative methods which are cut from large chunks of non-recyclable materials. Not only does the process save on resources but it also reduces the cost of the materials being used.

Challenges of 3D printing

Material Limitations:

- While 3D printing offers versatility in material options, certain advanced materials may be challenging to work with or expensive.
- **Quality Control:**
  o Ensuring consistent and reliable quality in 3D printed products can be challenging, especially for critical applications.

Regulatory and Legal Issues:

- As 3D printing evolves, challenges related to intellectual property rights, safety regulations, and quality standards need to be addressed.

Bioprinting:

- The field of bioprinting holds potential for creating functional organs and tissues for transplantation, but ethical, technical, and regulatory challenges remain.

Closing remarks

- India's debut of a 3D-printed post office underscores its progress in advanced manufacturing technologies.
- This achievement not only demonstrates the efficiency of 3D printing in construction but also reflects its potential to reshape industries, drive innovation, and contribute to economic growth.
- As technology continues to evolve, 3D printing holds the promise of revolutionizing traditional manufacturing methods and enhancing customization and efficiency across various sectors.

7.15   CHANDRAYAAN 3

Context

- ISRO on Tuesday said that in the "first-ever in-situ" measurements carried out in the lunar polar region, the Laser-Induced Breakdown Spectroscope (LIBS) instrument onboard Chandrayaan-3 rover Pragyan has unambiguously confirmed the presence of Sulphur (S) in the lunar surface near the south pole.

About Chandrayaan-3

- Chandrayaan-3 is a follow-on mission to Chandrayaan-2 to demonstrate end-to-end capability in safe landing and roving on the lunar surface. **It consists of Lander and Rover configuration**.
- It will be launched by **LVM3 from SDSC SHAR, Sriharikota**. The propulsion module will carry the lander and rover configuration till 100 km lunar orbit.
- The propulsion module has a **Spectro-polarimetry of Habitable Planet Earth (SHAPE)** payload to study the spectral and Polari metric measurements of Earth from the lunar orbit.
- The propulsion module will carry the **lander and rover configuration till 100 km lunar orbit**. The propulsion module has **Spectro-polarimetry of Habitable Planet Earth (SHAPE)** payload to study the spectral and Polari metric measurements of Earth from the lunar orbit.
  o **Lander payloads**:

- Chandra's Surface Thermophysical Experiment (ChaSTE) to measure the thermal conductivity and temperature; Instrument for Lunar Seismic Activity (ILSA) for measuring the seismicity around the landing site; Langmuir Probe (LP) to estimate the plasma density and its variations.
- A passive Laser Retroreflector Array from NASA is accommodated for lunar laser ranging studies.
  - **Rover payloads**:
- Alpha Particle X-ray Spectrometer (APXS) and Laser Induced Breakdown Spectroscope (LIBS) for deriving the elemental composition in the vicinity of landing site.

CHANDRAYAAN-3 INDIA'S SHOT TO THE MOON

The powered descent will begin on August 23, 5:45 pm, in four broad phases: Rough braking phase; Attitude Hold Phase; Fine Braking Phase; Terminal Descent Phase.

- Chandrayaan-3, which weighs 3,900kg and cost 6.1bn rupees ($75m; £58m), has the "same goals" as its predecessor - to ensure a soft-landing on the Moon's surface.

The mission objectives of Chandrayaan-3 are

- To demonstrate Safe and Soft Landing on Lunar Surface
- To demonstrate Rover roving on the moon and
- To conduct in-situ scientific experiments.

To achieve the mission objectives, several advanced technologies are present in Lander such as,

- **Altimeters**: Laser & RF based Altimeters
- **Velocimeters**: Laser Doppler Velocimeter & Lander Horizontal Velocity Camera

- **Inertial Measurement**: Laser Gyro based Inertial referencing and Accelerometer package
- **Propulsion System**: 800N Throttleable Liquid Engines, 58N attitude thrusters & Throttleable Engine Control Electronics
- **Navigation, Guidance & Control (NGC):** Powered Descent Trajectory design and associate software elements
- **Hazard Detection and Avoidance**: Lander Hazard Detection & Avoidance Camera and Processing Algorithm
- **Landing Leg Mechanism**.

To demonstrate the above said advanced technologies in earth condition, several Lander special tests have been planned and carried out successfully viz

- **Integrated Cold Test** - For the demonstration of Integrated Sensors & Navigation performance test using helicopter as test platform
- **Integrated Hot test** – For the demonstration of closed loop performance test with sensors, actuators and NGC using Tower crane as test platform
- **Lander Leg mechanism** performance test on a lunar simulant test bed simulating different touch down conditions.

About Chandrayaan-3

Launch Vehicle	• LVM3 M4 launcher
Two Module Configuration	• **Propulsion Module** (Carries Lander from launch injection to Lunar orbit) • **Lander Module** (Rover is accommodated inside the Lander).
Communication	• **Propulsion Module**: Communicates with IDSN • **Lander Module**: Communicates with IDSN and Rover. Chandrayaan-2 Orbiter is also planned for contingency link. • **Rover**: Communicates only with Lander.

Background

- **India's space program dates back more than six decades**, to when it was a newly independent republic and a deeply poor country reeling from a bloody partition.
- **When it launched its first rocket into space in 1963**, the country was no match for the ambitions of the US and the former Soviet Union, which were way ahead in the space race.
- **Now, India is the world's most populousnation** and its **fifth largest economy**. It boasts a burgeoning young population and is home to a growing hub of innovation and technology.

- **In 2014, India became the first Asian nation** to reach Mars, when it put the Mangalyaan probe into orbit around the Red Planet, for **$74 million – less than the $100 million Hollywood spent making space thriller "Gravity."**
- Three years later, India launched a record 104 satellites in one mission.
- **In 2019, ISRO announced in a rare televised address** that India had shot down one of its own satellites, in what it claimed was an anti-satellite test, making it one of only four countries to do so.
- That same year ISRO said India was planning to set up an **independent space station by 2030.**

The soft-landing process

Altitude: 100 km — Lander separates from propulsion module. Speed is over 6000 kmph. De-boost begins. Lander enters a lower orbit for soft-landing.

Altitude: ~30 km — Using its thrusters, Vikram reduces its speed further.

Altitude: 100 m — Vikram hovers above surface to scan for obstacles

Slowed descent

Touchdown

- Currently, the **only space stations available** for expedition crews are the International Space Station (a joint project between several countries) and **China's Tiangong Space Station.**
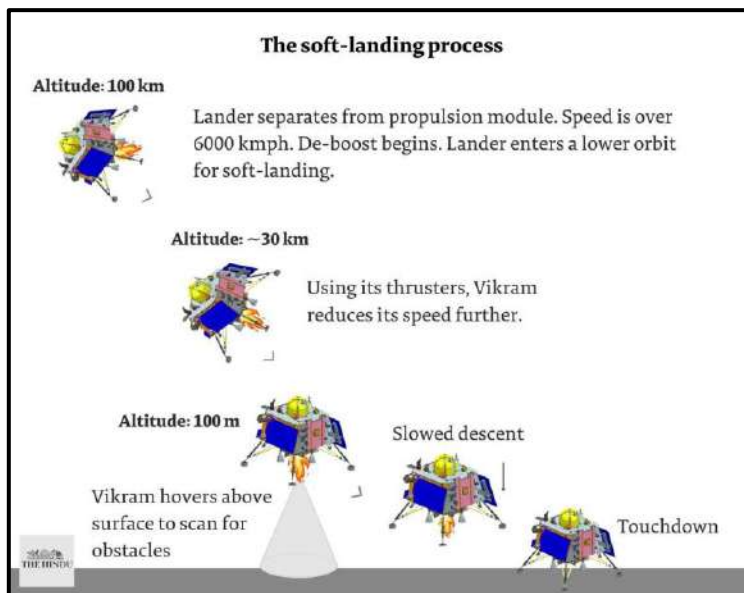
Conclusion

- Chandrayaan-3's successful landing near the lunar south pole epitomizes the spirit of exploration and innovation that ISRO embodies. The mission's achievements, propelled by advanced technology and a resolute team, deepen our understanding of the Moon's mysteries and pave the way for further lunar exploration. The triumph of Chandrayaan-3 cements India's position on the global map of space exploration and opens new avenues for unraveling the Moon's enigmatic history.

7.16   INDIA'S SPACE TECH TRANSFORMATION

Context

- India ranks seventh in terms of funding within International SpaceTech landscape for the year.

Details

- Indian SpaceTech sector has received $62 million funding in 2023 so far, registering 60% increase, compared to the same period last year, according to data research firm Tracxn.
- It secured $28 million funding in 2020 which stood at $35 million between 2010 and 2019. The funding reached $96 million in 2021 and $112 million in 2022 (17% jump).

India ranks seventh in terms of funding within International SpaceTech landscape for the year. It credited privatisation of SpaceTech sector in 2020 for this transformation.

Indian Space Sector

- India's space program stands out as one of the most cost-effective in the world. India has earned worldwide recognition for launching **lunar probes, building satellites, ferrying foreign satellites** up and has even succeeded in reaching Mars.
- India's space programme is one of the most **cost-effective in the world**. India has gained global recognition for successfully launching lunar probes, constructing satellites, transporting foreign satellites,

and even reaching Mars. The global space economy is currently valued at **approximately US\$ 360 billion.**

- o **India is the 4th nation to enter the elite space** power club with an anti-satellite weapon.
- **Despite being one of the world's few spacefaring nations**, India accounts for only around 2% of the global space industry. Last year in 2022, there were 180 orbital launches, which is more than double the 86 launches five years prior.
  - o All major economies are striving to explore and exploit space.
- **This is not restricted to government-sponsored space programmes**. Private space exploration has emerged as one of the fastest-growing sectors.
- Under the umbrella of a new organisation called IN-SPACe, India's business sector, including start-ups and diversifying established firms, would be able to take part in the country's space journey.

Indian Space Background

- **The Indian National Committee for Space Research ("INCOSPAR")** was established under the Department of Atomic Energy in 1962, marking India's first entry into space research and exploration.
- **INCOSPAR was superseded in 1969** by the **Indian Space Research Organisation ("ISRO"),** with the goal of using space technology to advance India's position in the worldwide competition of space exploration. Furthermore, the Department of Space and the Space Commission (DSSC) was legally established in 1972.
- With the additional resources provided by the DSSC, ISRO developed the first Indian satellite, Aryabhata, and launched it with Soviet Union assistance in 1975 as the country's first achievement in space.
- This resulted in a better understanding of satellite technology and related research, including TV broadcasting through the **Satellite Instructional Television Experiment (SITE) programme.**
- **In 1980, Rohini became the first Indian satellite** to be successfully launched into orbit by India using an indigenously built launch vehicle, SLV-3.
- **Rakesh Sharma became the first Indian citizen** to go into space as part of a three-member Soviet Indian crew in 1984. Since then, India has expanded its space programme to include communication, broadcasting, meteorology, defence, GEO satellites, astronomy, cartography, academic research, and even exploration of the Moon via two **Chandrayaan missions and of Mars via the Mangalyaan Mars Orbiter Mission.**

Present Scenario

- India currently has two significant satellite systems in operation. The **Indian Remote Sensing Satellite System (IRS)** is utilised for monitoring and managing natural deposits, and the **Indian National Satellite System (INSAT)** is used for telecommunications, television transmission, and meteorological services.
  - o India has the world's largest network of remote-sensing satellites for civil use.
- **It comprises a plethora of satellites designed to fulfil national needs**. The Polar Satellite Launch Vehicle (PSLV), one of two current launch vehicles, is primarily used to launch experiment satellites, remote sensing payloads, and payloads weighing up to 1,600 kg into polar or low Earth orbits.
- Second, **India has developed a Geosynchronous Satellite Launch Vehicle (GSLV)** that can deliver satellites weighing up to 2,200 kg into orbit.

Indian Space Policy – 2023

- It is an overarching, composite and dynamic framework to implement the reform vision. The policy aims to form a framework for the private sector to use ISRO facilities for a small charge and also encourages

them to invest in creating new infrastructure for the sector. The operational part of ISRO's missions will be moved to the New Space India Limited, a public sector undertaking under the Department of Space.

Closing remarks

- **Private firms including SpaceX, Blue Origin**, etc have revolutionised the global space market via innovation and superior technology, cutting prices and turnaround time. However, in India, the private sector participants have been limited to serving as vendors or suppliers to the government's space programme.
  - It is vital to allow commercial firms in the Indian space sector to establish themselves as independent participants capable of end-to-end space activities.
- **The Indian Space Policy 2023** would lead the way forward by providing much-needed clarity in space reforms and augmenting private industry participation to promote the country's space economic opportunity.
  - **It will institutionalise private sector participation** in the space industry, with ISRO focussing on advanced space technology research and development.
- **The future of the Indian space sector** is vibrant with several major initiatives and projects in progress. With continuing government funding and private-sector collaboration, India is poised to make an indelible imprint in the field of space exploration and technology.

7.17   SHORTS ARTICLES

Nuclear Medicine

Context

- According to World Nuclear Association, "more than 10,000 hospitals worldwide use radioisotopes in medicine, and about 90% of the procedures are for diagnosis.

Details

- The most common radioisotope used in diagnosis is technetium-99 (Tc-99), with some 40 million procedures per year, accounting for about 80% of all nuclear medicine procedures and 85% of diagnostic scans in nuclear medicine worldwide".
- This project is vital for the development of nuclear medicine in the Republic of Kyrgyzstan and our further strategic cooperation.
- In the future, Rosatom is ready to fully meet the needs of the Kyrgyz Republic in technetium-99m generators.

About Nuclear Medicine:

About	• Nuclear medicine **uses radioactive material** inside the body to see how organs or tissue are functioning (for diagnosis) or to **target and destroy damaged** or diseased organs or tissue (for treatment).
Usage	• Nuclear medicine can show how the **organs or tissues are functioning.** • For most **diagnostic procedures**, a tracer, which contains the radioactive material, is injected, swallowed, or inhaled. • **Then the healthcare provider or radiologist** (a healthcare professional with special training to use radiation in healthcare) uses a radiation detector to see how much of the tracer is absorbed or how it reacts in the organ or tissue. • This will give the provider information about how well it is functioning.
Benefits	• **Provides information on how organs**, tissues, and cells are working. (Other common imaging procedures only show the structures.) • **Can be used also in targeted treatments** to kill or damage harmful or cancerous cells,

	reduce the size of tumors, or reduce pain.
Risk	• Radiation doses are usually higher than in common imaging like x-rays. This means these procedures are slightly more likely to increase the possibility you may get cancer later in life. • **Some nuclear medicine procedures** are longer and use more radiation than others. These could cause skin reddening and hair loss. • May give off small amounts of radiation right after your procedure and need to take steps to protect others from exposure.

DRACO Program

Context

• The space agency and the Defense Advanced Research Projects Agency, or DARPA, announcedthat Lockheed Martin had been selected to design, build and test a propulsion system.

Details

• The DRACO engine would consist of a nuclear reactor that would heat hydrogen from a chilly minus 420 degrees Fahrenheit to a toasty 4,400 degrees, with the hot gas shooting from a nozzle to generate thrust.
• Greater fuel efficiency could speed up journeys to Mars, reducing the amount of time astronauts spend exposed to the treacherous environment of deep space.
• Nuclear propulsion could also have uses closer to home, which is why DARPA is investing in the project. The technology may allow rapid maneuvers of military satellites in orbit around Earth.

About DRACO Program:

About	• The goal of the **Demonstration Rocket for Agile Cislunar Operations (DRACO)** program is to demonstrate a nuclear thermal rocket (NTR) in orbit. • **NTRs use a nuclear reactor to heat propellant** to extreme temperatures before exhausting the hot propellant through a nozzle to produce thrust. • **Compared to conventional space propulsion** technologies, NTRs offers a high thrust-to-weight ratio around 10,000 times greater than electric propulsion and two-to-five times greater specific impulse (i.e. propellant efficiency) than in-space chemical propulsion.
Phase 1	• **Track A conducted a baseline design of an NTR reactor**. • Track B developed an **operational system** concept to meet operational mission **objectives and a demonstration system** design that is traceable to the operational system but focuses on demonstrating the propulsion subsystem.
Phase 2 and Phase 3	• **It will carry a single performer forward to the flight demonstration**, which is envisioned to take place by FY27. o This performer will be responsible for building the NTR and its demonstration system stage. • **Phase 2** will involve a cold flow test of the rocket engine without nuclear fuel. • **Phase 3** will involve assembly of the fueled NTR with the stage, environmental testing, and launch into space to conduct experiments on the NTR and its reactor.

Digital India RISC-V Microprocessor (DIR-V) Program

Context
- India has thrown its weight behind the open-source RISC-V architecture.

Details:
- The overall aim of Digital India RISC-V programme is to enable the creation of Microprocessors for the future in India, for the world and achieve industry-grade silicon and design wins.
- The government of India set the timeline for starting the commercial manufacturing of the indigenous microprocessors by December 2023.

About DIR-V Program:

Aim	• It aims to **createfuture generations of microprocessors** that will serve the need of India's strategic focus on mobility, computing, and digitization.
Partnership	• DIR-V program will see partnerships between Startups, Academia and Multinationals, to make India not only a **RISC-V Talent Hub for the World but also supplier of RISC-V System on Chips for Servers, Mobile devices, Automotive and Microcontrollers** across the globe.
RISC-V	• RISC-V has emerged as a strong alternative to them in last decade, having no licensing encumbrances, enabling its adoption by one and all in semiconductor industry, at different complexity levels for various design purposes. • RISC-V Instruction Set Architecture (ISA) is not only witnessing a quantum leap and unprecedented levels of processor innovation owing to its free and open nature but also pushing the Moore's Law beyond its limits.

IMS-1 Satellite Bus Technology

Context
- The Indian Space Research Organisation (ISRO) announced that it began transferring IMS-1 Satellite Bus technology to Alpha Design Technologies.

Details:
- The transfer was facilitated by ISRO's commercial arm New Space India Limited (NSIL) through an agreement that was signed.
- This technology signals the beginning of increased private participation in the Indian space industry.
- The IMS-1 satellite bus was developed by the UR Rao Satellite Centre and is a small satellite platform designed to enable low-cost access to space.
- The bus can serve as a dedicated vehicle for many different payloads, facilitating Earth imaging, ocean and atmospheric studies, microwave remote sensing and space science missions.

About:
- The IMS-1 satellite bus is a **small satellite platform developed by the UR Rao Satellite Centre.**
- Its design aims to enable low-cost access to space and can serve as a dedicated vehicle for various payloads.
- The versatility of the IMS-1 bus allows it to support missions related to Earth imaging, ocean and atmospheric studies, microwave remote sensing, and space science.

Key Features of the IMS-1 Satellite Bus:

Weight	• The IMS-1 bus weighs about 100 kilograms, making it suitable for small satellite missions.
Payload Capacity	• It can carry payloads weighing up to 30 kilograms, making it ideal for deploying smaller scientific instruments and equipment.

| Power Generation | • The satellite is equipped with solar arrays that generate 330 watts of power, supporting its operational requirements in space. |
| Pointing Accuracy | • Four reaction wheels and a 1 Newton thruster enable precise pointing accuracy with an accuracy threshold of 0.1 Degrees, allowing it to target specific areas of interest during missions. |

Incandescent and LED bulbs

Context

• Traditional bulbs will become increasingly hard to find, following a law that did not ban the sale of incandescent bulbs.

Details

• According to a timeline released by the department, manufacturers were told to stop making the bulbs in January.

• Not all versions of the bulbs will be banned, but it will become increasingly hard to find the everyday versions of them, such as those that provide that flattering light in the dining room or study.

• It could be harder to find bulbs by wattage as a metric associated with LEDs, called the lumen, becomes the standard.

• Some types of incandescents will still be available, including bug lamps and "odd sized" bulbs.

Incandescent Bulbs:

• **Traditional Technology:** Incandescent bulbs work based on a simple principle: passing an electric current through a wire filament, which heats up and produces light due to incandescence.

• **Light Spectrum:** Incandescent bulbs emit a warm, yellowish light, which is often preferred for ambiance in certain settings.

• **Energy Inefficiency:** Incandescent bulbs are highly inefficient, converting only around 10% of energy into light, while the rest is wasted as heat.

• **Short Lifespan:** These bulbs have a relatively short lifespan, typically lasting around 1,000 hours.

LED Bulbs:

• **Light-Emitting Diode (LED):** LED bulbs use semiconductor technology, where electrons passing through a semiconductor create photons, generating light.

• **Energy Efficiency:** LED bulbs are significantly more energy-efficient than incandescent bulbs, converting around 80% to 90% of energy into light.

• **Light Spectrum Control:** LED technology allows for easy control of the light spectrum, enabling different color temperatures and light qualities.

• **Longer Lifespan:** LED bulbs have a much longer lifespan, lasting up to 25,000 to 50,000 hours or more, depending on the quality of the bulb.

JALDOST and Q Plane

Context:

• Two technologies developed by the National Aerospace Laboratories (NAL) were unveiled.

Details:

• The first technology is JALDOST, an airboat that operates on water. It is designed to remove excess aquatic weed and floating waste from water bodies.

• The JALDOST has a closed airtight pontoon type hull to make it inherently unsinkable. According to NAL, it has a hybrid propulsion system, comprising air propulsion and paddle wheel propulsion.

• NAL has developed two versions of the airboat — JALDOST Mark-1 and an upgraded version JALDOST Mark-2.

JALDOST - The Water Weed Removal Airboat

• Developed by National Aerospace Laboratories (NAL).

• **Purpose:** Remove excess aquatic weed and floating waste from water bodies.

• **Design:** Closed airtight pontoon type hull, making it unsinkable.

• **Propulsion:** Hybrid system - air propulsion and paddle wheel propulsion.

• **Versatility:** Can navigate through weed-infested water bodies efficiently.

- **Waste Collection:** Steel mesh belt conveyor system in front collects weed and waste.
- **Waste Handling:** Collected waste falls on horizontal deck conveyor.
- **Unloading:** Rear conveyor system unloads waste to trucks or tractors.
- **Versions:** JALDOST Mark-1 and JALDOST Mark-2 (upgraded version).
- **JALDOST Mark-2:** Designed for cleaning lakes in Bengaluru, based on BBMP's specifications.
- **Potential:** NAL's private design partner ready to supply JALDOST Mark-2 as per BBMP's requirements.

Q-plane - The All-Electric UAV
- Developed by National Aerospace Laboratories (NAL).
- **Type:** Lightweight, all-electric Unmanned Aerial Vehicle (UAV).
- **Capability:** Vertical-take-off-and-landing (VTOL).
- **Purpose:** Autonomous flight for surveillance, aerial mapping, and environmental monitoring.
- **Range:** 30 kilometers.
- **Endurance:** Up to 70 minutes.
- **Propulsion:** Electric propulsion system for eco-friendly performance.
- **Versatility:** VTOL capability enables operation in various environments.
- **Reduced Carbon Footprint:** Compared to conventional fuel-powered aircraft.
- **Significance:** Demonstrates NAL's commitment to advancing aerospace research in India.

Jan Vishwas Bill
Context
- The Jan Vishwas Bill, now passed in both houses of the Parliament, was brought in to help with "ease of business" in the pharmaceutical sector.

Details:
- The Jan Vishwas Bill passed in the Rajya Sabhawill amend two provisions of the law governing manufacture, storage, and sale of medicines in India.

- One of the amendments has led to a debate on whether manufacturers of substandard medicines would be let off easy – by paying a fine instead of imprisonment.
- The Jan Vishwas bill was brought to the parliament with an aim to improve ease of doing business. It will amend 183 provisions across 42 laws to do away with imprisonment or fines for certain offences.

About the Bill:
- **The first amendment:**
- It will do away with imprisonment under section 30 (2) of the current law for companies repeatedly using **government analysis or test reports for promoting their products.**
- At present, companies face up to two years imprisonment and a fine of not less than ten thousand rupees for a repeated violation.
- This **will change to only a fine but not less than five lakh rupees.**
- **The second amendment:**
- It will change section 32B (1) of the existing law to **allow "compounding" of offences under section 27 (d).**
- What this essentially means is that companies violating the provisions of 27 (d) will continue to face imprisonment between one and two years and a fine not less than R20,000.
- Now there will be an **alternative mechanism where the company could agree to pay the fine** instead of going through a criminal proceeding in court.

Room Temperature Superconductivity
Context
- The discovery of a material that will show superconductive properties at room temperature would revolutionise technology around us.

Details:
- Last week, two South Korean researchers posted two related papers on the internet, not yet peer-reviewed, claiming that a lead-based compound they had developed had shown superconducting properties at room

temperature, under normal pressure conditions.

- While the possible discovery of a room temperature superconductor set the physics community abuzz with discussions, it triggered less excitement and more a sense of déjà vu.
- Such a discovery is a sure shot Nobel Prize winner. More than that, it has the potential to revolutionise the technology space, and be one of the most impactful scientific discoveries of this century. Yet such a material has proved to be notoriously elusive.
- *Superconductivity is achieved only at extremely low temperatures, close to absolute zero.*
- *Materials like Mercury, Lead, Aluminum, Tin, and Niobium become superconducting at very low temperatures.*

The Quest for Room-Temperature Superconductors:
- Scientists seek a material showing superconductivity at room temperature and normal pressure conditions.
- Many past claims of room-temperature superconductivity have faced scrutiny and skepticism.
- The South Korean researchers' claim needs more supporting data to be convincing.

Potential Impact of Room-Temperature Superconductors
- **Revolutionize technology:** Super-efficient appliances, energy transmission, and storage systems.
- **Impactful scientific discovery:** A Nobel Prize-worthy breakthrough with wide-ranging applications.
- **Practical applications:** MRI machines, Maglev trains, and many other critical technologies can benefit.

Single Pill strategy to beat Cardiovascular Diseases

Context
- WHO included three fixed dose combinations of cardiovascular medicines or polypills on its revised Model Lists of Essential Medicines (EML) 2023.

Details
- The WHO Expert Committee on Selection and Use of Essential Medicines noted the evidence from large randomised-controlled trials that the use of the polypill is associated with reduced risks of cardiovascular events, including fatal and non-fatal myocardial infarction and stroke, and the need for revascularisation in primary and secondary prevention settings.

About the pill:
- A polypill is a type of drug combination consisting of a single drug product in pill form (i.e., tablet or capsule).
- It combines multiple medications (that is, more than one active pharmaceutical ingredient).
- The prefix "poly" means "multiple", referring to the multiplicity of distinct drugs in a given "pill".
- In precise usage, a pill is a polypill if it contains at least 4 drugs (meaning that fixed-dose combinations of 2 or 3 drugs are not polypills).

Usage	- **As a preventive medicine and treatment**: Polypills may be consumed as a preventive medicine, and/or treating actual pathophysiological conditions, the former typically involving lower dosages than the latter. - **Reduce pill burden**: Polypills can reduce the number of tablets or capsules (generally orally administered) that need to be taken, which in turn may facilitate the handling and administration of pharmaceuticals as well as alleviate patient pill burden.
Symptoms	- In atherosclerosis, there is the build-up of fats, cholesterol and other substances in and on the artery walls. - A buildup of cholesterol plaque in the walls of arteries causes obstruction of blood flow.

	Plaques may rupture, causing acute occlusion of the artery by a clot.

WHO Report on Tobacco Control

Context

- Across the world, there are 300 million fewer smokers,with the prevalence of smoking declining from 22.8% in 2007 to 17% in 2021.

Key findings of the report

Positive	• Across the world, there are 300 million fewer smokers today, with the prevalence of smoking declining from 22.8% in 2007 to 17% in 2021. • In the 15 years since the MPOWER measures were first introduced, 5.6 billion people in the world – or 71% of the entire population – remain protected by at least one of the measures. This has increased from just 5% of the population in 2008. • The number of countries implementing at least one MPOWER measure has increased from 44 countries in 2008 to 151 in 2022. • With a focus on second-hand smoke, the report says that almost 40% of countries now have completely smoke-free indoor public spaces.
Negative	• There are at least 44 countries in the world that still do not implement any MPOWER measure. • There are 53 countries that do not completely ban smoking in healthcare facilities. • Only half of the countries have smoke-free workplaces and restaurants. • The tobacco industry's aggressive promotion of E-cigarettes as a safer alternative to cigarettes is threatening negative impacts of it.
India Specific	• India has the highest level of achievement when it comes to putting health warning labels on tobacco products and providing tobacco dependence treatment. • With 85% of cigarette packs carrying health warnings both on the front and back, India figures among the top 10 countries in terms of the size of health warnings. • The cigarette packets in the country also carry a toll-free number for a quit line. • India has also banned the sale of e-cigarettes and banned smoking in healthcare facilities and educational institutions.

Digital Health Incentives Scheme (DHIS)

Context

- The National Health Authority (NHA) has announced a Digital Health Incentive Scheme (DHIS) for the stakeholders of the digital health ecosystem.

Details:

- The scheme aims to give a further boost to digital health transactions in the country under the Ayushman Bharat Digital Mission (ABDM).
- The incentives under this scheme would be provided to hospitals and diagnostic labs and also to the providers of digital health solutions such as Hospital/ Health Management Information System (HMIS) and

Laboratory Management Information System (LMIS).

About the scheme:

- The DHIS was launched with effect from January 1, 2023, **as part of the Ayushman Bharat Digital Mission.**
- Under the DHIS, the eligible health facilities and digital solutions companies shall be able to earn **financial incentives of up to ₹4 crores based on the number of digital health records created and linked to ABHA (Ayushman Bharat Health Account)** numbers of the patients.
- Incentives are provided to hospitals and diagnostic labs and the providers of digital health solutions such as Hospital/ Health Management Information Systems and

Laboratory Management Information Systems for adopting and enabling transformative digitisation under Ayushman Bharat Digital Mission.

Who are eligible?
This incentive can be availed by

- The health facilities (hospitals, diagnostic labs) and
- Digital Solution Companies
- They should be registered with ABDM's Health Facility Registry (HFR)

Gene Therapy
Context
- A 5-year-old boy has received an infusion of Elevidys, the recently approved gene therapy for Duchenne muscular dystrophy (DMD), at Nationwide Children's Hospital, where the treatment was first investigated.

What is gene therapy?
- Gene therapy is a **medical approach** that treats or prevents disease by correcting the underlying genetic problem. Gene therapy techniques allow doctors to treat a disorder by altering a person's genetic makeup instead of using drugs or surgery.
- The earliest method of gene therapy, often called gene transfer or gene addition, was developed to:
  o Introduce a new gene into cells to help fight a disease.
  o Introduce a non-faulty copy of a gene to stand in for the altered copy causing disease.
- **Gene therapies are being used to treat a small number of diseases**, including an eye disorder called Leber congenital amaurosis and a muscle disorder called spinal muscular atrophy.
- Many more gene therapies are **undergoing research** to make sure that they will be safe and effective.
- **Genome editing is a promising technique** also under study that doctors hope to use soon to treat disorders in people.

Gravitational Waves
Context
- Astrophysicists describe what galaxy-wide gravitational waves could mean for our understanding of black holes and the history of the cosmos.

Details
- More than 15 years of observations of pulsars has revealed the low-frequency hum as spacetime is stretched and squeezed by gravitational waves.
- Evidence is now pointing to the fact that the rhythms of millisecond pulsars in our region of the Milky Way galaxy are affected by the long-wavelength gravitational radiation.
- A number of studies pointing to this have been published recently.
- Among the most comprehensive papers was one published by the North American Nanohertz Observatory for Gravitational Waves (NANOGrav) in the Astrophysical Journal Letters.

About gravitational waves:
- A gravitational wave is an invisible (yet incredibly fast) ripple in space. Gravitational waves travel at the speed of light (186,000 miles per second). These waves squeeze and stretch anything in their path as they pass by.
- A gravitational wave is an invisible (yet incredibly fast) ripple in space.
- We've known about gravitational waves for a long time. More than 100 years ago, Albert Einstein came up with many ideas about gravity and space.
- Einstein predicted that something special happens when two bodies—such as planets or stars—orbit each other. He believed that this kind of movement could cause ripples in space. These ripples would spread out like the ripples in a pond when a stone is tossed in. Scientists call these ripples of space gravitational waves.
- Gravitational waves are invisible. However, they are incredibly fast. They travel at the speed of light (186,000 miles per second). Gravitational waves squeeze and stretch anything in their path as they pass by.

Maya OS

Context

- India's Defence Ministry will install an indigenously developed operating system called Maya OS, replacing Microsoft's Windows, on all its computers by the end of this year.

Details:

- By doing this, the ministry expects to protect its computers from cyberattacks. The OS will soon be adopted by Armed Forces.

The name: Maya OS

- Maya OS is **named after the ancient Indian concept of illusion, which refers to the deceptive appearance of reality**.
- The name reflects the idea that hackers will be faced with maya or illusion when they try to hack into Defence Ministry computer systems.
- Maya OS also draws inspiration from the ancient Indian art of warfare, as it **uses a feature called Chakravyuh**, which is a multi-layered defensive formation that was used in the epic Mahabharata.
- **Chakravyuh is an end-point anti-malware and antivirus software** that creates a virtual layer between the user and the internet, blocking any malicious attempts to access or compromise the data.

About Maya OS

About	• Maya OS is a new operating system developed by the Union Ministry of Defence to protect its computer systems from cyberattacks.
Based on	• It is based on the open-source Ubuntu platform, which means it uses free and publicly available software.
Aim	• Maya OS aims to provide a robust defense against cyber threats by offering an interface and functionalities that are similar to that of Windows OS, ensuring a seamless transition for users.
Features	• Maya OS also comes with a feature called Chakravyuh, which is an end-point anti-malware and antivirus software that creates a virtual layer between the user and the internet, preventing hackers from accessing sensitive data. • Maya OS is expected to be installed in all the computers of the Defence Ministry by the end of this year.

Graphene-Aurora Program

Context

- Ministry of Electronics & Information Technology (MeitY) Secretary Shri Alkesh Kumar Sharma launched the 'Graphene-Aurora program' at a function in Maker Village Kochi, Kerala.

Details

- The program shall be implemented by Digital University Kerala with joint funding from Ministry of Electronics & Information Technology (MeitY), Government of India and Government of Kerala and Industry partners, with the total budget outlay of Rs 94.85 Crore, wherein, Carborundum Pvt Limited joined as one of the main industry partners.
- Along with the startup products developed, the technologies and products also developed at research and development centers like India Innovation Centre Graphene (IICG), setup at Makers village, Kochi shall be considered for commercialization.

About Graphene-Aurora Program

Aim	• It intends to nurture a robust graphene technology and innovation ecosystem. • This ecosystem will guide, develop, implement, and support small and medium enterprises (SMEs) and startups in commercializing graphene technologies.

Purpose	• The program's focus on creating a commercialization ecosystem for graphene positions India to excel in the emerging global market for new materials.
Collaboration	• The program is a collaborative effort between Digital University Kerala, the Government of India's Ministry of Electronics & Information Technology (MeitY), the Government of Kerala, and industry partners.
Budget Outlay	• The program boasts a total budget outlay of Rs 94.85 Crore, with financial support from MeitY, the Government of Kerala, and industry partners. Carborundum Pvt Limited is one of the key industry partners.

Global Initiative on Digital Health

Context

- India, in collaboration with the World Health Organization (WHO), will launch the Global Initiative on Digital Health on Saturday as part of the ongoing G-20 summit in Gandhinagar.

Details

- The summit is also working at garnering support for setting up a **Climate and Health Initiative** in India, in collaboration with the Asian Development Bank and the launch of **patient and healthcare workforce mobility portal.**
- **The first such global initiative** is aimed at **data convergence, interface of health platforms and investments** in the digital health space around the globe.
- The **summit is working on bringing in the crucial interim** medical countermeasure (MCM), "which is a 'network of networks approach' before the next health emergency hits us, and India, in collaboration with WHO.
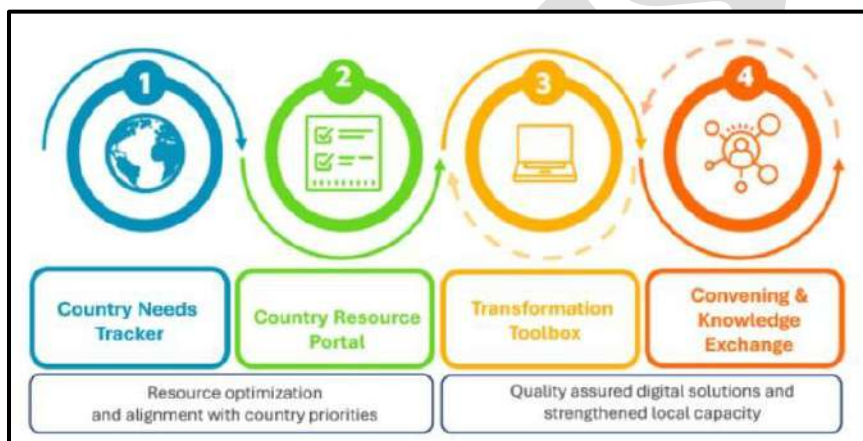
About the initiative

- The World Health Organization (WHO) and the G20 India presidency announced a new Global Initiative on Digital Health (GIDH).
- The new GIDH initiative (pronounced "guide" for short) will operate as a WHO-managed network and platform to support the implementation of the Global Strategy on Digital Health 2020–2025.

The GIDH initiative aims to bring countries and partners together to achieve measurable outcomes by:

- Developing clear priority-driven investment plans for digital health transformation;
- Improving reporting and transparency of digital health resources;
- Facilitating knowledge exchange and collaboration across regions and countries to accelerate progress;
- Supporting whole-of-government approaches for digital health governance in countries; and
- Increasing technical and financial support to the implementation of the Global Strategy on Digital Health 2020–2025 and its next phase.
- **Digital health is a proven accelerator** to advance health outcomes towards achieving Universal Health Coverage and the health-related **Sustainable Development Goals by 2030.**
- **Digital health interventions improve** health care in many ways, from supporting individuals in managing their health and wellness journeys, to enabling care providers to adhere to guidelines and provide high quality care, to strengthening health systems by **improving supply chains and workforce management**.

First-ever WHO Global Summit on Traditional Medicine

Context

- Ministry of Ayush and World Health Organisation are organising the two day Traditional Medicine Global Summit, on 17th and 18th August 2023 in Gandhinagar, Gujarat.

Details

- **The Union AYUSH Secretary** highlighted that the Global Centre on Traditional Medicines in Jamnagar, Gujarat, established by the WHO, is the first such centre in a developing country.

- He also informed that the WHO will convene the Traditional Medicine Global Summit, co-hosted by the Ministry of AYUSH, on 17th and 18th August, 2023 in Gandhinagar which will explore the role of traditional, complementary and integrative medicine in addressing pressing health challenges and driving progress in global health and sustainable development.

- *The G20 is a unique opportunity to showcase India's leadership in the field of traditional medicine. In the last 9 years, India has developed eight folds in* **the field of traditional medicine**.

- *By the end of the year*, **more than 12,500Ayush-based Health & wellness centers will be functional across the nation, out of which 8,500 are already in place.**

About Global Summit on Traditional Medicine

- **Gujarat Declaration will emphasise that the importance of Traditional Medicine** is recognised for attainment of Universal Health Coverage (UHC) and WHO's commitment to work toward it through evidence generation and policy support to member states.

- **The summithighlighted the significance** of the WHO Global Centre for Traditional Medicine, which was inaugurated in 2022 as the United Nation's first and largest traditional medicine outpost in any developing country.

- **It is expected to be one of the largest gatherings of its kind, bringing together participants** from over 90 countries, distinguished members of academia, government representatives and significant players from the traditional medicine sector.

- With India holding the **current G20 presidency**, he highlighted the nation's strengths in healthcare and urged for efforts to be focused on maximizing its contribution to the global healthcare sector.

Alcanivorax borkumensis

Context

- Oil-eating" Alcanivorax borkumensis bacteria form "dendritic" biofilms that reshape oil droplets to speed up the rate of consumption, researchers report.

Details:

- The findings reveal how this particular bacterium optimizes oil biodegradation and consumption. Obligately hydrocarbonoclastic bacteria (OHCB) survive by consuming hydrocarbons as a sole carbon and energy source.

- These marine bacteria are known to play an integral role in the bioremediation of spilled petroleum worldwide.

About Alcanivorax borkumensis:

About	• *Alcanivorax borkumensis* is a cosmopolitan marine bacterium that uses oil hydrocarbons as its exclusive source of carbon and energy.
Found in	• This bacterium is found in low numbers in unpolluted environments, but it quickly becomes the dominant microbe in oil-polluted open ocean and coastal waters, where it may comprise up to 80–90% of the oil-degrading microbial community.

Role in biodegradation	• As a recently discovered hydrocarbonoclastic, A. borkumensis is capable of degrading oil in seawater environments. **Hydrocarbonoclastic** has the root '**clastic**' meaning it can divide something into parts (in this case hydrocarbons).
Mechanism	• **Crude oil, or petroleum, is predominantly made up of hydrocarbons**, a product that consists of a long chain of carbon atoms attached to hydrogen atoms. • Whereas most organisms **use sugars or amino acids** for their source of carbon/energy, A. borkumensis uses alkanes, a type of hydrocarbon, in its metabolic process. • This diet allows A. borkumensis to **flourish in marine environments** that have been affected by oil spills. • Through its metabolism, A. borkumensis **can break down oil into harmless compounds**. This ability makes this particular species a major potential source for bioremediation of oil-polluted marine environments.

Sodium Ion Battery

Context

• AR4 Tech, a start-up in Coimbatore, has partnered Sodion Energy of Singapore to make sodium ion battery packs for domestic and export markets.

Details:

• The sodium-ion batteries developed by Sodion will be made into battery packs here. The semi-automatic plant with imported equipment will have the capacity to make almost 100 packs a day. Sodion Energy is a shareholder in AR4 Tech.

• AR4 Tech will use the battery packs to convert existing petroleum vehicles (mainly two wheelers) into electric vehicles. The life cycle of a battery is expected to be almost 10 years. These battery packs can also go in to uninterrupted power supply systems.
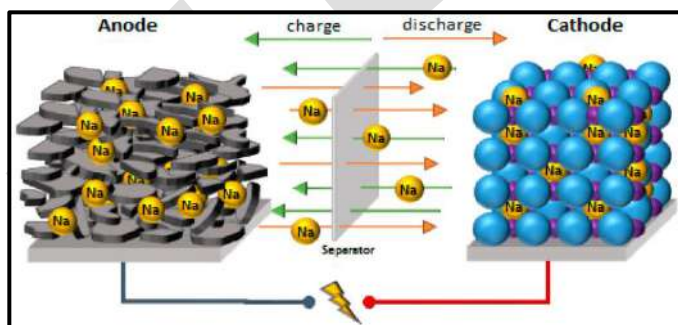
About the sodium-ion batteries:

• The sodium-ion battery (NIB or SIB) is a type of **rechargeable battery** that uses sodium ions ($Na+$) as its charge carriers.

• In some cases, its **working principle and cell construction** are similar to those of **lithium-ion battery (LIB)** types, but it **replaces lithium with sodium** as the cathode material, which belongs to the same group in the periodic table as lithium and thus has **similar chemical properties**.

• Sodium is more than 500 times more abundant than lithium, which is available in a few countries.

• **Sodium-ion battery charges faster than lithium-ion** variants and have a three times higher lifecycle.

• However, **sodium-ion batteries lack of a well-establishedraw material** supply chain and the technology is still in early stages of development.

Can Sodium-based Batteries Replace Lithium-ion Batteries?

• **While there are many potential advantages** to using sodium-ion batteries over lithium-ion batteries, there are also several challenges that need to be overcome before they can be widely adopted as a replacement.

• **If sodium-ion batteries are to become the backbone** of the energy storage industry, they must continue to improve their technical performance.

• **Researchers are working to improve the performance and stability** of the batteries, as well as to reduce their cost, while companies are looking to establish a supply chain for the materials used in the batteries.

Sodium-ion vs. Lithium-ion Battery Technology

Lithium-ion battery	Sodium-ion battery
• Sodium is more than 500 times more abundant than lithium. It can also be extracted from seawater at a low cost.	• Lithium availability is limited to a few countries, which is why prices have risen more than seven-fold since 2021.
• Sodium is more environmentally friendly and can be transported at zero volt, making it safer.	• Lithium is less environmentally friendly than sodium and must be always stored with a minimum charge, increasing fire risks.
• A Sodium-ion battery uses aluminum which is cheaper than copper.	• Lithium-ion battery uses copper, which is three or four times more expensive than aluminum used on sodium batteries
• Sodium-ion battery has a higher operating temperature range. This means these can be used in more extreme temperatures without the risk of thermal runaway.	• Lithium-ion battery has lower operating temperature range and can cause fire if operated in higher temperatures.
• Sodium-ion battery charges faster than lithium-ion variants and have a three times higher lifecycle.	• Lithium-ion battery has a slow charge rate and smaller lifecycle compared to sodium-based batteries.

7.18   SNIPPETS

Paleo Proxies

- The Paleo Proxy Technique is a method used by scientists to reconstruct past climates and temperature variations by analyzing indirect indicators or "proxies" found in natural materials.
- Proxies are biological, chemical, or physical indicators that respond to temperature changes or other environmental conditions, preserving a record of past climate in their properties.

ZARTH

- ZARTH, short for 'ZTF Augmented Reality Transient Hunter,' is an innovative mobile application that has revolutionized the way people observe and interact with the dynamic universe.
- Developed by a team of astronomers and data scientists, led by the accomplished astronomer Ashish Mahabal from the prestigious California Institute of Technology, ZARTH is an exciting blend of gaming and scientific observation.
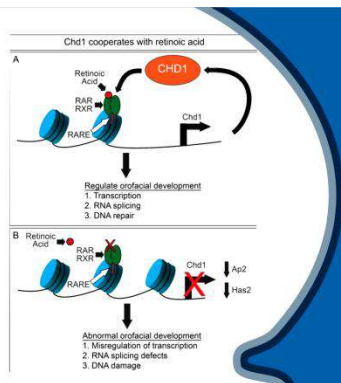
Chromodomain Helicase DNA Binding Protein 1 Like (CHD1L)

- The gene named Chromodomain Helicase DNA Binding Protein 1 Like (CHD1L), contains information to make proteins that allow the body to repair DNA damage.
- A variant of the CHD1L gene is specifically present in the African population and it has been linked to the reduced viral load (amount of HIV in the blood) of the most common and virulent type of HIV, called HIV-1 (more common and severe retrovirus compared to HIV-2).

GSAT 24

- GSAT-24, a 4-tonne 24-Ku band communication satellite, was launched in June the previous year, with a specific focus on enhancing Tata Play's DTH offerings.
- Designed and built by ISRO, the satellite was strategically positioned in a geosynchronous orbit of 36,000 kilometers after its launch by the French company Ariane space using the Ariane 5 space launch vehicle from French Guiana in South America.
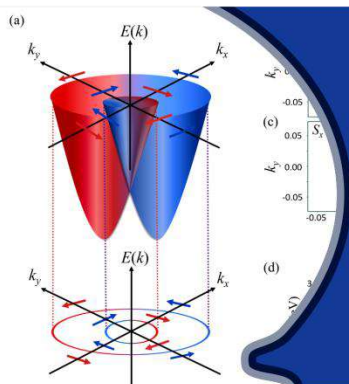
Rashba Splitting

- It is a fascinating quantum mechanical phenomenon that occurs in condensed matter systems, revealing itself through the separation of energy levels of electrons due to spin-orbit coupling.
- This intricate effect holds immense significance in understanding material properties and potential applications in emerging technologies.
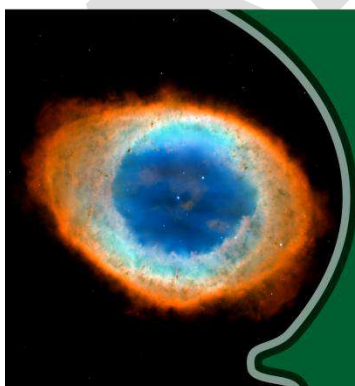
Ring Nebula

- The Ring Nebula, also known as Messier 57 or M57, is one of the most famous and visually striking objects in the night sky.
- Located in the constellation Lyra, approximately 2,000 light-years away from Earth, the Ring Nebula is a planetary nebula formed from the remnants of a dying star.
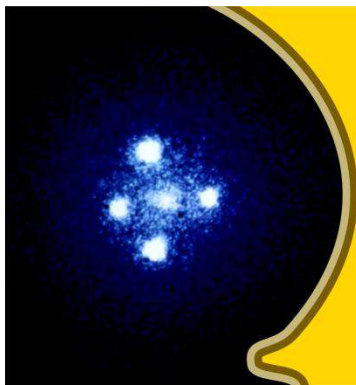
Einstein Cross

- The Einstein Cross, also known as Q2237+0305, is a fascinating astronomical phenomenon.
- The Einstein Cross was discovered in 1985 by a team of astronomers led by Dennis Walsh.
- It is located in the constellation Pegasus and has a redshift of $z \approx 1.7$, making it one of the most distant known quasars.
- The phenomenon was named the "Einstein Cross" due to the cross-like pattern created by the four bright images of the quasar around the lensing galaxy.
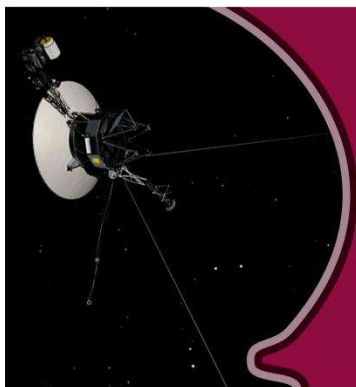
Voyager 2

- Voyager 2 is a space probe launched by NASA in 1977, to explore the outer planets of our solar system.
- It is part of the Voyager program, which also includes its twin spacecraft, Voyager 1.
- The primary mission of Voyager 2 was to study Jupiter, Saturn, Uranus, and Neptune, and it provided invaluable data and images during its flybys of these planets.

Trachoma

- Trachoma is the world's leading infectious cause of blindness and is one of the conditions known as neglected tropical diseases.
- Trachoma is a bacterial infection caused by Chlamydia trachomatis. They can be easily treated.
- The disease is still known to be endemic in six countries of the WHO's Eastern Mediterranean Region.
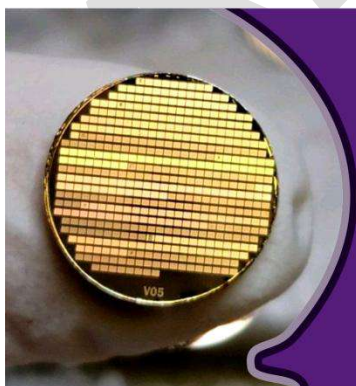
Lunar Codex

- Lunar Codex Program aims to preserve Human Creativity on the Moon.
- Spearheaded by Samuel Peralta, a semi-retired physicist and art collector from Canada.
- Aims to collect various forms of art created by humans from around the world.
- Future lunar landers to take Lunar Codex capsules to various destinations on the moon's South Pole and Sinus Viscositatis.

Peste Des Petits Ruminants

- It is a highly contagious viral disease caused by morbillivirus.
- This virus belongs to the family paramyxoviridae.
- First identified in early 1940s in Ivory Coast, this disease is later reported from many African, Asian and European nations.
- In India highest instances of this disease are reported from Himachal Pradesh.

e-Sanjeevani

- It is the union government's telemedicine application.
- e-Sanjeevani is an integral part of the Ayushman Bharat Digital Health Mission (ABDHM), and more than 50, 000 Ayushman Bharat Digital Health IDs have been generated via the e-Sanjeevani application.
- It provides doctor-to-doctor and patient-to-doctor consultations.
- This application works on a hub and spoke model wherein doctors including specialists provide services to patients in Health and Wellness Centers (HWCs) in rural areas.
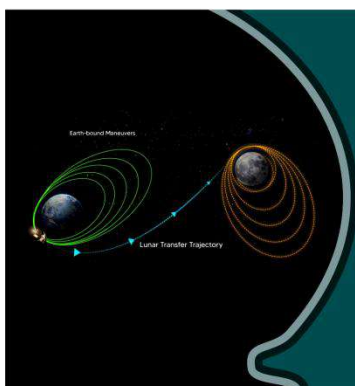
Translunar Injection

- Translunar Injection (TLI) is a crucial manoeuvre used in space missions to send spacecraft from Earth's orbit to the orbit of the Moon.
- It is a critical step in lunar missions, allowing spacecraft to break free from Earth's gravity and begin their journey to the Moon.
- The primary purpose of Translunar Injection is to accelerate a spacecraft to a velocity that allows it to escape Earth's gravitational influence and enter a trajectory that will carry it towards the Moon.
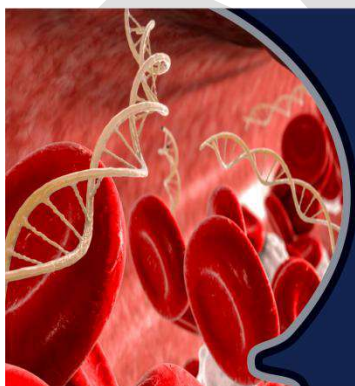
Cell Free DNA

- cfDNA, or cell-free DNA, is a type of DNA that is released from cells into the bloodstream or other body fluids.
- It can provide valuable information about the health and status of different cells and tissues in the body.
- For example, cfDNA can reveal the presence of cancer, infections, autoimmune diseases, or pregnancy complications.
- cfDNA is produced when cells die and their DNA is broken down into smaller fragments.
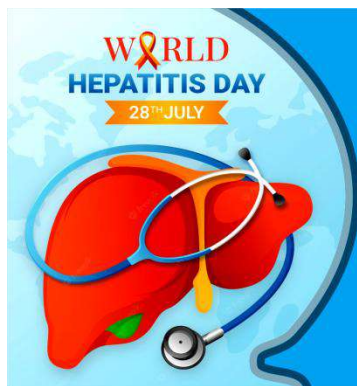
World Hepatitis Day

- World Hepatitis Day is an annual event that takes place on July 28 to raise awareness about viral hepatitis and its impact on global health.
- The main goal of this day is to promote prevention, testing, and treatment while showing support for those affected by hepatitis.
- The theme for World Hepatitis Day 2023 is "One life, one liver," which focuses on creating awareness about viral hepatitis.

World Coin Project

- World coin is a cryptocurrency project that aims to create a new form of digital identity that can verify that its holder is a real human being, not an AI bot or a fake account.
- The project was co-founded by Sam Altman, the CEO of Open AI, and the research organization behind ChatGPT, one of the most advanced AI chatbots in the world.
- World coin's main innovation is its World ID, which is generated by scanning a person's eyes using a device called an orb.
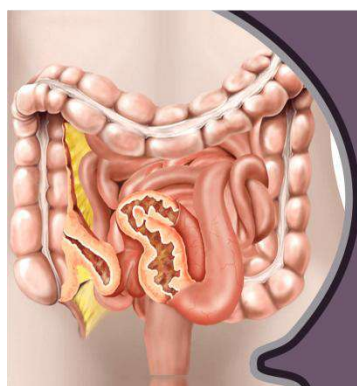
Crohn's Disease

- Crohn's disease, also called regional enteritis or ileitis, is a lifelong form of inflammatory bowel disease (IBD).
- The condition inflames and irritates the digestive tract — specifically the small and large intestines.
- Crohn's disease can cause diarrhea and stomach cramps. It's common to experience periodic disease flare-ups.
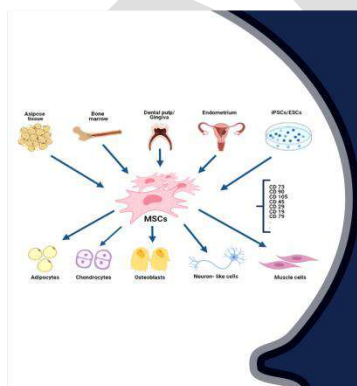
Neonatal Mesenchymal Stem Cells

- Mesenchymal stromal cells (MSCs) possess several unique properties which render them an ideal candidate for cell-based therapy in various neonatal diseases.
- MSCs are multipotent and can migrate to the damaged tissues or organs in response to the inflammatory mediators.
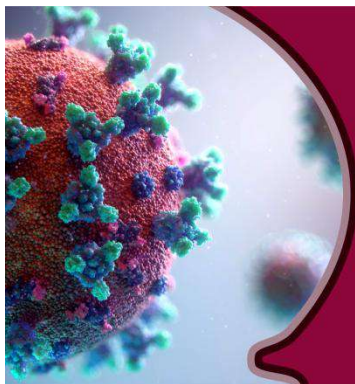
Adeno-Associated Virus (AAV)

- Adeno-associated virus (AAV) is a non-enveloped virus that can be engineered to deliver DNA to target cells, and has attracted a significant amount of attention in the field, especially in clinical-stage experimental therapeutic strategies.
- The ability to generate recombinant AAV particles lacking any viral genes and containing DNA sequences of interest for various therapeutic applications has thus far proven to be one of the safest strategies for gene therapies.
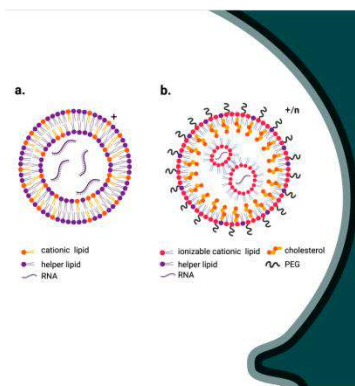
mRNA-loaded lipid Nanoparticles

- mRNA delivery has recently gained substantial interest for possible use in vaccines.
- mRNA vaccines are administered intramuscularly where they transfect antigen-presenting cells (APCs) near the site of administration, resulting in an immune response.
- The developed system is composed of mRNA loaded in loaded lipid nanoparticles (LNPs) whose lipid composition was optimized for maximum transfection into spleen cells.

Inflammatory Bowel Disease

- Inflammatory bowel disease (IBD) is a term for two conditions (Crohn's disease and ulcerative colitis) that are characterized by chronic inflammation of the gastrointestinal (GI) tract.
- Prolonged inflammation results in damage to the GI tract.
- The exact cause of IBD is unknown, but IBD is the result of a weakened immune system. Possible causes are:
- The immune system responds incorrectly to environmental triggers, such as a virus or bacteria, which causes inflammation of the gastrointestinal tract.

Cryptobiosis

- It is a metabolic state in extremophilic organisms in response to adverse environmental conditions such as desiccation, freezing, and oxygen deficiency.
- In the cryptobiotic state, all measurable metabolic processes stop, preventing reproduction, development, and repair.
- Cryptobiosis is often compared to the resurrection from death. It feels like the organism is caught in a state between life and death.
- It is a reversible process, and organisms return to normal life when the environmental conditions improve and their metabolic state is then restored to its original form.
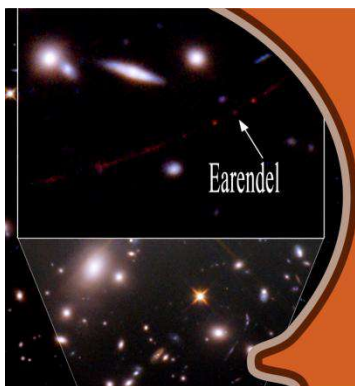
Earendel

- Earendel was a star discovered by the Hubble Space Telescope in 2022 and it is the most distant and earliest known star.
- The James Webb Space Telescope has conducted further observations of Earendel using its Near-Infrared Camera (NIRCam) instrument, revealing important details about the star.
- Earendel (WHL0137-LS) is a remarkable star located in the constellation of Cetus.

Luna-25

- Luna-25, launching from the Vostochny cosmodrome, aims to explore the moon's south pole region, believed to hold substantial ice deposits.
- Despite the proximity in timing, Roscosmos assures no interference between Luna-25 and Chandrayaan-3 missions due to different landing areas.
- The spacecraft, weighing 1.8 tons and carrying 31 kg of scientific equipment, will orbit the moon for five to seven days before descending to one of three potential landing sites near the pole.
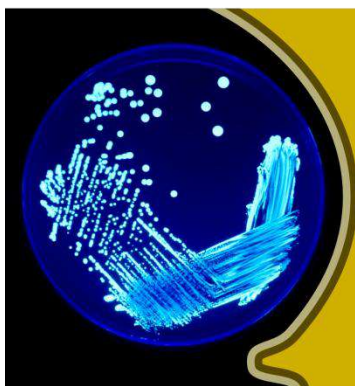
Legionella bacteria

- Legionella Bacteria cause an infection called Legionnaires' disease.
- When people breathe in water contaminated with the bacteria, they get infected.
- Once these bacteria reach the lungs, they cause pneumonia.
- Legionnaires' disease doesn't spread from person to person.
- Instead, the bacteria spreads through the mist, such as from air-conditioning units for large buildings.

Gandhinagar Declaration

- The Gandhinagar Declaration was adopted at the end of the two-day meeting held to follow up on the progress made to end TB.
- It was adopted by WHO South-East Asia Region.
- It committed to further accelerate efforts to end tuberculosis by 2030.

Heronries

- The herons are long-legged, long-necked, freshwater and coastal birds.
- They exhibit very little sexual dimorphism in size.
- The herons are carnivorous.
- The members of this family are mostly associated with wetlands and water and feed on a variety of live aquatic prey.

Lou Gehrig's Disease

- It's also known as Amylotropic Lateral Sclerosis.
- It is a neurodegenerative disease in which special nerve cells called motor neurons in the brain and spine which control an individual's voluntary functions like walking, chewing, talking, moving their arms- are affected.
- The disease is progressive, meaning the symptoms get worse over time.

Agnikul's Suborbital Tech Demonstrator (SorTeD)

- Agnikul'sSorTeD, named Agnibaan, is a single-stage launch vehicle equipped with the company's proprietary Agnilet engine.
- Agnibaan can carry payloads of up to 100 kg to low Earth orbit (LEO) at altitudes of up to 700 km.
- Agnibaan launches vertically and follows a predetermined trajectory during its suborbital space flight.

7.19   1 MAINS & 5 MCQs

Q1. Why the National Research Foundation needs to make an impact? Discuss in the context of recently introduced Anusandhan National Research Foundation Bill 2023.

Answer

- The bill seeks to set up a Rs 50,000-crore fund, with a sizeable contribution from the private sector by tapping into the corporate social responsibility (CSR) funds, to "seed, grow and promote" research and development (R&D) and foster a culture of research and innovation throughout India's universities, colleges, research institutions, and R&D laboratories.

- The Anusandhan National Research Foundation Bill 2023 seeks to **establish a new body, the Anusandhan National Research Foundation (NRF), to promote and fund research and innovation in science,**

technology, engineering and social sciences. The NRF will replace the existing Science and Engineering Research Board (SERB), which was created by the Science and Engineering Research Board Act 2008.

- o The Bill states that the SERB Act will be repealed and the SERB will be dissolved upon the commencement of the NRF Act.
- The Bill aims to **create a robust research ecosystem in India by supporting researchers** across disciplines and institutions, fostering collaboration and excellence, and enhancing the quality and impact of research outcomes.

Functions of NRF

- **Prepare short-term, medium-term, and long-term roadmaps** and formulate programs for research and development (R&D) in natural sciences, engineering and technology, environmental and earth sciences, health and agriculture, and scientific and technological interfaces of humanities and social sciences.
- Facilitate and finance the growth of R&D and related infrastructure in universities, colleges, and research institutions through grants, fellowships, scholarships, awards, prizes, etc.

- **Support translation of research into capital-intensive technology** by providing financial assistance for proof-of-concept development, prototyping, testing, validation, scaling up, etc.
- **Encourage international collaboration** by facilitating the exchange of researchers, students, faculty members, etc. and participating in joint research projects with foreign institutions.
- **Encourage investments in the Foundation by private and public sector** entities by creating an enabling environment for philanthropy, corporate social responsibility, endowments, etc.
- Undertake an annual survey of scientific research, outcomes, and spending in India and benchmark them with global standards.

Conclusion

- The Governing Board may also appoint a Chief Executive Officer, who should be of the rank of an Additional Secretary, or above, and who will be responsible for the day-to-day administration and management of the Foundation.

....

Q2 Consider the following statements:

1. Methane-eating bacteria (methanotrophs) are effective, but they cannot grow optimally at methane concentrations around 5,000-10,000 ppm.
2. Carbon dioxide (CO_2) is over 85 times more potent than Methane in terms of its global warming potential on a 20-year timescale.

Which of the above statements is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) None of the above.

Q3. Which of these is/are the policy highlights of the National Deep Tech Startup Policy (NDTSP)?

1. The policy seeks to support research and development activities in deep tech start-ups to foster innovation and technological advancements.
2. The policy suggests the creation of an Export Promotion Board to facilitate the entry of Indian deep tech start-ups into foreign markets.
3. The policy proposes to streamline the intellectual property regime for deep tech start-ups.
4. The policy emphasizes the need for a coordinated and comprehensive approach to engaging with international partners.

How many of the above statements is/are correct?

(a) Only one
(b) Only two
(c) Only three
(d) All the statements

Q4. Which of the following statements about significant moon missions is correct?

(a) Luna 2 was the first manned mission to land on the moon.
(b) Chang'e 3 successfully collected lunar samples and returned them to Earth.
(c) Apollo 11 was the first human-made object to reach the moon.
(d) Chandrayaan-1 detected water molecules on the far side of the moon.

Q5. Consider the following statements.

1. The herons are long-legged, long-necked, freshwater and coastal birds.
2. The neck is longer in the day herons than the night herons and bitterns.

   Which of the statements given above is/are incorrect?

   (a) 1 only

ANSWERS: 2) D, 3) D, 4) C, 5) C, 6) D

(b) 2 only
(c) Both 1 and 2
(d) None of the above.

Q6. Consider the following statements with respect to cfDNA:

1. It can provide valuable information about the health and status of different cells and tissues in the body.
2. cfDNA analysis can be used to identify the presence of pathogen-derived DNA in body fluids.
3. It is produced when cells die and their DNA is broken down into smaller fragments.
4. It is a useful tool because it is easy to obtain from a blood sample or other body fluid, and it reflects the current state of the cells and tissues in the body.

   How many of the above statements are correct?

   (a) Only one
   (b) Only two
   (c) Only three
   (d) All four.

8. CULTURE & HISTORY

8.1   ORIGINS OF INDO-EUROPEAN LANGUAGES

Context
- New insights into the origin of Indo-European languages have been published in a study in the journal Science.

About
- **The Steppe hypothesis proposes the origin to be in the Pontic-Caspian Steppe** around 6000 years ago, while the farming one suggests an older origin tied to early agriculture around 9000 years ago.
- **Previous evolutionary analyses of Indo-European languages** have come to conflicting conclusions about the age of the family, due to the combined effects of inaccuracies and inconsistencies in the datasets they used and limitations in the way that phylogenetic methods analyzed ancient languages.
- **Researchers at the Max Planck Institute for Evolutionary Anthropology, Germany**, used recently developed ancestry-enabled Bayesian phylogenetic analysis to test whether ancient written languages, such as Classical Latin and Vedic Sanskrit, were the direct ancestors of modern Romance and Indic languages, respectively.
- **Estimating the Indo-European family to be approximately 8100 years old**, with five main branches already split off by around 7000 years ago, the analyses' results agreed entirely with neither the Steppe nor the Anatolian hypotheses.
- **Recent ancient DNA data** suggest that the Anatolian branch of Indo-European did not emerge from the Steppe, but from further south, in or near the northern arc of the Fertile Crescent - as the earliest source of the Indo-European family.

The researchers constructed a dataset of core vocabulary from 161 Indo-European languages, including 52 ancient languages, and used statistical techniques to create a language family tree and test

whether ancient languages such as Classical Latin or Vedic Sanskrit were direct ancestors of modern languages.

- Our language family tree topology, and our lineage split dates, point to other early branches that may also have spread directly from there, not through the Steppe.
- Their analysis has indicated that the Sanskrit of the Vedic texts was not the direct ancestor of modern Indic languages, but was a distinct sister dialect.
- Even the Prakrit languages of medieval India **"do not derive from Sanskrit and, specifically, do not go back directly to the Sanskrit in the Vedic texts"**.
- **The study authors have now proposed a new hybrid hypothesis** for the origin of the Indo-European languages, with an ultimate homeland south of the Caucasus and a subsequent branch northward onto the Steppe, as a secondary homeland for some branches of Indo-European entering Europe with the later Yamnaya and Corded Ware-associated expansions.
- **Ancient DNA and language phylogenetics** thus combine to suggest that the resolution to the 200-year-old Indo-European enigma lies in a hybrid of the farming and Steppe hypotheses.

Conclusion
- Earlier studies had often produced conflicting results. Haggerty said that "while we're building on nearly 200 years of research on the Indo-European languages", the dataset used in the new study provided a full and balanced sample of languages. Assumptions that some modern spoken languages have emerged directly from ancient written languages were also dropped. Instead, the researchers put those assumptions to test.

8.2   NATIONAL MANUSCRIPTS BILL 2023

Context

- India has a large collection of ancient manuscripts, a part of the country's cultural heritage, but over the years many have been lost or lie in museums abroad.

About the bill

- **Objective:** To document and catalogue Indian heritage texts, regardless of their location within India or overseas.
  - Maintain accurate and up-to-date information about them.
  - Elaborate the circumstances under which these texts can be accessed for consultation.
- **The Bill envisages setting up a 10-member National Manuscripts Authority (NMA),** with the Union Minister of Culture would be the Chairperson of this body.
- **The NMA would serve as the highest authority for establishing policies** related to digitization, conservation, preservation, editing, and publication efforts concerning manuscripts.
- **The NMA will additionally create a specialized digital platform** for the purpose of indexing, cataloguing, uploading, and downloading manuscript copies.

The Bakhshali manuscript, an ancient mathematical text inscribed on birch bark, stands as the earliest documented instance of zero's utilization, originating from India.

Significance of the bill

- **Numerous priceless Indian manuscripts are currently dispersed** across various regions within the country and even overseas.
- These manuscripts are in the **possession of private collectors, museums, and institutions,** often lacking proper documentation and care.

- **It's imperative to establish a connection** between the study and interpretation of manuscripts and sustainable livelihoods.
- **Manuscripts hold significant importance** as a vital component of India's documentary heritage.

About National Mission for Manuscripts:

- Establishment of the National Mission of Manuscripts (NMM) was aimed at **safeguarding India's extensive repository of manuscripts.**
- The NMM an **autonomous body was established in 2003 by the Ministry of Culture**, Government of India.
- The primary mission directive involves recognizing, gathering, recording, safeguarding, and maintaining manuscripts from various regions across India, ensuring their availability to the public.
- It's a unique project in its programme and mandate, the Mission seeks to unearth and preserve the vast manuscript wealth of India.
- The NMM operates as a comprehensive national initiative with the goal of fulfilling its motto: 'preserving the past for the future'.
- According to the NMM, **75% of the existing manuscripts are in Sanskrit, 25% are in regional languages**.

Conclusion

- Preserving and reviving India's ancient manuscripts is not only a matter of cultural importance but also a means of better understanding the country's historical development, intellectual achievements, and contributions to various fields.
- By revitalizing efforts to recover lost manuscripts and promote their study, India can reclaim a significant part of its cultural heritage and ensure that these priceless documents continue to inspire and educate generations to come.

8.3 ILLICIT TRAFFICKING OF CULTURAL PROPERTIES

Context
- The G20 nations have called for stepping up global cooperation to fight illicit trafficking of cultural properties, with enhanced monitoring of the international borders.

Details
- Though India itself has not yet signed a key 1995 convention on the protection of cultural properties, it led the G20 as its current chair to stress on ratification and implementation of the international treaty.

Introduction:
- Cultural property is part of the **common heritage of humankind**. It is so unique and important a testimony of the evolution and identity of peoples, that the importance of protecting it has been stressed in several international instruments.
- **Illicit trade in cultural property –** meaning the illicit import, export and transfer of ownership of cultural property – is a growing threat within global trade.
- **As noted by UNESCO**, every day, somewhere in the world, a cultural object is looted, stolen from a museum, illegally excavated, or smuggled across a border.
- This trafficking in cultural property damages cultural heritage worldwide, deprives people of their history and culture and weakens social cohesion in the long term.

By definition, illicit trade in cultural goods happens clandestinely and takes many different forms, including but not limited to:
- Theft from cultural heritage institutions or private collections
- Looting of archaeological sites
- Displacement of artefacts due to war

Issues:
- **As with other forms of illicit trade**, organized criminal groups are increasingly involved in the trafficking of cultural property.

- **The proceeds of this illicit activity** are also becoming an important avenue for the laundering proceeds of crime, fuelling corruption and armed violence.
- It has also been identified by UNODC as a possible source of financing for terrorist groups.
- **The situation has worsened in recent years, due to the increase of conflicts, a shift towards online market places -** including popular social networks that serves as new marketing channels, and the pandemic, which has weakened the capacity to monitor heritage sites.
- **Other challenges include a lack of coherent and systematic data collection** necessary to analyse the dimensions of illicit trade in cultural goods.
- **This lack of good quality data on this crime helps perpetuate a vicious circle**: without a good understanding of the size of the problem, it is difficult to muster political prioritisation and adequate resources to fight it.
- At the same time, without adequate resources dedicated to the issue the nature and scale of the problem cannot be properly understood.

Conclusion
- Addressing threats to irreplaceable cultural resources and protecting and preserving cultural heritage requires the attention and cooperation of the international community. International organizations and national authorities, along with law enforcement agencies, customs services and private sector stakeholders have an important role to play in stopping the looting, trafficking, and sale of cultural property.

8.4   SHORT ARTICLES

Folk Dances in News

Context

- The three-day national festival of folk and tribal dances, Utkarsh, ended with folk and tribal dances of 12 states at Ravindra Convention Centre.

Details

- Sangeet Natak Akademi, New Delhi, organised the event in association with MP Culture Development. They included Rauf of Kashmir, Sorathi of Sikkim, Jhijhiya of Bihar, Hojagiri of Tripura, Gaud Maria of Chhattisgarh, Pulkali of Kerala, Chhapeli of Uttarakhand, Gotipua of Odisha, Bhangra of Punjab, Purulia Chhau from West Bengal, Oggu Dolu of Telangana and Gudum Baja Madhya Pradesh.

FOLK DANCE MAP OF INDIA
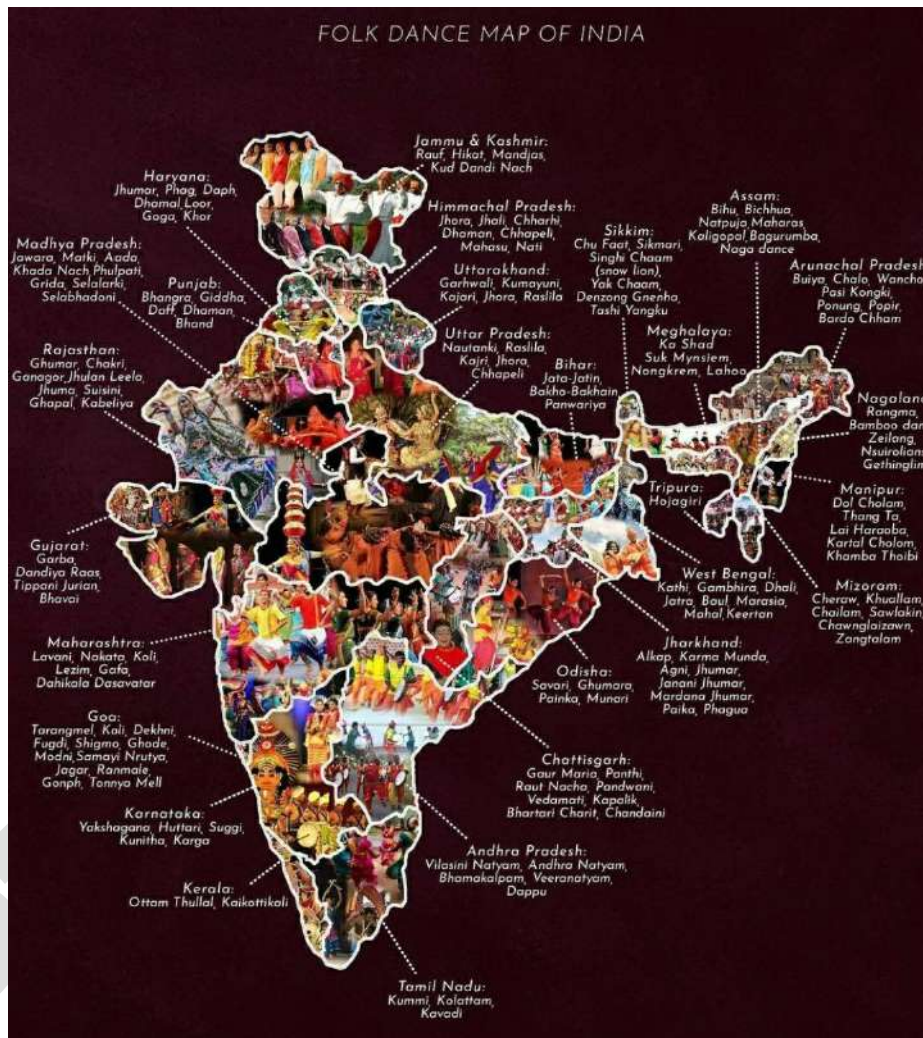
- Jhijhiya is a famous folk dance of Bihar and is performed in Mithila. This dance is performed by women only. Navaratri is celebrated to worship Goddess Lakshmi, Parvati, and Saraswati.

About folk dances of India

Andhra Pradesh	• Kuchipudi, Vilasini Natyam, Andhra Natyam, Bhamakalpam, Veeranatyam, Dappu, Tappeta Gullu, Lambadi, Dhimsa, Kolattam, Butta Bommalu.
Assam	• Bihu, Bichhua, Natpuja, Maharas, Kaligopal, Bagurumba, Naga dance, Khel Gopal, Tabal Chongli, Canoe, Jhumura Hobjanai.
Bihar	• Jata-Jatin, Bakho-Bakhain, Panwariya, SamaChakwa, Bidesia.
Jharkhand	• Alkap, Karma Munda, Agni, Jhumar, Janani Jhumar, Mardana Jhumar, Paika, Phagua, Hunta Dance, Mundari Dance, Sarhul, Barao, Jhitka, Danga, Domkach, Ghora Naach.
Manipur	• Dol Cholam, Thang Ta, Lai Haraoba, Pung Cholom, Khamba Thaibi, Nupa Dance, Raslila, Khubak Ishei, Lhou Sha.
Sikkim	• Chu Faat Dance, Sikmari, Singhi Chaam or the Snow Lion Dance, Yak Chaam,

	Denzong Gnenha, Tashi Yangku Dance, Khukuri Naach, Chutkey Naach, Maruni Dance.

Vibhajan Vibhishika Smriti Diwas'

Context

- 'Partition Horrors Remembrance Day' or 'VibhajanVibhishika Smriti Diwas' is observed on August 14 to remember all those who lost their lives due to partition.

Details

- India will celebrate its 77th year of independence on Tuesday, and preparations are already in place, including '**Har GharTiranga'** rallies and Prime Minister Narendra Modi's appeal to change social media account display pictures, upload selfies with the tricolour, and engage in activities that symbolise unity in the country.
- But before the country witnesses a joyous celebration of its independence, a 'Partition Horrors Remembrance Day' or '**VibhajanVibhishika Smriti Diwas'** is observed on August 14.
  - This day was announced by the Prime Minister in 2021 to remember all those who lost their lives due to the partition of the nation and were uprooted from their origins.
- *"The partition caused one of the largest migrations in human history, affecting about 20 million people. Millions of families had to abandon their ancestral villages/towns/cities and were forced to start anew as refugees,"* a government release said when the day was initially announced.

About Vibhajan Vibhishika Smriti Diwas

About	- Partition Horrors Remembrance Day is an **annual national memorial Day** observed on **14 August in India**, commemorating the victims and sufferings of people during the 1947 partition of India.
Observed	- It was **first observed in 2021**, after announcement by Prime Minister Narendra Modi.
Significance	- **"The partition resulted in one of the most significant populationmovements** in recorded history, impacting approximately 20 million individuals." - **"Numerous families had to leave behind their traditional villages**, towns, and cities, compelled to embark on a fresh journey as refugees," stated an official government announcement during the initial declaration of the day.
Outcome	- *"Partition Horrors Remembrance Day keep reminding us of the need to remove the poison of social divisions, disharmony and further strengthen the spirit of oneness, social harmony and human empowerment,"* - The observance of Partition Horrors Remembrance Day **helps to preserve the lessons of history and promote a deeper understanding of the consequences of political and social divisions,** with the ultimate goal of fostering empathy, reconciliation, and a commitment to a peaceful coexistence among all communities.

Inscription from Kalyani Chalukya period

Context

- A new inscription from the Kalyani Chalukya era was **found in Ummeda in Nandipet Mandal in Nizamabad district**.

Details

- The seventeen-line stone inscription order, written on the stone having 4x5 feet dimensions, was issued by Pallavarasa, the prime minister of the kingdom.

- An eleventh-century inscription bearing the name of Kalyan Chalukyan ruler Tribhuvanamalla V Vikramaditya was found on a stone boulder outside the Ummeda Kalabhairavaswamy temple in Nandipet mandal of Nizamabad district by members of Kotha Telangana Charithra Brundam (KTCB).

Description of Inscription

- The seventeen-line stone inscription order, written on the stone having 4x5 feet dimensions, was issued by Pallavarasa, the prime minister of the kingdom.
- The inscription, written in Telugu-Kannada script and Kannada language, records the ritual performed on the Lunar Eclipse in the month of Falguna, 1012 AD when Pallavarasa washed the feet and worshipped Somanatha Guru and donated approximately ninety acres of land to him. This was the second inscription bearing his name.
- The first inscription was found with his name in Nandikandi village of Sangareddy district. He was conferred the title "Pampa Permanadi."

"'Sarvonamasya' and 'Bhatta Vritthi' written on the stone, meant that everybody should accept the order, which applies to all 20-30 caste professions (Bhattaswamyam) which depended on the temple and served the God".

About Kalyani Chalukya

- The Western Chalukya Empire ruled most of the western **Deccan, South India, between the 10th and 12thcenturies**.
- **This Kannadiga dynasty** is sometimes called the Kalyani Chalukya after its regal capital at Kalyani, today's Basavakalyan in the modern Bidar District of Karnataka state, and alternatively the Later Chalukya from its theoretical relationship to the 6th-century Chalukya dynasty of Badami.
- **The dynasty is called Western Chalukyas** to differentiate from the contemporaneous Eastern Chalukyas of Vengi, a separate dynasty. Prior to the rise of these Chalukyas, the Rashtrakuta empire of Manyakheta controlled most of Deccan and Central India for over two centuries.
- **In 973, seeing confusion in the Rashtrakuta empire** after a successful invasion of their capital by the ruler of the Paramara dynasty of Malwa, Tailapa II, a feudatory of the Rashtrakuta Dynasty ruling from Bijapur region defeated his overlords and made Manyakheta his capital.
- The dynasty quickly rose to power and grew into an empire under **Someshvara I** who moved the capital to Kalyani.

Sources of history

- Inscriptions constitute the main source of information about the Badami Chalukya history.
- Important among them, the **Badami cave inscriptions (578) of Mangalesa, Kappe Arabhatta record of 700, Peddavaduguru inscription of Pulakesi II, the Kanchi Kailasanatha inscription and Pattadakal Virupaksha Temple inscriptions of Vikramaditya II all in Kannada provide more evidence of the Chalukya language**.
- The earliest inscription of the Badami cliff dated 543 of Pulakesi I, the Mahakuta Pillar inscription (595) of Mangalesa and the Aihole inscription dated 634 of Pulakesi II represent examples of Sanskrit inscriptions written in old Kannada script.
- **The reign of the Chalukyas saw the arrival of Kannada** as the predominant language of inscriptions along with Sanskrit, in areas of the Indian peninsula outside, known as **Tamilaham (Tamil country).**

- **Several coins of the early Chalukyas with Kannada legends** have been found indicating usage of Kannada at the highest administrative levels.
- **Inscriptions of the Chalukyas** have been translated and recorded by historians of the Archaeological Survey of India.

Sattriya Dance

Context

- The **Sattriya dance** form stands as one of the eight classical dances of India.

About the dance

- **In the 15th century A.D.,** Mahapurusha Sankaradeva, an influential Vaishnava saint and reformer of Assam, invented the Sattriya Dance form as a powerful tool for spreading the Vaishnava faith.
- As time passed, this form of dance **evolved and flourished into a unique style**.
- Sattriya or Sattriya Nritya, is one of the **prominent major Indian classical dance forms from North East India** which was recognized on 15th November, 2000 by **Sangeet Natak Akademi** of India under the chairmanship of Dr. Bhupen Hazarika.
- **It is an artistic way of presenting mythological teachings** to the people in an enjoyable and accessible manner with the aim of a unified, classless society.
- **This dance-drama performance of art has its origins in the Krishna-centered** Vaishnavism and attributed to the 15th century Bhakti movement scholar, social reformer and saint, Srimanta Sankardev.
- **The basic dance unit of Sattriya is the Mati Akhara**, and dancers learn foundational sets during their training. Akharas are subdivided into Ora, Saata, Jhalak, Sitika, Pak, Jap, Lon, and Khar.
- **During a performance, dancers integrate two styles,** one masculine and energetic, with jumps, and the other feminine and delicate.
- **Sattriya was traditionally performed only by male monks** in monasteries as part of their daily rituals or to mark special festivals on mythological themes.

Dedicated Cultural Heritage Squad

Context

- Parliamentary panel recommends setting up 'dedicated cultural heritage squad' to recover stolen antiquities.

Details

- The report, titled 'Heritage Theft – The Illegal Trade in Indian Antiquities and the Challenges of Retrieving and Safeguarding Our Tangible Cultural Heritage', was tabled in both houses of Parliament Monday.
- **The report highlights challenges in documenting**, identifying, safeguarding and repatriating antiquities and lost cultural wealth. One of its chapters, titled 'retrieval of antiquities', talks about the Kohinoor.
- **It observes that according to an opinion from the Department of Legal Affairs**, the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural **Property allows countries to conclude special agreements** among themselves for the restitution of removed cultural property.
- The law secretary also told the committee that "legislative competence exists" for formulating a law for the restitution of the Kohinoor to India.

About Indian Culture and heritage

- Indian word for culture is 'Sanskriti'. From time immemorial, Indians have described their culture as 'Human Culture' (**Manav Dharma/ Sanskriti).** It has a universal appeal.
- The **principle of 'Unity in Diversity' is the implicit law of nature,** universe and life. People belonging to diverse communities, speaking different languages, having different food, performing different customs

harmoniously co-exist in India. Thus, the soul of cultural heritage of India lies in the fact that it's an all embracing confluence of religions, traditions, customs and beliefs.

- Over the years, **numerous styles of art, architecture, painting, music, dance, festivals and customs** have developed in India and this wide variety has made the Indian culture unparalled to which the entire world still looks up to.

- The cultural heritage of India still **flourishes maintaining its original features together** along with changes, a key indicator of its strength.

Kasi Cultural Pathway

Context

- The G20 Culture Ministers' Meeting ended after day-long deliberations following which a ministerial Outcome Document and Chair's Summary — 'Kashi Culture Pathway' was issued.

About the Cultural Pathway:

- *Kashi is known to be a treasure chest of knowledge, duty and truth and it is indeed the cultural and spiritual capital of India.*

- **The 'Kasi Cultural Pathway'** focuses on restoring the glory of heritage structures and ensuring the return of cultural and heritage artefacts to countries from where they were taken by others.

- The propagation of cultural heritage in environmental protection to find ways and means to tackle climate-related challenges with the cooperation of G20 nations and other countries.

- **The 'Kasi Cultural Cultural Pathway'** plan emerged from discussions among member countries on the implementation of decisions taken in the previous Rome and Bali Declarations.

Significance:

- **Cultural heritage and its preservation** can play a vital role in environment protection and our climate by ensuring continued preservation and propagation of such heritage, the world can also achieve sustainable development goals.

- **The propagation of cultural heritage in environmental protection** to find ways and means to tackle climate-related challenges with the cooperation of G20 nations and other countries.

Gond painting

Context

- During the 15th BRICS summit in South Africa, Prime Minister Narendra Modi presented unique gifts to various leaders from participating nations.

Details:

- The word 'Gond' comes from the Dravidian expression 'Kond' which means 'green mountain'. These paintings, created by dots and lines, have been a part of pictorial art on walls and floors of Gonds and it is done with the construction and re-construction of each and every house, with locally available natural colours and materials like charcoal, coloured soil, plant sap, leaves, cow dung, lime stone powder.

About the Painting:

About	• It is a traditional form of tribal art that originates from the Gond communities of central India. • The Gonds are one of the largest Adivasi (indigenous) communities in India and are known for their rich cultural heritage, which includes their unique style of painting.
Characteristics	• They are characterized by intricate and vibrant patterns, depicting the connection between humans, nature, and the spiritual world.
Evolution	• It has a long history, deeply rooted in the Gond culture. • Traditionally, these paintings were created as a form of expression for various rituals, festivals, and celebrations.
Themes	• **Nature:** Gond artists often depict elements of nature such as trees, animals (elephants, birds, and more), and rivers. • **Mythology and Folklore:** Gond paintings frequently feature characters from local myths, legends, and folktales. etc.
Techniques	• Gond paintings are traditionally created on walls, floors, and other surfaces within the Gond households. However, with changing times, artists have adapted to using paper, canvas, and other modern mediums.

Seethakali

Context

• T N Shajimon wins Kerala Folklore Akademi award for reviving 'Seethakali', a female-oriented Dalit narrative of the Ramayana.

Details

• Decades ago, in erstwhile Desinganad (present day Kollam, Kerala), the days running up to Onam were busy for the Veda community. They performed 'Seethakali' (roughly translated to Sita's play), a dance drama, which narrated the story of the Ramayana through Sita's perspective.

• The Vedas, who worked in the fields, performed it solely for their feudal lords, in the courtyards of their large houses. By the '80s the practice ended and the art form became nearly extinct.

- In 2020, this Dalit Ramayana is being performed again with the same fervour and passion by a group of dedicated artistes from Kollam. T N Shajimon, a filmmaker and theatre artiste, who revived 'Seethakali' and brought it back to the public domain.

About Seethakali

About	• It a vibrant and flamboyant folk art, traces its roots back to Perinad in **Kollam district, Kerala.** • This captivating art form **emerged around 150 years ago**, initially performed by the Vedar and Pulayar communities.
Tradition	• In its early days, Seethakali was an integral part of the harvest **festival, Onam.** • From **the Atham star until the 28th day following Onam**, performers from subaltern communities would travel from house to house, sharing the enchantment of this art.
Instruments and attire	• **Natural materials like bamboo and palm leaves** find artistic expression in Seethakali. • **The costumes and makeup are strikingly vibrant**; characters like Rama and Laxmana are adorned in green, a color symbolic of gods and goddesses in Kathakali.
Themes	• Based on episodes from the **epic Ramayana, Seethakali** breathes life into mythical characters such as **Rama, Seetha, Ravana, and Hanuman.** • The performances vividly depict **Seetha's journey**, from accompanying Rama to the woods to her ascent to the heavens.

8.5   SNIPPETS

Umeksha and Utkarsh Festivals

- Unmesha is India's most inclusive and Asia's largest literature festival, focusing on celebrating the rich diversity of languages and cultures in the country.
- Utkarsh serves as a vital platform for showcasing and preserving India's folk and tribal performing arts.

Lokmanya Tilak National Award

- The Lokmanya Tilak National Award is conferred on people to honour the legacy of Indian independence activist, Bal Gangadhar Tilak.
- The award was constituted by Tilak Smarak Mandir Trust in 1983. It is given to people who have worked for the progress and development of the nation and whose contribution can only be looked upon as remarkable and extraordinary.

Drukyul Literature Festival

- Drukyul's Literature Festival is an annual celebration of literature and arts in the Himalayan Kingdom of Bhutan, under the Royal Patronage of Her Majesty the Queen Mother Ashi Dorji Wangmo Wangchuck.
- The festival is an independently organized not-for-profit event that is free and open to all.

Veshaw Literary Festival

Veshaw Literary Festival Kulgam 2023
(A celebration of Literature, Art, Culture and Heritage)
7th & 8th August 2023
Mini Secretariat
Kulgam

- The 'Veshaw Literary Festival' was held here on Monday, as part of the Jammu and Kashmir administration's efforts to take literary activities from cities and towns to the hinterland.
- Local artists and writers who took part in the event said the literary fest provided them with a platform closer to their homes to showcase their work.
- Tabish Ajaz Khan, an artist who participated in the event appreciated the government for organising the festival here.

Shaligram Stones

- Shaligram stones, revered by Hindus and Buddhists for over 2,000 years, are facing a dire threat due to climate change.
- These ancient fossils, believed to embody the divine presence, have been a central part of religious practices in Nepal's Kali Gandaki River Valley.
- Shaligram stones come in various shapes, sizes, and colors. They often display intricate patterns on their surfaces. The markings are revered as symbols of different manifestations of Lord Vishnu.

Bir Bikram Manikya Bahadur

- Maharaja Bir Bikram Manikya Bahadur, born on August 19, 1908, was a prominent royal figure who played a pivotal role in the modernization and development of the princely state of Tripura.
- His reign marked a transformative period in Tripura's history, characterized by progressive reforms and visionary initiatives.

Kalaripayattu

- The word Kalaripayattu is a combination of two Malayalam words - kalari (training ground or battleground) and payattu (training of martial arts), which is roughly translated as "practice in the arts of the battlefield."
- Considered among the oldest and most scientific martial arts in the world, Kalaripayattu was developed in Kerala.
- Lauded as the pride of Kerala, it is acknowledged and respected across the world.
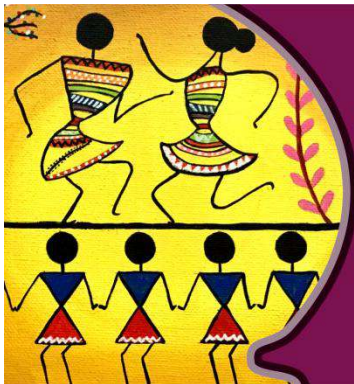
Warli Art

- Warli painting is a style of tribal art mostly created by the tribal people from the North Sahyadri Range in Maharashtra, India.
- Figures are created out of geometrical shapes — two triangles, stick-like hands and legs, a circle (representing face), a smaller circle (only for female form to indicate a hair bun) and square.
- There are no deities involved and there is no striking colour palette either.

UNIDROIT Convention

- The UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects (Rome, 1995) is a key international treaty on cultural property protection.
- It attempts to strengthen the main weaknesses of the 1970 Unesco Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property.

Bidri Work Pair Of 'Surahi'

- Prime Minister Narendra Modi's gesture of presenting a Bidri work pair of 'Surahi' to South African President Cyril Ramaphosa serves as a testament to India's rich artistic heritage and diplomatic finesse.
- The intricate Bidri craft, originating from Bidar in Karnataka, holds profound cultural significance and reflects the synthesis of diverse artistic traditions.

Tshepo Motsepe

- PM Modi presented a Naga shawl for Tshepo Motsepe, the First Lady of South Africa.
- This shawl is a splendid example of textile art, woven for centuries by the tribes in Nagaland.
- Crafted from locally sourced materials such as cotton, silk, and wool, the shawl boasts geometric and symbolic designs.

Mylara cult

- The Mylara cult, also known as the Milara cult, is a significant religious and cultural movement in Karnataka, India, rooted in the worship of the deity Mylaralinga or Milaralinga.
- This syncretic cult combines elements of Hinduism and local folk traditions, holding deep spiritual and cultural importance for its followers.

8.6   1 MAINS & 5 MCQs

Q1. Indian folk art and crafts have a rich cultural heritage that showcases the diversity of Indian culture. In this context discuss briefly the significance of National Manuscripts Bill 2023. Also mention about the National Mission for Manuscripts.

Introduction

- **The Bill envisages setting up a 10-member National Manuscripts Authority (NMA),** with the Union Minister of Culture would be the Chairperson of this body. **The NMA would serve as the highest authority for establishing policies** related to digitization, conservation, preservation, editing, and publication efforts concerning manuscripts.
- **The NMA will additionally create a specialized digital platform** for the purpose of indexing, cataloguing, uploading, and downloading manuscript copies.

Body
Significance of the bill:

- **Numerous priceless Indian manuscripts are currently dispersed** across various regions within the country and even overseas.
- These manuscripts are in the **possession of private collectors, museums, and institutions,** often lacking proper documentation and care.
- **It's imperative to establish a connection** between the study and interpretation of manuscripts and sustainable livelihoods.
- **Manuscripts hold significant importance** as a vital component of India's documentary heritage.
- **About National Mission for Manuscripts:**
- Establishment of the National Mission of Manuscripts (NMM) was aimed at **safeguarding India's extensive repository of manuscripts.**
- The NMM is an **autonomous body established in 2003 by the Ministry of Culture**, Government of India.

- The primary mission directive involves recognizing, gathering, recording, safeguarding, and maintaining manuscripts from various regions across India, ensuring their availability to the public.
- It's a unique project in its programme and mandate, the Mission seeks to unearth and preserve the vast manuscript wealth of India.
- The NMM operates as a comprehensive national initiative with the goal of fulfilling its motto: 'preserving the past for the future'.
- According to the NMM, **75% of the existing manuscripts are in Sanskrit, 25% are in regional languages**.

Conclusion

- Preserving and reviving India's ancient manuscripts is not only a matter of cultural importance but also a means of better understanding the country's historical development, intellectual achievements, and contributions to various fields. By revitalising efforts to recover lost manuscripts and promote their study, India can reclaim a significant part of its cultural heritage and ensure that these priceless documents continue to inspire and educate generations to come.

....

Q2. Which of the following statements with reference to Gond Paintings is/are incorrect?
1. Gond painting is a famous folk art of Maharashtra only.
2. The Gond painters use natural colours only.
   Select the correct answer using the code given below:
   A. 1 only
   B. 2 only
   C. Both 1 and 2
   D. Neither 1 nor 2

Q3. Consider the following statements with reference to the Seethakali folk art:
1. It is a vibrant and flamboyant folk art, traces its roots to Kerala.
2. It emerged around 150 years ago, initially performed by the Ezhava (Tiyyar) and Pulayar communities.
   Select the correct answer using the code given below:
   A. 1 only
   B. 2 only
   C. Both 1 and 2
   D. Neither 1 nor 2

Q4. Bidriware is a popular metal handicraft, it belongs to which among the following states?
   A. Kerala
   B. Karnataka
   C. Andhra Pradesh
   D. Telangana

Q5. Consider the following statements with respect to Kalyani Chalukya period:
1. The Kannadiga dynasty was the prominent rival of the Kalyani Chalukyas.
2. The Western Chalukya Empire is also known as the Kalyani Chalukya Empire.
3. Tailapa-II, who was a feudatory of the Rashtrakuta established this dynasty.
   Select the correct answer using the code given below:
   A. 1 and 2 only
   B. 2 and 3 only
   C. 3 only
   D. 1, 2 and 3

Q6. Consider the following statements with reference to the Warli art:
1. It is a style of tribal art mostly created by the tribal people from the North Sahyadri Range in Maharashtra.
2. It is about day-to-day life and the human connection.
3. Nature and deities are common in these art forms.
   Select the correct answer using the code given below:
   A. 1 and 2 only
   B. 2 and 3 only
   C. 3 only
   D. 1, 2 and 3

ANSWER: 2. A, 3. A, 4. B, 5. B, 6. A

9. GEOGRAPHY & DISASTER MANAGEMENT

9.1   PERILS OF UNPLANNED URBANIZATION

Context

- In the past few weeks, three major cities Delhi, Ahmedabad, Mumbai have been flooded.
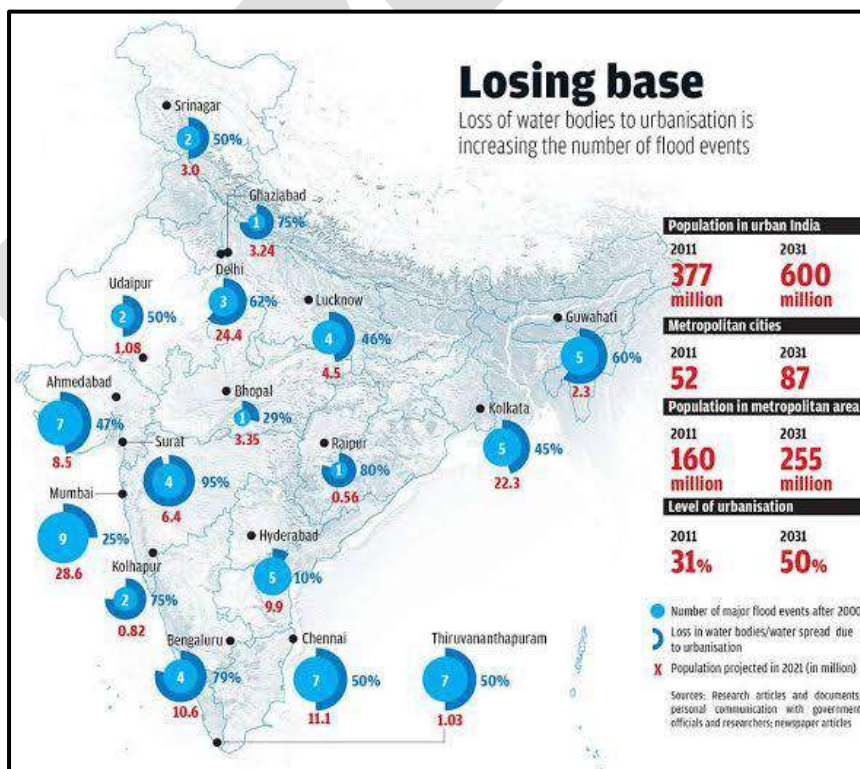
About Urbanization

- Urbanization is the population shift from rural to urban areas, the corresponding decrease in the proportion of people living in rural areas, and how societies adapt to this change.
- It is predicted that by 2050 about 64% of the developing world and 86% of the developed world will be urbanized.

Status of Urbanisation in India

- The population residing in urban areas in India, according to the 1901 census, was 11.4%, *increasing to 28.53% by the 2001 census, and is currently 34% in 2017 according* to the World Bank.
- According to a survey by the United Nations, in 2030 40.76% of the country's population is expected to reside in urban areas.

Perils of Unplanned Urbanization in India and need for addressing them

- A majority of urban residents in India face *water-logging and traffic congestion.* While flooding was a regular occurrence in urban India before independence, damage and disruption have increased.
- Urban floods are now a *national problem in India*, affecting mega and metropolitan areas almost every year. Cities like *Hyderabad (in 2000), Srinagar (in 2014), Chennai (in 2021) and Bengaluru (in 2022*) have seen some areas being submerged during heavy rainfall.
- India's urban population is *anticipated to reach 814 million by 2050*. As a result, the government needs to focus on city master plans and urban renewal initiatives as essential components to reduce urban flooding.

Losing base
Loss of water bodies to urbanisation is increasing the number of flood events

Population in urban India	
2011	2031
377 million	600 million

Metropolitan cities	
2011	2031
52	87

Population in metropolitan area	
2011	2031
160 million	255 million

Level of urbanisation	
2011	2031
31%	50%

Number of major flood events after 2000
Loss in water bodies/water spread due to urbanisation
Population projected in 2021 (in million)

Sources: Research articles and documents; personal communication with government officials and researchers; newspaper articles

Repercussions of Unplanned Urbanization and underlying causes

- **Encroachment in water bodies:** The original built-up area of Indian cities has expanded dramatically over the past two decades. New developments are taking place in low-lying areas and with unplanned urbanization and a rise in population, there has been a rise in construction and, consequently, a loss of water bodies.

- **Low percolation in groundwater recharge:** With cities getting more concrete due pavements, roads, and settlements, rainwater percolation has reduced, leading to a rise in stormwater run-off.
- **High water run-off:** Climate change is leading to extreme weather and causing an increase in the frequency of short-duration heavy rainfall resulting in higher water run-off.
- **Exceeding capacity of drains:** To accommodate the higher flows of stormwater, it would have been ideal to widen the natural drains but _large-scale encroachments have occurred without widening the natural drains_. Thus, flooding occurs as the capacity of the natural drains is decreased.
- **Urban heat island effect:** The hot air pushes the rain-bearing clouds higher as they pass over the urban heat island, resulting in highly localized and occasionally intense rainfall.

Way ahead

- _Holistic study of urban areas:_ To understand the problem better studies must be conducted in all cities to understand the catchment area and flooding risk associated with urban water bodies (including rivers) and land use.
- _Geotagging of water bodies:_ Geographic information systems (GIS) may be used to tag local water bodies, to help keep track of encroachments and understand their seasonality.
- _Early warning systems:_ Investments are required in more early warning systems (including Doppler radar) to enable real-time updates on changing weather patterns locally.
- _Drainage master plans:_ Most cities need to develop drainage master plans — even Delhi is yet to have one. Additionally, existing pipelines need to be surveyed and water-logging locations identified.
- _Public awareness:_ Awareness about wetland/water body conservation must be improved. We must identify and replicate local examples. Ex. The Mangalore City Corporation (MCC).

Conclusion

- _Mindsets, policies, and approaches towards urbanization_ need to change for the growth of cities and urban areas to be turned into opportunities that will leave nobody behind. The development of blue-green infrastructure will help in the situation.

9.2   MONSOON, AND ITS IMPACT ON AGRICULTURE

Context

- Monsoon impacts food inflation in India

Introduction

- India is the world's largest producer of sugar, cotton and pulses. The country is also the second biggest producer of wheat and rice. _Monsoon season which delivers about 70% of the country's annual rainfall,_ determines how successful cultivation would be. The monsoon is also critical for the wider economy.

Monsoon's Impact on Agriculture

- _Monsoon for agricultural growth:_ India gets around 70 per cent of its annual rainfall during the monsoon season, which also affects the yield of some kharif or summer crops like rice, pulses and oil seeds such as soybeans. Farmers start planting these crops with the arrival of monsoon rains in June.
- _Inflation:_ Around _50% of India's total food output comes in the form of summer crops_. A delayed monsoon can lead to supply issues and even accelerate food inflation. A normal rainfall, and as a result higher agricultural output, can boost India's economic growth and keep inflation in check.
- _Effect on demand:_ In a good monsoon season, farm output goes up, boosting demand for consumer goods as well as the income of rural people. All of this l_eads to a stronger economic outlook that in turn_

helps lift equities, especially for companies selling goods in rural areas. However, a poor monsoon season weakens the demand for CG products, tractors, two–wheelers and rural housing.

- *Higher imports and farm loan waivers:* It forces the government to spend on the import of food as well as take measures like farm ban waivers.
- *Better irrigation potential:* The monsoon rains in India also replenish reservoirs and groundwater which helps in improving irrigation and also boost hydropower production.

Indian Agriculture's dependence on monsoon

- Farming is the *only source of income for many farmers in India.* Taking into consideration the amount of GDP contribution that Indian agriculture has, it is a primary factor to affect the economy as a whole.
- Around *70 per cent of the Indian population depends on farming* and 58 per cent of the total employment in the country is through agriculture which contributes to around 18 per cent of the GDP.
- The amount of rainfall in a specific area *determines the types of crops that can adapt and grow to the natural factors* affecting the region. Monsoon-friendly crops with a high requirement of water like sugarcane, jute and paddy can easily be cultivated during summers in areas with high proximity to monsoons.
- Crops like wheat and barley require moderate temperature, humidity and water, therefore can only be grown in winter during North-East Monsoon.
- The south–west monsoon *irrigates over half of India's cropland.* Its arrival marks the beginning of the cultivation of rainfed kharif crops which are heavily dependent on the monsoon.
- The *quality of rainfall* determines agricultural production. Early showers will help farmers start planting major crops such as rice, Soybeans, cotton and pulses.

Monsoon

- Monsoon is traditionally a seasonal reversing wind accompanied by corresponding changes in precipitation, but now used to describe seasonal changes in atmospheric monsoon or rainy season, lasting from June to September.
- The word "monsoon" originated from *the Arabic word Muslim which means seasonal winds.*

India's Summer and Winter Monsoon Season

- The two monsoon seasons are the "*summer" southwest monsoon and the "winter" northeast monsoon.*
- Most of the rain in India comes from the summer monsoon rains.
- The summer southwest monsoon is from May to September.
- The winter northeast monsoon is from October to December.
- The seasons in India are dominated by the humid southwest summer monsoon which slowly sweeps across the country *beginning in late May or early June.*
- Monsoon rains begin to recede from north India at the beginning of October. South India typically receives more rainfall.

Advance of Southwest Monsoon 2022
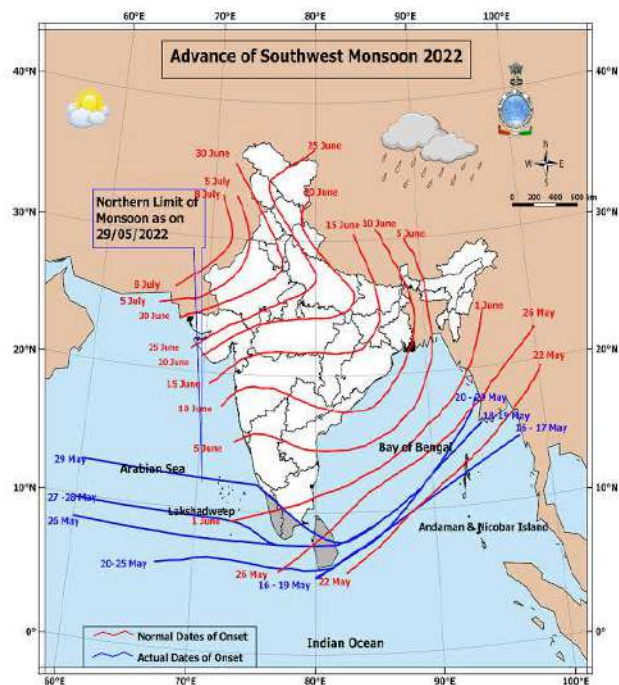
Conclusion

- There are increasing incidences of floods during this season. Droughts due to erratic weather, it's a time to explore ways of bringing a sustainable model of farming for our farmers and minimize depression every monsoon.

9.3   MODERNIZATION OF FIRE SERVICES

Context

- The Government has launched a "Scheme for Expansion and Modernization of Fire Services in the States"

Scheme for Expansion and Modernization of Fire Services in the States

- It has been launched with the earmarked allocation of Rs. 5,000 Crore of Preparedness and Capacity Building Funding Window under the National Disaster Response Fund (NDRF) for strengthening fire services in the States for the period up to 2025-26.

The measures included in the scheme provide for

- setting up of new fire stations,
- strengthening of State Training Centres and capacity building,
- provisions for modern fire-fighting equipment,
- strengthening of State Headquarters and Urban Fire Stations,
- technological upgradation and installation and augmentation of online systems.

Fund allocation

- **States:** On a cost-sharing basis of 75:25
- **North Eastern Hill States:** in the ratio of 90:10.
- An amount of Rs. 500 crore, out of the total central outlay of Rs. 5000 crore will be for incentivizing the States for the adoption of legal and infrastructure-based reforms.

Primary responsibility

- The primary responsibility for disaster management, including disbursal of relief to the affected people on the ground level, rests with the State Governments.

Fire safety governance in India

Responsibility for fire safety is the *concern of states and Municipal bodies.*

- *NDMA guidelines:* The National Disaster Management Authority guidelines provide the fire safety requirements for public buildings, including hospitals along with design guidelines relating to maintaining a minimum level of open space, exit mechanisms, stairs, and evacuation drills.
- *Building Codes and Government Regulations:* The National Building Code of India (NBC) and the state-specific building codes prescribe fire safety requirements for the occupancy, maintenance, and construction of buildings.
- *Fire and Rescue Services*: Each state in India has its fire and rescue services department responsible for fire prevention, firefighting, and rescue operations.
- *Fire Safety Audits:* Periodic fire safety audits are conducted by fire authorities to assess the compliance of plants, buildings and establishments with fire safety regulations. The audits find out potential fire hazards and recommend corrective measures.
- *Fire Safety Training:* Fire safety training is provided for building occupants, employees, *and the general public.* Training incorporates fire drills, evacuation procedures, and the proper use of fire extinguishers.
- *Fire Prevention Measures:* Fire safety measures such as the installation of fire alarms, sprinkler systems, fire hydrants, and fire extinguishers in buildings and public spaces.

Issue of Fire Safety in India

- The *Fire services* are *inadequately organized in India*. Increasing Industrial Plants at a rapid pace and increasing number of larger and taller buildings have added to the problems of fire safety in India.

- Most Indian cities are characterized by _high population density and overcrowded urban areas._ Narrow streets, congested buildings, and a lack of open spaces make firefighting and rescue operations challenging during emergencies.
- Fire hazards are _no longer issues_ only in big cities and Industrial centres.
- Vast quantities of _fire-prone commodities_ are transported by different modes. Ex. LPG Vehicles.
- Modern buildings may have fire safety features bu_t compliance with fire safety regulations is not always strictly enforced._ Many buildings lack proper fire exits, fire alarms, and sprinkler systems.
- Fire service is one of th_e most dangerous emergency issues in the country._ Climate change and the resultant urban heat island effect may contribute to extreme weather conditions and heat waves, increasing the risk of wildfires and urban fires.

Way forward

- _Public awareness:_ Awareness campaigns, strict enforcement of fire safety laws, and public cooperation are essential to ensure fire safety.
- _Multiple measures:_ Preventing urban fires requires a combination of fire safety measures, public awareness, and enforcement of fire safety regulations.
- _Building designs:_ Proper building design, fire safety equipment, use of fire-resistant materials in construction and regular inspections are essential to minimize the risk of fires in urban areas.
- _Better enforcement:_ Effective enforcement of Building and fire safety codes and regulations is important to ensure compliance and mitigate fire hazards in urban environments.
- _Integration of fire safety in smart Cities:_ Smart city initiatives should integrate fire safety systems, use real-time data, and leverage technology for efficient fire response.

9.4   URBAN FLOODING

Context

- An article on MEASURES TO CURTAIL URBAN FLOODING appeared in PIB

What is Urban Flooding?

- The flooding of land or property in a built environment, especially in densely populated cities where rainfall _exceeds drainage systems' capacity_, is known as urban flooding. It is a man-made disaster.
- Urban flooding, in contrast to rural floods, which are caused by heavy rain over a flat or low-lying area, is caused not only by higher precipitation but also by unplanned urbanization.

Causes of Urban Flooding in India

- **Meteorological Factors:**
  o India being a tropical country, has very heavy rainfall throughout the monsoon season. Changing climate and increased precipitation had a huge role to play in the devastating floods that happened across central Indian states, including the 2006 and 2017 Mumbai floods.
- **Hydrological Factors:**
  o Flood risk arises when the surface runoff is more than the infiltration rate during precipitation. The _infiltration rates depend upon the type of soil and their respective water retention capacity._ Topography plays a major role in carrying the runoff water outside urban areas.
  o Usually, a combination of two or more of the following factors: extreme climate-related events, unplanned development in the catchment area and under-capacity natural drainage blocked stormwater drainage system, is the major cause of the urban flooding
- **Human Factors:**
  o Human intervention in the natural environment has increased the urban flood risk. These anthropogenic factors can be a direct result of Urbanization coupled with encroachments, and

pollution which causes interference in the smooth flow of water in the drainage channels.
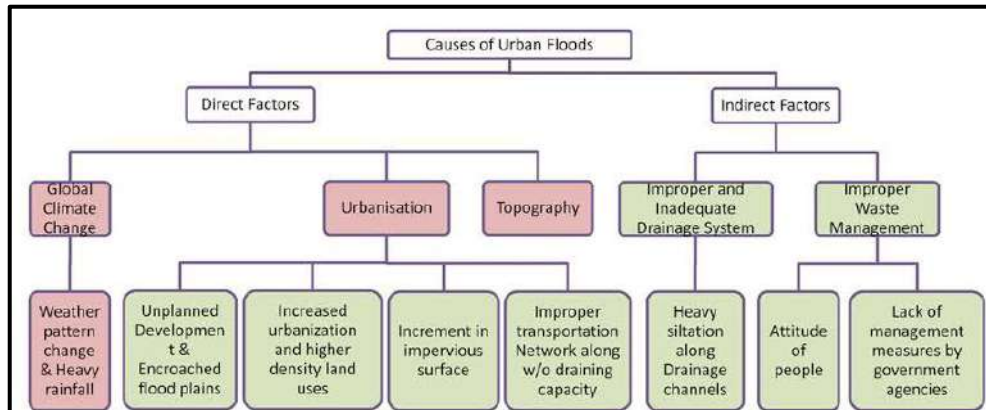
How do floods impact Urban areas

- **Tangible Losses:** The losses that can be measured physically and can be assigned an economic value.

- ***These losses can be direct or indirect:***

- ***Direct -*** Structural damage to buildings, property damage, damage to infrastructure.

- ***Indirect -*** Economic losses, Traffic disruption, and emergency costs.

- **Intangible Losses:** Intangible losses include loss of life, secondary health effects, and infections or damages to the environment which are difficult to assess in monetary terms since they are not traded.

- Direct - casualties, Health effects, ecological losses.

- The indirect – post-flood recovery process, mental damage to the people.

Way ahead

- ***National Water Policy (2012) :*** The National Water Policy (2012) formulated by this Ministry inter alia advocates that the conservation of rivers, river corridors, water bodies and infrastructure should be undertaken in a scientifically planned manner through community participation.

- ***Sharing of data:*** Local rainfall data can be integrated with the Central Water Commission and regional flood control efforts.

- ***City-wide databases:*** We should also invest in city-wide databases that enable the provision of immediate relief in the event of a flooding-related disaster.

- ***Revamp drainage and storm water networks:*** We must revamp and expand drainage and stormwater networks across our cities as most of India's 5,000 plus cities and towns don't have a well-functioning sewerage network.

- ***Water-sensitive urban design and planning techniques***— especially in the context of implementation — are of utmost importance. These methods take into consideration the topography, types of surfaces (pervious or impervious), and natural drainage and leave very less impact on the environment.

- ***Integrated management:*** The storage capacities of water bodies and water courses and/or associated wetlands, flood plains, ecological buffers and areas required for specific aesthetic recreational and/or social needs may be managed in an integrated manner.

- ***Regulations:*** Urban settlements, encroachments and any developmental activities in the protected upstream areas of reservoirs/water bodies, key aquifer recharge areas that pose a potential threat of contamination, pollution, reduced recharge and those that endanger wild and human life should be strictly regulated.

9.5   IMPACT OF ENSO ON INDIA

Context
- ENSO has affected various parts of India separately in recent decades, says a new report

Impact of global warming on ENSO and Monsoon
- **Variable impacts in India:** The El Nino Southern Oscillation (ENSO) has had a greater impact on northern parts of India, a lesser impact on the central parts and a relatively constant impact on the southern parts of the country in recent decades.
- **Delayed impact on monsoon:** The El Nino is also forming much later in the year than before. Earlier, it would begin around February or March but now it begins around June or July. This has delayed the impact of El Nino on monsoon rainfall.
- **Wearing relationship of monsoons and El Niño:** The warm Arabian Sea, due to global warming, sends moisture across to central India with east-moving winds, leading to a weakening of the relationship between monsoon rainfall over central India and the El Nino.
- **Shift in monsoon depressions:** In recent decades, the monsoon depressions used to move more towards Uttar Pradesh but now they move more towards Madhya Pradesh and Rajasthan. This has decreased their influence over northern India which, in turn, has increased the influence of El Nino on the southern region.
- **Sift in the region of origin of ENSO:** Along with the change in the onset of the ENSO, the region where it forms has also shifted from the extreme eastern Pacific to the east-central Pacific Ocean, a change of 5-7 degrees of longitude.
- El Nino has become stronger and its pattern has been changing and traditional El Nino events have become more intense and major.

El Niño and SO and formation of ENSO
- El Niño is the occasional **occurrence of warm ocean surface waters along the coast of Ecuador and Peru.**
- Southern Oscillation is the fluctuation of atmospheric pressure over the tropical Indo-Pacific region.
- The combination of an **El Niño [Circulation of Water] and the Pacific Ocean circulation pattern** called the southern oscillation [circulation of atmospheric pressure] results in ENSO.

Only El Nino == [Warm water in Eastern Pacific + Cold water in Western Pacific].

Only SO == [Low Pressure over Eastern Pacific + High Pressure over Western Pacific]

ENSO = [Warm water in Eastern Pacific + Low Pressure over Eastern Pacific] + [Cold water in Western Pacific + High Pressure over Western Pacific].

ENSO and its Impact on India
- ENSO occurs due to the warming or cooling of sea surface temperatures over the equatorial Pacific **Ocean beyond the long term average.**
- The **warming phase** known as the El Nino is generally known to **suppress monsoon** rainfall while the **cooling phase** known as the La Nina generally **enhances monsoon rainfall.**
- El Nino causes subsidence or downward movement of air which in turn suppresses monsoon rainfall.

Southern Oscillation Index (SOI)
- SOI is the **difference in pressur**e between Tahiti in French Polynesia (Central Pacific), representative of the Central Pacific Ocean and Port Darwin, in northern Australia, representative of the Eastern Pacific Ocean.
- It measures the intensity of the Southern Oscillation.

- **Positive Southern Oscillation Index (SOI) means:** Drought conditions in Eastern Pacific and good rainfall in Western Pacific (Northern Australia and Indonesia) and Good rainfall by Indian Monsoons
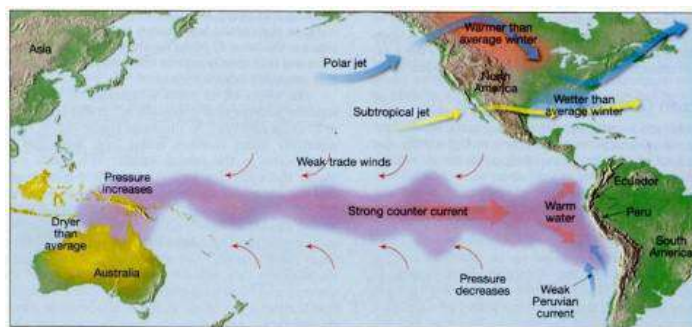- **Negative SOI:** Means Low Indian monsoons.

About Monsoon

- A monsoon (from the **Arabic mawsim, which means "season"**) is a seasonal change in the direction of the prevailing, or strongest, winds of a region.

Fig.14 Upon the advent of an ENSO event, the pressure over the eastern and western Pacific flip-flops. This causes the trade winds to diminish, leading to an eastward movement of warm water along the equator. As a result, the surface waters of the central and eastern Pacific warm, with far-reaching consequences to weather patterns.

Fig: ENSO event in pacific Ocean

- Generally, across the world, monsoons are experienced in the tropical area _roughly between 20° N and 20° S_. The climate of India is described as the 'monsoon' type.

 In Asia, this type of climate is found **mainly in the south and the southeast.**

1. **The southwest monsoon season -**Rainfall received from the southwest monsoons is seasonal, and occurs between June and September. This is the summer monsoon period where the southwest monsoon holds over the country. The whole country receives nearly 75% of its rainfall during this period. The Southwest Monsoon winds are called 'Nairutya Maarut' in India.
2. **The retreating northeast monsoon season -**The months of October and November are known for retreating monsoons. This South West Monsoon **starts retrieving from the extreme northwest** by the beginning of September, progressively receding southwards.

Factors which influence monsoons

- **Global factors:** the ENSO, El-Nino, LaNina, etc
- **Localized factors:** Strength of the monsoon trough, which is a line of low-pressure areas, and the frequency of low-pressure areas that generally form in the Bay of Bengal, known as monsoon depressions.
- Both strengths of the monsoon trough are measured **in terms of vorticity** or the favourable conditions required for rainfall to occur and low-pressure areas show declining strength across India over the period.

Conclusion

- How the relationship between ENSO with monsoon rainfall over different parts of India would change with further global warming is quite uncertain as the ENSO itself is changing with the changing climate.

9.6   ASSESSMENT OF CLIMATE CHANGE OVER THE INDIAN REGION

Context

- Ministry of Earth Sciences (MoES) published a Climate Change report titled 'Assessment of Climate Change over the Indian Region

About the report

- The report contains a comprehensive assessment of the impact of climate change on the Indian subcontinent.

The highlights of the report are as follows:

- **India's average temperature** has risen by around 0.7oC during **1901-2018**. The frequency of daily precipitation extremes (rainfall intensities >150 mm per day) increased by about 75% during 1950-2015.
- The **frequency and spatial extent of droughts** in India **increased** significantly during 1951-2015.

- **Sea-level rise** in the North Indian Ocean occurred at a rate o**f 3.3 mm per year** in the last two and half decades (1993-2017).
- The frequency of **Severe Cyclonic Storms** over the Arabian Sea has **increased** during the post-monsoon seasons of 1998-2018.

Factors Affecting the Climate of India

- **Latitude:** India's climate depends upon the country's latitudinal degree. The Tropic of Cancer divides the country into two halves. One is the tropical climate which lies south of the Tropic of Cancer and another is the Subtropical climate which lies North of the Tropic of Cancer.
- **Altitude:** The Himalayas in the North have an **average height of around 6000 m** Preventing the cold winds from Central Asia from entering the subcontinent. Due to the presence of these mountains, the subcontinent has gentle winters.
- **Upper-Air Circulation:** The upper air circulation of the district is **overwhelmed by a westerly flow** which is represented by a Jet stream. The place of the jet stream in summer is North of the Himalayas and in winter the jet stream will be South of the Himalayas.
- **Tropical Cyclones And Western Cyclonic Disturbances:** Tropical cyclones start over the Bay of Bengal and the Indian Ocean. They occur during the monsoon and in October and November. The westerly stream from the Mediterranean area impacts the climate of the north and north-western districts.
- **Relief:** During June – September, the wind sides of the W**estern Ghats and Assa**m receive tremendous amounts of rainfall and while the southern plateau stays dry because of the leeward position of the Western Ghats.
- **Distance from the Sea:** The equable climate in large coastal areas is because of the long coastline but the interior areas of India are very far from the moderating influence of the sea, thus, extremes of climate exist in such areas.

Way ahead to protect India from climate change vagaries

- **Long-term strategy:** Implementing climate-smart agricultural practices, investing in water conservation and management systems, and developing climate-resilient infrastructure are essential components of a long-term adaptation strategy.
- **Conserve ocean ecosystem: Mangroves, seagrasses, seaweeds and coral reefs can absorb some of the energy** from the ocean and prevent storm surges and coastal erosion.
- **Transition towards cleaner and more sustainable energy sources:** By investing in renewable energy technologies such as solar, wind, and hydropower, India can reduce its dependence on fossil fuels and decrease greenhouse gas emissions. This transition not only mitigates climate crisis but als**o improves air quality, reduces health risks, and promotes energy independence.**
- **Creating conducive environments:** India should create a conducive environment for innovation, investment, and technological advancements in the clean energy sector by **providing tax breaks, incentives and subsidies.**
- **Conserve coastal habitats:** Conserving and restoring coastal habitats such as salt marshes and dune systems can protect against flooding.
- **Adaptation to climate change:** Adapting to climate change by conserving marine and coastal ecosystems and building climate-resilient ecosystems could provide significant co-benefits.
- **Tackling air pollution:** By promoting clean energy sources and sustainable transportation, India can tackle air pollution and create healthier living environments for its citizens.
- **Ecosystem conservation and restoration:** long-term perspective plans for the conservation and restoration of ecosystems contribute to physical health but also **enhance mental well-being and quality of life** for individuals and communities.

- **Strengthening governance mechanisms:** The issues can also be addressed through a governance lens and, therefore, NDC commitments to law, policy and institutional change and strict implementation of laws and policies are important.

Detection, prevention and mitigation efforts impact of climate change in Indian

- **Impact-Based Forecast (IBF):** IMD and National Disaster Management Authority (NDMA) have implemented Impact Based Forecast (IBF) in the recent past which contains the details of impacts expected from the severe weather elements and guidelines to the general public about do's and don'ts while getting exposed to severe weather.
- **Forecasts, nowcasts and warnings:** The forecasts, nowcasts and warnings related to Severe Weather are disseminated to users including disaster managers by email and SMS regularly. Forecasts & warnings are disseminated through social media & websites, WhatsApp groups for reference by all concerned.
- **IMD's latest tools and technologies:** In 2020, IMD launched seven of its services (Current Weather, Nowcast, City Forecast, Rainfall Information, Tourism Forecast, Warnings and Cyclone) with the 'UMANG' mobile App for use by the public.
- **Mobile apps:** IMD developed the **mobile App 'MAUSAM' for weather forecasting, 'Meghdoot' for Agromet advisory** dissemination and **'Damini' for lightning alerts.**
- **Climate Hazard & Vulnerability Atlas:** IMD has brought out an online "Climate Hazard & Vulnerability Atlas of India" **prepared for the thirteen most hazardous meteorological events**, which will help state government authorities and Disaster Management Agencies in planning and taking appropriate action to tackle various extreme weather events. This atlas also helps IMD to issue impact-based forecasts for various extreme weather events.
- **ACROSS scheme**: The umbrella Central Sector Scheme named "**Atmosphere & Climate Research-modelling Observing Systems & Services (ACROSS)**" with **4 sub-schemes** namely, **Atmospheric Observation Network (AON), Upgradation of Forecast System (UFS), Weather & Climate Services (WCS) and Commissioning of Polarimetric Doppler Weather Radars (PDWR)**, helps in modernization, expansion and improvement in Weather & Climate services.

Conclusion

- Despite an array of global interventions, climate change and biodiversity loss remain pressing environmental problems in the Indian region. Yet, the **capacity and resources to address the challenges are often limited.** Finding effective and efficient ways to respond to both climate change and biodiversity loss is, therefore, critical.

9.7   TIDAL POWER IN INDIA

Context

- The Standing Committee asks MNRE to apprise it of efforts to assess tidal energy potential.

The potential of tidal power in India

- As per the report titled "**Tidal Power Development in India**" published by the **standing committee on energy** the estimated **potential of tidal and wave power** in India is 12,455 Megawatts (MW) and 41,300 MW, respectively.
- Moreover, the potential for ocean-thermal has not been estimated to date.
- **The potential areas** with low/medium tidal wave strength are the **Gulf of Khambat, the Gulf of Kutch** & southern regions in Gujarat, Palk Bay- Mannar Channel in Tamil Nadu, and Hoogly River, South Haldia & Sunderbans in West Bengal.

- Tidal energy is still in the **Research & Development (R&D) phase** and has not been implemented on a commercial scale in India.

Reasons for stagnant development of tidal energy in India

- **High cost:** The earlier efforts for harnessing tidal power were not successful due to high capital costs ranging from **Rs. 30 crore to Rs. 60 crore per MW.**
- **Cyclones:** Cyclones destroy anything that falls in its path, indiscriminately uprooting everything from trees to electric lines When a cyclone rages, it destroys anything that falls in its path, **indiscriminately uprooting everything from trees to electric lines** to solar plates. Ex. In 2009, when **Cyclone Aila** ripped through the Sundarbans, it reportedly destroyed power infrastructure worth Rs 50 crore.
- **Climate change: Extreme weather even**ts due to claimed change have enhanced frequencies of bomb cyclones, marine heatwaves, tsunamis, and the rise of sea levels, which makes developing tidal energy infrastructure difficult.
- **No study on impacts:** There is no study on the assessment of the **environmental and ecological impact of a tidal power plant.** The power plants may environmentally impact a large area upstream and downstream.
- **No funds:** The Committee of Parliament noted that **no funds have been spent by the central government** on the development of tidal power.
- **Low investment in R&D:** It observed that the funds allocated to the Ministry of New and Renewable Energy for research and development have been reduced significantly at the revised stage in the last few years.
- **Environmental impacts:** Placing turbines in tidal streams is complex because the **machines are large and disrupt the tide** they are trying to harness. The environmental impact could be severe, depending on the size of the turbine and the site of the tidal stream.

- **Determine Tidal potential:** There is a need to determine the country's actual exploitable potential for tidal, wave and ocean-thermal power.
- **Roadmap for commercial projects:** There is a need to make a roadmap to set up commercial tidal power projects by 2030. The feasibility of commercial generation of tidal power should be explored.
- **Demonstration tidal power project:** The MNRE can set up one demonstration tidal power project in the country at a favorable cost-effective location, like the Gulf of Kutch.
- **Cost effective technologies:** Further research and development should be conducted to find better and cost-effective technology for the furtherance of such projects.
- **Environmental impact of tidal power plant:** It is recommended that the central government should assess the environmental impact and ecological sustainability of a tidal power plant.
- **Research and development:** It is recommended that the central government should not reduce the funds for research. The central government **should provide significant support for un-harnessed sources** such as tidal energy.

Initiatives taken by the government to promote tidal energy

- On August 22, 2019, the MNRE **issued a notification clarifying that energy produced using various forms of ocean energy such as tidal, wave, ocean thermal energy conversion**, etc. shall be eligible for meeting non-solar renewable purchase obligations.
- The MNRE has issued proposals under the Renewable Energy Research and Technology Development Programme, which will include tidal power.

Tidal Energy

- Tidal power is harnessed **by converting energy from the natural rise and fall of ocean tides** and currents to electricity. While the wave energy in the form of the motion of ocean waves can be extracted using energy conversion devices.

Way ahead

How are they harnessed?

- For tidal energy generators, **turbines are placed in tidal streams.**
- The rotation of the turbine due to tidal current produces electricity.

Advantage of tidal energy

- Because water is much more dense than air, **tidal energy is more powerful than wind energy**.
- Unlike wind, tides are predictable and stable.
- They produce a steady, reliable stream of electricity.
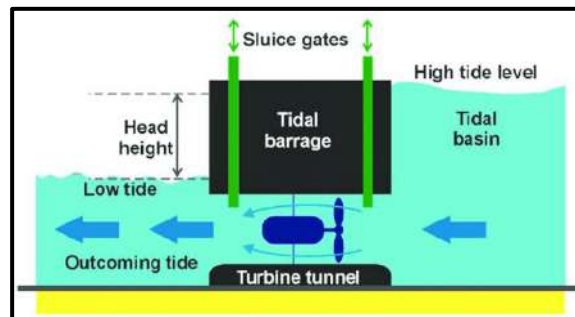
Fig: Tidal energy generation

Important points to remember

- Tidal power represents the s**mallest share (about 535 MW) of the global installed capacity** of renewable energy.
- The world's **first tidal power station** was constructed in 2007 at **Strangford Lough** in Northern Ireland.
- The two tidal power projects, 240 MW **La Rance station in France (installed in 1966)** and the 254 MW **Sihwa plant in South Korea** (installed in 2011), constitute **more than 90 percent of the total installed capacity** of tidal energy.

Conclusion

- India must find ways to keep its pledge to produce half its electricity from non-fossil sources by 2030 to achieve **'net zero' target by 2070. S**olar power is likely to play a major role in this transition, but it will need to be complemented.

9.8   SOLAR FLARES

Context

- **The X1.5 Flare caused an R3 (strong) radio** blackout event on the daylit side of the knocks-out radio transmissions across North America.

Solar flares

- Solar flares are **large explosions from the surface of the sun** that emit intense bursts of electromagnetic radiation.
- The intensity of the explosion determines what classification the flare belongs to.
- The most powerful are **X-class flares, followed by M-, C- and B-class; A-class flares** are the smallest.
- These flares can be visible as bright flashes in a particular region of the sun and can last several minutes.

How do they occur?

- Solar flares occur when magnetic energy builds up in the solar atmosphere and is released suddenly.
- The sun's surface is a **magnetically mixed-up pla**ce. Magnetic fields are created **from electrically charged gasses** generating electrical currents that act as a magnetic dynamo inside the sun.
- These m**agnetic fields twist**, tangle and reorganize themselves due to the turbulent nature of the gases that create them.
- This unsettled magnetic field behaviour, also known as **solar activity, can trigger solar flare eruptions from the surface that release vast amounts of electromagnetic radiation,** which is a form of energy that includes radio waves, microwaves, X-rays, gamma rays and visible light.

Sunspots and solar cycles

- Solar flares **tend to originate from regions of the solar surface that contain sunspots** which are darker and cooler portions of the solar surface where magnetic fields are particularly strong.
- **The number of sunspots** can indicate the likelihood of a **solar flare eruption.**
- The solar flares are intrinsically linked to the solar cycle, which is an approximately 11-year cycle of solar activity driven by the sun's magnetic field.

Impacts of solar flares on Earth

- **Disrupts power grids:** The fluctuations in solar flares could induce electric fluctuations at ground level that could blow out transformers in power grids.
- **Affects signal transmission and communications:** Solar flares can temporarily alter the upper atmosphere creating disruptions in signal transmission and communications.
- **Impacts flora and fauna:** The dangerous emissions from flares like energetically charged particles (primarily high-energy protons) and electromagnetic radiation (primarily x-rays) could have a debilitating impact on the flora and fauna of the earth.
- **Disrupts satellites:** A solar flare's particles can also collide with crucial electronics onboard a satellite and disrupt its systems.
- **Impact space exploration:** Astronauts may be affected by the cumulative radiation exposure during space walks.

Conclusion

- Improving space weather forecasts, alerts, watches and warnings are crucial to prevent the impact of solar flares on Earth.

9.9   ISRAEL'S DESALINATION SUCCESS

Context

- Israel's desalination success can help India in revolutionizing water sustainability.

Strategy of Israel

- **Diversification of source thorough desalination:** Once heavily reliant on freshwater from the **Sea of Galilee**, Israel confronted dwindling water supplies due to shifting climate patterns. However, the nation diversified its sources through desalination.
- **Forging agreements:** It forged agreements to supply desalinated water to neighbouring Jordan.
- **Building desalination plants:** Five desalination plants were built along the country's coastline, in Soreq, Hadera, Ashkelon, Ashdod, and Palmachim and two more are under construction.
- **Recycling of waters:** Israel has an impressive 90 per cent wastewater recycling rate. This along with desalination plants has virtually eradicated water-related anxieties in the nation.

Achievements

- The desalination plants are projected to account for **85-90 per cent of Israel's annual water consumption.**
- Today. **Globally, only 1 per cent of the world's drinking water undergoes desalination.** In Israel around 25 percent of its drinking water is sourced from desalination plants.
- Beginning humbly in 2005, Israel's desalination capacity has surged dramatically, producing a staggering **585 million cubic meters annually.**

Way ahead for India and what India can learn from Israel

- **Adopting desalination technology:** Israel's desalination success holds immense potential for India, especially in coastal areas grappling with water scarcity. By establishing desalination plants, India can tap into its expansive coastline to generate freshwater from seawater, providing a reliable water source even during droughts.

- **Recycling and reusing wastewater:** Similar to Israel, India can prioritize the recycling and reuse of wastewater. Treating wastewater for non-potable purposes such as irrigation and industrial processes can alleviate pressure on freshwater sources and curb pollution.
- **Localized water management: E**mulating Israel's localized approach can help India tailor solutions to unique water availability and demand patterns in different regions. Implementing water-efficient agricultural practices and embracing technologies like drip irrigation can optimize water usage.
- **Crafting comprehensive policies:** India can develop water policies aligned with Israel's successful strategies. Regulatory measures that incentivise water recycling, reflect water's true value in pricing and promote sustainable practices can drive meaningful change.
- **Capacity building and knowledge sharing:** Collaborations with Israel can enhance India's water management capabilities. Training programs and knowledge exchanges can empower India to effectively manage its water resources.
- **Long-term vision:** Like Israel, India can invest in water infrastructure, technologies and policies that build a resilient water system capable of withstanding climate change and population growth.

Challenges

- **High initial investment**: Establishing substantial desalination plants entails **substantial capital investments**, often amounting to hundreds of millions of dollars.
- **Lack of favorable ecosystem:** Favorable project financing conditions and lower labour

costs played a pivotal role in Israel's cost-effectiveness. However such favorable conditions are lacking in India despite increasing wages and low investments due to low ROI.

- **Energy-intensive nature:** A major obstacle to desalination remains its energy-intensive nature. The process demands substantial energy inputs, accounting for a s**ignificant 10 percent of Israel's electricity consumption.**
- **Low awareness**: There is a lack of awareness among people and entrepreneurs about the importance of desalination in India.
- **Issues of Brine management:** Brine is a **highly concentrated chemical residue that can damage the entire marine ecosystem** if directly discharged into the water bodies or open seas. Much of that is pumped back out to sea, and current regulations require costly outfall systems to ensure adequate dilution of the salts.
  - Currently, the **world produces more than 100 billion litres (about 27 billion gallons) of water a day from desalination,** which leaves a similar volume of concentrated brine, according to a report by the Massachusetts Institute of Technology.

Conclusion

- Israel's accomplishments offer valuable lessons for other water-scarce regions globally. **But, the financial dimension must not be disregarded.** As the technology proliferates, costs are likely to decrease, rendering desalination more accessible to low-income nations grappling with water scarcity.

9.10   MAPS OF THE WORLD'S MOST REMOTE FJORDS

Context

- Fjords are responsible for ice breaks in glaciers.

What are fjords

- A fjord is a **long, deep, narrow body of water that reaches far inland.** Fjords are often set in a **U-shaped valley** with steep walls of rock on either side.

- Fjords are found mainly in **Norway, Chile, New Zealand, Canada, Greenland, and the U.S. state of Alaska.**
- The **world's longest fjord** is situated in Greenland and is referred to as the **Scoresby Sund.**

How are fjords formed

- Fjords are **created by glaciers.**
- Glaciers move very slowly over time, and can greatly alter the landscape once they have moved through an area. This process is called glaciation.
- **Glaciation carve deep valleys. This is why fjords can be thousands of meters deep.**
- Fjords are usually the deepest farther inland, where the glacial force is strongest.

Importance of Fjords

- Some features of fjords include coral reefs. **Some of the largest coral reefs are found at the bottom of fjords** in Norway.
- They are home to several ty**pes of fish, plankton and sea anemones.**
- **Skerries** are also found around fjords. A skierry is a small, **rocky island** created through glaciation.
- The fjords are generally calm and protected. This makes them **popular harbours for ships.**

Need for mapping Fjords

- **Melting and calving of ice:**
  o When it snows or rains, **glaciers in green lands and Antarctica accumulate ice, and they lose ice to melting and calving** – the process where chunks of ice break off and eventually melt away into the sea.
  o But over the past few decades, they are **losing mass at an accelerated pace, with more icebergs calving** into the ocean and

more ice being melted from below by relatively warm seawater.

- **Fjords as glaciers drain: Most glaciers in Greenland drain into fjords** in which the waters near the surface are very cold, heavily influenced by meltwater from the glaciers.
- **Accumulation of warm Atlantic water:** Some fjords allow in the warmer water of Atlantic origin, which is saltier and therefore heavier so it enters the fjords at a greater depth.
- **Complex nature of Fjord's bathymetry:**
- The shape and depth (or "bathymetry") of the seafloor **determines whether this warmer water can reach the glaciers and cause them to melt.**
- These fjords may have particularly complex bathymetry as they themselves were formed by glaciers which also eroded the seabed.
- While the inner parts can be a kilometre deep**, a shallower "sill" at the entrance (formed when eroded materials accumulate or from resistant bedrock)** can act as a shield against inflowing warmer water.
- Therefore mapping these fjords is one of the most critical steps in a**ssessing the future of the glaciers that flow into them**. This is, unfortunately, easier said than done, since many of these glaciers flow into some of the most remote areas of the world.

Conclusion

- The **Seabed 2030 Project,** aims to completely map the world's ocean floor before the end of the decade. Knowing more about the seabed, and the glaciers that flow into the sea, will in turn help us to sustainably manage the ocean and, ultimately, the planet.

9.11   HILL TOWNS' 'CARRYING CAPACITY'

Context

- Supreme Court to form a panel to evaluate hill towns 'carrying capacity.

Need for evaluating the carrying capacity of Hilltowns

- **Damage to eco-tourism potential:** As a result of the non-assessment of the carrying

capacities of vulnerable places in the Indian Himalayan Region, tourism, especially the eco-tourism potential of these areas is severely undermined.

- **Massive developmental projects:** Without carrying capacity studies of hill stations, u**nregulated tourism and development, massive tunneling and blasting** being carried

out would pose a great threat of natural disasters in future.

- **Extensive dumping in rivers:** Extensive, large-scale muck dumping is being carried out along the Beas River, from Mandi to Manali this further risks the **damage to the river's carrying capacity.**
- **Impacts on livelihood**: The livelihoods of a vast number of citizens residing in hill stations will be severely deprived due to frequent landslides and environmental degradation, thereby depriving them of their **Fundamental Rights under Articles 14 and 19(1)(g) of the Constitution of India.**
- **Seismic vulnerabilities:** According to the Seismic Zonation Map given by **the Bureau of Indian Standards (BIS),** the **Indian Himalayan Region is situated in tectonically active Seismic Zones IV and V,** which are highly vulnerable to earthquakes. Towns such as Almora, Nainital, Dehradun, Roorkee, Darjeeling, Jalpaiguri, Gangtok and Shimla are situated in Seismic Zone-IV whereas Guwahati, Imphal, Jorhat, Kohima, Mandi and Srinagar fall under Seismic Zone-V.

Case of recent landslides in Himachal and Uttarakhand
- Considered to be the gateway to Himalayan mountain climbing expeditions and renowned pilgrimage sites such as **Badrinath and Hemkund Sahib, Joshimath is on the brink of subsidence after huge cracks appeared in hundreds of houses, roads and fields,** forcing several families to seek shelter elsewhere.

Way ahead
- **Role of state:** Land' is a **State subject as per the 7th Schedule** of the Constitution of India and its sustainable management, including preservation, protection, regulation, prohibition of development activities etc. is the primary responsibility of the concerned State of Union Territory administration.
  - The state is duty-bound to abide by the principle of sustainable development and values enshrined in Article 21 of the Constitution.
- **State-specific plans:** State governments should prepare and implement the **Master Plans/Tourism Plans/Layout/Area Development Plans** of the ecologically fragile areas, hill stations and highly visited areas in hills so as to regulate and guide the extent, magnitude, nature and patterns of any form of development in the hilly areas.
- **EIA and SIA:** There should be proper implementation of Environmental impact assessment and social impact assessment norms before initiating mining or dam construction.
- **Landslide micro zoning:** Landslide micro zoning procedures should be adopted for mountainous and other highly vulnerable regions.
- **Apada Mitra/ApadaSakhis**: Steps should involve locally available trained manpower such as Apada Mitra/ApadaSakhis to intensify the hazard reduction and public awareness programs.

Conclusion
- Adoption of the Precautionary Principle, the **principle of sustainable development, polluter pays inter-generational equity** and the **Public Trust Doctrine** are key to ecosystem health restoration in the Himalayan region.

9.12   POTHOLE ACCIDENTS ARE MAN-MADE DISASTERS

Context
- As per the Bombay High Court, Pothole Accidents Are Man-Made Disasters and the State Has a **Constitutional Duty To Protect Rights Under Article 21.**

Statics on pothole incidents
- Death toll due to potholes in 2021 amounted to **10 lives per day with annual fatalities in the country accounting for 3,597** and it was a more than 60% rise over the toll in 2021 (As per Ministry of Roads , transport and highways).
- **Maharashtra** records the **highest number of deaths at around 1000 per year.**
- A large number of pothole-related deaths go unaccounted for because crash reporting protocols vary across States.
- Madhya Pradesh, Uttar Pradesh, Tamil Nadu and Maharashtra are among the top four in road crashes, injuries and deaths due to faulty roads, particularly attributable to potholes.

Reasons for Pothole formation:
- Potholes result from the **accumulation of heavy water on roads**. Studies point to the lack of an adequate drainage system as the main reason for pothole formations.
- The **unproportioned distribution of aggregates for road construction** is also one of the reasons for pothole formation.

Way ahead
- It is important to implement the **standardised methodology and quality materials** for the construction of roads.
- **Regular surveys and maintenance** of the states and central authorities should be done and the time period for maintenance should be fixed for different types of roads.
- An effective **mechanism to ensure accountability** for road accidents due to potholes and faulty roads should be in place.

- There is no **scientific method for reporting or filing complaints** on faulty roads in India. A robust reporting and response system should be placed for timely repair.
- There is a need for a **unified statute or law on road construction, engineering and maintenance** to ensure strict implementation of safety measures and timely repair.

Measures taken by government
- **Guidelines for Road Construction, Maintenance and Management:**
  o The **Indian Road Congress has formulated over 100 sets of guideline**s for ensuring standardized road construction, maintenance and management, including guidelines for filing reports on potholes. However, these guidelines are rarely implemented.
  o The existing legislation for road safety, the Motor Vehicles Act, has no provisions to ensure the accountability of road authorities for defects in the engineering, design and maintenance of roads.
- **The Motor Vehicles (Amendment) Bill, 2017:**
  o The Motor Vehicles (Amendment) Bill, 2017, **attempts to address the issue of liability for defective roads.**
  o For any kind of road crash i**njury or death caused by defective road design and engineering,** the designated authority who constructed and maintained the road can be penalized with a sum ₹1 **lakh rupees.**
  o The Bill directs safety standards to be prescribed by the Central government.

Conclusion
- Road safety is a multi sectoral issue. **Save LIFE Foundation** has been demanding criminal liability to the authorities responsible for constructing and maintaining the roads. The government must explore such options to ensure accountability.

9.13   CANALISATION OF RIVERS

Context
- As Punjab faces floods, can canalisation of rivers be a solution?

What is canalisation and how does canalisation of rivers work?
- Canalisation involves **regulating or diverting the flow of water from a water source**, such as a river.
- **Canalisation is done in the following ways.**
  o directing river water into specific channels,
  o utilizing mini dams for regulation,
  o establishing interconnections between canal systems and rivers, and
- fortifying earthen embankments in times of need.

Status of canalisation in Punjab
- **Dams on perennial rivers**: The Bhakra Nangal Dam on the Sutlej, Pong Dam on the Beas, and Ranjit Sagar or Thien Dam on the Ravi.
- **Dhussi Bandhs:** These are earthen embankments on all these big rivers.
- **Small earthen dams:** A multitude of small earthen dams with limited capacity exist in districts like Hoshiarpur.
  o The inherent weaknesses in Dhussi Bandhs make them susceptible to breaches during even modest increases in river flows.
- **Lack of canalisation:** Many local rivulets, rainwater drains, and Nullhas lack proper canalisation, exacerbating flood risks.

Advantages of canalisation of rivers:
- **Regulating flow of water:** Canalisation regulates the flow of water during high rainfall due to snowmelt or any other reasons. Excess water can be diverted into regulated channels.
- **Improves navigation:** It ensures the inland navigation of boats and ships through regular adjustment of the depth of water and removal of obstacles. This facilitates better connectivity both inland and to the ports.
- **Stable supply of water:** Canalisation ensures a regular and stable supply of water for various applications including drinking water, irrigation and industrial operations by controlling water flow.

How canalisation can play a role in flood prevention: A case of Punjab floods
- Both the recent floods in Punjab resulted from the overflowing of main rivers and local waterways.
- The flooding was driven by **heavy regional rainfall, causing unregulated rivers, Nadis, rivulets, Nullahs, etc. to overflow into the Sutlej and Ghaggar river**s.
- Incessant rainfall in Himachal filled the Bhakra Nangal and Pong dams, forcing the release of heavy water downstream into Punjab.
- Here, undertaking **canalisation would help manage both local rain and dam releases.**

Way ahead
- The overspill from the large dams requires **better dam management,** which requires the **creation of additional storage facilities** to release water downstream gradually.
- Long-term **canalisation strategies** could be a possible solution. Various avenues of canalisation of different rivers and streams should be looked for.
- Yearly **strengthening of Dhussi Bandhs**, extending them up to 30 to 40 feet.
- Regular **desalination to prevent silt accumulation**, erosion and damage to infrastructure in canal water bodies.

Conclusion
- India's vulnerability to floods demands that canalisation efforts should be taken up to avert future disasters.

9.14   STATE OF THE CLIMATE IN THE SOUTH-WEST PACIFIC 2022

Context

- A report from the World Meteorological Organization (WMO) has underscored the imminent peril faced by Pacific islands, as the rate of sea-level rise surpasses earlier projections, placing these vulnerable nations at a heightened risk of submergence.

Findings of State of the Climate in the South-West Pacific 2022

- **Seal level rise:** The sea levels around the Pacific Islands are rising at a rate of about 4 mm per year, slightly above the global average.
- **Natural hazards:** The region recorded 35 natural hazards last year, including floods and storms, resulting in the death of over 700 people.
- **Rise in effects of disaster weather hazards**: Despite a decrease in the number of reported disaster weather events compared to 2021, the economic losses due to flooding and weather events have increased, underscoring the escalating threat of climate change in the region. These events directly affected more than 8 million individuals.
- **Marine heatwaves:** The report also highlighted the occurrence of marine heatwaves in a large area northeast of Australia and south of Papua New Guinea over more than six months.
- **Role of El Nino: I**t is a phenomenon characterised by a warming of water surface temperatures in the eastern and central Pacific Ocean. It has a big impact on the South-West Pacific region as it is frequently associated with higher temperatures, disruptive weather patterns and more marine heatwaves and coral bleaching.

Impacts of climate change on SIDS

- The accelerated rise of sea level t**hreatens low-lying islands such as Tuvalu and the Solomon Islands o**f possible submergence in future.

- Small Islands in the region **could face devastating floods over time,** leading to the destruction of agricultural lands and habitable areas.
- The heat waves have had a significant impact on **marine life and the livelihoods** of SIDS communities.
- By 2100, the ocean is projected to become even warmer, further **acidified, and less oxygenated**, with rates and magnitudes of these changes increasing with higher greenhouse gas emissions. This will have an adverse impact on their blue economy.
- Ocean waves have also strengthened over the past several decades due to ocean warming. Projected increases in wave power can combine with **sea-level rise to exacerbate coastal hazards.**

About SIDS

- Internationally, SIDS are identified as **a group of 38 United Nations (UN) Member States and 20 Non-UN Member/Associate Member**s that are located in three regions: the Caribbean; the Pacific; and the Atlantic, Indian Ocean, Mediterranean and South China Seas (AIMS) and are home to approximately 65 million people,

Way ahead

- **Climate adaptations:** As adaptation is specific to a given place, adaptation planning must account for the risks to climate change driven by biophysical, socio-cultural, and economic characteristics, and implementation must reflect the unique contexts that can facilitate or constrain the effectiveness of adaptation actions.
- **Addressing multiple dimensions:** Detailed preparatory work, including capacity, awareness, and consensus-building, as well as a thorough assessment of current and future vulnerabilities is needed.
- **Harmony between NAPs and NDCs:** Nationally Determined Contributions (NDCs)

and NAPs (National adaptation plans) can be made complementary and mutually supportive.

- **Climate reparation and common but differentiated responsibilities:** Global North should recognise its historical contributions to climate change and efforts should be made to support these SIDS and Global South.
- **Climate finance and technology transfer:** The 100 billion annual target of the Paris climate deal must be met with global effort and collaboration.

Conclusion

- Small island developing states (SIDS) have long been recognized as being particularly at risk of climate change. These nations are often described as being on th**e "frontlines of climate change," as "hot spots of climate change."**The findings of the WMO report underscore the urgent need for comprehensive climate action to mitigate these impacts and safeguard the future of these vulnerable island nations.

9.15 FLOOD PLAIN ZONING

Context

- The Punjab floods highlight the need for plain zoning in villages along the rivers Sutlej, Beas, Ravi and Ghaggar.

Need for floodplain zoning

- Flood plains are **sensitive to any natural events such as flooding.**
- **Concrete encroachments** in these areas have exacerbated the devastation caused by flooding.
- **Well-maintained flood plains**, free from wanton construction and concrete**, are natural defenses against flooding farther inland.**
- They are als**o useful for recharging groundwater levels and maintaining the water table.**
- Regular flooding poses risks to both people and property, and the health of the flood plains themselves. **Floodplain zoning prevents these effects.**

About floodplain

- A flood plain is an area adjacent to the river which normally gets flooded when the river swells.

How to identify floodplains?

- Experts do this based on **topographical features around rivers.** For instance, floodplains often contain oxbow lakes – abandoned meandering channels of the river, where it once flowed before changing its course.

PUNJAB'S FLOOD HAZARD MAP

Well-maintained flood plains crucial to reduce damage caused by deluges

Source: Dept of revenue, rehabilitation and disaster mgmt, Punjab govt

How and why is floodplain zoning done?

- Zoning **demarcates areas around rivers** likely to be affected by floods of different magnitudes and frequencies, to specify the types of permissible developments there.
- This is done so that whenever floods do occur, the **damage is minimal.**
- Zoning of flood plains is done to regulate land use.

Guidelines on floodplain zoning by the National Disaster Management Authority:

- **Defense installations, industries, and public utilities** like hospitals, electricity installations, water supply, telephone exchanges, aerodromes, railway stations, commercial centers, etc. s**hould be located such that they**

are above the levels corresponding to a 100-year frequency or the maximum observed flood levels.

Status of floodplain zoning in India:

- Floodplains in many rivers have been **wantonly encroached upon. Ex. Villages along Sutlej, Beas, Ravi and Ghaggar.**
- Villages along these encroached rivers are **perennially at risk of floods whenever they swell.**
- The **National Green Tribunal (NGT) prevents construction within a 500 m area** from the central lining of a river. However, the **direction is not followed by many states.**
- Many states are **yet to carry out floodplain zoning** despite guidelines by the centre.

Way ahead

- **Flood zone Mapping** should be decentralized at local and regional levels.
- **Rivers should be modelled** as incidences of reservoir breach and the release of emergency water from dams should be automated.
- **Technologies like satellite imagery and Geographic Information Systems** should be extensively applied to ensure early warning.
- **Watershed management** with both hard and soft solutions, which are engineering and ecologically sustainable solutions respectively should be adopted.
- **Riparian zones** should be **managed well** and regulated to prevent flooding and erosion.

9.16   CLOUDBURSTS

Context

- Himachal CM orders study into increasing cloudburst incidents in Himachal.

About cloudbursts

- Cloudburst is a sudden, **very heavy rainfall, usually local and of brief duration.**
- **Examples**
  - On December 2nd, 2015: Chennai recorded 494 mm of rainfall causing floods.
  - On May 4th, 2018: Cloudburst in Belagavi, Karnataka. It reported 95mm of rain in an hour.
  - On October 20th, 2021: A cloudburst in Pethanaickenpalayam town of Salem district, Tamil Nadu. The Vasishta River was flooded due to this.

Process of formation

- Most so-called cloudbursts **occur in connection with thunderstorms.** In these storms, there are violent upsurge of air, which at times prevent the condensing raindrops from falling to the ground.
- **A large amount of water may thus accumulate at high levels**, and if the upward currents are weakened the whole of this water falls at one time.

The criteria of a cloudburst:

- The India Meteorological Department (IMD): An unexpected precipitation exceeding 100mm (or 10 cm) per hour over a geographical region of approximately 20 to 30 square km.
- In Sweden, the Swedish term 'Skyfall' is unused meaning 1 mm per minute for short bursts and 50 mm per hour for long-lasting rainfalls.

Impacts of Cloudburst:

- Flash floods: A cloudburst triggers flash floods.
- Infrastructure damage: Damages houses, roads, bridges, public and private infrastructures.
- Landslides: Hilly and mountainous areas are impacted by landslides.
- Impacts on agriculture: Crops and arable land along with livestock will be adversely impacted.

Way ahead

- **Activities** along river banks should be **regulated.**
- **Embankments, dams and barrages** should be constructed to regulate water flow.
- **Localized micro planning** considering the ecologically fragile nature of the floodplains should be done.

- **Eco-sensitive zones and water bodies** should be regulated and preserved.
- **Advanced technologie**s should be applied by IMD to monitor and forecast extreme weather for early warning, preparedness, mitigation and early evacuation.

9.17   SHORT ARTICLES

Pacific Decadal Oscillation

Context
- Cyclone frequency may rise over Indian coast from the warming of Pacific: study.

About Pacific Decadal Oscillation
- It is a climate pattern in the Pacific Ocean region, characterized by long-term variations in sea surface temperatures.

Positive Phase:
- The Central and eastern Pacific Ocean experience warmer sea surface temperatures.
- Western Pacific Ocean tends to be cooler.

Negative Phase:
- Central and eastern Pacific Ocean become cooler.
- Western Pacific Ocean becomes warmer.

Its Impact climate of India
- **Pacific Decadal Oscillation (PDO) cycle: Repeats every 20-30 years**, affecting cyclone frequency.
- **Positive PDO phase: A warmer (positive-phased)** PDO implies fewer equatorial-origin cyclones.
- **Example:** Equatorial-origin cyclones were **43% less in the period from 1981 to 2010** compared with **1951 to 1980**, and this was because the PDO was in a **'warmer' or positive phase.**
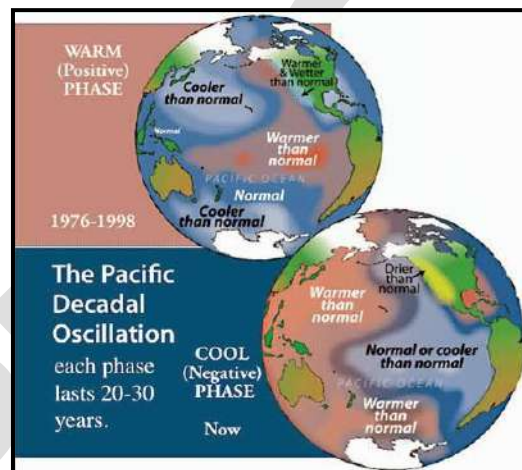
Fujiwhara Effect

Context
- The United States west coast recently **witnessed Hurricane Hilary**.

Fujiwhara effect: Definition
- As per the National Weather Service (NWS), **when two hurricanes (or cyclones), spinning in the same direction,** are brought close together, they begin 'an intense dance around their common centre' and this **interaction between two cyclones is called the Fujiwhara effect.**

How do they gain strength?
- **If one hurricane's intensity overpowers the other:** The smaller one will orbit it and eventually crash into its vortex.
- **If two storms of similar strengths pass by each other:**
  o They **may gravitate towards each other** until they reach a common centre and merge, or merely **spin each other around** for a while **before shooting off on their paths.**
  o **In rare instances they may merge**, leading to the formation of a mega cyclone capable of wreaking havoc along coastlines.
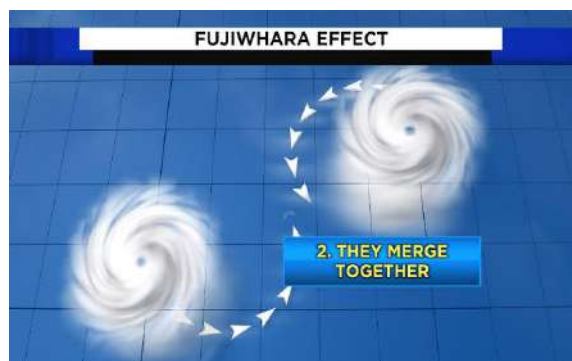
Recent Impact

- In the case of **Hurricane Hillary, at least twelve 'atmospheric river'** storms were formed due to the merging of two cyclones due to the Fujiwhara effect.
- **Note:** 'Atmospheric rivers' are vast airborne currents carrying dense moisture and hanging low in the atmosphere.

9.18   SNIPPETS
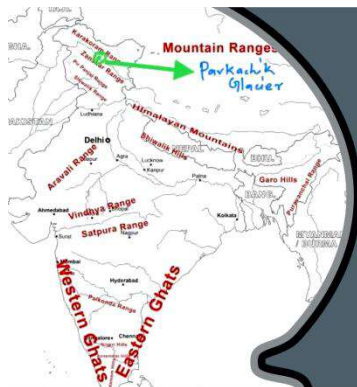
Parkachik Glacier

- Ladakh glacier melting around Parkachik Glacier may form three lakes as per study
- The Parkachik Glacier is one of the largest glaciers in the Suru River valley.
- The Suru River valley is a part of the southern Zanskar Ranges in the western Himalayas.
- Two main reasons for the rapid melting of the glacier are global warming and increasing temperatures in the region, and the its lower altitude than other glaciers in the Zanskar region.

Typhoon Doksuri

- Over 31,000 evacuated from Beijing as Typhoon Doksuri breaks rainfall records.
- Typhoon Doksuri, known in the Philippines as Super Typhoon Egay, was a powerful, deadly and destructive tropical cyclone.
- The name "Doksuri" means eagle in Korean.
- It became the costliest typhoon to hit China on record.
- Doksuri caused extensive damage in the Philippines, Taiwan, China and Vietnam, in late-July 2023.
- The fifth named storm and third typhoon of the 2023 Pacific typhoon season, Doksuri started as a low-pressure area in the Philippines.

Siberian Permafrost

- 46,000-year-old worms brought back to life from Siberian permafrost.
- Nematodes Plectus murrayi and Tylenchus polyhypnusnematodes were resurrected from Siberian permafrost, which is located in northern Siberia.
- Permafrost is a permanently frozen layer on or under Earth's surface.
- It consists of soil, gravel, and sand, usually bound together by ice.
- Permafrost usually remains at or below 0°C (32°F) for at least two years.

Typhoon Khanun

- Typhoon Khanun hits the Japan coast.
- Typhoon Khanun, known in the Philippines as Typhoon Falcon, was a powerful, erratic and long-lived tropical cyclone that moved along Okinawa, Japan and the west coast of the Korean Peninsula.
- The sixth named storm, and the fourth typhoon of the 2023 Pacific typhoon season.
- Khanun started as a low-pressure area in the Pacific Ocean.
- It is a Category 4-equivalent typhoon on the Saffir–Simpson scale blowing over the Philippine Sea, before undergoing an eyewall replacement cycle.

Sponge City

- Critics are raising questions about the effectiveness of its 2015 "sponge city" initiative.
- It is a new urban construction model for flood management, strengthening ecological infrastructure and drainage systems proposed by Chinese researchers in early 2000.
- It absorbs and captures rainwater and utilizes it to reduce floods.
- The philosophy: To distribute and retain water at its source, slow down water as it flows away from its source, clean water naturally and be adaptive to water at the sink when water accumulates.

Sapphire mines

- Jammu and Kashmir, LG Manoj Sinha said that the Sapphire mines will be auctioned to give a boost to the local economy.
- As per GSI, the Khan area of Paddar in J&K has the presence of sapphire and ruby-like precious gems in different adits, mostly in corundum form.
- Mineral Exploration and Consultancy Limited (MECL) has been assigned the task of conducting detailed exploration.
- The valley is estimated to have a reserve of sapphire worth ₹10,000 crore.
- Sapphire is a precious gemstone consisting of aluminium oxide with trace amounts of elements such as iron, titanium, cobalt, lead, chromium, vanadium, magnesium, boron, and silicon.
- The name sapphire is derived from the Latin sapphires from the Greek sapphires, which refer to lapis lazuli.

Hurricane Hilary

- Mexico and Southern California brace for the never-seen-before storm named Hillary.
- Place of occurrence: It hit Southern California and Mexico.
- What are hurricanes? :Hurricanes are large swirling storms with high-speed winds that form over warm ocean waters.
- Condition for the formation of hurricanes: The ocean waters must be above 26 degrees Celsius.
- Reason for hurricanes on the east coast of the US: In the Atlantic, warm, equatorial waters are transported north to higher latitudes along the US coast via the Gulf Stream but along the west coast, in the Pacific, cold current steers colder water from higher latitudes toward equatorial regions.
- This is why hurricanes are more likely on the eastern coast than on the western coast of the US.

9.19   1 MAINS & 5 MCQs

Q1. Rising incidents cloudbursts across various regions in India and its impacts demands a multi pronged approach to prevent its damage. Critically examine. (250 words)

Answer

- Cloudburst is a sudden, very heavy rainfall, usually local and of brief duration.

Rising incidents of cloudburst in India

- On December 2nd, 2015: Chennai recorded 494 mm of rainfall causing floods.
- On May 4th, 2018: a cloudburst in Belagavi, Karnataka. It reported 95mm of rain in an hour.
- On October 20th, 2021:A cloudburst in Pethanaickenpalayam town of Salem district, Tamil Nadu. The Vasishta River was flooded due to this.

Impacts of Cloudburst

- **Flash floods:** A cloudburst triggers flash floods.
- **Infrastructure damage:** Damages houses, roads, bridges, public and private infrastructures.
- **Landslides:** Hilly and mountainous areas are impacted by landslides.
- **Impacts on agriculture:** Crops and arable land along with livestock will be adversely impacted.

Multi pronged approach to mitigate the impact of cloudbursts

- Activities along river banks should be regulated.
- Embankments, dams and barrages should be constructed to regulate water flow.
- Localized micro planning considering the ecologically fragile nature of the floodplains should be done.
- Eco-sensitive zones and water bodies should be regulated and preserved.
- Advanced technologies should be applied by IMD to monitor and forecast extreme weather for early warning, preparedness, mitigation and early evacuation.

Q2. Consider the following statements about floodplain:
1. It is an area near the mouth of the river.
2. Floodplains are devoid of oxbow lakes.
3. National Disaster Management Authority mandantes Defence installations, industries, and public utilities should be located such that they are above the levels corresponding to a 100-year frequency or the maximum observed flood levels.

Which of the above statements is/are incorrect?

A. 1 and 2 only
B. 2 and 3 only
C. All Three
D. None

Q3. Consider the following statements:
1. The India Meteorological Department (IMD) defines cloudbursts as unexpected precipitation exceeding 50mm per hour over a geographical region of approximately 20 to 30 square km.
2. In Sweden cloudburst is termed as 'Skyfall'.

Which of the above statements is/are correct?

A. 1 only
B. 2 Only
C. Both 1 and 2
D. Neither 1 nor 2

Q4. Consider the following statements:
1. Interaction between two cyclones is called the Fujiwhara effect.

2. If one hurricane's intensity overpowers the other they may gravitate towards each other until they reach a common center and merge.
   Which of the above statements is/are correct?
A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

Q5. Consider the following statements about Pacific Decadal Oscillation (PDO):

1. Pacific Decadal Oscillation (PDO) cycle repeats every 20-30 years.
2. A warmer PDO implies fewer equatorial-origin cyclones.

3. During the Negative Phase of the Central and eastern Pacific Ocean it becomes cooler.
   How many of the above statements are/are correct?
A. Only one
B. Only Two
C. All three
D. None

Q6. Hurricane Hillary which recently occurred hit which of the following countries?
1. United States
2. Japan
3. Peru
4. Canada's East coast

ANSWERS: 2) A, 3) B, 4) A, 5) C, 6) 1

10. PLACES IN NEWS

10.1 INDIA

ADICHALLANUR

About

- It is one of the oldest civilized sites in Tamil Nadu. Adichanallur is located in Thoothukudi district on the banks of the river Thamiraparani which flows in the Thiruvaikundam circle.
- This archeological site is located at a distance of about 24 km from Tirunelveli on the way to Thiruchendur.
- The site is associated with a pre-1600 BC civilization. It is one of the first towns to be excavated by the Archaeological Survey of India.

DEVIKA RIVER

About

- The work on the river Devika Rejuvenation project in Udhampur district of Jammu and Kashmir.
- Also known as Devika Nagari, the river originates from the hilly Suddha Mahadev temple in Udhampur and flows down towards western Punjab (now in Pakistan), where it merges with the Ravi river.
- The Devika River holds religious significance as it is revered by Hindus as the sister of the Ganga.

HINDON, YAMUNA AND KALI RIVERS

About

- Yamuna is the second-largest tributary river of the Ganges by discharge and the longest tributary in India.
- It originates from the Yamunotri Glacier at a height of 6,387 metres (20,955 ft) on the southwestern slopes of Bandarpunch peaks of the Lower Himalaya in Uttarakhand.
- Hindon River is an important tributary of Yamuna River. In fact, this river is sand-witch between two major rivers: Ganga on the left and Yamuna on the right. Hindon originates from upper Shiwalik (Lower Himalayas).
- Kali- It's originated in the northern slopes of Vindhya Hills. Flowing in the M.P., it enters in the Rajasthan near Bindha village in Jhalwara District. After flowing 145 km in Rajasthan its joins Chambal River near Nonera village of Kota District.

LAMKA - CHURACHANDPUR

About

- The jurisdiction of Churachandpur District Headquarters is classified as a town devoid of municipality.
- The roles, functions, responsibilities and powers in the town management are all vested in the Autonomous District Council, Churachandpur, ADCC.
- Lamka is the headquarters of Churachandpur district. It is 63.4 km away from the Manipur State Capital of Imphal. The town has approximately 1.2 lakh populations.

HINDU KUSH REGION

About

- The Hindu Kush is the third main mountain range in Asia, located west of the central Himalayas in Afghanistan, Pakistan, and Tajikistan.
- The Hindu Kush Himalayas (HKH) are the freshwater towers of South Asia and parts of Southeast Asia. Water originating from their snow, glaciers and rainfall feed the ten largest river systems in Asia.
- The highest and the most prominent mountain of Hindu Kush is Tirich Mir (7,708 m / 25,288 ft), which is also the highest outside the dual Himalayas-Karakoram system.

GHAGGAR

About

- The Ghaggar rises in the Siwalik (Shiwalik) Range, in northwestern Himachal Pradesh state and flows about 200 miles (320 km) southwest through Haryana state, where it receives the Saraswati River.
- It eventually dries up in the Great Indian (Thar) Desert.
- The Ghaggar was probably once an affluent of the Indus River. Its seasonal flow is dependent on monsoonal (seasonal) rainfall.

CHUNGI BADETHI TUNNEL

About

- ChungiBadethi tunnel on Gangotri National Highway in Uttarkashi, is facing a threat of getting damaged following landslides around the area, leaving authorities concerned.
- Landslides cause concern over ChungiBadethi tunnel's safety on Gangotri National Highway.

10. PLACES IN NEWS

10.1   INDIA

SAHYADRI PLATEAU

About
- The Sahyadri plateau is located in the western part of India, parallel to the Arabian Sea.
- It stretches from Gujarat in the north to Karnataka in the south, and covers an area of over 100,000 square kilometers.
- The Sahyadri plateau is a mountainous region, with an average elevation of around 1,000 meters.
- The highest peak in the plateau is Kalsubai, which is located in Maharashtra and has an elevation of 1,646 meters.

PARAVANAR RIVER

About
- Paravanar River basin which is a leaf shaped river basin and second smallest river basin of Tamil Nadu lies within Cuddalore District of Tamil Nadu.
- The basin is typically covered by sedimentary rock types of Tertiary to Recent age.

BEAS RIVER

About
- The Beas River originates from the Beas Kund, a glacial lake situated at an elevation of over 4,000 meters in the Kullu district of Himachal Pradesh, India.
- It flows through two Indian states, namely Himachal Pradesh and Punjab. The river travels approximately 470 kilometers from its source to its confluence with the Sutlej River in Punjab.
- The River passes through or near several towns and cities, including Manali, Kullu, and Mandi in Himachal Pradesh, and Amritsar in Punjab.

BHAGWATI PLATEAU

About
- Bhagwati Moll is one of the last remaining ecologically valuable laterite plateaus in the country.
- The porous laterite of the plateau absorbs rainwater, letting it out in springs, and recharging aquifers.
- The plateau has a temple that is in use and every alternate year 3,000 people go on a procession along an ancient route to appease the local Betalgod.
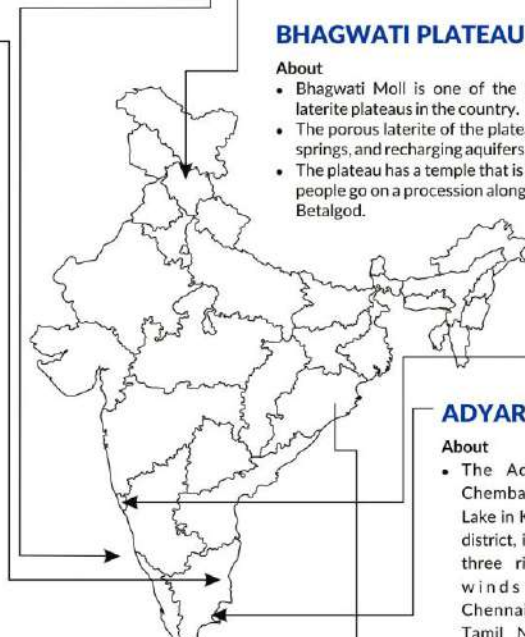
ADYAR RIVER

About
- The Adyar River, originating near the Chembarambakkam Lake in Kanchipuram district, is one of the three rivers which winds through Chennai (Madras), Tamil Nadu, India, and joins the Bay of Bengal at the Adyar estuary.
- Adyar river starts from Malaipattu tank (80.00° longitude and 12.93° latitude) near Manimangalam village in Sriperumbudur taluk at about 15 kilometres (9 mi) west of Tambaram in South Chennai.
- It starts to appear as a stream only from the point where water released from Chembarambakkam lake joins the river at Thiruneermalai.
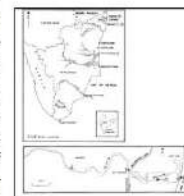
DAMS IN NEWS

Jayakwadi, NimnDudhna, Yeldari, Siddheshwar, Majalgaon, Manjara, Penganga, Manar, Nimn Terna, Vishnupuri and Sina Kolegaon.	Maharashtra
Bhatsa Dam	Bhatsa & Chorna River, Shahpur
Isapur Dam	Penganga River, Hingoli
Jayakwadi (Paithan) Dam	Godavari River, Jayakwadi (Aurangabad)
Koyna Dam	River Koyna, Koyna Nagar (Satara Dist)
Totladoh Dam	Pench River, Nagpur
Ujjani (Bhima) Dam	Bhima River, Solapur
Warna Dam	Warna River, Sangli Dist

BRAHMANI RIVER

About
- The Brahmani is a major seasonal river in the Odisha state of eastern India.
- The Brahmani is formed by the confluence of the Sankh and South Koel rivers, and flows through the districts of Sundargarh, Deogarh, Angul, Dhenkanal, Cuttack, Jajapur and Kendrapara.
- Together with the river Baitarani, it forms a large delta before emptying into the Bay of Bengal at Dhamra.

10. PLACES IN NEWS

10.1 INDIA

LIKARU-MIG LA-FUKCHE ROAD

About
- Border Roads Organisation (BRO) has commenced the construction of a 64-km long Likaru-Mig La-Fukche road in Eastern Ladakh's Demchok sector.
- It is located close to Hanle in Eastern Ladakh.
- The 64-km long road will connect Likaru to Fukche, situated 3 km from the Line of Actual Control (LAC).
- Once completed, it will be the world's highest motorable road at a height of 19,400 ft in Mig La.

TAMPARA LAKE

About
- Tampara Lake is one of the largest fresh water lakes in the State.
- The beautiful lake & the nearby Chilika Lagoon highlight the ecological diversity Odisha is blessed with.
- While Tampara is a fresh water lake, Chilika is a brackish water lagoon.

YELAGIRI

About
- It is a hill station located in the newly formed Tirupattur district of Tamil Nadu, India, situated off the Vaniyambadi-Tirupattur road.
- The Yelagiri hill station is not as developed as other hill stations in Tamil Nadu like Ooty or Kodaikanal.
- However, the district administration has now taken up the task of developing Yelagiri Hills into a tourist destination by promoting adventure sports such as paragliding and rock climbing.

FAZILKA

About
- Fazilka drain is one of 22 drains and water bodies, where untreated water of Malwa district (Punjab, India) is discharged.
- The monitoring committee has said that the drain is closed at the borderline of countries, leading to stagnation in the shape of ponds and deterioration of quality of groundwater in the border area.
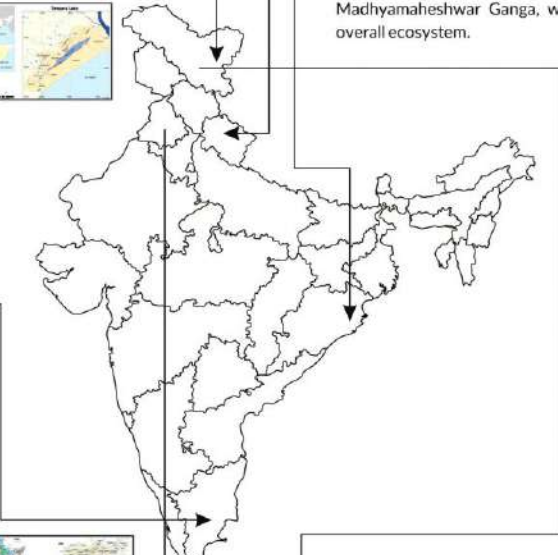
NANDAKINI RIVER

About
- The Nandakini River is a prominent watercourse flowing through the state of Uttarakhand in northern India.
- Originating from the Nanda Devi Mountain, this river traverses a picturesque landscape and plays a vital role in the ecology and livelihoods of the region.
- The Nandakini River originates from the Nanda Devi Mountain, the second-highest peak in India, located in the Garhwal Himalayas.
- The Nandakini River eventually merges with the Alaknanda River at Nandprayag, a confluence that holds cultural and religious importance.
- The river is fed by several tributaries, such as the Gauriganga and Madhyamaheshwar Ganga, which contribute to its flow and overall ecosystem.

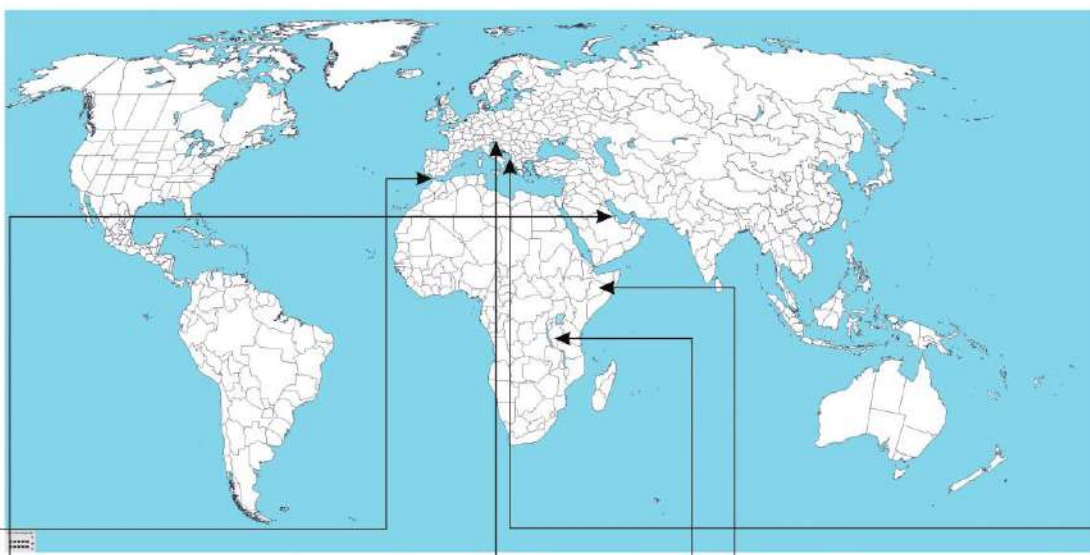### BHAGAT BRIDGE" IN DANNA VILLAGE

About
- The 115-feet long bridge has been named as Bhagat bridge in memory of Late Major Bhagat Singh, Veer Chakra, who laid down his life defending this sector in 1965 war.
- This bridge is testament of Indian Army's commitment to people of Jammu and Kashmir be it defending the borders or supporting them towards building a prosperous and peaceful Kashmir.
- On this special occasion as the nation prepares to celebrate its 77th Independence Day, the inauguration of the bridge serves as a poignant reminder of the sacrifices made by the Indian Army to safeguard the sovereignty and integrity of the nation. It also reaffirms the Army's dedication to fostering strong bonds with local communities and dedicatedly contributing towards their welfare.

10. PLACES IN NEWS

10.2 INTERNATIONAL

ARASH DORRA GAS FIELD

About

- The Arash-Dorra gas field, known as Arash in Iran and Dorra in Kuwait and Saudi Arabia, has been a source of conflict between the three countries.
- The field has sizable natural gas reserves, which makes it a very important resource for all parties concerned.
- The Anglo-Iranian Oil Company (now BP) and Royal Dutch Shell, respectively, received offshore concessions from Iran and Kuwait in the 1960s, which is when the dispute's origins may be found.

IBERIAN PENINSULA

About

- Iberian Peninsula, peninsula in southwestern Europe, occupied by Spain and Portugal.
- It is bordered by the Mediterranean Sea on the Southeast and East and by the Atlantic Ocean on the north, west, and southwest.
- It is in close proximity to the northwest African coast, separated by the Strait of Gibraltar and the Mediterranean Sea.

SLOVENIA

About

- Slovenia is a European country located in Central Europe, bordered by Italy to the west, Austria to the north, Hungary to the northeast, and Croatia to the south and southeast.
- It gained independence from Yugoslavia in 1991 and has since developed into a prosperous and diverse nation.
- The capital city, Ljubljana, boasts a charming old town, historic architecture, and vibrant cultural scene.

MALAWI

About

- Malawi is a landlocked country situated in southeastern Africa.
- It shares borders with Zambia to the northwest, Tanzania to the northeast, and Mozambique to the east, south, and southwest.
- Malawi is known as the "Warm Heart of Africa" due to the friendly and hospitable nature of its people.
- It is characterized by its diverse landscapes, including plateaus, mountains, and large freshwater bodies like Lake Malawi, one of Africa's Great Lakes.

AMHARA REGION

About

- The Amhara Region is located in the northwestern part of Ethiopia between 8°45' and 13°45' North latitude and 36° 20' and 40° 20' East longitude.
- Its land area is estimates at about 170000 square kilometers. Amhara borders Tigray Region in the North, Afar in the East, Oromiya in the South, Benishangul-Gumiz in the Southwest and the country of Sudan in the west.
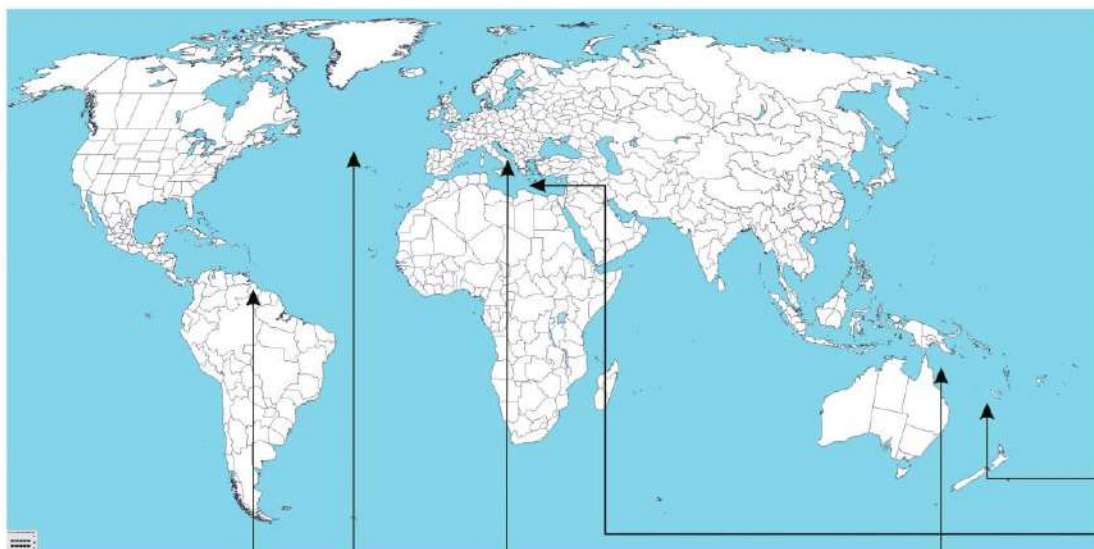
CROATIA

About

- Croatia is situated between central and eastern Europe bordering the Adriatic Sea between Slovenia and Bosnia and Herzegovina.
- Croatia becoming a member of the euro area will help the nation to protect its economy amid soaring inflation in the wake of the Russian war in Ukraine.

10. PLACES IN NEWS

10.2 INTERNATIONAL

GUYANA

About
- Guyana is officially known as the Cooperative Republic of Guyana.
- The country is bordered by;
  - The Atlantic Ocean in the North.
  - Brazil in the South and Southwest.
  - Venezuela in the West.
  - Suriname in the East.
- it is one of the least densely populated countries on Earth.

PUGLIA

About
- Puglia is the least mountainous region of Italy, consisting of broad plains and low-lying hills.
- The only mountainous areas, the Gargano promontory and the Dauni mountains, do not exceed 1,150 metres and are in the north of the region.
- Puglia is a very hot and dry region. There are a few rivers found on the 'TavolieredellePuglie'at the foot of the Gargano promontory.

GULF STREAM

About
- The Gulf Stream is a powerful ocean current in the Atlantic Ocean, known for its significant role in influencing regional and global climates.
- Originating in the Gulf of Mexico, the Gulf Stream flows northward along the eastern coast of North America before crossing the Atlantic towards Europe.
- It is one of the major components of the Atlantic Meridional Overturning Circulation (AMOC).

GREAT BARRIER REEF

About
- The Great Barrier Reef, situated off the northeastern coast of Australia, is one of the world's most remarkable and diverse marine ecosystems.
- It stretches over 2,300 kilometers (1,430 miles) and encompasses a vast expanse of coral reefs, islands, and marine life.
- Recognized as a UNESCO World Heritage Site, the reef holds immense ecological significance and is a global treasure.

MEDITERRANEAN REGION

About
- The Mediterranean Sea is a large body of water located between Europe, Africa, and Asia.
- It is connected to the Atlantic Ocean through the Strait of Gibraltar and to the Red Sea via the Suez Canal.
- The Mediterranean Basin encompasses diverse countries and regions, including Southern Europe, North Africa, and the Middle East.

TUVALU

About
- Tuvalu is a picturesque island country in the west-central Pacific Ocean, positioned between Hawaii and Australia.
- It is a ring-shaped coral reef surrounding a lagoon, with islands dotting the rim, offering a stunning oasis for visitors.
- With a small population of around 12,000 people, Tuvalu is considered the least visited country in the world.

10. PLACES IN NEWS

10.2   INTERNATIONAL
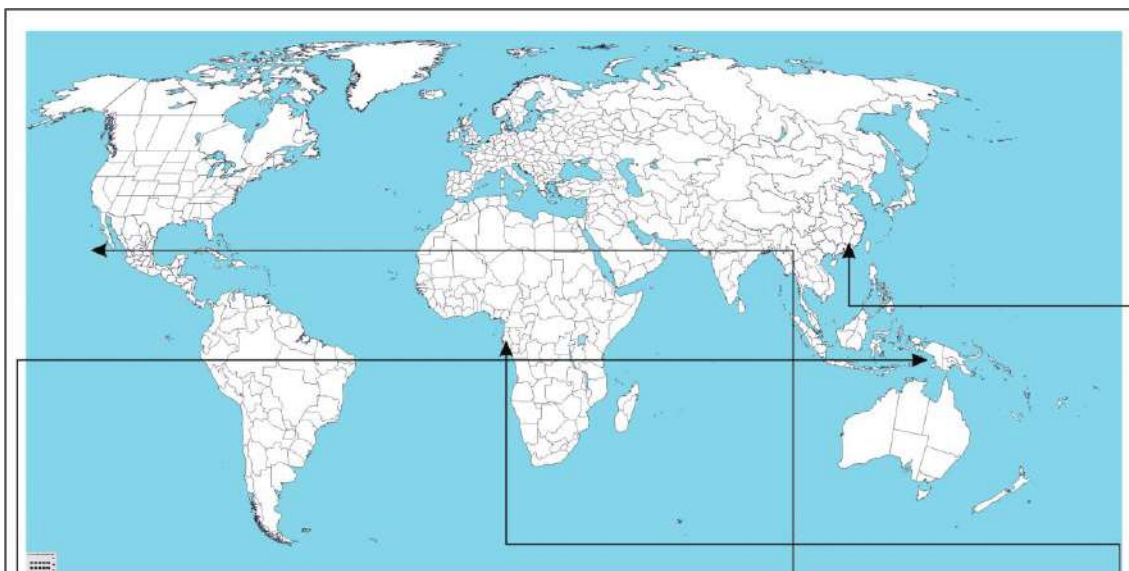
PAPUA NEW GUINEA

About

- New Guinea is the world's second-largest island, with an area of 785,753 km2.
- Located in Oceania in the southwestern Pacific Ocean, the island is separated from Australia by the Torres Strait, though both landmasses lie on the same continental shelf.
- Numerous smaller islands are located to the west and east.

SULINA CHANNEL

About

- The Sulina Channel, a 63 km distributary of the Danube, is crucial for the 'new' trade route.
- It connects major Ukrainian river ports to the Black Sea, entirely within Romania's borders (a NATO member).
- The Sulina Channel is the only deep and wide channel suitable for freight transport.

TIGRIS RIVER

About

- The Tigris River is located in southwestern Asia. Its source is in the eastern Taurus mountain range in Armenia, and the river flows through the countries of Turkey, Syria, and Iraq.
- The river is part of the Syrian-Turkish border.
- It receives its water from other rivers in the area as well as the annual melting snowfalls of the region before joining the Euphrates River and emptying into the Persian Gulf.

HAWAII

About

- Hawaii is a state located in the Pacific Ocean, comprising an archipelago of islands.
- It is situated in the central Pacific region, southwest of the continental United States.
- The state is known for its isolated and unique geographical position.
- Hawaii consists of eight main islands: Hawaii (also known as the Big Island), Maui, Oahu, Kauai, Molokai, Lanai, Niihau, and Kahoolawe.

GABON

About

- Gabon is a central African country, is rich in natural resources.
- Located on the Atlantic Ocean, it borders Cameroon, Equatorial Guinea, and the Republic of Congo.
- It is sparsely populated, with a population of 2.3 million (2021) and forests covering 85% of its territory.
- Gabon, the fourth largest oil producer in Sub-Saharan Africa, posted strong economic growth over the past decade, driven mainly by oil and manganese production.
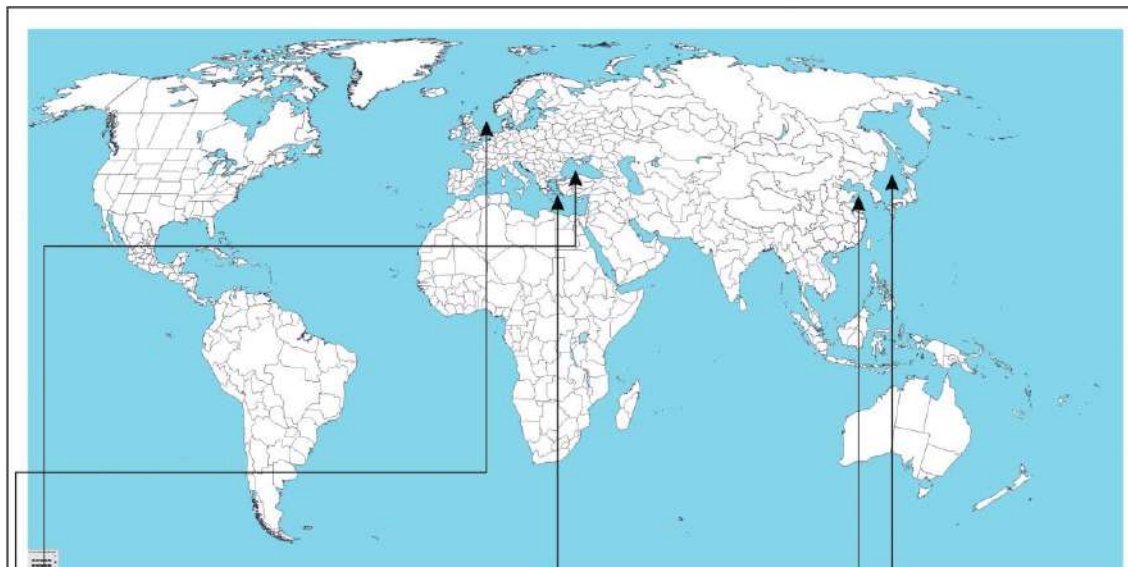
WEST LIAOHE RIVER

About

- The West Liaohe River Basin (WLRB) is one of the most sensitive areas to climate change in China and an important grain production base in the Inner Mongolia Autonomous Region of China.
- The basin is in the transition zone between the Inner Mongolia Plateau and the Songliao Plain.

10. PLACES IN NEWS

10.2   INTERNATIONAL

BLACK SEA

About

- The Black Sea is a marginal sea of the Atlantic Ocean lying between Europe and Asia.
- It is bordered by Bulgaria, Georgia, Romania, Russia, Turkey, and Ukraine.
- It is supplied by major rivers, principally the Danube, Dnieper, and Don.
- The Black Sea ultimately drains into the Mediterranean Sea, via the Turkish Straits and the Aegean Sea.
- The Bosporus Strait connects it to the small Sea of Marmara which in turn is connected to the Aegean Sea via the Strait of the Dardanelles.
- To the north, the Black Sea is connected to the Sea of Azov by the Kerch Strait.

NORTH SEA

About

- The North Sea lies between Great Britain, Denmark, Norway, Germany, the Netherlands, Belgium and France.
- An epeiric sea on the European continental shelf, it connects to the Atlantic Ocean through the English Channel in the south and the Norwegian Sea in the north.
- It is more than 970 kilometres long.
- The North Sea has featured prominently in geopolitical and military affairs, particularly in Northern Europe, from the Middle Ages to the modern era.

YELLOW SEA

About

- The Yellow Sea covers an area of approximately 380,000 square kilometers (146,900 square miles).
- It is situated between the eastern shores of mainland China and the western shores of the Korean Peninsula.
- To the northwest, the Yellow Sea is connected to the Bohai Sea through the Bohai Strait.
- It opens to the south into the Korea Strait, which leads to the East China Sea.

SOUTH CHINA SEA

About

- The South China Sea is a marginal sea of the Western Pacific Ocean.
- It is bounded in the north by the shores of South China (hence the name), in the west by the Indochinese Peninsula, in the east by the islands of Taiwan and northwestern Philippines (mainly Luzon, Mindoro and Palawan), and in the south by Borneo, eastern Sumatra and the Bangka Belitung Islands.
- Major rivers that flow into the South China Sea include the Pearl, Min, Jiulong, Red, Mekong, Rajang, Pahang, Agno, Pampanga, and Pasig Rivers.
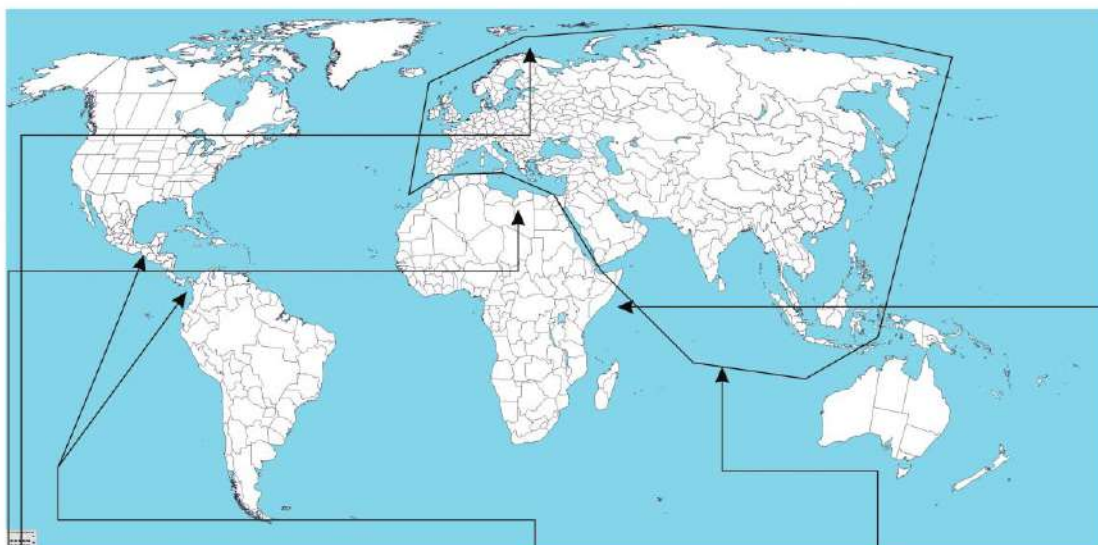
DARDANELLES STRAIT

About

- The Dardanelles is a strait, or narrow body of water, that connects the Aegean Sea and the Sea of Marmara in Turkey.
- It also separates the continent of Europe from the westernmost tip of Asia Minor. The strait is named for the ancient city of Dardanus.
- In ancient times it was called the Hellespont, meaning "Helle's sea," in memory of Helle, a mythical princess.
- The Dardanelles have always been of great strategic importance because they link the Black Sea with the Mediterranean Sea and provide the only seaward access to the ancient city of Constantinople (Istanbul).
- During the First World War, Turkey heavily fortified the Dardanelles with both minefields and shore batteries.

10. PLACES IN NEWS

10.2 INTERNATIONAL

MURMANSK PORT

About
- Murmansk Port serves as a crucial gateway for trade and transportation in Russia's Arctic region.
- Murmansk is situated about 2,000 km northwest of Moscow, making it a vital maritime link between Europe and the Arctic region.
- The port's proximity to the Arctic Ocean grants it access to the NSR, a shorter shipping route that offers potential advantages over traditional routes like the Suez Canal.

LIBYA

About
- Libya is a country located in North Africa, bordered by the Mediterranean Sea to the north.
- Libya shares its borders with several countries: Egypt to the east, Sudan to the southeast, Chad and Niger to the south, Algeria to the west, and Tunisia to the northwest.
- Its coastline along the Mediterranean Sea is significant, and many major cities are situated along it.

ECUADOR AND GUATEMALA

About
- Ecuador: Situated in South America, bordered by Colombia to the north, Peru to the south and east, and the Pacific Ocean to the west.
- Guatemala: Situated in Central America, bordered by Mexico to the north and west, Belize to the northeast, Honduras to the east, and El Salvador to the southeast.

NORTHERN SEA ROUTE

About
- The Northeast Passage [also known as the Northern Sea Route (NSR)], the shortest shipping route for freight transportation between Europe and countries of the Asia-Pacific region, straddles four seas of the Arctic Ocean.
- Running to 5,600 km, the Route begins at the boundary between the Barents and the Kara seas (Kara Strait) and ends in the Bering Strait (Provideniya Bay).
- The Northern Sea Route (NSR) defined by Russian legislation as running from the entrances to the Novaya Zemlya straits in the west, along the Russian Arctic coast above Siberia through the Kara Sea, Laptev Sea, East Siberian Sea, and Chukchi Sea, to Cape Zhelaniya on the Bering Strait.

GREATER HORN OF AFRICA REGION

About
- The Horn of Africa (HoA), also known as the Somali Peninsula, is a large peninsula and geopolitical region in East Africa.
- Located on the easternmost part of the African mainland, it is the fourth largest peninsula in the world.
- It is composed of Ethiopia, Eritrea, Somalia and Djibouti; broader definitions also include parts or all of Kenya, Sudan, South Sudan, and Uganda.
- The term Greater Horn Region (GHR) can additionally include Burundi, Rwanda, and Tanzania.
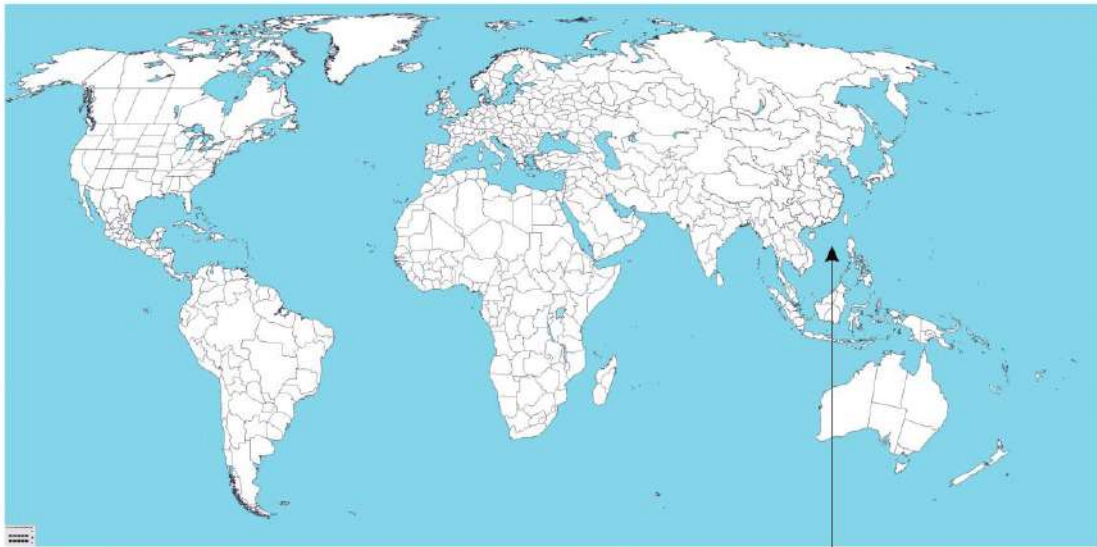
10. PLACES IN NEWS

10.2   INTERNATIONAL

TRITON ISLAND

About

- Triton is one of the major islands in the Paracel group, which is roughly equidistant from the coast of Vietnam and China's island province of Hainan.
- It is located on the southwest corner of Triton Reef and has an area of 7 hectares (17 acres) above sea-level. The reef including the island measures about 120 hectares (300 acres) in area.
- The island is administered by the People's Republic of China, and is also claimed by the Republic of China (Taiwan) and Vietnam.