

THE IAS GAZETTE

A House Journal of **APTI PLUS**

AUGUST 2023



APTI PLUS

Academy for Civil Services Pvt. Ltd.
CREATING CIVIL SERVANTS FOR THE NATION



RD EDITION

FOREST CONSERVATION

AMENDMENT BILL 2023

Other topics

- Need for Uniform Civil Code
- Aspartame: A Sweet Death
- Critical Minerals for India
- Chandrayaan 3
- National Multidimensional Poverty Index

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A MONTHLY PERIODICAL FOR ASPIRANTS OF UPSC CSE



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1. POLITY & GOVERNANCE

1.1 NEED FOR UNIFORM CIVIL CODE

Context

- The Prime Minister said that India needed a Uniform Civil Code (UCC) as the country could not run with the dual system of “separate laws for separate communities.

Uniform Civil Code

- The idea of a UCC refers to laws that apply to everyone in India, replacing religion-based personal laws governing matters such as marriage, divorce, inheritance, adoption and succession.
- In Article 44, our constitution specifies the UCC: "The State shall endeavor to secure the citizens a Uniform Civil Code throughout the territory of India".
- The constitution is thus very clear that unless a uniform civil code is followed, integration cannot be imbibed. However, the fact is that it is only a “directives principle” laid down in the constitution and they are not enforceable by the court.



Should India have a uniform civil code?

Arguments to support the UCC:

- Lessons from other countries:** UCC is prevalent in many countries now. **Even Italy has one, as does the rest of the developed world.** Polygamy has also been either banned or severely restricted in Syria, Egypt, Turkey, Morocco, Iran and even in Pakistan.
- Need for reform in personal laws:** While other personal laws have undergone reform, for instance, Hindu Marriage Act, Hindu Succession Act, Hindu Minority and Guardianship Act, and Hindu Adoptions and Maintenance Act, Muslim law has not undergone such reforms. **Allowing Muslims, for example, to marry more than once, but prosecuting Hindus or Christians for doing the same, for instance, goes against the right to equality.** Uniform Civil Code will in the long run ensure Equality.
- Gender equality:** There is universal agreement that personal laws, regardless of the community, are skewed against women. **The entire gamut of laws governing rights relating to property, marriage, divorce, maintenance, adoption and inheritance goes against the rights of women** in various personal laws. UCC will help to promote Gender equality.
- Social Ethics:** UCC does not insist people from one religion start practising rituals of other religions. All it requires is, with changing times, there should be a Uniform Civil code irrespective of all religions as far as social ethics such as equality and respect for women and their rights are concerned.
- Lesson from Muslim countries:** Many Islamic countries have codified and reformed Muslim personal Law to check its misuse. Muslim countries like Egypt, Turkey and even Pakistan have reformed their laws. There is no reason why India should continue with vastly discriminatory personal laws.
 - Until 1947 both India and Pakistan had governed Muslims under the Shariat Act of 1937. However, by 1961 Pakistan, a Muslim country had reformed its Muslim Law more than India had and this remains true today.
- Support from judiciary:** In the 1985 Shah Bano case, the Supreme Court, after two similar orders in the past, batted for a common civil code for greater national integration, and ruled that the Muslim Personal

Laws couldn't be cited to deny Muslim women maintenance from their husbands after divorce. The Supreme Court again called for a UCC in 1995 and 2017.

- **Bars people of other communities to be a party against the community:** The interpretation of laws, in the absence of a uniform code for all religious communities, debar other religious communities from becoming a party to the case in the court in which an appeal is made against the members of that community. This makes them authoritarian in their domain.

Case study

- Let us take a look into the **case of Imrana-a 28 years old woman, and the mother of five children.** On June 6, 2005, Imrana, was raped by her 69-year-old father-in-law Ali Mohammad. Soon after she was raped, a local Muslim panchayat (council of elders) asked her to treat her **husband Nur Ilahi as her son and declared their marriage null and void! Can any law of the land justify this?**

Arguments against the UCC

- **Complex nature of Indian societies:** Indian society is extremely complex. India has a long history of personal laws and it cannot be given up easily. India is much more complex than Western societies which have been totally secularized.
- **Against the freedom of religion:** UCC is against fundamental rights guaranteed under Art. 25 and 26. **Both Article 25 (the right freely to profess, practice and propagate religion),** since it takes away the same religious rights of minorities.
- **Against minority rights:** A Uniform Civil Code administers the same set of secular civil laws to **govern different people belonging to different religions and regions.** This supersedes the right of citizens to be governed under different personal laws based on their religion or ethnicity. **The freedom to adopt any religion is enshrined in the Constitution.** This code will affect the religious freedom of minorities.
- **Non-enforceable and not mandatory:** **Article 44 provides for a Uniform civil code** for India. Article 37 of the Constitution itself makes clear, the directive principles "shall not be enforceable by any court". Nevertheless, they are "fundamental in the governance of the country".
- This shows that although our constitution itself believes that a Uniform Civil Code should be implemented in some manner, it does not make this implementation mandatory.
- **Against cultural rights:** UCC is against fundamental rights contained in Art. 29. Another defence taken against Art. 44 is of Art.29 which guarantees the right to 'culture'. It is contended that personal law forms a part of 'culture'.
- **Against Tribal rights:** Indian Tribes such as **Nagas, Gonds, Khons, Khasi, Rabhas,** etc have their religion and practice a type of nature worship or totemism in some cases. They practice various **bizarre activities as a part of their custom.** Uniform Civil Code makes it difficult to govern tribal and scheduled areas and its implementation might be a backlash on the decades of efforts of integrating tribal people into the mainstream.
- **Non- applicability of IPC in some cases:** The Indian Penal Code (IPC) was brought in by the British in 1862 to cover all substantive aspects of criminal law. The IPC did not apply to matters such as marriage, divorce, inheritance, adoption and succession. These were governed by personal laws of different religions. Here personal laws are required.

Evolution of the Uniform Civil Code

In 1835	<ul style="list-style-type: none"> • The British government tried to reform local social and religious customs. • They stressed upon the need for uniformity in the codification of Indian law relating to crimes, evidence, and contracts, specifically recommending that personal laws of Hindus and Muslims be kept outside such codification.
In 1937	<ul style="list-style-type: none"> • Under the East India Company, the Muslim Personal Law (Shariat) Application Act was passed to formulate an Islamic law code for Indian

	<p>Muslims.</p> <ul style="list-style-type: none"> It had no uniformity in its application at lower courts due to the diversity of the local cultures of Muslims in different parts of India.
1941	<ul style="list-style-type: none"> The B N Rau Committee to codify the Hindu law was formed. The committee recommended a codified Hindu law, which would give equal rights to women. The 1937 Act was reviewed and the committee recommended a civil code of marriage and succession for Hindus.
1950	<ul style="list-style-type: none"> Article 44 specifying "The State shall endeavor to secure the citizens a Uniform Civil Code throughout the territory of India" became part of constitution.
Mohd Ahmed Khan vs Shah Bano Begum case (1985)	<ul style="list-style-type: none"> The Supreme Court ruled in Shah Bano's favor under the "maintenance of wives, children and parents" provision (Section 125) of the All India Criminal Code, which applied to all citizens, irrespective of religion. Further, it recommended that a uniform civil code be set up.
Muslim Women's (Right to protection on divorce) Act (MWA) in 1986	<ul style="list-style-type: none"> It was enacted to overturn the Supreme court's verdict in Shah Bano case. It made Section 125 of the Criminal Procedure Code inapplicable to Muslim women.

Has any state implemented the UCC?

- UCC is in force only in the **state of Goa**. The Goa Civil Code was given by the Portuguese in 1867.
- However, **Uttarakhand** is set to be the first state in post-Independent to implement UCC. The state govts. have vowed to implement UCC in Assam and Gujarat as well.

Way ahead

- National consensus:** Civil Code is necessary to effect an integration of India by bringing all communities into a **common platform which at present is governed by personal laws which do not form the essence of any religion**. India as a nation will not be truly secular unless uniformity is established in the form of rational non-religious codified laws. However there must be a consensus among all the religions before the UCC is made universal.
- National debate:** In India, as far as personal law is concerned secularism has come to mean "non-intervening in the matter of religion." **This needs to be relooked and debated as there cannot be any discrimination in the guise of secularism.**
- The politicization results in appeasing the minority by giving them certain rights ultimately to catch their votes or to gain their sympathy. Secular India has upheld the freedom of religion at the cost of national unity.
- Reform rather than UCC:** Some derogatory practices of religions can be removed by reforming personal laws in a similar way the **Triple talaq was nullified by the Supreme Court**. Inheritance rights, access to religious paces, etc rights can be ensured by reforming all the personal laws. we must deal with the roots first and the branches later." The key to achieving a UCC in essence is to simply remove all forms of discriminatory customs and traditions from personal laws.
- Social Mobility and literacy:** As the minorities are educated and move up in the socio-economic ladder, the derogatory practices such as discrimination against women will fade away. **As per Sachar commission report on minorities**, the socio-economic conditions of Muslims are abysmally backward as compared to Hindus. Thus their social mobility and literacy is mandatory.

- **Reconcile our diversity:** India is a diverse country with diverse cultures. Efforts have to be made to reconcile our diversity with universal and indisputable arguments on human rights.

Conclusion

- Uniform Civil Code can be successfully introduced only after achieving improved levels of literacy, awareness on various socio-political issues, enlightened discussions and increased social mobility. **A secular India needs a uniform civil code. To mark time is to march with the communalists.** Thus, the ultimate aim of reforming uniform civil code should be ushering in the new dawn of freedom, dignity and opportunity for both the sexes equally. **The enactment of the UCC in piecemeal manner would be in tune with the spirit of Article 44.**

1.2 SCHEME FOR MINOR RAPE VICTIMS

Context

- Recognising the trauma faced by minor rape victims Centre announces scheme for minor rape victims.
- The proposal for “**critical care and support for accessing justice to rape/gang rape survivors and minor girls who get pregnant**” has been approved by the WCD Ministry.

About the scheme for minor rape victims

- It has an outlay of **Rs 74.10 crore** and will be applicable across the country.
- The scheme aims to provide **shelter, food, daily needs, safe transportation for attending court hearings and legal aid to minor girls** who have been abandoned by their family due to forced pregnancy, either due to rape or gang rape, or due to any other reason, and have no other means to support themselves.
- The fund will help in **setting up shelters for such victims**. This could be in the nature of standalone shelters, or wards earmarked for such victims in existing childcare institutions (CCIs), as state governments see fit.
- In the case of wards inside existing CCIs, the person in charge of the institution will ensure that a **separate safe space is provided to minor rape victims**.
- This additional support will be available to CCIs, **up to the age of 18 years, and in after-care facilities up to the age of 23 years**.
- It will provide medical infrastructural support, apart from the financial support that such minor victims are in need of, **under the aegis of the Nirbhaya fund**.

- The administrative structure of **Mission Vatsalya** will be leveraged in collaboration with state governments and child care institutions, to actualise this support to minor victims on the ground.

Statistics of sexual abuse in India

- In 2021, the National Crime Records Bureau (NCRB) reported **51,863 cases under the POCSO Act**.
- The WCD Ministry officials revealed that **64% or 33,348 cases out of those were reported under sections 3 and 5 of the Act**, which pertain to penetrative sexual assault and aggravated penetrative sexual assault, respectively.
- In 2007, The Ministry of Women and Child Development released the results of a nationwide survey on Child Abuse, in which **12,500 children participated across 13 States**.
- More than half, **53% said that they had been subjected to one or more forms of sexual abuse**. If that can be extrapolated it would mean that one in every two children have been victims of sexual abuse.
- Over 20 per cent of those interviewed said they were subjected to severe forms of sexual abuse. Of those who said they were sexually abused, 57 percent were boys.

Issues of sexual abuse in India and lacunae in laws

- **Taboo to discuss sex and sexuality:** This happens to be the biggest reason why children are a victim of sexual abuse. There is **reluctance to have the talk about sex and sexuality, particularly with children**. As there is an absence of knowledge and teaching and a healthy environment, both children and adults are in the dark of the risks that follow through.
- **Tolerance to gender-based violence:** In India since the beginning of time the society has an ignorance and a level of accepting and tolerance towards gender based violence. We live on the saying; children and women are prone to such abuse if they cross their morality limits.
- **Consent:** If the child/adolescent refuses to undergo medical examination but the family member or investigating officer is insisting on the medical examination, the **POCSO Act is silent and does not give clear direction**.
- **Treatment cost:** The law has made a legal obligation on the medical fraternity and establishment to provide free medical care to the survivors. **But the state rarely provides such compensation**.
- **Medical examination:** The POCSO Act, Section 27(2) mandates that in the case of a female child/adolescent victim, the medical examination should be done by a female doctor.
 - However, the law mandates the available medical officer to provide emergency medical care. While, the **Criminal Law Amendment Act, Section 166A of the Indian Penal Code** mandates the

Government medical officer on duty to examine the rape victim. This conflicting legal position would arise when a female doctor is not available.

- **Consented Sexual Intimacy:** The latest amendment of the Indian Penal Code regarding rape laws in 2013, provides that the age of consent for sex **has been fixed to 18 years and anyone who has consensual sex with a child below 18 years can be charged with rape**. This may increase rape cases.

Way ahead

- There is an urgent need to clarify the issue of consent in cases where a child/adolescent refuses to undergo a medical examination but the family member or investigating officer is insisting on the medical examination.
- The State must direct strict compliance with Section 19 and reporting of offenses particularly by doctors who indulge in medical termination of pregnancy of minors in extenuating circumstances.
- The issue of medical termination should be resolved by harmonizing the laws.
- There is an urgent need to assign responsibility and accountability to the Government, elected representatives, and policy makers for education and awareness of children.
- There is a need to integrate family violence treatment and child sexual abuse enforcement and support actions and preventive measures and foster the development of evaluation of sexual offense-related cases.

1.3 CONSTITUTIONAL POSITION OF THE GOVERNOR IN INDIA

Context

- The Governor of Tamil Nadu, R.N. Ravi, has **dismissed V. Senthil Balaji, a Minister in the Council of Ministers of Tamil Nadu** as in the communication issued by the Raj Bhavan on June 29, 2023. However, the Governor later backtracked on his decision late in the night, keeping the “dismissal” order in abeyance.

Misuse of Powers with examples

Misuse of Discretionary Powers

- As an appointee of the Union Government, the **Governors are prone to act on the instructions of the ruling party at the Centre.**
- Inevitably the “**discretion**” in **choosing a Chief Minister**, requiring a Chief Minister to prove his/her majority, dismissing a Chief Minister, dissolving the legislature, and recommending President’s Rule came to be tainted with partisan political considerations.
 - **Example 1:** In 1952, Madras Governor invited Congress to form a government instead of UDF which had majority seats.
 - **Example 2:** In 2016, when the Governor of Arunachal Pradesh decided to advance assembly elections which lead to a political crisis in the state and consequent President Rule.

<p>Other famous examples of Misuse:</p>	<p>Dismissal of SR Bommai: One of the more famous examples was the dismissal of the SR Bommai (Janata Dal) government in Karnataka in 1989. The then Governor refused to allow the democratically elected chief minister to prove his majority on the floor of the Assembly.</p> <p>Dismissal of NT Rama Rao and Wilfred D’Souza: Andhra Pradesh and Goa’s governors, who dismissed the governments led by NT Rama Rao and Wilfred D’Souza, respectively, showed the same partisan attitude.</p> <p>Romesh Bhandari’s actions: Uttar Pradesh Governor Romesh Bhandari’s actions were so blatantly partisan that he had to endure the Supreme Court’s disgrace of being censured.</p> <p>Recent case of Karnataka: The most recent one (2018) is the action taken by the governor while forming a government in Karnataka. The Governor called a party to form the government, though it was not having a simple majority and gave some time to prove the majority. But the Governor did not give the first preference to the other two parties with a post-poll alliance. Later this was solved with the intervention of the court.</p>
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Misuse of Article 356 (President’s Rule)

- Article 356, provides for President’s rule in any State and it is to be applied, when ‘a situation has arisen in which **the Government of the State cannot be carried on in accordance with the provisions of this Constitution.** It results in the takeover of the State government by the Union government.
- The Governor has the power to recommend the dismissal of the State government and the suspension or dissolution of the State assembly. This has led to many conflicts.
- In some cases, State governments were dismissed even when they had a majority in the legislature, as had happened in **Kerala in 1959 or without testing their majority**, as happened in several other States after 1967.

<p>Important Cases Related to Governor’s Power</p>	<p>Bommai vs. Union of India, 1994:</p> <ul style="list-style-type: none"> • The case was about the limits to the Governor’s powers in dismissing a state government under Article 356 of the Constitution • The floor of the Assembly is the only forum that should test the majority of the government of the day, and not the subjective opinion of the Governor <p>Rameshwar Prasad Case, 2006:</p> <ul style="list-style-type: none"> • The Supreme Court was called upon to pronounce its verdict on the validity of the proclamation of the President’s Rule and the dissolution of the Assembly in Bihar in 2005. • The SC held that the Governor could not decide based on his subjective assessments <p>Nabam Rebia case- Arunachal Pradesh, 2016:</p> <ul style="list-style-type: none"> • The Governor is not an elected representative, but only an executive nominee whose
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powers flow from the aid and advice of the Cabinet.

- **Using discretionary powers to summon or dissolve** Assembly sessions without the aid and advice of the Chief Minister and his Cabinet is unconstitutional.

Reasons for Misuse

- **A retirement Package:** The post has been reduced to **becoming a retirement package for politicians** for being politically faithful to the government of the day. The Governor is not an elected office-holder. Many Governors have been retired military officers or civil servants or politicians.
- **Central appointee:** The Governor is appointed by the central government and therefore, actions of the Governor are often viewed as interference by the Central government in the functioning of the State government.
- **Partisanship:** When **two different parties are in power at the center and the State**, the role of the Governor becomes even more controversial. In most cases, Governors are unable to shed their political inclinations, predilections and prejudices while dealing with different political parties within the State. As a result, sometimes the decisions **they take at their discretion appear as partisan and intended to promote the interests of the ruling party in the Union Government**, particularly if the Governor was earlier in active politics or intends to enter politics at the end of his term.
- **Threat of removal:** If the governor does not act as per the advice of the central government he or she is bound to be removed by the center.

Suggestions and way ahead

- A wide spectrum of suggestions in regard to various aspects of the institution and the role of the Governments have been made by various commissions.

Recommendations of Sarkaria Commission (1988):

The Sarkaria Commission made the following recommendations regarding the appointment of the Governor:

- should be an eminent person;
- must be a person from outside the State;

- **must not have participated in active politics at least for some time before his appointment;** it even suggested that when the state and the centre are ruled by different political parties, the governor should not belong to the ruling party at the center.
- he **should be a detached person** and not too intimately connected with the local politics of the State;
- he should be **appointed in consultation with the Chief Minister of the State, the Vice-President of India and the Speaker of the Lok Sabha;**

Governor should appoint CM based on the following principles:

- Leader of the majority party or parties,
- Should seek a vote of confidence in the assembly within 30 days of his appointment as the CM.
- As long as the council of ministry possess a majority in the assembly the governor cannot use his discretionary powers.

Recommendations of M.M Punchhi Commission (2010):

- It recommended that the **state chief minister should have a say in the appointment of the governor.**
- It also recommended that the **Appointment of the governor should be entrusted to a committee comprising the Prime Minister, Home Minister, Speaker of the Lok Sabha and chief minister of the concerned state.** The Vice- President can also be involved in the process.
- The commission recommended that the doctrine of pleasure should end and should be deleted from the Constitution.
- It recommended that the Governor should not be removed at the whim of the central government. Instead, **a resolution by the state legislature should be there to remove the Governor.**

Conclusion

- The Governor is the Executive Head of the State and in many cases, the powers of the Governor resemble those of the President of

India. Given such a respectful position being granted to the post of governor, he/she should use its power within the bounds of the constitution.

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1.4 CRIMINALIZATION OF INDIAN POLITICS

Context

- The Association for Democratic Reforms (ADR), an electoral watchdog, established in 1999 by a group of professors from the Indian Institute of Management (IIM) Ahmedabad, wrote to the Election Commission seeking action against parties that fail to publish details of criminal antecedents of candidates as per orders of the Supreme Court and the poll panel.

Statistics about criminalisation

- After the 2019 Lok Sabha elections, according to ADR, 43% of the newly-elected MPs had pending criminal cases against them.
- According to a report by the Association for Democratic Reforms (ADR) and National Election Watch (NEW), in the 2019 Lok Sabha elections, 43% of the winners had declared criminal cases against themselves, and 29% had declared serious criminal cases, such as murder, attempt to murder, kidnapping, and crimes against women.

- ADR's analysis of candidates in the 2014 Lok Sabha elections found that 34% of the candidates had criminal cases against them, and 17% had serious criminal cases.
- In the 2015 Bihar assembly elections, 47% of the candidates from major parties had criminal cases against them, and 31% had serious criminal cases, according to a report by the ADR and Bihar Election Watch.
- A report by the National Crime Records Bureau (NCRB) found that between 2014 and 2018, there was a 44% increase in the number of cases of elected representatives booked under various sections of the Indian Penal Code (IPC).
- According to the NCRB's "Crime in India" report for 2019, there were 9,427 cases of crimes committed by politicians, of which 4,029 cases were related to corruption.
- The ADR and NEW's analysis of the 2020 Bihar assembly elections found that 328 out of 1,463 candidates had declared criminal

cases against themselves, and 245 had declared serious criminal cases.

- In a 2018 report, the Election Commission of India noted that criminalization of politics was a growing threat to the country's democracy, and called for urgent action to address the issue.

Various Judgments Against Criminalization Of Politics

Public Interest Foundation v. Union of India (2019):

- In this case, the Supreme Court of India ordered political parties to publish the criminal records of their candidates on their websites, social media handles, and newspapers. The court also directed the Election Commission of India to create a framework to ensure that the information on candidates' criminal records was disseminated effectively.
- The court also ordered that the candidate and the party have to publish the information at least thrice after filing the nomination.

Supreme Court order of 2020:

- In 2020 the Supreme Court ordered that they would have to include the **reasons for selecting such a candidate**.
- The court ordered that the reasons as for selection shall be with reference to the qualifications, achievements and merit of the candidate concerned, and **not mere 'winnability' at the polls**.
- It ordered that the information would have to be published in one local vernacular newspaper, one national newspaper and on the official social media platforms of the political party within 48 hours of the selection or not less than two weeks before the first date of nominations, whichever is earlier.
- The parties would then have to submit a compliance report with the ECI within 72 hours.

Lily Thomas v. Union of India (2013):

- In this case, the Supreme Court of India declared that any member of parliament or state legislative assembly who is convicted of

a crime and sentenced to a prison term of two years or more would be disqualified from holding office.

- The court also declared that a convicted lawmaker could not contest an election or continue as a member of the legislature while the appeal was pending.

Association for Democratic Reforms v. Union of India (2002):

- In this case, the Supreme Court of India directed the Election Commission of India to issue guidelines to ensure that candidates with criminal records were not given tickets to contest elections by political parties.
- The court also ordered that candidates must disclose their criminal records in their nomination papers.

Manoj Narula v. Union of India (2014):

- In this case, the Delhi High Court held that a person cannot be disqualified from contesting elections merely because they have been charged with a criminal offence. However, the court also held that political parties must not field candidates who have a criminal background.

State of Uttar Pradesh v. Raj Narain (1975):

- In this case, the Supreme Court of India held that citizens have a fundamental right to know the antecedents of their representatives. The court directed that election affidavits should contain information on candidates' assets, liabilities, educational qualifications, and criminal records.

Issues of non-adherence to the guidelines of the Supreme Court

- The political parties are **flouting the Supreme Court's orders and the ECI's subsequent directions**.
- There is "**wilful disobedience**" by parties.
- Many political parties **did not have functional websites to publish the information** and those that did had not maintained the information and/or had inaccessible website links.
- While the Supreme Court had said that a party cannot use "winnability" as a reason for selecting a candidate with criminal

antecedents, the ADR letter pointed out that **parties were citing “chances of winning, the popularity of the person” as among the reasons.** The parties were also “copy-pasting” similar justifications for multiple candidates.

- **ADR Analyzed forms C2 and C7**, which are the ECI’s prescribed formats for submitting the information and found many shortcomings.

Way ahead

- **Strict Laws:** The first step to curb the criminalization of politics is to have strict laws in place. Laws should be enacted **to bar individuals with criminal records from contesting elections or holding public office.** This can help to prevent the entry of criminal elements into the political system.
- **Fast-track courts:** There is a need to set up fast-track courts to hear cases against politicians with criminal backgrounds. This can help to ensure speedy justice and prevent politicians from using their power to delay or manipulate the legal process.
- **Electoral Reforms:** The electoral process should be reformed to prevent criminal elements from getting elected. **One of the key reforms could be to mandate that political parties disclose the criminal records of their candidates.** This can help to increase transparency and accountability in the political system.
- **Public Awareness:** There is a need to create awareness among the public about the

negative consequences of the criminalization of politics. This can be done through campaigns, public debates, and other means of mass communication. Awareness can help to create pressure on politicians to clean up their acts and work for the benefit of the people.

- **Political Will:** Finally, there is a **need for political will to curb the criminalization of politics.** Politicians themselves should take the lead in setting an example and ensuring that only honest and law-abiding individuals are allowed to hold public office. This can help to create a culture of integrity and accountability in the political system.

Conclusion

- In a constitutional democracy, the criminalisation of politics is an extremely disastrous and lamentable situation. The citizens in a democracy cannot be compelled to stand as silent, deaf and mute spectators to corruption by projecting themselves as helpless. **The solutions to curb the criminalization of politics are multi-faceted and require a concerted effort from all stakeholders.** By enacting strict laws, setting up fast-track courts, introducing electoral reforms, creating public awareness, and demonstrating political will, it is possible to clean up the political system and ensure that it works for the benefit of the people.

1.5 DATA PROTECTION BILL AND RELATED CONCERNS

Context

- The upcoming data protection Bill could empower the central government to lower the age of consent from 18.

Background

- Currently, India does not have a standalone law on data protection. The usage of personal data is regulated **under the Information Technology (IT) Act, 2000.**

- It has been observed that **this framework is not adequate to ensure the protection of personal data.**
- In 2017, the central government constituted a Committee of Experts on Data Protection chaired by **Justice B. N. Srikrishna** to examine issues relating to data protection in the country.
- Based on the recommendations of the Committee, the Personal Data Protection Bill,

2019 was introduced in Lok Sabha in December 2019.

- The Bill was referred to a Joint Parliamentary Committee which submitted its report in December 2021.
- In August 2022, the Bill was withdrawn from Parliament. In November 2022, the **Ministry of Electronics and Information Technology released the Draft Digital Personal Data Protection Bill, 2022 for public feedback.**

Key Features of Digital Personal Data Protection Bill, 2022

- **Applicability:** The Bill will apply to the processing of digital personal data within India where such data is: (i) collected online, or (ii) collected offline and is digitised. It will also apply to the processing of personal data outside India, if it is for offering goods or services or profiling individuals in India. Personal data is defined as any data about an individual who is identifiable by or in relation to such data. Processing has been defined as an automated operation or set of operations performed on digital personal data. It includes collection, storage, use, and sharing.
- **Consent:** Personal data may be processed only for a lawful purpose for which an individual has given consent. A notice must be given before seeking consent. Notice should contain details about the personal data to be collected and the purpose of processing. Consent may be withdrawn at any point in time. Consent will be deemed given where processing is necessary for: (i) performance of any function under a law, (ii) provision of service or benefit by the State, (iii) medical emergency, (iv) employment purposes, and (v) specified public interest purposes such as national security, fraud prevention, and information security. For individuals below 18 years of age, consent will be provided by the legal guardian.
- **Rights and duties of data principal:** An individual, whose data is being processed (data principal), will have the right to: (i) obtain information about processing, (ii) seek correction and erasure of personal data, (iii)

nominate another person to exercise rights in the event of death or incapacity, and (iv) grievance redressal. Data principals will have certain duties. They must not: (i) register a false or frivolous complaint, (ii) furnish any false particulars, suppress information, or impersonate another person in specified cases. Violation of duties will be punishable with a penalty of up to Rs 10,000.

- **Obligations of Data Fiduciaries:** The entity determining the purpose and means of processing, called data fiduciary, must: (i) make reasonable efforts to ensure the accuracy and completeness of data, (ii) build reasonable security safeguards to prevent a data breach and inform the Data Protection Board of India and affected persons in the event of a breach, and (iii) cease to retain personal data as soon as the purpose has been met and retention is not necessary for legal or business purposes (storage limitation). The storage limitation requirement will not apply in case of processing by government entities.
- **Transfer of personal data outside India:** The central government will notify countries where a data fiduciary may transfer personal data. Transfers will be subject to prescribed terms and conditions.
- **Exemptions:** Rights of the data principal and obligations of data fiduciaries (except data security) will not apply in specified cases including prevention and investigation of offences, and enforcement of legal rights or claims. The central government may, by notification, exempt certain activities from the application of provisions of the Bill. These include: (i) processing by government entities in the interest of the security of the state and public order, and (ii) research, archiving, or statistical purposes.
- **Data Protection Board of India:** The central government will establish the Data Protection Board of India. Key functions of the Board include: (i) monitoring compliance and imposing penalties, (ii) directing data fiduciaries to take necessary measures in the event of a data breach, and (iii) hearing

grievances made by affected persons. The central government will prescribe: (i) composition of the Board, (ii) selection process, (iii) terms and conditions of appointment and service, and (iv) manner of removal.

- **Penalties:** The schedule to the Bill specifies penalties for various offences such as: (i) up to Rs 150 crore for non-fulfilment of obligations for children and (ii) up to Rs 250 crore for failure to take security measures to prevent data breaches. Penalties will be imposed by the Board after conducting an inquiry.

Key Issues and Analysis

Exemptions to the State may have adverse implications for privacy

- Personal data processing by the State has been given several exemptions under the Bill. As per Article 12 of the Constitution, the State includes: (i) central government, (ii) state government, (iii) local bodies, and (iv) authorities and companies set up by the government. We discuss certain issues with these exemptions below.

The Bill may enable unchecked data processing by the State, which may violate the right to privacy

- The Supreme Court (2017) has held that any infringement of the right to privacy should be proportionate to the need for such interference.
- The exemptions may lead to data collection, processing, and retention beyond what is necessary. This may not be proportionate, and may violate the fundamental right to privacy.
- The Bill empowers the central government to exempt processing by government agencies from any or all provisions, in the interest of aims such as the security of the state and maintenance of public order. None of the rights of data principals and obligations of data fiduciaries (except data security) will apply in certain cases such as processing for prevention, investigation, and prosecution of offences. The Bill does not require government agencies to delete personal data,

after the purpose for processing has been met. Using the above exemptions, on the ground of national security, a government agency may collect data about citizens to create a 360-degree profile for surveillance. It may utilise data retained by various government agencies for this purpose. This raises the question whether these exemptions will meet the proportionality test.

- For interception of communication on grounds such as national security, in PUCL vs Union of India (1996), the Supreme Court had mandated various safeguards including: (i) establishing necessity, (ii) purpose limitation, and (iii) storage limitation. These are similar to the obligations of data fiduciaries under the Bill, the application of which has been exempted.
- The Srikrishna Committee (2018) had recommended that in case of processing on grounds such as national security and prevention and prosecution of offenses, obligations other than fair and reasonable processing and security safeguards should not apply. It observed that obligations such as storage limitation and purpose specification, if applicable, would be implemented through a separate law. India does not have any such legal framework.
- In the United Kingdom, the data protection law enacted in 2018, provides similar exemptions for national security and defence. However, actions such as bulk processing of personal datasets by government agencies for intelligence and law enforcement activities are regulated under the Investigatory Powers Act, 2016. A warrant for such action is issued by the Secretary of State (i.e., Home Minister), which requires prior approval by a Judicial Commissioner. Necessity and proportionality for such actions must be established. Data retention beyond the period of warrant is restricted. This law also provides for parliamentary oversight.

Processing without consent for preventing dissemination of false statements of fact

- The Bill specifies “preventing dissemination of false statements of fact” as one of the

public interest purposes for deemed consent.

This raises the question about the need for such a ground.

- It may be argued that **any harm or adverse implication due to such dissemination** is already covered under grounds such as prevention of incitement of offence, public order, and security of the state.
- Mere expression or **dissemination of false statements of fact may not be an offence under any law.**
- The Supreme Court (2015) has held that **speech can be limited on the grounds under the Constitution** when it reaches the level of incitement. Other forms of speech even if offensive or unpopular remain protected under the Constitution.

Whether consent requirement should apply where government agencies provide commercial services

- The Bill provides that consent will be deemed to have been obtained for processing of data to provide benefits and services by the State and its instrumentalities.
- Consent requirement provides individuals control over the extent of data collection and processing.
- Government and public sector utilities owned by it provide various services to individuals such as health, banking, telecom, and electricity. Thus, government health departments and companies such as SBI, BSNL, and **state discoms need not take consent from individuals for processing their data. The question is whether this is appropriate.**
- The Srikrishna Committee (2018) had observed that there is **an imbalance of power between the individual and the State if the State is the only provider of a service or benefit.** A data principal does not have a choice to refuse consent if he needs the benefit or service. In such a situation, the idea of requiring consent is meaningless. However, it is unclear **why such an exemption has been extended to all services provided by the State, including commercial services.**

The Bill accords differential treatment towards public and private entities performing the same function

- As discussed above, a government company can process the personal data of its customers without obtaining their consent, and it may retain the data for an unlimited period.
- However, its competitors in the private sector would have to comply with these requirements. Thus, these provisions will result in differential treatment towards public and private entities performing the same function. This **may violate the right to equality protected under Article 14 of the Constitution.**

Implications of exemption from data fiduciary obligations

- For certain public interest purposes such as national security and law enforcement, the consent requirement would be meaningless due to the covert nature of such actions. However, it may be argued that other principles should continue to apply to safeguard privacy.
- As these obligations do not apply, a data breach at the **National Crime Records Bureau or the Unique Identification Authority of India** need not be reported as per the mechanism under the Bill.
- Data collected by police for the investigation and prosecution of one offence may be utilised for other purposes. Similarly, where personal data is processed to enforce legal rights or claims (for example, the right to food under the National Food Security Act, 2013), the obligation to ensure the accuracy and completeness of data will not apply.
- The rights of the data principal including the **right to seek correction of personal data and the right of grievance redressal will also not apply.** Thus, the Bill **does not provide an individual with any recourse,** where legal rights may be denied based on the processing of inaccurate data. Such recourse may have to be provided in the specific laws.

Bill may not ensure independence of the Data Protection Board of India

- The Bill requires the central government to set up the Data Protection Board of India. It provides that the Board will function as an independent body. The composition, terms of appointment, and manner of removal of the members will be prescribed by the central government. The question is whether these details should be provided in the principal legislation to **ensure the independence of the Board.**
- **Key functions of the Board include:** (i) determining non-compliance with provisions of the Bill, (ii) imposing penalties, and (iii) directing data fiduciaries to adopt necessary measures in case of a data breach. Often, government entities may be subject to such investigations, as they process a significant amount of personal data. This may raise questions whether the Board will be able to function independently in such matters.
- The **Personal Data Protection Bill, 2019** sought to provide for an independent Data Protection Authority. The details such as composition, manner and terms of appointment were specified in the Bill itself.
- Acts establishing regulators such as the Telecom Regulatory Authority of India and the Competition Commission of India also specify such details. In particular, they assure the term of service and restrict removal only on certain grounds such as abuse of position, conviction for an offence, unsound mind, and insolvency.
- **Under the RTI Act, 2005,** while the term of the members of the Central Information Commission may be prescribed by the central government, other details such as a selection committee to recommend appointments, qualification, and manner of removal have been specified in the Act.

Right to data portability and the right to be forgotten not provided

- The Bill **does not provide for the right to data portability and the right to be forgotten.** The 2018 Draft Bill and the 2019 Bill introduced in Parliament had sought to provide for these rights. The Joint Parliamentary Committee,

examining the 2019 Bill, recommended retaining these rights.

- **General Data Protection Regulation (GDPR)** of the European Union also recognises these rights. The Srikrishna Committee (2018) observed that **a strong set of rights of data principals is an essential component of a data protection law.** These rights are based on principles of autonomy, transparency, and accountability to give individuals control over their data.

Right to data portability:

- The right to data portability allows data principals to obtain and transfer their data from data fiduciary for their own use, in a structured, commonly used, and machine-readable format. It **gives the data principal greater control over their data and can facilitate the migration of data from one data fiduciary to another.**
- One possible concern has been that access to such information may reveal trade secrets of the data fiduciary. The Srikrishna Committee (2018) had recommended that to the extent it is possible to provide the information without revealing **such trade secrets, the right must be guaranteed.** The Joint Parliamentary Committee had observed that trade secrets cannot be a ground to deny data portability, and it may only be denied on the ground of technical feasibility.

Right to be forgotten:

- The right to be forgotten refers to the **right of individuals to limit the disclosure of personal data on the internet.**
- The Srikrishna Committee (2018) observed that the right to be forgotten is an idea that **attempts to instil the limitations of memory into an otherwise limitless digital sphere.** However, the Committee also highlighted that **this right may need to be balanced with competing rights and interests.**
- Exercise of this right may interfere with someone else's right to free speech and expression and the right to receive information.
- Its applicability may be decided on factors such as the **sensitivity of the personal data to**

be restricted, the relevance of the personal data to the public, and the role of the data principal in public life.

Definition of 'harm'

- The Bill defines harm in relation to a data principal as: (i) any bodily harm, (ii) distortion or theft of identity, (iii) harassment, or (iv) prevention of lawful gain or causation of significant loss. We discuss certain issues with the above definition below.

The definition of harm may be narrow

- The **Personal Data Protection Bill, 2019** specified the following types of harm: (i) mental injury, (ii) loss of reputation or humiliation, (iii) discriminatory treatment, (iv) blackmail or extortion, (v) any observation or surveillance not reasonably expected by the data principal, and (vi) restriction of speech, movement, or any other action arising out of fear of being observed or surveyed. The 2022 Draft Bill does not include these. The Joint Parliamentary Committee (JPC) recommended adding '**psychological manipulation that impairs the autonomy of the individual**' to the list of harms in the 2019 Bill.
- The 2022 Draft Bill does not provide for such harm. It is unclear whether the term 'harassment' included in the 2022 Draft Bill will include the types of harm discussed above. The JPC also recommended empowering the central government to prescribe other types of harms.² It reasoned that there may be considerations to identify new types of harms in the future. The Bill does not provide for such powers to the central government.

Lack of clarity on what constitutes a significant loss

- Under the Bill, harm includes prevention of lawful gain or causation of significant loss. It is unclear what constitutes a significant loss.

The Bill does not provide any guidance on determining the significance of loss.

Definition of child different from other jurisdictions

- Under the Bill, a child has been defined as a **person below 18 years of age**. In USA and UK, persons above the age of 13 can give consent for the processing of personal data. GDPR of the European Union sets this age at 16, member countries may lower it up to 13.
- The Srikrishna Committee (2018) recommended that while determining the age of consent for children, factors such as the minimum age of 13 and maximum age of 18 and a single threshold for ensuring practical implementation, should be taken into account.
- It noted that from the perspective of the full autonomous development of a child, 18 years may be too high.⁴ However, to be consistent with the existing legal framework, the age of consent should be 18 years.
- Under the Indian Contract Act, 1872, the **minimum age to sign a contract is 18**.

Way Forward

- The DPDP Bill is a welcome initiative by the government to protect the privacy and rights of individuals concerning their data and to regulate the processing of such data-by-data fiduciaries. However, it is **not without its flaws and limitations**.
- The bill **must be thoroughly debated and discussed in Parliament and among various stakeholders**.
- The bill **must be reviewed and updated periodically to keep pace with the evolving trends and developments in the domain of data protection**.

1.6 ELECTORAL BOND

Context

- Between 2016-17 and 2021-22, the seven national and 24 regional parties received a total donation of ₹9,188.35 crore from Electoral Bonds according to the report by the **Association of Democratic Reforms (ADR)**.

What is an Electoral Bond?

- An electoral bond is like a **financial tool used for making donations to political parties**.
- It is **like a promissory note that can be bought by any Indian citizen or company incorporated in India** from select branches of the **State Bank of India**. The citizen or corporate can then donate the same to any eligible political party of his/her choice.
- The bonds are similar to bank notes that are payable to the bearer on demand and **are free of interest**.
- An individual or party will be allowed to purchase these bonds digitally or **through a cheque**.

When was the Electoral Bond introduced?

- The electoral bonds were **introduced with the Finance Bill (2017)**. The government **notified the Electoral Bond Scheme 2018**.

How to use Electoral Bonds?

- The bonds are issued **in multiples of Rs 1,000, Rs 10,000, Rs 100,000 and Rs 1 crore** (the range of a bond is between Rs 1,000 to Rs 1 crore). These are available at some branches of SBI. A donor **with a KYC-compliant account** can purchase the bonds and can then donate them to the party or individual of their choice. Now, the receiver can encash the bonds through the party's verified account.
- The electoral bond is **valid only for fifteen days**.

When are the bonds available for purchase?

- The electoral bonds are available for purchase for 10 days at the beginning of every quarter.

- The first 10 days of January, April, July and October has been specified by the government for the purchase of electoral bonds.
- An additional period of 30 days shall be specified by the government in the year of the Lok Sabha elections.

Electoral bonds: Conditions

- Any party that is **registered under section 29A of the Representation of the Peoples Act, 1951** and has **secured at least one percent of the votes polled** in the most recent General elections or Assembly elections is **eligible to receive electoral bonds**.
- The party will be **allotted a verified account by the Election Commission of India (ECI)** and the electoral bond transactions **can be made only through this account**.
- The electoral bonds **do not bear the name of the donor**. Thus, the political party **might not be aware of the donor's identity**.

Are Electoral Bonds taxable?

- In February 2017, the then finance minister Arun Jaitley said that the **donations would be tax deductible**. Hence, a donor will get a deduction and the recipient, or the political party, will get tax exemption, provided returns are filed by the political party.

Why were Electoral Bonds introduced in India?

- According to the Government, electoral bonds were being introduced **to ensure that all the donations made to a party would be accounted for in the balance sheets without exposing the donor details to the public**.
- The government said that electoral bonds **would keep a tab on the use of black money for funding elections**. In the absence of electoral bonds, donors would have no option but to donate by cash after siphoning off money from their businesses, the government said.

Why is there a controversy over Electoral Bond?

- Experts are of the view that if the electoral bonds scheme had been introduced to bring about greater transparency, the **government must not restrain from allowing details of such donations to be made public.**
- Experts and several politicians say that since neither the purchaser of the bond nor the political party receiving the donation is required to disclose the donor's identity, the shareholders of a corporation will remain unaware of the company's contribution. **Voters, too, will have no idea of how, and through whom, a political party has been funded.**
- Since the identity of the donor has been kept anonymous, **it could lead to an influx of black money.**
- Some others allege that **the scheme was designed to help big corporate houses donate money without their identity being revealed.** According to civil rights societies, the **concept of donor "anonymity" threatens the very spirit of democracy.**
- The Congress party said that the **donations made through electoral bonds were equivalent to money laundering.**

Restrictions that were done away with after the introduction of the electoral bond scheme

- Earlier, no foreign company could donate to any political party under the Companies Act.
- A firm **could donate a maximum of 7.5 percent of its average three-year net profit** as political donations according to Section 182 of the Companies Act.
- As per the same section of the Act, companies had to disclose details of their political donations in their annual statement of accounts.
- The government **moved an amendment in the Finance Bill** to ensure that this proviso would not be applicable to companies in the case of electoral bonds.
- Thus, **Indian, foreign, and even shell companies can now donate to political**

parties without having to inform anyone of the contribution.

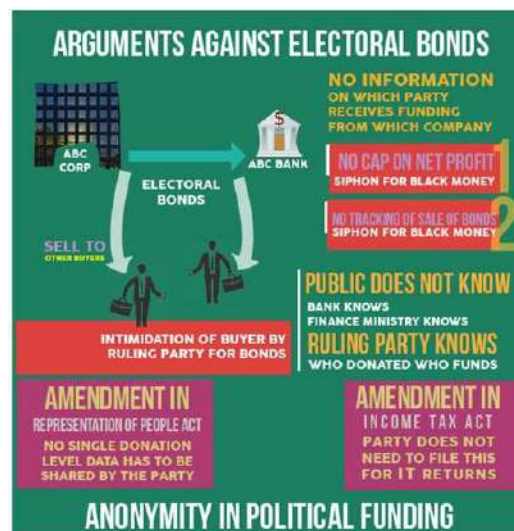
Arguments in Favor of the Electoral Bond

- It promotes transparency in funding and donation received by political parties.
- It is an important **"electoral reform"** toward a **"cashless-digital economy"**.
- It is a tool to eradicate black money in political funding.



Arguments against Electoral Bond

- The bonds increase the anonymity of political donations, Citizens will not be able to know who is donating how much money to which political party.
- Promoting corruption and lack of transparency in the accounts of all political parties.
- The electoral bonds scheme has opened floodgates to unlimited corporate donations to political parties by Indian as well as foreign companies which is a threat to Indian democracy.



Pleas challenging the scheme in the Supreme Court

- There are two petitions challenging the scheme – one jointly filed in 2017 by ADR and non-profit Common Cause, and another filed in 2018 by the **Communist Party of India (Marxist)** – both largely asking for the same relief. The Election Commission of India (ECI), which was a respondent to the petition, filed a counter-affidavit questioning the electoral bonds scheme in its current form.

What does the Supreme Court have to say on Electoral Bonds?

- On April 12, 2019, the Supreme Court asked all the political parties to submit details of donations received through electoral bonds to the Election Commission of India.
- It also asked the Finance Ministry to reduce the window of purchasing electoral bonds from 10 days to five days.
- The apex court is yet to fix a date for hearing other pleas against the electoral bonds.

Election Commission of India's view on Electoral Bonds

- The Election Commission told the Supreme Court of India that while it was not against the Electoral Bonds Scheme, it did not approve of anonymous donations made to political parties.
- The Election Commission of India filed an affidavit in 2019, saying the government's scheme for political funding has legalized anonymity.

Reserve Bank of India on Electoral Bonds Scheme

- The RBI was critical of the scheme. The central bank had warned the government that the bonds would "undermine the faith in Indian banknotes and encourage money laundering".

Findings of the Association of Democratic Reforms (ADR)

- Between 2016-17 and 2021-22, the seven national and 24 regional parties received a

total donation of ₹9,188.35 crore from Electoral Bonds out of which the BJP's share was ₹5,271.9751 crore, while all other national parties together amassed ₹1,783.9331 crore.

- The total donation declared by the BJP is more than three times the total donations declared by all other national parties.
- There is one major problem here. We know the incomes of these parties, but we don't know who funded them. Most parties reported an increase in income, but we don't know how they raised the money.
- This leads us to the main problem of Indian democracy - political corruption. Since there is no limit to donations and we don't know who the donors are, there is always a risk of parties pushing their donors' agenda instead of working for the benefit of the public.
- So, in this scenario, it is worth seeing how parties in other leading democracies fund themselves.

Innovative Alternative

The following plan, though inspired by the 'Big-Bang-Demon', envisages controlled implosion of cash:

- The government will print and supply adequate cash of a different kind, called E-notes, to all parties to fight elections in proportion to their vote share in the last election. The E-notes issued to each party will have its respective election symbol- no Gandhiji- and the party will be free to spend its E-notes for buying votes, rallies, or anything else. Upon a party or coalition forming a stable government, the E-notes become monetized for use, but those issued to the opposition bearing their election symbols will get auto-demonetized. So, those voting for the ruling party or coalition can spend their E-notes vacationing or partying, while others can just rue their choice.
- E-notes won't be replaced when they get aged and die; those holding the dying E-notes are plain unlucky.
- Since all E-notes die after use, effectively, no black money is used in elections.

- Government finances elections- not moneybags, – So, **no cronyism of any kind.**
- With **auto-demonetization,** PM's TV announcement time is saved.
- E-notes cannot be saved- only spent- **so boost to the parallel economy.**
- Parties will gladly join coalitions to ensure their **voters' E-notes aren't auto-demonetized.**
- Government formation easy- **No instability.**
- Before voting, voters will think for the sake of their E-notes.
- There is a **need for effective regulation of political funding** along with courageous reforms to break the vicious cycle of corruption and improve the quality of democratic polity in India.
- It is high time that the Parliament amends the existing laws so as to bring in greater transparency in political funding and **do away with anonymous funding except for smaller amounts of less than Rs. 1000 or so.**
- On the other hand, the ECI could think of creating a platform where **timelier & easily accessible information regarding political contributions & expenditure is made available for the public,** instead of just uploading scanned reports submitted by political parties.

Closing Remarks

- It is **important to fill the gaps in the present laws** to make the entire electoral process more accountable and transparent.

1.7 INITIATIVES TO PROMOTE AND PROTECT TRIBAL LANGUAGES

Context

- For the protection, preservation, and promotion of the cultural heritage of the country, Government has set up **seven Zonal Cultural Centres.**

Zonal Cultural Centres [ZCCs]

- Zonal Cultural Centres [ZCCs] **organize various cultural activities and programs all over the country on a regular basis.**
- ZCCs **work for the promotion, preservation and documentation of different vanishing arts.**
- Ministry of Culture organises many **Rashtriya Sanskriti Mahotsavas** and a minimum of 42 regional festivals through ZCCs in a year. The Government of India releases **Grants-in-aid to all ZCCs** for organising these activities. Government is organising various events/programs for these sections throughout the country through ZCCs to celebrate Azadi ka Amrit Mahotsav.

Many Tribal Languages in India face extinction threat

- There are **7,000 living languages in the world** and around **3,000 are considered 'endangered'.**

- This means that almost half of the planet's current linguistic diversity is under threat.
- The situation in India is alarming. Some **197 languages are in various stages of endangerment in our country,** more than any other country in the world.
- There are **five tribal languages that are moving towards extinction in India.** Linguist experts say that the most threatened language is Majhi in Sikkim. According to research conducted by People's Linguistic Survey of India, there are just four people who currently speak Majhi and all of them belong to the same family.
- Similarly, the **Mahali language in eastern India, Koro in Arunachal Pradesh, Sidi in Gujarat and Dimasa in Assam are facing extinction.**
- Until recently, **UNESCO has put Asur, Birhor and Korwa in its list of the world's endangered languages with Birhor being categorised as 'Critically Endangered', with just 2,000 speakers left.**
- According to UNESCO, **any language that is spoken by less than 10,000 people is potentially endangered.**
- Two major tribal languages that are included in the Eighth Schedule, namely **Bodo and**

Santali, have also shown declines, though not negative growth.

- The number of Bodo speakers in Assam declined to 4.53 per cent of the total population in 2011, from 4.86 per cent in 2001. It shows a total decadal percentage increase of 9.81. On the other hand, Santali shows a total decadal percentage increase of 13.89.

Implications

- Tribal languages are a treasure trove of knowledge about a region's flora, fauna and medicinal plants.
- Usually, this information is passed from generation to generation.
- However, when a language declines, that knowledge system is completely gone.
- With the loss of language comes the loss of everything in culture and loss of solidarity, the loss of Man himself.”

Initiatives to promote and protect Tribal Languages and Tribal Literature

Grants to State Tribal Research Institutes

- The Government of India also provides grants to State Tribal Research Institutes for the promotion of tribal languages, the development of bilingual primers for the preservation of tribal languages and promoting of tribal literature.

“Financial Assistance for Support to Centres of Excellence”

- Under the component “Financial Assistance for support to Centres of Excellence” of the scheme “Tribal Research Information, Education, Communication and Events (TRUCE)”, financial assistance is provided to reputed Institutions for carrying out research study programmes including documentation of tribal languages with an aim to promote tribal culture, artefacts, customs and traditions of tribal communities.

Eklavya Model Residential Schools

- Ministry of Tribal Affairs has resolved to establish nearly 750 Eklavya Model Residential Schools to support the education

of tribal students under Azadi Ka Amrit Mahotsav.

Tribal Freedom Fighters Museums

- Government of India has sanctioned ten tribal freedom fighters' museums in order to acknowledge heroic and patriotic deeds of tribal people.

Searchable Digital Repository

- Government has developed a searchable digital repository where all research papers, books, reports and documents, folk songs, photos/videos are uploaded.

ADIGRAMS Portal

- The Government has launched the ADIGRAMS Portal, a unique portal which monitors physical and financial progress of the grants given by the Ministry to States and can track the actual utilisation of funds.

Janjatiya Gaurav Diva

- Government of India has decided to celebrate the 15th of November of every year as Janjatiya Gaurav Divas to mark the birth anniversary of tribal freedom fighter Birsa Munda.

Way Ahead and Closing Remarks

- If urgent steps are not taken, it is likely to affect the learning of tribal children in the classroom, since learning depends on continuous interest and eternal vigilance.
- Mother Tongue Based Multi-Lingual Education (MTBMLE) could play a key role in preserving tribal languages, claim linguistic experts. Ignoring mother tongue-based intervention in early childhood for tribal children could potentially impede the early childhood learning process.
- ‘Transition Curriculum’ could be the way ahead as—the approach helps bridge the gap between home and school languages and validates the child's home culture and traditional knowledge, thus enabling better learning.
- Tribal languages should be endorsed through innovative, cultural and entertainment programmes, suggest linguistic experts.
- For example, a local community radio channel called ‘Asur Mobile Radio’ in Jharkhand

- launched cultural programmes in the Asur language, **which has only 7,000-8,000 speakers.** The Asur language features in the UNESCO list of 'definitely endangered' languages.
- The Asur community started popularising the language in their area. This has significantly aided the revival of the dying language.
 - **Local Civil Society Organisations** and **Cultural Institutions** should make dramas and films in native tribal languages. This will ensure a **wider outreach and encourage the younger lot to preserve and respect their language.**
 - There is a need to promote tribal languages as a medium of communication and

education in tribal-dominated districts. It can significantly reduce the communication gap and school dropout rate.

- It is important to integrate indigenous knowledge systems alongside modern sciences in the curriculum of schools.
- Tribal languages are fundamental to understand the world we live in, our origin, the roots that we all came from and what humans are capable of. Therefore, it is high time for others to appreciate the important contribution of tribal languages in enriching the world's rich cultural and linguistic diversity.

1.8 INTELLECTUAL PROPERTY RIGHTS POLICY MANAGEMENT FRAMEWORK

Context

- Ministry of Commerce and Industry informed the Rajya Sabha about the Intellectual Property Rights Policy Management (IPRPM) Framework.

IPR

- Intellectual Property Rights (IPR) refers to the legal rights granted to the inventor or manufacturer to protect their invention or manufacture product.
- These legal rights confer an exclusive right on the inventor/manufacturer or its operator who makes full use of it's his invention/product for a limited period of time.

About Intellectual Property Rights Policy Management Framework

- The framework was launched in the form of National IPR Policy 2016 encompassing all IPRs into a single vision document setting in place an institutional mechanism for implementation, monitoring and review of IP laws.

READ A TO Z ABOUT IPR:



Types of IPR Covered under the Framework

Type	Act	Coverage	Term of Protection
Patent	Patent Act 1970 & Patent Rules 2003 Amended in 2014, 2016, 2017, 2019, 2020 and 2021.	Must qualify requirements of being novel, Inventive and having industrial utility	20 years

Trademarks	Trademark Act 1999 & Trademark Rules 2017	A Trademark provides protection for symbols, colours, shapes, words, etc. representing and relating to a good or a service.	10 years renewed for 10 years on payment of additional fees
Designs	Designs Act 2000 & Designs (Amendment) Rules 2021	A 'design' under the Designs Act [section 2(d)] means and includes 'only the features of shape, configuration, pattern, ornaments or composition of lines or colours, applied to any article whether in two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to an are judged solely by the eye'.	10 + 5 years
Copyrights	Copyrights Act 1957 & Copyrights Rules 2013 amended in 2021.	Under section 13 of the Copyright Act, a protection under copyright can be obtained for 'original literary, dramatic, musical and artistic works; cinematograph films; and sound recording'.	Authors: Lifetime+60 years Producers: 60years Performers : 50 years
Geographical Indications	Geographical Indications Act 1999 & GI Rules 2002 amended in 2020.	Goods bearing unique characteristics due to geographical linkage - agricultural goods, natural goods, manufactured goods, handicrafts and foodstuff	10 years, Renewed for 10 years on payment of additional fees
Semiconductor Integrated Circuits Layout Design	Semiconductor Integrated Circuits Layout Design Act 2000 & Rules 2001	A 'semiconductor integrated circuit' is defined as ' <u>a product having transistors and other circuitry elements which are inseparably formed on a semiconductor material or an insulating material or inside the semiconductor material and designed to perform an electronic circuitry function</u> '. A layout of transistors and other circuitry elements including lead wires connecting such elements and expressed in any manner in semiconductor integrated circuits.	Semiconductor Integrated Circuits Layout Design
Trade Secret	Common Law approach covered through IPC, Contract Act, IP Act and	Confidential information having commercial value	Till the time confidentiality is safeguarded.

	Copyright		
Plant Varieties	Protection of Plant Varieties and Farmers Rights Act (PPVFRA), 2001	Traditional varieties and landraces, all developed varieties (non-traditional and non-landrace) in trade/use for older than 1 year and not older than 15 years or 18 years (in case of trees and vines), and new plant varieties. The objective of the Protection of Plant Varieties and Farmer's Right Act, 2007, is to recognize rights of Indian farmers and to provide protection to plant varieties in order to encourage the growth and development of more plant varieties.	Plant Varieties

National Intellectual Property Rights (IPR) Policy 2016

- The National Intellectual Property Rights (IPR) Policy 2016 adopted on 12.5.2016 is a vision document to guide future development of IPRs in the country.
- The policy has seven objectives designed for creating an environment that encourages innovation and creativity by providing stronger protection and incentives for inventors, artists, and creators.
- There are several measures undertaken to achieve the given objectives. Among measures taken are compliance and timeline reduction in IP filing and disposal, fee rebate for Startups, MSMES, Educational Institutions and expedited examination for certain categories of applicants.

Objectives and activities undertaken under The National IPR Policy

- Appropriate amendment in IPR Laws and Rules - improving procedural requirements in processing of applications to speed up grant and disposal.
- Modernisation & Digitisation of IP offices - improvement in functioning and performance of IP Offices as well as streamlining workflow processes.

- Scheme for Facilitating Start-Ups Intellectual Property Protection (SIPP) to encourage filling of Patent applications by Startups.
- Reduction in filing Fees for Start-ups, MSMEs, and educational Institutes to encourage Patent filling.
- Expedited Examination for certain category of applicants, such as Start-ups, small entities, women inventors for expeditious grant of Patents.
- Awareness initiatives and Programs for stakeholders with an intent to inculcate importance of protecting their IPR at an early stage in the business development cycle.
- National Intellectual Property Awareness Mission (NIPAM), a flagship program to impart IP awareness and basic training in educational institutes.
- National Intellectual Property (IP) Awards are conferred every year to recognize and reward the top achievers comprising individuals, institutions, organizations and enterprises, for their IP creations and commercialization.
- Patent Facilitation Programme has been revamped to scout patentable inventions and provide full financial, technical and legal support in filing and obtaining patents.
- Expand Knowledge Capacity & Skill Building: To promote the study, research, and development of IPR in higher educational

institutions, IPR chairs have been set up across the country under the Scheme for Pedagogy & Research in IPRs for Holistic Education and Academia (SPRIHA). Currently, 37 IPR Chairs are incorporated. These Chairs have facilitated 146 Patent filings and 424 Patents registered, 215 IP works published, 1373 total IP Programs conducted, 238 Pedagogy activities undertaken during 2020-21 and 2022-23.

- xi. **Commercialization of IP:** Technology Innovation Support Centres (TIS) have been set up in various Central and State Universities and State Council for Science & Technology across the country for supporting IPR education, boosting IP filings and enhancing IP commercialization. Since 2020, 12 established TISCs have filed 734 patents, conducted 1752 IP awareness programs, and commercialized 99 patents. Additionally, 901 applications for trademarks, designs and copyright were also filed. The network has been further expanded with 22 new TISCs across 20 states in the country. Technology Transfer Organizations (TTOs) & Incubators are also working in around 150 research institutions and more than 1000 Universities for commercializing IP.

Achievements of National Intellectual Property Rights (IPR) Policy 2016

Strengthening of Institutional Mechanism

- The administration of the Copyright Act, 1957, and the Semiconductor Integrated Circuits Layout-Design Act, 2000 has been transferred to the Department of Industrial Policy and Promotion.
- This has **enabled an integrated approach and synergy between different IP offices and Acts.** Under the Finance Act 2017, the Copyright Board has also been merged with the Intellectual Property Appellate Board (IPAB).

Clearing Backlog/ Reducing Pendency

- Various steps undertaken by the Government, including augmentation of technical manpower, have resulted in **a drastic reduction in pendency in IP applications.** The

patent applications pending for examination have reduced from 1,97,934 as on 31.3.2016 to 1,39,274

- As regards trademarks, the number has come down from 2,59,668 to 32,619 in the same period.
- **Automatic issuance of electronically generated patent and trademark certificates** has been introduced.

Increase in Filings

- **Patent filings have increased by nearly 7%.**
- Trademark filings have **increased by nearly 28% in this duration.**

IP Process Re-engineering

- **Patent Rules, 2003 has been amended** to streamline processes and make them more user-friendly.
- **Expedited Examination of patents is now permitted** on certain grounds. In fact, the **shortest time taken to grant a patent recently has been just 81 days** from the filing of the request for examination.
- **Totally revamped Trade Marks Rules, 2017** have been notified on 6th March 2017.
- **Nearly 200 international MoUs** received from various Central Ministries/ Departments/ organizations have been vetted **from IPR angle in time bound manner.**
- **India has acceded to the WIPO Copyright Treaty (WCT) and WIPO Performances and Phonograms Treaty (WPPT),** which extend coverage of copyright to the internet and digital environment.

Creating IPR Awareness

- **IPR Awareness programs have been conducted** in over 200 academic institutions, including rural schools through satellite communication, and for industry, police, customs and judiciary.

IPRs in School Syllabus

- Content on IPRs has been included in the NCERT curriculum of the Commerce stream.

Technology and Innovation Support Centres (TISCs)

- In conjunction with WIPO, **6 TISCs have been established in various institutions across different states.**

Global Innovation Index (GII)

- India's rank in the GII Report issued by WIPO has **improved from 81st in 2015 to 57th place in 2018.**

IPR Enforcement Toolkit for Police

- A IPR Enforcement Toolkit has been prepared to assist police officials in dealing with IP crimes, in particular, Trademark counterfeiting and Copyright piracy.

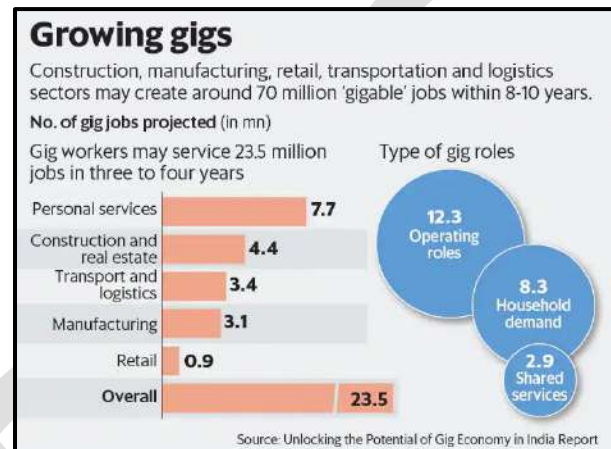
1.9 RAJASTHAN BILL ON GIG WORKERS

Context

- The Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023, was passed by the State Assembly.
- It covers all platform-based gig workers who are residents of Rajasthan or work in the State for at least 90 days a year.

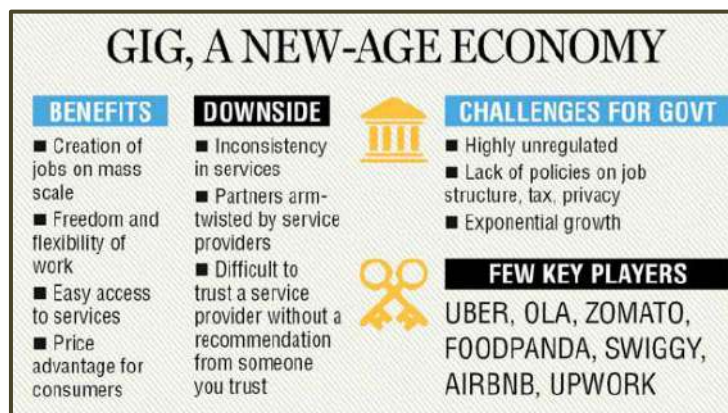
What is Gig Economy?

- A gig economy is **a free market system in which temporary positions are common** and organizations hire independent workers or freelancers for short-term commitments instead of full-time long-term employees.
- Examples of gig workers include **freelancers, independent contractors, project-based workers** and temporary or part-time hires. Gig apps and digital technology are often used to connect customers and gig workers.
- So, **instead of a regular wage, workers get paid for "gigs".**



India's Gig Economy

- There are now close to **15 million gig workers in India.** Delivery boys, cleaners, consultants, bloggers, etc., are all part of the gig economy.
- The number of flexi or gig jobs **could soar to 90 million in 8-10 years,** with total transactions valued at more than \$250 billion, contributing an incremental 1.25% to India's gross domestic product (GDP) - Report by consulting firm Boston Consulting Group (BCG) and Michael & Susan Dell Foundation.



- The gig economy has the **potential to service up to 90 million jobs in India's non-farm economy alone,** transact more than \$250 billion in the volume of work, and **contribute an incremental 1.25% approximately to India's GDP over the long term.**

Need of the hour

Giving due effect to the Code on Social Security

- For the 1st time, the **Code on Social Security, 2020** acknowledges platform workers and gig workers as new occupational categories. With that, the platform workers are eligible for benefits like life and disability cover, old age protection, maternity benefits, provident fund, employment injury benefits, etc.
- **Implementation of the Code** is the need of the hour.

Take examples from Global Best Practices

- Amendments to labour laws in Ontario and California have shown a move towards granting employee status to platform workers, thus guaranteeing minimum wage and welfare benefits. This is the view propagated by international agencies in the EU, including the European Trade Union.
- So, the **Government of India should also consider granting the gig workers the status of employees of the aggregators**. That would automatically provide them all the labor benefits like PF and ESI.

Provide chances to gig workers to become independent entrepreneurs

- The **Government should consider providing a loan scheme to the platform workers**, to end their dependency on the platform aggregator companies.

Scaling Technology platforms

- The gig economy presents an opportunity for India to drive job creation and economic growth.
- Technology platforms operating at scale within an ecosystem of information and services can help unlock efficiency, bring in demand-supply transparency, and drive greater formalization and financial inclusion.

Key features of the Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023

- **Applicability:** The Bill applies to "aggregators" (digital intermediaries connecting buyers and sellers) and "primary employers" (individuals or organizations engaging platform-based workers).
- **Welfare Board:** The Bill proposes a Welfare Board comprising State officials, representatives from gig workers, aggregators, and civil society.
 - The Board will be responsible for setting up a welfare fund, registering platform-based gig workers, aggregators, and primary employers, and ensuring social security guarantees for gig workers.



- **Database and Unique ID:** The Board will maintain a database of companies and workers, and each gig worker will receive a unique ID, valid indefinitely.
- **Funding:** The Social Security and Welfare Fund will be created with contributions from individual workers, State government aids, and a 'welfare cess' paid by aggregators. The welfare cess, not exceeding 2% nor falling short of 1% of each transaction's value, will be submitted by aggregators within the first five days of each month.
- **Workers' Rights:** The Bill recognizes gig workers' right to be registered with the Welfare Board upon joining an app-based platform, irrespective of the duration or number of providers they work for.
- **Schemes for Social Security:** The Welfare Board will formulate schemes for social security, including accidental insurance, health insurance, and other benefits related to health, accident, and education.
- **Grievance Redressal:** Gig workers can file grievances related to entitlements, payments, and benefits provided under the Act either physically or online through the web portal. There is also an Appellate Authority to address objections raised by employers.

- **Accountability of Aggregators:** Aggregators are obligated to deposit welfare cess on time, update the gig worker database, and document any variations in numbers. Failure to comply may result in fines, with increasing penalties for subsequent violations.

Evaluation

- Although the Bill is a significant step towards addressing gig workers' welfare, some concerns have been raised by labour unions, such as vague terminologies, funding sources, enumeration of benefits, and effective redressal mechanisms.

Recommendation

- Unions recommend clearer definitions, sourcing funds solely from aggregators and the State, detailed enumeration of benefits, and a more effective grievance redressal mechanism to ensure the welfare of gig workers.

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1. 10 SHORT ARTICLES

Panchayat Development Index

Context

- Union Minister of State for Panchayati Raj Shri Kapil Moreshwar Patil releases **Report on Panchayat Development Index at National Workshop on Panchayat Development Index.**

Panchayat Development Index (PDI)

- It is a new initiative by the Ministry of Panchayati Raj to **assess the progress of local development through panchayats**, the rural self-government institutions in India.
- The Panchayat Development Index (PDI) Report includes **688 data points on 9 themes, 144 local targets, and 577 local indicators.**
- The PDI is based on the **concept of Localization of Sustainable Development Goals (LSDGs)**, which aims to align the national and global development goals with the local context and priorities.
- It is designed to be a compact and comprehensive statistical tool that captures various aspects of development at the panchayat level.

Themes of the Panchayat Development Index (PDI)

It covers **nine themes** that reflect the vision of an ideal village, which are:

- Poverty-free
- Healthy
- Child-friendly
- Water-sufficient
- Clean and green
- Self-sufficient
- Socially just and secure
- Well-governed
- Women-friendly

The PDI takes into account the inputs, outputs, and outcomes of development interventions in each theme.

Scores

- The PDI is calculated by aggregating the scores of indicators under each theme and then normalizing them on a scale of 0 to 100.
- The PDI score reflects the level of development achieved by a panchayat in comparison to other panchayats in the same district, state, or country.

Categorization

The PDI categorizes the panchayats into **four grades** based on their scores:

- A+ (above 90%)
- A (75-90%)
- B (60-75%)
- C (40-60%)
- D (below 40%)

Rehabilitation Homes for Victims of Trafficking

Context

- The Ministry of Women and Child Development has approved a scheme to provide **financial assistance to states and Union Territories to set up protection and rehabilitation homes** for victims of trafficking in states having international borders.

About the scheme

- Financial assistance will be provided to the states in border areas to set up Protection and Rehabilitation Homes for the victims of trafficking particularly for the minor girls and young women.
- The homes will provide services like shelter, food, clothing, counselling, primary health facilities and other daily requirements.
- The victim girls will be produced before CWC to declare fit facility for providing sponsorship as per the Mission Vatsalya scheme guidelines and accordingly, the States/UTs will be requested to do the needful.

Recognition of rehabilitation homes

- As per **section 51 of the JJ Act, 2015 (as amended in 2021)**
- the Board or the Committee **recognize a facility being run by a Governmental organization or a voluntary or non-governmental organization registered under any law** for the time being in force to be fit to temporarily take the responsibility of a child for a specific purpose after a due inquiry regarding the suitability of the facility and the organization to take care of the child in such manner as may be prescribed and
- the Board or the Committee **may withdraw the recognition** under sub-section (1) for reasons to be recorded in writing.

Constitutional & legislative provisions related to Trafficking in

- Trafficking in Human Beings or Persons has been prohibited under the Constitution of India under Article 23 (1).
- **The Immoral Traffic (Prevention) Act, 1956 (ITPA)** is an important legislation for prevention of trafficking for commercial sexual exploitation.
- In **Criminal Law (amendment) Act 2013** the **Section 370 of the Indian Penal Code** has

India been substituted with Section 370 and 370A IPC which provide for comprehensive measures to counter the menace of human trafficking.

Performance Grading Index

Context

- Recently, the Performance Grading Index for Districts (PGI-D) combined report for 2020-21 & 2021-22 was released.

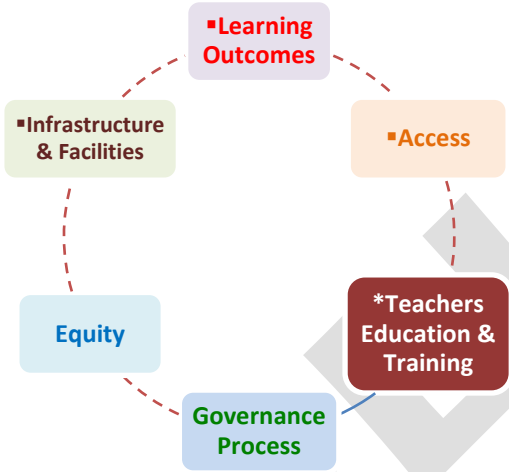
Performance Grading Index (PGI)

About	<ul style="list-style-type: none"> PGI measures the performance of States/UTs on a uniform scale to catalyze transformational change in the field of school education.
Ministry & Department	<ul style="list-style-type: none"> Department of School Education and Literacy, Ministry of Education.
Aim	<ul style="list-style-type: none"> It aims to propel States & UTs towards undertaking multi-pronged intervention that will bring about the much-desired optimal education outcomes.
Objectives	<ul style="list-style-type: none"> To provide insight into the status of school education in States & UTs, including key levels that drive their performance and critical areas of performance. To promote evidence-based policymaking and highlight course correction to ensure quality education for all.
Function	<ul style="list-style-type: none"> It pinpoints the gaps and helps States/UTs in prioritizing the areas for intervention to ensure that the school education system is robust at every level. It motivates States and UTs to adopt best practices followed by the top-performing States.
Methodology	<ul style="list-style-type: none"> The PGI evaluation classifies States and UTs into grade/ levels, as opposed to ranking.
Categories and Indicators	<ul style="list-style-type: none"> PGI is structured in two categories: Outcomes; Governance & Management. It comprises of 70 indicators.
Points assigned	<ul style="list-style-type: none"> Points assigned to indicators are 10 or 20. Points assigned to each Domain ranges from 80 to 360.
Gradation	<ul style="list-style-type: none"> States/UTs are assessed on basis of their performance against the benchmark for each indicator. Following the same approach of State PGI in the previous years, States/ UTs are graded.
Data Source	<ul style="list-style-type: none"> The information on the indicators is drawn from data available with the DoSEL from the Unified District Information System for Education (UDISE), National Achievement Survey (NAS) of NCERT, the MidDay Meal website, Public Financial Management System (PFMS) and the information uploaded by the States and UTs on the Shagun portal of DoSEL.

PGI 2.0.

The reason behind the change in 2021-22 PGI Structure

- Over the period, many of the indicators in PGI – States/UTs have been **outlived and become redundant.**
- Also, the structure of PGI – States/UTs has been heavily **tilted toward the indicators related to Governance Processes rather than the quality indicators.** Therefore, the PGI – State structure for 2021-22 has been **revised and renamed as PGI 2.0.**

<p>The motive behind PGI 2.0</p>	<ul style="list-style-type: none"> To have more updated base with quality indicators. To align with new initiatives of the National Education Policy (NEP) 2020. To monitor indicators relating to Goal 4 of Sustainable Development Goals (SDGs), and To replace existing indicators which have achieved optimal target. 																						
<p>Categories and Indicators</p>	<ul style="list-style-type: none"> The PGI 2.0 structure comprises of 1000 points across 73 indicators grouped into 2 categories, Outcomes, Governance Management (GM). 																						
<p>Domains</p>	<ul style="list-style-type: none"> Categories are further divided into 6 domains, viz., 																						
<p>Grades</p>	<table border="1"> <thead> <tr> <th>Category</th> <th>Score range</th> </tr> </thead> <tbody> <tr> <td>Daksh</td> <td>941 - 1000</td> </tr> <tr> <td>Utkarsh</td> <td>881 - 940</td> </tr> <tr> <td>Atti - Uttam</td> <td>821 - 880</td> </tr> <tr> <td>Uttam</td> <td>761 - 820</td> </tr> <tr> <td>Prachesta - 1</td> <td>701 - 760</td> </tr> <tr> <td>Prachesta - 2</td> <td>641 - 700</td> </tr> <tr> <td>Prachesta - 3</td> <td>581 - 640</td> </tr> <tr> <td>Akanshi - 1</td> <td>521 - 580</td> </tr> <tr> <td>Akanshi - 2</td> <td>461 - 520</td> </tr> <tr> <td>Akanshi - 3</td> <td>401 - 460</td> </tr> </tbody> </table>	Category	Score range	Daksh	941 - 1000	Utkarsh	881 - 940	Atti - Uttam	821 - 880	Uttam	761 - 820	Prachesta - 1	701 - 760	Prachesta - 2	641 - 700	Prachesta - 3	581 - 640	Akanshi - 1	521 - 580	Akanshi - 2	461 - 520	Akanshi - 3	401 - 460
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Findings of PGI 2021-22

- Apart from **Punjab and Chandigarh**, the top performing states and union territories are Gujarat, Kerala, Maharashtra, Delhi, Puducherry, Tamil Nadu. All of these states were put into the 641 - 700-point category.
- Arunachal Pradesh, Meghalaya and Mizoram emerged as the worst-performing states** in the PGI report. All three states were put in the 401 - 460-point category.
- Delhi was the only state or union territory to get into the highest category for any domain.** Delhi was in the top category (941 - 1000) for both access and equity.

Honoring National Anthem

Context

- An executive magistrate in Srinagar has sent 11 men to jail for allegedly not rising for the National Anthem at an event.

Prevention of Insults to National Honour Act, 1971

- The Prevention of Insults to National Honour Act, 1971 is an Act of the Parliament of India that prohibits the desecration of or insult to the country's national symbols, including the national flag, national emblem, national anthem, national motto, the constitution, and the map of India including contempt of Indian constitution.
- **National Anthem**
- As per Section 3 of the Act, whoever intentionally prevents the singing of the Jana Gana Mana or causes disturbances to any assembly engaged in such singing shall be punished with imprisonment for a term, which may extend to three years, or with fine, or with both.
- **Penalty and Conviction**
- As Such the Law recognizes all the above cases, as grouped under Section (a) National Flag and Constitution (b) National Anthem, as offences and convicts the Penalties or sentences as follows.
- Whoever having already been convicted of an offence under section 2 or section 3 is again convicted of any such offence shall be punishable for the second and for every subsequent offence, with imprisonment for a term, which shall not be less than one year.

Interpretation of law around alleged disrespect to the National Anthem

Bijoe Emmanuel case

- The law around alleged disrespect to the National Anthem was laid down by the Supreme Court in its 1986 judgment in Bijoe Emmanuel & Ors vs State Of Kerala & Ors.
- The court granted protection to three children belonging to the millenarian Christian sect Jehovah's Witnesses, who did not join in the singing of the National Anthem at their school.

- The children, siblings named Bijoe Emmanuel, Binu, and Bindu, who were students of Classes 10, 9, and 5 respectively, were expelled from NSS High School, run by the Hindu organization Nair Service Society, on July 26, 1985.
- The court held that **forcing them to sing the Anthem violated their fundamental right to religion under Article 25 of the Constitution.**
- In its August 11, 1986 judgment, the Supreme Court said that **"Article 25 ("Freedom of conscience and free profession, practice and propagation of religion")...was incorporated in recognition of the principle that the real test of a true democracy is the ability of even an insignificant minority to find its identity under the country's Constitution.**
- Standing up respectfully when the National Anthem is sung – as the children had done – but not singing oneself "does not either prevent the singing of the National Anthem or cause disturbance to an assembly engaged in such singing so as to constitute the offence...under the **Prevention of Insults to National Honour Act, 1971.**" the court said.
- Section 3 of the Act prescribes jail up to three years and/ or a fine for "intentionally prevent[ing] the singing of the National Anthem or caus[ing] disturbance to any assembly engaged in such singing".
- The court held that the children's expulsion as a result of their "conscientiously held religious faith...was a violation of their Fundamental Right to freedom of conscience" and to freely profess, practise and propagate their religion.

Shyam Narayan Chouksey vs Union of India (2018).

- The Supreme Court revisited the matter in Shyam Narayan Chouksey vs Union of India (2018). While hearing the case, the court had, on November 30, 2016, passed an interim order that **"All the cinema halls in India shall play the National Anthem before the feature film starts and all present in the hall are obliged to stand up to show respect to the National Anthem."**
- The court had also ordered that **"entry and exit doors shall remain closed" when the**

Anthem is played, and that “when the National Anthem shall be played...it shall be with the National Flag on the screen”.

- However, in its final judgment in the case passed on January 9, 2018, the court modified its 2016 interim order. “The order

passed on 30th November 2016, is modified to the extent that playing of the National Anthem prior to the screening of feature films in cinema halls is not mandatory, but optional or directory,” the court said.

Nullification of MP Election

Context

- Holding that he had suppressed his assets and sources of income in the election affidavit, the Madras High Court annulled the 2019 election of O.P. Ravindranath Kumar- MP from Tamil Nadu.

Corrupt practices under Representation of the People Act, 1951

- The Representation of the People Act, 1951 defines 'corrupt practices' under Section 123 of the Act.

Section 123

- Section 123 of the Act includes bribery, undue influence, spreading false information, and promoting enmity or hatred between different groups for election purposes as corrupt practices.
- Bribery involves offering or accepting gratification to induce a person to vote for or against a particular candidate. Undue influence involves using direct or indirect means, such as threats or inducements, to interfere with the free exercise of electoral rights by voters.
- Spreading false information refers to intentionally publishing false statements that could prejudice a candidate's prospects in the election while promoting enmity or hatred refers to any attempt to create hostility between different groups based on religion, race, caste, community, or language.

Section 123 (2)

- Section 123 (2) of the Act deals specifically with undue influence. It defines it as any direct or indirect interference or attempts to interfere with the free exercise of electoral rights by a candidate or his agent, or any other person with the consent of the candidate or his election agent. This could

include threats of injury, social ostracism, or expulsion from any caste or community.

Section 123 (4)

- Section 123 (4) of the Act extends the ambit of “corrupt practices” to the intentional publication of false statements which can prejudice the outcome of the candidate's election.
- The Act also provides for the disqualification of elected representatives on specific grounds, including corrupt practices, failure to declare election expenses, holding interests in government contracts or works, or holding an office of profit under the government.

WHAT THE REPRESENTATION OF THE PEOPLE ACT SAYS

SECTION 8(1) A person convicted for promoting enmity between different groups, rape, terrorist acts, insulting national flag etc stands disqualified for six years on mere conviction.

SECTION 8(2) A person convicted for hoarding, dowry offences etc, incurs disqualification if he is sentenced to at least six months for the offences. The bar continues for six years after release from jail.

SECTION 8(3) A person con-

victed of any other offence incurs disqualification if he is sentenced to an imprisonment of not less than two years. The disqualification continues till six years after release.

SECTION 8(4) Protects sitting MPs and MLAs from being disqualification under the above provisions. If they file an appeal within three months, they can continue as a member of the House till the completion of the term or till the decision on appeal, whichever is earlier.

Previous Judgements

- The Indian Supreme Court has made several important rulings regarding corrupt practices in the past.

Abhiram Singh v C.D. Commachen

- In 2017, in the case of Abhiram Singh v C.D. Commachen, the court held that seeking votes in the name of a candidate's religion, race, caste, community, or language is a corrupt practice under Section 123(3) of the Representation of the People Act (RPA) 1951.
- The court emphasized that such appeals can lead to "polarization and communal hatred" and can "disrupt the secular fabric of the nation."

SR Bommai v. Union of India

- In another important case, SR Bommai v. Union of India in 1994, the Supreme Court ruled that the encroachment of religion into secular activities is strictly prohibited.
- The court cited subsection (3) of Section 123 of the RPA Act, 1951, which defines corrupt practices in elections, to support its ruling.
- The court held that the use of religion to gain votes is a corrupt practice that threatens the secular nature of Indian democracy.

S. Subramaniam Balaji v State of Tamil Nadu

- More recently, in 2013, the Supreme Court in the case of S. Subramaniam Balaji v State of

Tamil Nadu held that promises of freebies by political parties during elections constituted a corrupt practice.

- However, in 2022, the court reconsidered its 2013 judgment and held that promises of freebies cannot be termed a corrupt practice.
- The court stated that such promises cannot be seen as a form of bribery and that they do not affect the free and fair conduct of elections. However, the matter is still under consideration and the final decision is yet to be made.

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Regulation of OTT Communication Services

Context

- The Telecom Regulatory Authority of India (TRAI) is starting consultations on how over-the-top (OTT) communication services like WhatsApp, Zoom, and Google Meet can be regulated.

Background

- In 2020, TRAI recommended against regulatory intervention for OTT platforms, saying that it should be left to market forces.
- However, it also said that the sector should be monitored and intervention should be done at an “appropriate time”.

Rationale behind the regulation for OTT communication services

- The TRAI has argued that while **telecom operators and OTT platforms such as WhatsApp offer similar services**, they are not bound by the same requirements – as a result, there is a need for regulatory parity.
- Telecom operators need a service license for offering voice and SMS services. But OTT communication service providers offer voice call, and messaging and video call services similar to the services provided by TSPs, and **without any such license**.

- Telecom service providers in India are currently regulated by several laws, including the Indian Telegraph Act, 1885, the Wireless Telegraphy Act, 1933 and the Telecom Regulatory Authority of India Act, 1997, and have to adhere to requirements such as lawful

interception. Such requirements, TRAI said, are not applicable to OTT services currently.

- Also, OTT services **do not financially contribute towards increasing telecom services penetration in the country**, unlike the operators who have to pay towards the Universal Service Obligation Fund (USOF).

Proxy Representation: Sarpanch-Patism

Context

- Supreme Court recently asked NGO to move govt. against sarpanch-patism.

Background: 73rd Constitutional Amendment

- In 1992, Panchayati Raj Institutions (PRIs) were mandated as local self-governing bodies by virtue of the 73rd Amendment.
- The legislation aimed to improve the delivery of social services by bringing decision-making closer to the people and constitutionally empowering local village leaders.
- It also ensured reservations for women and Scheduled Castes and Tribes to prevent historically powerful groups from claiming political, economic and social resources.
- Specifically, Article 243D(3) mandated that one-third of the sarpanch/pradhan (head of a village's directly elected decision making body) positions were to be reserved for women in every State.
- The amendments were inserted in the Constitution to help the women population at the grassroot level break cultural barriers and improve their socio-economic conditions through representative democracy

The problem of Proxy Representation of Women in Panchayats

- Two differing, almost divergent positions emerge from the literature available on the efficacy of this landmark reservation policy.
- Some scholars have proposed that reservation can have the unintended and adverse consequence of weakening local democracy.
- Though the reservation has been implemented, in reality, it is functioning through a proxy model.

- Basically, women's reservations in Panchayats are being misused as husbands are running the village panchayats through proxies after their wives win from reserved seats.
- Thus, women, who are elected from reserved constituencies, serve as proxies for their male relatives—exercising nominal power while the men retain the real work of governance.
- This phenomenon gave rise to a new term: sarpanch-pati (or pradhan-pati, depending on regions).
- The term implies that where women are de jure elected, their husbands de facto run the local state.
- Reservation, they therefore argue, intensifies the problem of gender inequality by giving it the veneer of a solution.
- The 73rd amendment that mandated women's political representation has catalyzed deep resistance and magnified patriarchal control – empowering sarpanch-patis in some families.

Opposing views

- These scholars argue that even if women are pushed into power with the intent of being proxies, they are eventually able to influence the delivery of public services.
- In particular, research has shown that women's needs are better addressed in villages where there is a female sarpanch.
- This transformation in the system had remarkable results bringing lakhs of women in Panchayats for leadership.
- The adoption of this Amendment has led the Panchayati Raj system to recognize women's rights, a significant step to bring the unseen potential of women to governance.

- It enables women's engagement in planning, decision-making, and execution of the necessity in the village Panchayats.
- Women representatives have exhibited their prowess; can adapt and learn managing funds, efficient community-based development, etc.

Supreme Court on Proxy Representation of Women in Panchayats

- Recently, a Uttar Pradesh-based **Mundona Rural Development Foundation** filed a petition against the role of male members in preventing elected women from active participation in Panchayati Raj Institutions (PRI).
- The lawyer Swati Jindal representing the organisation argued that male members are sabotaging the reservation for women at the grassroots levels of local bodies due to their problematic control of decision-making.

Enforcement Directorate

Context

- The two-tenure extension granted by the government to Sanjay Kumar Mishra, Director of Enforcement has been invalidated by the Supreme Court.

Challenge to Tenure Extension of CBI and ED Directors

Case Description

- On November 14th, 2021, the President of India passed the **Delhi Special Police Establishment (Amendment) Ordinance, 2021**, and the **Central Vigilance Commission (Amendment) Ordinance, 2021**. These Ordinances permit the extension of the tenures of the directors of the Central Bureau of Investigation (CBI) and the Enforcement Directorate (ED) by amending the Delhi Special Police Establishment Act, 1946 (DSPE Act) and the Central Vigilance Commission Act, 2003 (CVC Act).
- The **Ordinances were passed without Parliamentary approval**, three days before the incumbent ED director, Mr. Sanjay Kumar Mishra, was meant to retire. Mr. Mishra's tenure was promptly extended by a year on November 17th, 2022.

- She also pointed out that a proxy process is used in the selection of panchayat pradhans and panchayats are operated by men behind elected women.
- A bench led by Justice Sanjay Kishan Kaul said **the SC court has its limitations, especially in matters touching on electoral democracy.**
- The court lamented:
"If the constitutional amendment has been followed only in letter and not in spirit, how will this court create the spirit?"
- SC court has acknowledged the problem but said it is **not for the 'court to pass orders in a matter like this'**, as it is **'an issue for the Executive'**. Court also mentioned that it cannot interfere in everything. The court **asked the petitioner to approach the Panchayati Raj ministry.**

- Both Acts explicitly state that **the directors' tenures should be for 'not less than two years'**.
- In **Common Cause v Union of India (2021)** the Supreme Court heard a challenge to the extension of Mr. Mishra's tenure as ED director for an additional year after his initial two-year tenure expired. The SC held that **extensions could be granted in 'rare and exceptional cases'** for a short period of time. However, **they made it clear that no further extension was to be granted to Mr. Mishra.**
- The **Ordinances allow up to 3 one-year extensions of the CBI and ED director's tenure.**
- On November 18th, 2021, Mahua Moitra, a Member of Parliament from the All-India Trinamool Congress (TMC), and Congress Leader Randeep Singh Surjewala filed petitions at the SC challenging the Ordinances. They argued that **the Ordinances overrode and were contrary to the Court's decision in Common Cause and extend Mr. Mishra's tenure.**
- Further, Ms. Moitra claims that the **Ordinances give the Union significant control**

over the tenure of the directors which would interfere with the independence of the CBI and the ED. This would violate the principles of fair investigation and fair trial that are constitutionally guaranteed under the **Rights to Equality and Life.**

- On December 14th, 2021, Parliament enacted the **Central Vigilance Commission (Amendment) Act, 2021**, and the **Delhi Special Police Establishment (Amendment) Act, 2021**. These Amendments confirmed the provisions for tenure extension that were first passed through the Ordinances.
- While the case remains pending at the SC, the agency under ED director Sanjay Kumar Mishra's stewardship has arrested several leaders from Opposition parties including Lok Sabha Member Karti Chidambaram and Karnataka Congress President D.K. Shivkumar.
- On July 27th, 2022 the SC upheld the wide and unchecked investigatory powers granted to the ED under the **Prevention of Money Laundering Act, 2002.**
- On July 13th, 2022, Congress leader Jaya Thakur, who was among those who

challenged the Ordinances, asked the Court to list the challenges to the Amendments, which the SC agreed to.

- On August 2nd, 2022, a **3-Judge Bench** issued notice to the Union government to respond to the challenges.
- On March 23rd, 2023, a 3-Judge Bench heard the arguments of the petitioners. The petitioners stated that the tenure extension orders as well as the Ordinances of the President were illegal as this compromised independence and diluted the insulation of autonomous bodies.
- On July 11th 2023, the Bench upheld the CVC and DSPE Amendments, on the ground that the legislature was competent to introduce these laws, they did not violate any fundamental right, and that it had sufficient safeguards to insulate the CBI and ED from Executive pressures. However, the **Supreme Court held that the tenure extensions granted to S.K. Mishra were illegal.** The Bench permitted him to serve a tenure till July 31st, 2023, while the Union finds a candidate to fill the Director's position.

Places of Worship Act

Context

- The Supreme Court gave the Centre "sufficient time" till October 31 to clarify its stand on the validity of the Places of Worship Act, which protects the identity and character of religious places as they were on Independence Day.

What is the Places of Worship Act 1991 and what are its Provisions?

- It is described as "**An Act to prohibit conversion of any place of worship and to provide for the maintenance of the religious character of any place of worship as it existed on the 15th day of August 1947, and for matters connected there with or incidental thereto.**"

What are its Provisions?

Section 3

- This section of the Act bars the conversion, in full or part, of a place of worship of any

religious denomination into a place of worship of a different religious denomination or even a different segment of the same religious denomination.

Section 4(1)

- It declares that the religious character of a place of worship "**shall continue to be the same as it existed**" on 15th August 1947.

Section 4(2)

- It says any suit or legal proceeding with respect to the conversion of the religious character of any place of worship existing on 15th August, 1947, pending before any court, shall abate and no fresh suit or legal proceedings shall be instituted. the proviso to this subsection saves suits, appeals, and legal proceedings that are pending on the date of commencement of the Act if they pertain to

the conversion of the religious character of a place of worship after the cut-off date.

Section 5

- Nothing contained in this Act shall apply to the place or place of worship commonly known as Ram Janma Bhumi-Babri Masjid situated in Ayodhya in the State of Uttar Pradesh and to any suit, appeal or other proceeding relating to the said place or place of worship.

Section 6

- Whoever contravenes the provisions of section 3 shall be punishable with imprisonment for a term which may extend to three years and shall also be liable to fine.
- Whoever attempts to commit any offence punishable under sub-section (1) or to cause such offence to be committed and in such attempt does any act towards the commission of the offence shall be punishable with the punishment provided for the offence.
- Whoever abets, or is a party to a criminal conspiracy to commit, an offence punishable under sub-section (1) shall, whether such offence be or be not committed in consequence of such abetment or in pursuance of such criminal conspiracy, and notwithstanding anything contained in section 116 of the Indian Penal Code (45 of 1860), be punishable with the punishment provided for the offence.

Section 7

- The provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any other law for the time being in force or any instrument having effect by virtue of any law other than this Act.

Assessment of Swachh Bharat Mission

Context

- Recently, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) released their Joint Monitoring Programme (JMP) report for

Exemption

- a. The disputed site at **Ayodhya was exempted from the Act**. Due to this exemption, the trial in the Ayodhya case proceeded even after the enforcement of this law.

Besides the Ayodhya dispute, the Act also exempted:

- b. Any place of worship **which is an ancient and historical monument**, or an archaeological site covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- c. A suit that has been **finally settled or disposed of**.
- d. Any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commenced.

Penalty

- If one violates the terms of the Act, such a person **could face up to three years in prison** and a hefty fine according to Section 6 of the Act, which outlines the punishments for such a violation.

Criticism

- The law has been challenged on the ground that **it bars judicial review, which is a basic feature of the Constitution**, imposes an **“arbitrary irrational retrospective cutoff date”**, and abridges the right to religion of **Hindus, Jains, Buddhists, and Sikhs**.
- It goes beyond Parliament's authority to legislate since it **limits a fundamental constitutional right to seek judicial review**.
- This Act is being interpreted as a **violation of the principle of secularism** enshrined in the Preamble and the Constitution.
- It is also argued that the **Center lacked authority to impose laws in this area because “pilgrimage locations” or “burial grounds” are included in the State List.**

water supply, sanitation and hygiene for households for the year 2022.

- The JMP report gives status on access to water, sanitation and hygiene to monitor the progress on SDG 6.

READ ABOUT SWACHH

BHARAT MISSION:



Background

- On October 2, 2019 Prime Minister Narendra Modi declared India open defecation free (ODF).
- In the next 60 months, as he said while declaring India ODF, “600 million people have been given access to toilets, more than 110 million toilets have been built.
- Indeed. India’s leap on this changed the global sanitation landscape. The world was closer to its toughest Sustainable Development Goal (SDG) 6 of giving universal access to water, sanitation and hygiene as India hosted the world’s largest number of population defecating in the open.
- Since then, India has crafted an elaborate next-generation sanitation programme called ODF Plus focusing on sustaining the status and making villages adopt solid and liquid waste management.

Findings of the Report [Assessment of Swachh Bharat Mission]

- According to this report, 17 per cent of the rural population in India still defecated in the open in 2022.
- One quarter of the rural population didn’t have even “at least basic” sanitation facilities.
- The latest JMP report tracked the progress from 2015 when these goals were set. India has recorded significant progress: in 2015 some 41 per cent of its rural population defecated in the open (17 per cent in 2022)

while 51 per cent households (75 per cent in 2022) had at least the basic sanitation facility.

- Based on this progress, India has registered an annual average of 3.39 per cent decline in open defecation. If one applies this decline rate to the base figure of 2022, it would take another four to five years to be ODF.

Other Reports and Mismatches

- According to data from the Swachh Bharat Mission, Gramin (SBMG) portal, villages in Madhya Pradesh and Tamil Nadu were declared 100% ODF by October 2018. However, according to National Statistical Office (NSO) survey data, only 71% and 62.8% of rural households in Madhya Pradesh and Tamil Nadu, respectively, had access to some form of the latrine (own, shared, public) in the same month.
- The SBMG data claimed that in 24 States/UTs, over 99% of rural households had individual household latrines as of March 2019, whereas the National Annual Rural Sanitation Survey (NARSS) data recorded six months later showed that in 24 States/UTs, less than 90% of the rural households had access to their own toilets.
- According to the SBMG data, 99.4% of rural households in Gujarat had individual latrines as of March 2019. However, according to National Family Health Survey-5 (NFHS-5) data, in the second half of 2019, only 63.3% of the population in rural households in Gujarat used individual toilets.
- According to the Multiple Indicator Survey (MIS), conducted between January 2020 and August 2021, in 21.3% of rural households, a majority said they had no access to any type of latrine (own, shared, public). The MIS survey is the fourth in the last five years to debunk the ODF claim.

National E-Governance Service Delivery Assessment (NESDA)

Context

- Department of Administrative Reforms and Public Grievances (DARPG) has developed National e-Governance Service Delivery Assessment (NeSDA) framework with an

overall objective to measure the depth and effectiveness of existing e-Governance service delivery mechanisms from the citizen’s perspective.

Details

- This framework, based on the **Online Service Index (OSI) of UN eGovernment Survey**, has been customized for the Indian federal structure and the e-Governance landscape of the States and UTs.

National e-Governance Service Delivery Assessment (NeSDA)

- DARPG **undertakes NeSDA study biennially**. This study assesses States, Union Territories (UTs), and focus Central Ministries on the effectiveness of e-Governance service delivery.
- NeSDA **helps the respective governments improve their delivery of citizen centric services and shares best practices across the country for all States, UTs and Central Ministries to emulate**.
- The Department has successfully released 2 editions of NeSDA study, viz., **NeSDA 2019 and NeSDA 2021**. Both the studies have shown a significant rise of e-services across all States/UTs.
- It has also shown **a rising trend of e-Services delivery shifting from single silo departmental portals to integrated / centralized portals**.
- Improvement in the country's e-Governance landscape due to last 2 editions of NeSDA study may be summarized in the following key takeaways –
 1. Increase in e-Service Delivery
 2. Rise in use of Integrated / Centralized Portals for delivery of e-Services
 3. Improvement across assessment parameter scores.
- In NeSDA 2021, 1400 services across all States and UTs were assessed as compared to 872 in 2019, **an increase of over 60%**. **74% respondents of the nation-wide citizen survey** conducted during the study had stated that they are satisfied with the e-Services provided by the States and UTs. The e-Services of Finance and Local Governance & Utility Services sectors were the most widely used by citizens.

NeSDA 2023 portal

- With the launch of NeSDA 2023 portal, DARPG has embarked on the journey of **third edition of the study- NeSDA 2023**.
- NeSDA 2023 framework has been revised in-line with the contemporary citizens need, leading global digital government trends and UN e-Government Survey studies.

Additions in the NeSDA 2023 Framework

Additions in the NeSDA 2023 framework are proposed under following dimensions:

1. **Portals Coverage:** All Government Portals assessed during NeSDA are classified into two categories viz., (i) State, UT, Central Ministry Portal and (ii) State, UT, Central Ministry Services Portals. A growing number of people are living in cities, more people will be accessing public services locally. So, it is imperative that robust e-government in place at city level to accommodate present and future citizen's needs. Hence **NeSDA 2023 framework will evaluate the maturity of e-Government at the City level by assessing City Portal** i.e., the official portal of respective City/Urban Local Body that provides a single window access to the information and links to the services being provided for the citizens and other stakeholders in the city.
2. **Focus Sectors and Mandatory Services Coverage:** The NeSDA framework **covers G2C and G2B services across seven sectors**, viz Finance, Labour Employment, Education, Local Governance Utility Services, Social Welfare (including Health, Agriculture, Home Security), Environment (including Fire) and Tourism sectors. The framework for NeSDA 2023 proposes an expansion on focus sectors with **an addition of Transport and Public Grievance**. Accordingly, additional mandatory services have been proposed under States/UTs and Central Ministries. In NeSDA 2023, additional 5 mandatory services at State / UT level and 12 services at Central Ministry level would be evaluated. In NeSDA 2023, a total of **59 mandatory services** are proposed to be assessed for every State & UT and 37 services to be assessed covering 21 Central Ministries/Departments.

3. **Assessment Parameters:** To make NeSDA framework more robust and align with global digital government trends it is proposed to include three additional assessment parameters, viz., Open Government Data

(OGD), E-Participation, and Leveraging Emerging Technologies.

The NeSDA 2023 portal will serve as an instrument to collect data online provided by the States, UTs and Central Ministries.

Impact of Government Poverty Schemes on Brain Growth

Context

- A study, published in Nature Communications highlights the impact that socioeconomic inequities can have on a child's brain development but demonstrates that this gap can be mitigated through state anti-poverty programs.

Impact of Government Schemes

- Overall, more expensive cost-of-living states with anti-poverty programs in more expensive states had narrower gaps in income-associated differences in brain structure. Similar levels were observed in states with the lowest cost of living.
- Additionally, the income-associated disparity in some mental health symptoms like anxiety

and depression was 48% lower in expensive states with larger cash benefits than in states with lower cash benefits. These patterns remained significant when controlling for numerous state-level social, economic, and political characteristics, including population density, education equity, incarceration rates, and gender equity.

- Children's brains are undergoing substantial development and have enhanced plasticity or capacity for further change based on their environment. These data suggest that policies and programs that work to reduce social and health inequities can directly reach children in disadvantaged environments and help support their mental health.

India Mobile Congress (IMC) 2023

Context

- Minister for Communications, Electronics & Information Technology and Railways inaugurated the Curtain Raiser of IMC-2023.

IMC

About

- The India Mobile Congress (IMC) is the largest digital technologies forum in Asia.
- IMC is a flagship event of the telecom sector in the country.

Commencement

- Starting in 2017, IMC is held annually.

Event Highlights

- It consists of a three-day international conference and a technology exhibition.

Role

- The event is envisioned to be the "leading platform for India's start-up and technology ecosystem".

Organizers

- The mega-event is organized jointly by the Cellular Operators Association of India (COAI) and the Department of Telecommunications (DoT), Government of India.

Aim

- The forum aims to be a platform for industry, businesses, regulators, and policymakers to discuss and deliberate on critical issues affecting the growth and proliferation of the telecom and technology sector.

Importance

- Since its inception in 2017, IMC has promoted India's positioning and serves as a key forum for global thought leaders to design the next wave of digital innovation, with India leading the charge.

IMC 2023 Edition

- The key programs will put the spotlight on 6G, advancements in 5G networks, the increasing use of AI in telecommunications and other

Domains, Edge Computing, Industry 4.0, and the emergence of India Stack.

- IMC 2023 would also widen to related technology Domains such as **Broadcast, Sat-Com, Manufacturing, and Semiconductors** through partnerships with various associations.
- IMC 2023 also **planned to introduce several B2G & B2B Forums** and Industry Round Tables, Big University and student engagement, and Global buyer forums.
- This year **IMC is introducing Aspire**, the grand Start-Up event that will place significant emphasis on igniting the future of entrepreneurship growth among young innovators and industry delegates in the

telecom and other digital domains. The primary objective of Aspire will revolve around delivering an unparalleled experience, incorporating various sections such as an Investor zone, pitching zone, workshop zone, and networking zone.

IMC 2023 Theme

- The theme for IMC2023 is **Global Digital Innovation.**

Significance of IMC 2023

- The India Mobile Congress 2023, will promote **India's pivotal role in the digital revolution impacting every sector globally.**
- This includes **pioneering breakthroughs in 5G, 6G, broadcasting, satellite, semiconductor, drone, devices, and green technologies.**

Export Preparedness Index (EPI) 2022

Context

- NITI Aayog released the **Third Edition of the report titled 'Export Preparedness Index (EPI) 2022' for States/UTs of India.**

Export Preparedness Index (EPI)

About	<ul style="list-style-type: none"> • EPI is a comprehensive <u>tool that measures the export preparedness of the States and UTs in India.</u>
Need	<ul style="list-style-type: none"> • Exports are vital for simulating economic growth and development in a country, which necessitates understanding the factors which influence export performance. • EPI, with its insights, continues to seek to assist the States and UTs in driving policy changes which are relevant to address their specific challenges.
Mandate	<ul style="list-style-type: none"> • The index <u>undertakes a comprehensive analysis of States and UTs across export-related parameters in order to identify their strengths and weaknesses.</u>
Aim	<ul style="list-style-type: none"> • With its ranking and scorecards, the report <u>aims to present a comprehensive picture of a states and UT's export preparedness.</u>
Pillars	<ul style="list-style-type: none"> ▪ EPI assess the performance of the States and UTs across four pillars - <u>Policy, Business Ecosystem, Export Ecosystem, and Export Performance.</u> 1. <u>Policy Pillar</u> evaluates states' and UTs' performance based on its adoption of export-related policy ecosystem at a state and district level as well as the institutional framework surrounding the ecosystem. 2. <u>Business Ecosystem</u> assesses the prevailing business environment in a state/UT, along with the extent of business-supportive infrastructure, and a state/UTs' transport connectivity. 3. <u>Export Ecosystem</u> focuses on the export-related infrastructure in a state/UT along with the trade support provided to the exporters, and the prevalence of Research and Development in the state/UT to foster innovation. 4. <u>Export Performance</u> is an output-based indicator that gauges the growth of a state's export over the previous year and analyses its export concentration and footprint on the global markets.
Significance	<ul style="list-style-type: none"> • EPI <u>highlights the achievements of states/UTs and encourages peer learning among the</u>

	<p>states/UTs to uphold the spirit of competitive federalism.</p> <ul style="list-style-type: none"> By improving collaboration among states, and between state and Centre, India can aspire to achieve sustained economic growth and leverage its heterogeneity to foster development at national and sub-national levels.
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Telecom Regulatory Authority of India (TRAI)

Context

- In response to a consultation paper by the Telecom Regulatory Authority of India (TRAI), telcos argued that there was no need to change the definition of 'international traffic,' a key term that determines what an international SMS is, and by extension, what it should cost.

TRAI

About	<ul style="list-style-type: none"> The Telecom Regulatory Authority of India (TRAI) is a regulatory body set up by the Government of India under section 3 of the Telecom Regulatory Authority of India Act, 1997. It is the regulator of the telecommunications sector in India.
Establishment	<ul style="list-style-type: none"> Telecom Regulatory Authority of India was established on 20 February 1997 by an Act of Parliament to regulate telecom services and tariffs in India. Earlier, regulation of telecom services and tariffs was overseen by the Central Government.
Mission	<ul style="list-style-type: none"> TRAI's mission is to create and nurture conditions for the growth of telecommunications in India to enable the country to have a leading role in the emerging global information society.
Objectives	<ul style="list-style-type: none"> One of its main objectives is to provide a fair and transparent environment that promotes a level playing field and facilitates fair competition in the market.
Mandate	<ul style="list-style-type: none"> TRAI regularly issues orders and directions on various subjects such as tariffs, interconnections, quality of service, direct-to-home services and mobile number portability.
Composition	<ul style="list-style-type: none"> It consists of a chairperson and not more than two full-time members and not more than two part-time members.
Secretariat	<ul style="list-style-type: none"> TRAI is administered through a secretariat headed by a secretary. All proposals are processed by the secretary, who organises the agenda for authority meetings (consulting with the chairperson), prepares the minutes and issues regulations in accordance to the meetings.
Advisors	<ul style="list-style-type: none"> The secretary is assisted by advisors. These include Mobile Network, Interconnection and FixeNetwork, BroadBand and Policy Analysis, Quality of Service, Broadcasting & Cable Services, Economic Regulation, Financial Analysis & IFA, Legal, Consumer Affairs & International Relation and Administration & Personnel.
Appellate Tribunal	<ul style="list-style-type: none"> The TRAI Act was amended by an ordinance, effective from 24 January 2000, establishing a Telecom Disputes Settlement and Appellate Tribunal to take over the adjudicatory and disputes functions from TRAI.
Recent TRAI initiatives	<ul style="list-style-type: none"> In order to increase broadband penetration in India, TRAI has proposed WANI (Wi-Fi Access Network Interface) architecture. If implemented, it may lead to set up of Public Data Offices (PDOs) where Wi-Fi Internet would be available on demand.

All India Services Rules and 2023 Amendments

Context

- Recently, All India Services (Death-cum-Retirement Benefits) Amendment Rules, 2023, were notified.

Highlights of All India Services Amendment Rules, 2023

- As per the Gazette notification, the following changes have been made to All India Services Amendment Rules.

Change in rule 2 [in sub-rule (1), in clause (aa), for the Note (viii)]

- Where a member of service, immediately before his retirement or death while in service, was on leave, and earned an increment which was not withheld, such increment, though not actually drawn, shall be included in his emoluments or average emoluments.

Changes in rule 3

General Conditions

- Future good conduct shall be an implied condition of every grant of pension and its continuance under these rules.
- The **Central Government may withhold or withdraw a pension** or a part thereof, for a specified period or indefinitely, either on a reference from the State Government concerned or otherwise, **if after retirement, a pensioner is convicted of a serious crime or be guilty of grave misconduct:**
 - Provided that no such order shall be passed without consulting the Union Public Service Commission.
 - Provided further that where a part of the pension is withheld or withdrawn, the amount of such pension shall not be reduced below the amount of minimum pension.
- Where a pensioner is convicted of a serious crime by a Court of Law, action under sub-rule (2) shall be taken in the light of the judgment of the court relating to such conviction.
- In a case not falling under sub-rule (3), if the Central Government considers that the pensioner is prima facie guilty of grave

misconduct, he shall, before passing an order under sub-rule (2), –

- serve upon the pensioner a notice specifying the action proposed to be taken against him and the ground on which it is proposed to be taken and calling upon him to submit, within fifteen days of the receipt of the notice or such further time not exceeding fifteen days, as may be allowed by the Central Government, such representation, as he may wish to make against the proposal; and
 - b) take into consideration the representation, if any, submitted by the pensioner under clause (a).
5. The decision of the Central Government on any question of withholding or withdrawing the whole or any part of the pension under sub-rule (2) shall be final.

Restriction on publishing after retirement

The amended rules also restrict a member of the service, who has worked in any Intelligence or Security-related organization included in the Second Schedule to the Right to Information Act, 2005 (22 of 2005), from publishing any material related to the following after retirement without prior clearance from the head of such organizations.

- Domain of the organization, including any reference or information about any personnel and his designation, and expertise or knowledge gained by virtue of working in that organization; and
- Sensitive information, the disclosure of which would prejudicially affect the sovereignty and integrity of India, the security, strategic, scientific or economic interests of the State or relation with a foreign State, or which would lead to incitement of an offence.

Further, any appeal against an order passed by the Central Government under sub-rule (2) shall lie to the President and the President shall, in consultation with the Union Public Service Commission, pass such orders on the appeal as may be deemed fit.

Changes in Rule 22

a) In sub-rule 7, the following proviso shall be inserted in Explanation 1:

Provided that the family pension shall be payable to a divorced daughter from the date of divorce if the divorce proceedings were filed in a competent court during the life time of the member of service or pensioner or his or her spouse but the divorce took place after their death.”

b) in Explanation 4, the following proviso shall be inserted,

“Bhoomi Samman” Awards

Context

- The President of India Smt. Droupadi Murmu presented the “Bhoomi Samman” to 9 State Secretaries and 68 District Collectors.

“Bhoomi Samman” Award

- “Bhoomi Samman” Awards are awarded for excellent work in achieving saturation of the core components of the Digital India Land Records Modernization Programme (DILRMP).
- As land management is a state subject, the grading system is largely based on reports and inputs of the states/UTs in the core components of computerization and digitization of land records.

Significance

- ‘Bhoomi Samman’ is a celebration of the success of cooperative and competitive federalism in the country.

Digital India Land Record Modernization Programme (DILRMP)

About

- The Digital India Land Record Modernization Programme (DILRMP), previously known as the National Land Record Modernization Programme (NLRMP), is a Central Sector scheme launched in 2008 by the Government of India.
- The DILRMP is the amalgamation of two projects: Computerisation of Land Records (CLR) and Strengthening of Revenue Administration and Updating of Land Records (SRA & ULR).

Provided that a child or sibling suffering from a mental or physical disability shall be deemed to be not earning his or her livelihood, if his or her overall income from sources other than family pension is less than the entitled family pension under sub-rule (2) and the dearness relief admissible thereon, payable on death of the member of service or pensioner concerned.”

Aim

- It attempts to build upon the commonalities that exist in the arena of land records in various States to develop an appropriate Integrated Land Information Management System (ILIMS) across the country, on which different States can also add State-specific needs as they may deem relevant and appropriate.

Purpose

- To digitize and modernize land records and develop a centralized land record management system.
- The official land records mapped and unmapped will enable the government to give access to basic facilities and rights to the land owners.

Components

The DILRMP has 3 major components

1. Computerization of land records
2. Survey/re-survey
3. Computerization of Registration.

Method

- According to the Ministry of Rural Development, under the Digital India Land Information Management System, lands are provided with a Unique Land Parcel Identification Number (ULPIN) which can be used in the same way as an Aadhaar Card.
- E-courts will also be linked with the land record and registration database.
- The transparency that is coming from digitization would curb unethical and illegal activities related to land.

Performance

- According to the Ministry of Rural Development, the Department of Land Resources has achieved 94% digitization targets pan-India.
- Further, it is resolutely targeting to achieve 100% saturation of the core components of digitization of land records in all the Districts of the country by March 31, 2024.

Significance

- For the development of rural areas, modernization of land records is a basic requirement as the livelihood of most of the rural population is dependent on land resources.
- A comprehensive integrated land management system is of utmost importance for the overall development of rural areas.
- Digitization increases transparency.
- Modernization and digitization of land records would have a great impact on the development of the country.

- Digitization of land records and its linkages with various government departments would help in the proper implementation of welfare schemes. It would also be of great help in case of loss of documents due to calamities like flood and fire.
- A large population of our country is involved in disputes related to land and a lot of time of the administration and the judiciary is consumed in these matters. Digitization would help in resolving disputes related to ownership and use of land. Through digitization and linkages of information, the energy of the people and institutions, which gets consumed in resolving disputes, would be utilized for development.
- Digitization process of land records and registration will help mitigate the huge pendency of court cases involving land disputes cutting down the GDP loss to the country's economy due to projects being stalled over litigation involving land disputes.

Rajasthan Minimum Guaranteed Income Bill, 2023

Context

- Recently, Rajasthan tabled the Rajasthan Minimum Guaranteed Income Bill, 2023, which effectively seeks to cover the entire adult population of the state with guaranteed wages or pensions.

What is the Bill?

- Under the Bill, all families of the state get guaranteed employment of 125 days every year, while the aged, disabled, widows, and single women get a minimum pension of Rs 1,000 per month.
- Importantly, the pension will be increased at the rate of 15 percent each year.
- The Bill has three broad categories: Right to Minimum Guaranteed Income, Right to Guaranteed Employment, and Right to Guaranteed Social Security Pension.
- The government anticipates an additional expenditure of Rs 2,500 crore per year for this scheme, which may increase with time.

What are its major provisions?

Minimum guaranteed income:

- Each adult citizen of the state has been guaranteed a minimum income for 125 days a year through the Rajasthan government's flagship Indira Gandhi Shahri Rozgar Guarantee Yojana for urban areas, and through Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in rural areas.

Minimum Pension

- Next, the government will provide eligible categories with a minimum pension of Rs 1,000.

Guaranteed employment

- The right to employment states that post the work in urban or rural employment schemes, the minimum wages should be paid "weekly or in any case not later than a fortnight."

Officials and Implementation

- The state will designate a program officer – not below the rank of Block Development Officer in rural areas and an Executive Officer

of the local body in urban areas – to implement the Act.

- Among other things, the **Program Officer shall ensure that the work site is within a radius of five kilometres of where the job card is registered in both rural and urban areas.**

Unemployment Allowance

- If the Program Officer fails to provide employment within 15 days from the receipt of the application, the **applicant shall be entitled to an unemployment allowance on a weekly basis “and in any case not later than a fortnight.”**

Guaranteed social security pension

- Every person falling in the category of old age/specially abled/widow/single woman with prescribed eligibility **shall be entitled to a pension.**
- It will increase over the base rate in two installments – **5 percent in July and 10 percent in January** of each financial year 24 starting 2024-2025.

The rationale behind the Bill

- Mahatma Gandhi’s message, **“The true measure of any society can be found in how it treats its most vulnerable members”,** was a focal point of all his government’s policies.
- The Bill is part of a bouquet of schemes and measures undertaken by his government to provide relief from inflation.

National Multidimensional Poverty Index

Context

- Recently, the **National Multidimensional Poverty Index: A Progress Review, 2023**, was released by NITI Aayog.

What makes a household/individual ‘Multi-Dimensionally’ Poor?

- A person is multidimensionally poor if she/he is deprived in one-third or more (means 33% or more) of the weighted indicators.
- Those who are deprived in one-half or more of the weighted indicators are considered living in extreme multidimensional poverty.

National Multidimensional Poverty Index

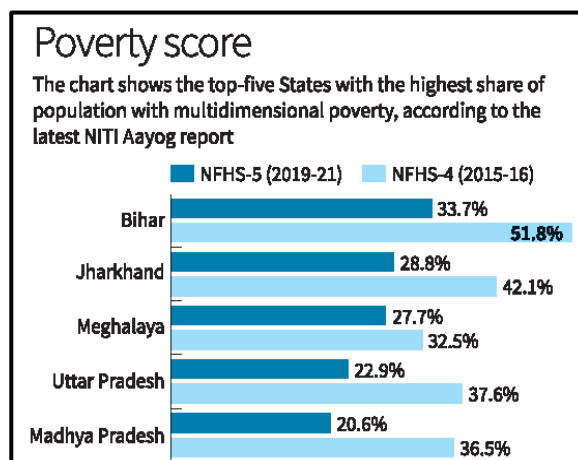
About

- NITI AAYOG’S National Multidimensional Poverty Index is modelled on the **Global Multidimensional Poverty Index**, which is jointly published by the Oxford Poverty and Human Development Initiative (OPHI) and the United Nations Development Programme (UNDP).
- It **captures overlapping deprivations in health, education, and living standards.**
- NITI Aayog published the **first National MPI baseline report for India in November 2021.** OPHI and the UNDP are its technical partners.

Measures of Poverty

- National MPI has three equally weighted dimensions of **Health, Education and Standard of Living.**
- These are represented by 12 indicators. These include **nutrition, child and adolescent mortality, maternal health, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing, assets, and bank accounts.**

National multidimensional poverty index: A Progress Review, 2023



- India has registered a significant **decline of 9.89 percentage points in the number of multidimensionally poor, from 24.85% in 2015-16 to 14.96% in 2019-2021.**
- The study says nearly **13.5 crore people came out of multidimensional poverty during the period**, assessed by identifying “acute deprivations in health, education and standard of living” using United Nations-approved parameters.
- **Rural areas witnessed the fastest decline in poverty from 32.59% to 19.28%**, mainly due to a decrease in the number of multi-dimensionally poor in States such as Bihar, Uttar Pradesh, Madhya Pradesh, Odisha, and Rajasthan.
- Delhi, Kerala, Goa, and Tamil Nadu have the **least number of people facing multidimensional poverty**, along with the Union Territories. Bihar, Jharkhand, Meghalaya, Uttar Pradesh, and Madhya Pradesh top the chart where the **percentage of the population which is multidimensionally poor is high.**
- Multidimensional poverty in urban areas, during the same period, **saw a decrease from 8.65% to 5.27%.**
- Uttar Pradesh registered the **largest decline in number of poor with 3.43 crore people escaping multidimensional poverty.**

Basis of the Report

- The report has been prepared **based on the latest National Family Health Survey of 2019-21** and is the **second edition of the National Multidimensional Poverty Index (MPI).**
- The broad methodology followed is in consonance with the global methodology.
- 12 parameters of health, education, and standard of living are examined in the report.

**READ ABOUT
GLOBAL
MULTIDIMENSIONAL
POVERTY INDEX:**



Rajya Sabha Vice-Chairpersons' Panel

Context

- Rajya Sabha Chairman Jagdeep Dhankhar has **appointed four women MPs to the panel of vice-chairpersons in the Upper House.**

Details

- This is the first time in the history of the Upper House **that equal representation has been given to women members in the panel of Vice-Chairpersons.**
- The Rajya Sabha chair **also went “fully digital”**. The Chair **will be using electronic tablets** for matters related to the conduct of the business of the House, attendance in the House, details of the members speaking and other relevant information.

Panel of Vice-Chairpersons

About

- The panel of vice-chairpersons is **a group of members nominated to assist the Chairman or the Deputy Chairman of the Rajya Sabha** in conducting its business effectively.

- The panel members are typically experienced parliamentarians from different political parties, ensuring broad representation in the upper house's functioning.

Functions

- **Assisting the Chairman:** The panel of vice-chairpersons is a group of members nominated to assist the Chairman or the Deputy Chairman of the Rajya Sabha in conducting its business effectively. They help in maintaining decorum during the sessions and ensuring that parliamentary proceedings are carried out smoothly.
- **Presiding Over Sessions:** In the absence of the Chairman of the Rajya Sabha (who is also the Vice President of India), one of the vice-chairpersons, usually the Deputy Chairman, presides over the sessions and exercises the powers and functions of the Chairman.
- **Chairing Committees:** Vice-chairpersons may also be appointed to chair various

parliamentary committees to oversee specific matters related to legislation, administration, or other issues.

Significance

- **Ensuring Smooth Functioning:** The panel of vice-chairpersons plays a crucial role in ensuring that the Rajya Sabha functions efficiently and effectively during its sessions.
- **Maintaining Order:** By assisting in the management of debates and discussions, the vice-chairpersons help maintain decorum and order in the upper house.

Challenges

Zero FIR

Context

- A Zero FIR was filed in connection to the May 4 incident, in which two Manipuri women were stripped and paraded.
- The term first information report (FIR) is **not defined in the Indian Penal Code (IPC), Code of Criminal Procedure (CrPC), 1973**, or in any other law, but in police regulations or rules, information recorded under Section 154 of CrPC is known as First Information Report (FIR).

What is a Zero FIR?

- When a police station receives a complaint regarding an alleged offence that has been committed in the jurisdiction of another police station, it registers an FIR and then transfers it to the relevant police station for further investigation.
- This is called a Zero FIR. **No regular FIR number is given. After receiving the Zero FIR, the relevant police station registers a fresh FIR and starts the investigation.**

Cantonment Area

Context

- In order to bring uniformity in municipal laws governing civil areas of Cantonments and adjoining State Municipal areas, it has been decided to consider excising civil areas of certain Cantonments and merge them with neighboring State municipalities.

- **Political Dynamics:** The panel may consist of members from different political parties, which can sometimes lead to challenges in reaching a consensus on various issues.
- **Disruptions and Obstructions:** In a diverse and multi-party parliamentary system, disagreements and differing opinions can lead to disruptions in the proceedings.
- **Training and Capacity Building:** Providing training and capacity-building programs for members can improve their understanding of parliamentary processes and protocols, enabling them to discharge their responsibilities more effectively.

When was the provision of Zero FIR established?

- The provision of Zero FIR came up **after the recommendation in the report of the Justice Verma Committee**, which was constituted to suggest amendments to the Criminal Law in a bid to provide for faster trial and enhanced punishment for criminals accused of committing sexual assault against women. The committee was set up after the 2012 Nirbhaya gang rape case.
- The provision says: ***"A Zero FIR can be filed in any Police Station by the victim, irrespective of their residence or the place of occurrence of crime."***

What is the purpose of a Zero FIR?

- The objective of a Zero FIR is **to ensure the victim doesn't have to run from pillar to post to get a police complaint registered.**
- The provision is **meant to provide speedy redressal to the victim** so that timely action can be taken after the filing of the FIR.

Cantonments

- A cantonment is a **civic body governed by a Cantonment Board.**
- Instead of the state government, **these civic bodies come under the Ministry of Defence (MoD).**

Origin

- Cantonments –or cantts, as they are often referred to– are civic bodies that trace their roots to the British Raj.
- These are the places where the British Indian Army stationed its troops.
- Unlike the Air Force or the Navy which had exclusive ‘bases’, the Army had cantonments where civilians too stayed in places away from military installations – but close by, leading to a fusion of lifestyles and cultures.

Evolution

- Over the course of time, these cantonments developed into towns and cities, with military and civilian parts.
- While the military parts are managed by the military authorities, the civilian parts are managed by the cantonment boards – a civic body with a mixture of officials and elected members.
- The **first cantonment was established in 1765 at Barrackpore, near Kolkata**. Several cantonments came up in the next few decades.
- These cantonments were often at strategic locations across the country.
- They served as military and logistical hubs and were key to consolidating British rule in India, such as the Meerut Cantonment, which served as the key to the British consolidation and expansion in North-West India.
- There were 56 cantonments at the time of Independence and six more were notified after 1947. The last Cantonment to be notified was Ajmer in 1962.

Cantonment's Rules and Regulation

- According to the MoD, the overall municipal administration of the notified Cantonments is the function of the Cantonment Boards which are democratic bodies.
- The Station Commander of the Cantonment is the ex-officio President of the Board and an officer of the Indian Defence Estates Service (IDES) or Defence Estates Organisation.
- The management of the Cantonment is also led by the Board. The Board has equal representation of the elected and nominated to balance the official representation with the democratic composition.

- This unique structure of Cantonment Boards is being maintained successfully keeping in view the fact that the Cantonment areas were and are primarily meant to accommodate the military population and their installations.
- However, Cantonments are different from Military Stations. While the Military Stations are purely meant for the use and accommodation of the armed forces under an executive order whereas the Cantonments are areas that comprise both military and civil populations.

The issues with cantonments

Just served the British interests

- The cantonments that served the British interests well, raised a range of issues in Independent India. Unlike the British Army, which ran cantonments with its absolute authority, an Independent India could not do the same.
- Cantonment Boards had to be run democratically, not with absolute colonial authority.

Tussles

- Along with a unique culture of civil-military fusion that emerged in these places, tussles between the two were also not uncommon.

Poor Civic Services

- The civilian residents were concerned with poor civic services, restrictions on construction and housing, and lack of development, while the military complained of a shrinking space of their way of life and security concerns.

Issues persisted over the decades

- With most of these issues being highly local were resolved soon, some persisted over the decades and led to extreme demands for the disbandment of cantonment boards altogether. For example, cellular coverage in Meerut Cantonment remains limited as cellular towers are limited and residents complain construction requires unnecessary paperwork.

Issues with Taxation

- There were also issues with taxation. In several places, the house tax or water tax in cantonments –paid to the cantonment

board— is higher than the rate in adjacent civilian civic bodies, which is a cause of disgruntlement.

The merits and demerits of disbanding cantonments

- The Ministry of Defence (MoD) was never meant to be involved in municipal affairs. The separation of civilian and military areas of cantonments can be a win-win situation for both sides.
- The Cantonment Boards are not financially well and don't have enough sources of income. They are dependent on grants-in-aid by the MoD. As a result, the civilian parts of the cantonments are terribly managed whereas the military-managed places are quite clean. Merging the civilian areas with municipal bodies of the state government and

Mission Shakti

Context

- Union Women and Child Development Minister Smriti Irani informed Rajya Sabha that the Central government is implementing Mission Shakti which is aimed at creating a safe and enabling environment for women in distress situations and difficult circumstances.

Mission Shakti

- The Union Ministry of Women and Child Development is the implementing body of the scheme during the 15th Finance Commission period 2021-22 to 2025-26.
- Mission Shakti aims to ensure a lifecycle support system for women through integrated care, safety, protection, rehabilitation and empowerment.

'Sambal' and 'Samarthya'

- Mission Shakti has two sub-schemes 'Sambal' and 'Samarthya'.
 - The "Sambal" is a sub-scheme for the safety and security of women.
 - The "Samarthya" is a sub-scheme for the empowerment of women.

SAMBAL

Initiatives under SAMBAL;

- **One-Stop Centre (OSC)** to facilitate access to an integrated range of services including

converting the military areas into military stations will be ideal.

- Once civilian and military areas are separated, the budget allocated for civic services too would be freed up.
- The military prefers military stations over cantonments but also points out that it would be a task to carve out civilian and military pockets in many cantonments.
- Carving out civilian and military pockets in many cantonments will be very tough. Disbanding cantonments would take away a lot of places such as open fields for sports and training and risk turning military stations into isolated pockets away from habitation. This could make the Indian Army unattractive to the youth.

medical aid, police assistance, legal aid/ case management, psychosocial counselling and temporary support services to women affected by violence.

- **Beti Bachao Beti Padhao**, to address the declining Child Sex Ratio.
- **Mahila Police Volunteers**, to report the incidences of violence against women
- Women's Helpline.
- Nari Adalats to promote and facilitate alternative dispute resolution and gender justice within families and in society.

SAMARTHYA

Initiatives under SAMARTHYA;

- **Gender Budgeting** is a tool for mainstreaming gender perspectives at various stages of planning, budgeting, implementation, impact assessment and revisiting of policy/programme objectives and allocations.
- SwadharGreh to provide relief and rehabilitation to destitute women and women in distress.
- Working Women Hostels for ensuring safe accommodation for women working away from their place of residence.
- **National Creche Scheme** to provide daycare facilities to children of the age group of 6 months to 6 years of working women who are employed.

- Pradhan Mantri Matru Vandana Yojana (PMMVY) Provide Cash incentives for improved health and nutrition to pregnant and nursing mothers.
- Umbrella ICDS Scheme is also subsumed in 'Samarthya'.

Vibrant Villages Programme

Context

- The Government has approved Vibrant Villages Programme (VVP).

About VVP

- Vibrant Villages Programme (VVP) is a Centrally Sponsored Scheme for comprehensive development of the select villages in 46 blocks in 19 districts of abutting northern border in the States of Arunachal Pradesh, Himachal Pradesh, Sikkim, Uttarakhand and UT of Ladakh.

Objective

- The objective of the program is to create sufficient incentives for people to stay on in the selected villages.

Interventions

- The program envisages focused areas of interventions in the select villages for the creation of opportunities for livelihood generation through the promotion of tourism & cultural heritage, skill development & entrepreneurship, and the development of cooperative societies including agriculture/horticulture, cultivation of medicinal plants/herbs, etc.
- The interventions also include providing road connectivity to unconnected villages, housing & village infrastructures, energy including renewable energy, television & telecom connectivity.

Suspension of MPs

Context

- Senior Aam Aadmi Party (AAP) leader Sanjay Singh was suspended from the Rajya Sabha for the remainder of the monsoon session of Parliament for repeatedly "violating" the directives of the chair.

How are Lok Sabha MPs suspended?

- There are rules that govern the suspension of members of Lok Sabha and Rajya Sabha.
- In the Lok Sabha, Rules 374 and 374(A) give the Speaker the power to suspend a member either through a motion or by themselves.
- Such an action may be taken if a member "disregards the authority of the Chair or abuses the rules of the House by persistently and wilfully obstructing the business", according to Rules of Procedure and Conduct of Business in Lok Sabha, published by the Lok Sabha Secretariat.
- In such a case, the Speaker may name the member and they may be suspended following a motion for a period not more than the remainder of the session.
- Rule 374(A) gives power to the Speaker to "automatically suspend" a member in case of "grave disorder".

How are Rajya Sabha MPs suspended?

- In the Rajya Sabha, the suspension of a member is governed by Rule 256. Unlike the Lok Sabha, the Rajya Sabha Chairperson does not have the power to suspend a member.
- Similar to Lok Sabha, a Rajya Sabha member can be suspended if the member "disregards the authority of the Chair or abuses the rules of the Council by persistently and wilfully obstructing the business thereof", according Rules of Procedure and Conduct of Business In the Council of States, published by Rajya Sabha Secretariat.
- The Rajya Sabha Chair can only suspend a member through a motion. The Chair names a member, following which the House takes up a motion to suspend that member for a period not more than the remainder of the session, according to Rule 256(2).
- While the Chair cannot suspend a member by themselves, the Chair can ask the member to leave the House.
- Rule 255 dictates: "The Chairman may direct any member whose conduct is in his opinion grossly disorderly to withdraw immediately from the Council and any member so ordered to withdraw shall do so forthwith and shall

absent himself during the remainder of the day's meeting."

Adjournment Motion


Context

- Amid the ongoing ethnic violence in Manipur, proceedings saw the Lok Sabha being adjourned.

Adjournment Motion

- A motion for adjournment is **moved to discuss a specific issue of urgent public importance** that must be of the utmost concern with the Speaker's approval.
- It **needs the support of at least 50 members to be admitted.**
- It is regarded as an **important device of parliamentary proceedings.**
- This motion is **introduced in the Lok Sabha only.**

1. 11 SNIPPETS



NATIONAL STATISTICAL ORGANISATION (NSO)

Context

- The Government of India recently appointed a panel under the chairmanship of Pronab Sen, to review the methodology of the National Statistical Organisation (NSO).

About NSO

- The National Statistical Office (NSO) under the Ministry of Statistics & Programme Implementation, Government of India conducts various surveys in India since 1950.
- The Annual Survey of Industries (ASI) is the principal source of Industrial Statistics in India.
- The survey is being conducted annually under the statutory provisions of the Collection of Statistics (COS) Act, 2008 and the rules framed there-under in 2011, except in the State of Jammu & Kashmir where it is being conducted under the Collection of Statistics Act, 2010 and rules framed there under in 2012.
- Information collected through this Survey is used for statistical purposes; to estimate the contribution of the industrial sector to Gross Domestic Product and also to help the Government in formulating policies for industrial development.

1. 12 1 MAINS & 5 MCQs

Q1. Many of the languages which are either extinct or endangered are the tribal languages and the languages spoken by nomadic of different states. What are its implications? Shed light on the initiatives that are being taken by the Government to promote Tribal Languages and Tribal Literature. Suggest measures to protect these indigenous languages.

Introduction

- According to UNESCO, any language that is spoken by less than 10,000 people is potentially endangered. There are 7,000 living languages in the world and around 3,000 are considered 'endangered'. The situation in India is alarming as some 197 languages are in various stages of endangerment in our country, more than any other country in the world. The concern is that **most dying languages are from the indigenous tribal groups spread across the country.**

Endangered and Extinct Tribal Languages

- The languages or dialects which are considered endangered, include 11 from Andaman and Nicobar Islands.
- The other languages in the endangered category are Manda, Parji and Pengo (Odisha), Koraga and Kuruba (Karnataka), Gadaba and Naiki (Andhra Pradesh), Kota and Toda (Tamil Nadu), Mra and Na (Arunachal Pradesh), Tai Nora and Tai Rong (Assam), Bangani (Uttarakhand), Birhor (Jharkhand), Nihali (Maharashtra), Ruga (Meghalaya) and Toto (West Bengal).
- The extinct languages of the Himalayan belt include Ahom, Andro, Rangkas, Sengmai, and Tolcha. In Assam, there is a group of six Tai-Kadai languages, that face imminent death. Two of them, Tai Ahom and Tai Turung, have already been reported to be extinct

- Until recently, **UNESCO has put Asur, Birhor and Korwa** in its list of the **world's endangered languages** with **Birhor being categorized as 'Critically Endangered'**, with just 2,000 speakers left.

Implications

- Tribal languages are a **treasure trove of knowledge** about a **region's flora, fauna and medicinal plants**. Usually, this **information is passed from generation to generation**. However, when a language declines, that **knowledge system is completely gone**. With the **loss of language comes the loss of everything in culture and loss of solidarity, the loss of Man himself.**"

Initiatives to promote and protect Tribal Languages and Tribal Literature

Grants to State Tribal Research Institutes

- The Government of India **provides grants to State Tribal Research Institutes for the promotion of tribal languages**, the **development of bilingual primers for the preservation of tribal languages** and **promotion of tribal literature**.

"Financial Assistance for Support to Centres of Excellence"

- Under the component **"Financial Assistance for support to Centres of Excellence"** of the scheme **"Tribal Research Information, Education, Communication and Events (TRU-ECE)"**, financial assistance is provided to reputed Institutions for carrying out research study programmes including documentation of tribal languages with an **aim to promote tribal culture, artefacts, customs and traditions of tribal communities**.

Eklavya Model Residential Schools

- Ministry of Tribal Affairs has resolved to **establish nearly 750 Eklavya Model Residential Schools to support the education of tribal students under Azadi Ka Amrit Mahotsav**.

Tribal Freedom Fighters Museums

- The Government has sanctioned ten **tribal freedom fighters' museums in order to acknowledge heroic and patriotic deeds of tribal people**.

Searchable Digital Repository

- The Government has developed a **searchable digital repository where all research papers, books, reports and documents, folk songs, and photos/videos are uploaded**.

ADIGRAMS Portal

- The Government has launched the ADIGRAMS Portal, a **unique portal which monitors physical and financial progress of the grants given by the Ministry to States and can track the actual utilisation of funds**.

Janjatiya Gaurav Diva

- GOI **celebrates the 15th of November as Janjatiya Gaurav Divas to mark the birth anniversary of tribal freedom fighter Birsa Munda**.

Suggestions

- **Mother Tongue Based Multi-Lingual Education (MTBMLE)** could play a key role in preserving tribal languages, claim linguistic experts. Ignoring mother tongue-based intervention in early childhood for tribal children could potentially impede the early childhood learning.
- **'Transition Curriculum'** could be the way ahead as—the **approach helps bridge the gap between home and school languages and validates the child's home culture and traditional knowledge, thus enabling better learning**.
- Tribal languages should be **endorsed through innovative, cultural and entertainment programmes**, suggest linguistic experts.

- For example, a local community radio channel called 'Asur Mobile Radio' in Jharkhand launched cultural programmes in the Asur language, **which has only 7,000-8,000 speakers**. The Asur language features in the UNESCO list of 'definitely endangered' languages.
- The Asur community started popularising the language in their area. This has significantly aided the revival of the dying language.
- **Local Civil Society Organisations** and **Cultural Institutions** should make dramas and films in native tribal languages. This will ensure a **wider outreach and encourage the younger lot to preserve and respect their language**.
- There is a **need to promote tribal languages as a medium of communication** and education in tribal-dominated districts. It can significantly reduce the communication gap and school dropout rate.
- It is important to **integrate indigenous knowledge systems alongside modern sciences in the curriculum of schools**.

Conclusion

- Tribal languages are **fundamental to understanding the world we live in, our origin, the roots** that we all came from and what humans are capable of. Therefore, it is **high time for others to appreciate the important contribution of tribal languages** in enriching the world's rich cultural and linguistic diversity.

Note: Extract keywords and key phrases from the above Model Answer to create your own answer.

MCQs

Q2. Consider the following statements.

1. Under the Trademark Act Trademark provides protection for symbols, colours, shapes, words, etc. representing and relating to a good or service.
2. Under section 13 of the Copyright Act, protection under copyright can be obtained for 'original literary, dramatic, musical and artistic works; cinematograph films; and sound recording'.
3. Geographical Indications are valid for 10 years, renewed for 10 years on payment of additional fees.
4. Patents are conferred upon inventions and discoveries of a phenomenon.

Which of the above statements is/are incorrect?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 4 only
- (d) 1, 2 and 4 only.

Q3. Consider the following statements with respect to Electoral Bonds.

1. Any party that is registered under section 29A of the Representation of the Peoples Act, 1951 and has secured at least two percent of the votes polled in the most recent General

elections or Assembly elections is eligible to receive electoral bonds.

2. Electoral Bonds are issued in multiples of Rs 1,000, Rs 10,000, Rs 100,000, and Rs 1 crore and these are available at all the branches of SBI.
3. The Electoral Bond is valid only for twenty-five days.
4. Electoral bond transactions can be made only through a verified account allotted by the Government of India.

Which of the above statements is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 4 only
- (d) None of the above.

Q4. Which of the following are considered as disrespect to the Indian National flag under the Prevention of Insults to National Honour Act, 1971?

1. Using the Indian National Flag as a covering for a building.
2. Putting any kind of inscription upon the Indian National Flag.
3. Using the Indian National Flag as a portion of the costume.

4. Draping the Indian National Flag on the sides of a train.
- (a) 1 and 2 only
 - (b) 2 and 3 only
 - (c) 3 and 4 only
 - (d) All of the above.

Q5. The Enforcement Directorate ensures the enforcement of which of the following acts?

- 1. Foreign Exchange Management Act, 1999
 - 2. Prevention of Money Laundering Act, 2002
 - 3. The Fugitive Economic Offenders Act, 2018
 - 4. Prevention of Corruption Act, 1988
- (a) 1 and 2 only
 - (b) 2 and 4 only
 - (c) 1, 2 and 3
 - (d) All of the above.

- 2. (c)
- 3. (d)
- 4. (d)
- 5. (c)
- 6. (b)

Q6. On which of the following grounds a Member of Parliament can be disqualified under the Representation of the People Act, 1951?

- 1. Convicted for any offence resulting in Imprisonment for three or more years.
 - 2. Detention of a person under a preventive detention law.
 - 3. A director or managing agent nor hold an office of profit in a corporation in which the government has at least 50 % share.
 - 4. Convicted for promoting enmity between different groups or for the offence of bribery.
- (a) 1 and 2 only
 - (b) 4 only
 - (c) 1, 2 and 3
 - (d) All of the above.

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2. INTERNATIONAL RELATIONS

2.1 INDIA AND TANZANIA RELATIONS

Context

- During the India-Tanzania Business Conclave, External Affairs Minister S Jaishankar highlighted the growing bilateral trade between the two countries, with India being Tanzania's primary market for exports. He also mentioned the increasing Indian investments in various sectors in Tanzania.

Details

- Despite the global disruption and the Covid-19 challenges, India-Tanzania bilateral trade has actually seen very strong growth, "**The Indian figures actually put our bilateral trade last year at USD 6.4 billion, i.e. is in 2020, 2022 and 2023.**"
- This is not only a very substantial bilateral trade, but it's also actually a bilateral trade which is getting increasingly balanced. And what is most important is that India remains the biggest destination for Tanzanian exports.
- As regards investment, we have seen investments in hospitals, in pharma, in animal vaccines, in education, in mining and agro-processing.

Current Relations of India and Tanzania:

Historical ties

- Tanzania and India have traditionally enjoyed close, friendly, and cooperative relations.
- **From the 1960s to the 1980s the political relationship** was driven largely by shared ideological commitments to anti-colonialism and socialism in various.

Bilateral Engagements

- India is the **second largest trading partner of Tanzania** with bilateral trade of USD 2.37 billion in 2020-21.
- India is the third largest trading partner of Tanzania with bilateral trade of **USD 4.58 billion in 2021-22 (as per DGCI&S data)**. India is also among the top five investment sources in Tanzania and as per Tanzania Investment

Centre, Indian investments in Tanzania add up to **USD 3.68 billion**.

Interactions and Cultural Engagements

- Traditional ties and the spirit of mutual cooperation between Tanzania and India have been consistently reinforced through various international co-operations such as the **Non-Aligned Movement (NAM)** and later through the various initiatives of South-South Cooperation.
- **The most recent example of such South-South solidarity was the 2008 India – Africa summit** hosted by India to advance and strengthen the ties between India and Sub-Saharan Africa.

Economic relations

- India is also among the top five investment sources in Tanzania with investments in Tanzania reaching **USD 3.65 billion in 2022**.
- The exports of India to Tanzania have increased at an **annualized rate of 10.5%, from USD 115M in 1995 to USD 1.41B in 2020**.
- The main products that India exported to Tanzania in 2022 were **Refined Petroleum (USD 481M), Packaged Medicaments (USD 215M), and Raw Sugar (USD 30.7M)**.

Exports and trading

- The exports of Tanzania to India have increased at an annualized rate of 9.51%, from USD 92M in 1995 to USD 891M in 2020.
- In 2020, Tanzania exported USD 891M to India.
- The main products that Tanzania exported to India were **Raw Copper (USD 260M), Coconuts, Brazil Nuts, and Cashews (USD 221M), and Gold (USD 159M)**.

Commercial relations

- At present major Indian companies in Tanzania are Airtel (telecom); Tata Africa Holdings Ltd, Mahindra & Mahindra (tractors), Kamal Group (Steel), Kalpataru (power

transmission), Tanzania (insurance with significant share of Indian PSEs), Larsen & Toubro, Afcons, Hester Biosciences (animal vaccines), Mahashree Agro, Purandare Industries (sugar factory) etc.

Bilateral Treaties & Agreements

- India and Tanzania have signed a number of bilateral Treaties/MOUs/Agreements. They are:
 - Agreement on Friendship & Technical, Economic and Scientific Cooperation (1966)
 - Trade Agreements (1972)
 - MOU on Technical Cooperation in the field of Posts and Telecommunications (1996)
 - Agreement on the establishment of Joint Business Council (1997)
 - Agreement on establishment of a Joint Trade Committee (2000)
 - MOU for Co-operation in the field of Agriculture and Allied Sectors (2002)
 - Agreement in the field of Health & Medicine (2002)
 - MoU on Exchange Programme on Co-operation in the field of Education (2003).

Defence & Security Cooperation

- India and Tanzania signed a Memorandum of Understanding (MoU) on Defence Co-operation in Oct 2003. The MoU provides an over-arching framework for progressing various defence co-operation initiatives between the two countries.
- **In recent years, India and Tanzania have been cooperating in the field of defence training in**

Indian institutions. Over 550 Tanzanian defence personnel have been trained in India.

- **Hydrography is another advancing area of cooperation** between the two countries. Indian naval survey ships have conducted hydrographic surveys of Tanzanian ports and prepared navigational charts.

Cultural relations

- **In 2021, ICCR sponsored Baba Gorekhnath Gotipua Dance Association** from Odisha to perform at prestigious 40th Bagamoyo International Festival in Bagamoyo, Tanzania.
- **An MoU for establishment of ICCR chair at University of Dar es Salaam (UDSM)** was signed between ICCR and UDSM in 2021. Tanzanian siblings Kili and Neema Paul who lip sync Indian songs, have a huge following in India.
- **Famous Nyati Mchoya group from Tanzania were sponsored by Government of India** to perform at International Suraj Kund Mela in Faridabad from in 2022.

Conclusion

- In addition to the booming trade, India and Tanzania have also strengthened their relations through cooperation in human resources, health, education and infrastructure, among other areas.
- The years to come will require increased movement of trade, capital and human resources from both India to Tanzania as well as vice versa.
- The flow of human capital and trade has laid the foundation for a relationship which continues to have a great scope for growth.

2.2 INDIA AND PHILIPPINES RELATIONS

Context

- External Affairs Minister S. Jaishankar and his visiting Philippines counterpart Enrique A. Manalo held the 5th meeting of the Joint Commission on Bilateral Cooperation.

Details

- Diplomatic sources highlight the potential for expanding defense cooperation between India and the Philippines.

- Secretary for Foreign Affairs Enrique A. Manalo visits India for bilateral talks with Indian counterpart S. Jaishankar.
- Discussions focus on maritime security, joint sales, joint patrols, and other collaborative activities.

Current Relations of India and Philippines:

Historical ties

- India and the Philippines share historical connections through cultural exchanges, including ancient maritime trade routes.
- Formal diplomatic relations were established in 1949, with both countries maintaining embassies in each other's capitals..

Bilateral Engagements

- India is the **second largest trading partner of Tanzania** with bilateral trade of USD 2.37 billion in 2020-21.
- India is the third largest trading partner of Tanzania with bilateral trade of **USD 4.58 billion in 2021-22 (as per DGCI&S data)**. India is also among the top five investment sources in Tanzania and as per Tanzania Investment Centre, Indian investments in Tanzania add up to **USD 3.68 billion**.

Economic relations

- **Bilateral trade** between India and the Philippines has been growing steadily, with a focus on sectors such as **information technology, pharmaceuticals, automobiles, and textiles**.
- India has invested in various sectors in the Philippines, including telecommunications, infrastructure, energy, and agribusiness.
- Efforts have been made to strengthen trade relations through agreements such as the **Bilateral Investment Promotion and Protection Agreement (BIPPA) and the Double Taxation Avoidance Agreement (DTAA)**.

Maritime cooperation

- New areas of collaboration include **cyber security, artificial intelligence, and space cooperation**.
- **Cooperation on cyber trafficking, intelligence exchange, and addressing cyber threats** is emphasized.
- Talks between ministers discuss expanding cooperation in existing domains like the **economy, defense, education, people-to-people relations, and anti-terrorism measures**.

Agreements

- Ministers emphasize the utility of **Maritime Domain Awareness (MDA)** and call for the operationalization of the standard operating

procedure for the White Shipping Agreement between the Indian Navy and the Philippines Coast Guard.

- **Signing of the Memorandum of Understanding (MoU)** on enhanced maritime cooperation between the coast guards of the two nations is anticipated.

Regional cooperation

- India's "**Act East**" policy has led to increased engagement with **ASEAN countries, including the Philippines, through various forums and initiatives**.
- Both countries have been active participants in the United Nations and have supported each other's candidatures in various UN bodies.

Defense & Security Cooperation

- **India and the Philippines** have engaged in defense cooperation, including exchange visits, joint military exercises, and training programs.
- Given their shared maritime interests, **both countries have cooperated in enhancing maritime security** and countering piracy in the region.

Cultural relations

- Cultural interactions, including music and dance **performances, art exhibitions, and film festivals**, have fostered a better understanding and appreciation of each other's cultures.
- India and the Philippines have collaborated in the field of education, **including student exchanges, scholarships, and academic partnerships**.

Conclusion

- Relations between the two countries have been friendly and problem free. It would be fair to say though that despite historical shared values and commonalities, **such as anticolonialism, South-South cooperation, a strong democratic polity**, an independent judiciary and press, and the wide use of the English language, the full potential of the relationship between the two countries is yet far from attainment and is reflective of a lack of informed knowledge about one another.

2.3 INDIA - FRANCE RELATIONS

Context

- India approved plans to buy 26 Rafale fighter aircraft and three Scorpene class conventional submarines for the Indian Navy from France. The proposals were approved by the Defence Acquisition Council (DAC).

Details

- As per the proposals, the **Indian Navy will get 22 single-seated Rafale Marine aircraft** along with four trainer aircraft.
- The Navy has been pressing for acquiring these fighter aircraft and submarines urgently as the force has been facing shortages in view of the security challenges around the country.
- The aircraft carriers INS Vikramaditya and Vikrant** have been operating the **MiG-29s** and need the Rafales for operations on both carriers.
- The three Scorpene class submarines** would be acquired under the repeat clause by the Navy as part of Project 75 and would be built at the **Mazagon Dockyards Limited in Mumbai**.
- India would be insisting on having more **'Make-in-India' content in the plan**.

Background of India and France relations

Historical ties

- India and France have **traditionally close and friendly relations**.
- In 1998, the two countries entered into a **Strategic Partnership** which is emblematic of their convergence of views on a range of international issues apart from a close and growing bilateral relationship.
- The areas of defence & security cooperation, space cooperation and civil nuclear cooperation constitute the principal pillars of the Strategic Partnership.

Bilateral Engagements

- The **Bilateral Investment and Protection Agreement between India and France expired in 2010**, ten years after coming into force. Govt intends to replace it with a revised Bilateral Investment Treaty. A model text of the agreement was proposed by the Indian side in 2015.
- France is the 11th largest foreign investor in India with a cumulative FDI stock of USD 9.83 billion** from April 2000 to March 2021, which represents 2 % of the total FDI inflows into India. There are more than 150 Indian companies operating in France (including sub-subsidiaries), employing more than 7,000 persons.

- A **Joint Economic Committee (JEC/JCM)** exists at the level of Ministers of Commerce and Foreign Trade from both sides.
- Joint Working Groups exist in various fields such as (i) IT & Telecommunications; (ii) Roads; (iii) Sustainable Urban Development; (iv) Agriculture and Food Processing; (v) Mineral Exploration and Development; (vi) Energy; (viii) Environment and (ix) Post.
- Bilateral consular relations are guided by the following four agreements:
 - **India-France Extradition Treaty (August 2005)**
 - **India-France Mutual Legal Assistance Treaty (MLAT) in Criminal Matters (10 October 2005)**
 - **India-France Agreement on the Transfer of Sentenced Persons (January 2008)**
 - **India-France agreement on exemption of visa requirements for diplomats (October 2013)**

Economic relations

- France is the 11th largest foreign investor in India.
- In the period April 2020-March 2021, India-France bilateral trade stood at USD 7.86 billion. India's exports to France were valued at USD 5.6 billion, down by 22.9%.
- Meanwhile, French exports to India decreased by 20.95% during the same period to USD 5.1 billion. Trade with France constitutes only 1.41% of India's total international trade.
- A Joint Economic Committee exists at the level of Ministers of Commerce from both sides.

Environment and renewable energy

- France is a founding member of the International Solar Alliance (ISA), announced by PM Modi in 2015 at UN Climate Change CoP21.
- The 3rd ISA Assembly held in October 2020 re-elected India and France as President and Co-President of the ISA.
- The countries signed an MoU on renewable energy in January 2021. The objective of the MoU is to promote bilateral cooperation in the field of new and renewable energy on the

basis of mutual benefit, equality and reciprocity. It covers technologies relating to solar, wind, hydrogen and biomass energy.

- India and France also work together on climate and biodiversity. In this context, India joined the French-led initiative called the High Ambition Coalition for Nature and People, on 7 October 2021. The HAC has an objective of protecting at least 30% of the world's lands and oceans by 2030.

Science and technology cooperation

- In the field of S&T, the Indo-French Centre for the Promotion of Advance Research based in New Delhi was established in 1987.
- It is estimated that there are about 7000 Indian students in France.

Defence & Security Cooperation

- Cooperation in defence is the cornerstone of the India-France strategic partnership.
- Although France became **India's second-largest defence supplier from 2017-2021**, it has been a reliable partner for India in the military aircraft domain since the 1950s.
- From the procurement of the **first-generation Dassault Ouragan fighter**, named 'Toofani' in the Indian Air Force (IAF), to the recent submarine and **Rafale-M deal** – the defence sector has emerged as a crucial pillar of the India-France relationship.
- The three services also have regular defence exercises; viz.
 - **Exercise Shakti (Army; the last one took place in November 2021 in France),**
 - **Exercise Varuna (Navy; Last conducted in Arabian Sea from 30th March to 3rd April 2022),**
 - **Exercise Garuda (Air Force; November 2022 in India).**
- The Indian Navy also participated in the French-led **La Pérouse exercise**, along with other Quad members in April 2021.

Cultural relations

- Indian culture enjoys wide following amongst the people of France. **An Indian Cultural Centre, named Vivekananda Cultural Centre, is being opened in Paris.**
- The **Indian diaspora in France is estimated to be around 5,00,000**, majority being French

citizens based in the French overseas territories.

- France encouraged India to consider joining the **Organisation Internationale De La Francophonie**, an international organisation representing francophone countries and regions and those with strong affiliation with **French culture. India welcomed the French invitation.**

Conclusion

- In order to enhance people-to-people ties between India and France and particularly serve consular requirements and strengthen

commercial relations in the South of France, India will open its Consulate General in Marseille, France opened "Bureau de France" in Hyderabad.

- French social security legislation, long-term student visas, and the ability to work for two to three years to pay off student loans are just a few of the issues that need to be resolved in order for the two nations to collaborate more effectively. Through this ambitious roadmap, the India-France Strategic Partnership will further diversify into new areas of cooperation while also deepening existing programmes of shared interest.

2.4 INDIA -TAIWAN RELATIONS

Context

- In a significant step aimed at boosting economic linkages, Taiwan announced it would open its third representative office in India in Mumbai, more than a decade after it last expanded its presence in India.

Details

- Taiwan's Foreign Ministry said the move to establish in Mumbai a Taipei Economic and Cultural Centre (TECC) – the term used to describe Taiwan's de facto diplomatic missions because India and Taiwan do not **maintain formal diplomatic relations** – came in the light of Taiwan and India witnessing "significant progress in numerous domains, including economics and trade, science and technology, critical supply chains".
- While India and Taiwan do not maintain formal diplomatic ties, the two sides in 1995 decided to open a TECC in New Delhi and an "**India Taipei Association**" in Taipei, which was a "**turning point**" to promote relations.
- TECC in Mumbai thus had its own strong logic, and was not necessarily linked to the current downturn in India-China relations, which have been in a state of freeze since Chinese transgressions across the Line of Actual Control starting in April 2020.
- **The opening of offices in 1995 and 2012 did not create much of a fallout on India-China**

relations despite Chinese sensitivities on Taiwan, partly because India had conveyed to Beijing that the offices would not be official and there would be no government-to-government engagement.

- India is also increasingly aware of its stakes when it comes to **maintaining peace and the status quo in the Taiwan Strait.** "Any sort of conflict, or even high tension, in the Taiwan Strait could have a devastating impact on Indian economic and national security interests."

[About India- Taiwan relationship](#)

Background

- When the Indian government initiated "**Look East Policy**" in early 1991, Taiwan and India started to approach each other and loosen visa restrictions.
- In 1995 the two countries established representative offices in each other's capitals, namely **Taipei Economic and Cultural Center in India (TECC) for ROC (Taiwan) in New Delhi and India-Taipei Association (ITA) for India** in Taipei.
- **Taiwan-India relationship has made significant progress for the past decades.** The two countries signed "**Double Taxation Avoidance Agreement**" and "**Customs Mutual Assistance Agreement**" in July 2011 which further enhanced the economic and trade relationship in particular for both sides.

Education Cooperation

- Over the past decade, over 400 Indian students have availed themselves of scholarships offered by the ROC (Taiwan) government.
- **At present there are 130,000 foreign students studying in Taiwan, of whom 2,800 students hail from India.** Foreign students are encouraged to study in Taiwan, and India is one of the countries whose students we actively pursue.
- **In 2019, Foundation for International Cooperation in Higher Education of Taiwan signed an MOU with Association of Indian Universities,** by which academic degrees and certificates recognized by one will be recognized by the other, allowing for greater research collaboration and exchanges by teachers and school administrators.
- **The Chio-Tian Folk Drums & Art Troupe (hereafter Chio-Tian) was invited by IIT Bombay to have 3-day performance during anniversary festival in 2019.**

Economic relations

- Economic cooperation in areas of trade, investment and industry between India and Taiwan has been very close in recent years. Bilateral trade has grown nearly six-fold from **USD 1.19 billion in 2001 to almost USD 7.7 billion in 2021.**
- **India ranks as Taiwan's 14th largest export destination and 18th largest source of imports.** The bilateral trade relationship is further enhanced by frequent exchanges of visits by business delegations.
- **Collaboration of small and medium enterprises** is another focal area. Both sides have strengthened cooperation in important areas of policy sharing, technological assistance, innovation, entrepreneurship and business incubation, market development, as well as capacity and capability building.
- **Bilateral Economic Consultations Meetings between India and Taiwan** are held annually and have been proven to be a success in bringing various mutual beneficial opportunities to both sides.

- Governments and industries of India and Taiwan will continue to engage closely in **"Make in India," "Digital India," "Skill India," and "Startup India" initiatives for collective growth.**

Science & Technology Cooperation

- The MOU on Scientific and Technological Cooperation was signed between TECC and ITA in 2007. **Bilateral joint meetings and academic seminars are held annually.**
- As of January 2023, a total of 115 projects and joint proposals have been carried out while 25 seminars have been held bilaterally.
- **The cooperation in science & technology contains a wide range of fields such as agricultural and food science; new material for sustainable energy and storage devices; health care including functional genomics, drug development and biomedical devices; earth, atmosphere and ocean sciences including disaster management & digital technology for societal applications and cloud computing.**

Cultural Exchange

- Cultural exchanges between Taiwan and India have been on the increase in recent years. In addition to the Taiwan films being screened annually in major films festivals of India, performing art groups from Taiwan have also been welcomed by Indian audience.

Closing thoughts

- A blockade by China would severely disrupt semiconductor exports to India with Taiwan, as of 2022, producing 92% of the world's most advanced logic chips and 70% of smartphone chipsets, among other critical components.
- There is an urgent need to assess the likely impact of a potential crisis across the Indian economy and to identify ways to mitigate the impact.
- Delaying such assessment might prove very costly since significant preparations to harden critical sections of the domestic economy and to reduce dependencies on China and East Asia will take time. This will require a whole-of-government effort.

2.5 INDIA AND UAE RELATIONS

Context

- The framework for the use of local currencies for transactions between India and UAE aims to put in place a Local Currency Settlement System (LCSS), which would enable exporters and importers to invoice and pay in their respective domestic currencies.

Details

- India and the United Arab Emirates (UAE) have signed a pact to establish a framework to promote the use of the rupee and UAE Dirham (AED) for cross-border transactions.
- “The MoU on establishing a framework for the use of local currencies for transactions between India and the UAE, aims to put in place a Local Currency Settlement System to promote the use of INR (Indian rupee) and AED (UAE Dirham) bilaterally.
- The MoU covers all current account transactions and permitted capital account transactions.

Current Relations of India and UAE

Historical ties

- The United Arab Emirates (UAE) has emerged as an **important partner in India's proactive diplomacy in West Asia**, with trade, investment, energy and people-to-people ties as pillars of this partnership.
- Bilateral ties received a big push when Prime Minister (PM) Narendra Modi visited the UAE in 2015 after a lull of 34 years in diplomatic relations.
- Three subsequent PM visits to the UAE, and the presence of UAE President Sheikh Mohammed bin Zayed Al Nahyan as chief guest of the Republic Day celebrations in 2017, marked the beginning of a new era of diplomatic relations.
- The warmth of this relationship was enhanced when PM Modi was honoured with the Order of Zayed, the UAE's highest civilian award, in 2019. Moreover, diplomatic maturity between New Delhi and Abu Dhabi can be understood by the fact that the UAE stood

with India on the issue of the abrogation of Article 370 in Jammu and Kashmir.

Bilateral Engagements

- India and UAE have institutional mechanisms in place for addressing the sectorspecific issues.
- This is in the form of Joint Commission for Economic and Technical Cooperation (JCM); Foreign Office Consultations (FOC); High Level Task Force on Investment (HLTFI); Joint Committee on Security Matters (JCSM); Joint Committee on Consular Matters (JCCM); Joint Defense Cooperation Committee (JDCC); Joint Working Group (JWG) on Renewable Energy and Joint Committee on Manpower Resources (JCMR)
- In addition to above a Local Coordination and Grievance Redressal Mechanism to redress grievances of the Indian community is also in place in the form of a **Local Coordination Committee (LCC)**.
- LCC, comprising of officers from the **Embassy and their UAE counterparts meets on a regular basis** to follow-up on consular, manpower and community related issues.

Economic relations

- Economic and Commercial cooperation with the UAE is a key aspect of overall bilateral relationship. The traditionally close and friendly India-UAE bilateral relationship has evolved into a significant partnership in the economic and commercial sphere.
- Indians have emerged as important investors within the UAE and India as an important export destination for the UAE manufactured goods.
- India's major export items to UAE include petroleum products; precious metals, stones, gems and jewellery; minerals; food items (cereals, sugar, fruits & vegetables, tea, meat, and seafood); textiles (garments, apparel, synthetic fibre, cotton, yarn); engineering & machinery products and chemicals.
- **India is UAE's second-largest trading partner accounting** for 9% of its total foreign trade

and 14% of non-oil exports. Also, the UAE is India's third biggest trade partner.

- **India-UAE trade increased from US\$ 180 million per year** in the 1970s to US\$ 72.8 billion in FY21.
- **UAE is the 7th largest investor in India with cumulative FDI inflows of US\$ 15,179 million** from April 2000 – September 2022.

Political relations:

- India-UAE bilateral relations have received impetus from time-to-time with exchange of high-level visits from both sides. Important visits at different level include: Presidential visits:
- Indian President visited UAE in November 1976, October 2003 and November 2010.
- UAE's President, Sheikh Zayedbin Sultan Al Nahyan, visited India in 1975 and 1992.
- EAM Shri Salman Khurshid visited UAE on March 13, 2013 and held a telephonic conversation with the UAE Foreign Minister on February 5, 2014 on his transit visit. MoS Shri E. Ahmad visited UAE from 30 April to 03 May, 2014.

Security and strategic cooperation

- India and the UAE share a common interest in promoting **regional stability and security**.
- Both countries have **cooperated in counter-terrorism efforts**, intelligence sharing, and maritime security initiatives.
- **The UAE has supported India's position on cross-border terrorism** and has taken steps to curb financing of terrorism.

Defense and Military Cooperation

- India and the UAE have **strengthened defense cooperation** through **joint military exercises**, training programs, and defense equipment purchases
- Cooperation in the defense sector includes **naval exercises, intelligence sharing, and joint efforts to combat piracy** and ensure maritime security.

Indian Community

- **UAE is home to Indian expatriate community of more than 2.6 million** – the largest expatriate community in the UAE. Professionally qualified personnel constitute about 15 & 20 percent of the community,

followed by 20 percent white-collar nonprofessionals (clerical staff, shop assistants, sales men, accountants, etc) and the remainder 65% comprises blue-collar workers. There is a significant **business community from India**.

- **The Embassy has Indian Community Welfare Fund (ICWF)** for providing short term economic assistance (food, shelter, passage expenses etc.) to destitute workers/housemaids in distress.
- **Indian Workers Resource Centre (IWRC)** with a 24- hour helpline is operating in Dubai since November 2010.

Cultural relations

- The two nations share historical ties and have maintained regular cultural exchanges both at official and popular levels. India and UAE signed a Cultural Agreement in 1975.
- **Festivals, music, dance, and art events** showcase the cultural diversity of both nations.
- **Tourism between the two countries** has seen significant growth, with Indian tourists visiting the UAE for leisure, business, and medical tourism.

Humanitarian Assistance and Disaster Relief

- India and the UAE have collaborated in providing humanitarian assistance and disaster relief during **natural disasters and emergencies**.
- The two countries have **extended support to each other during times of crisis**, reflecting the strong bonds of friendship and solidarity.

Conclusion

- The bilateral trade between India and UAE is projected to reach US\$ 250 billion by 2030. As per the Minister of State for Foreign Trade, the FTA between the two countries is expected to add US\$ 9 billion to the **GDP of the UAE by 2030**.
- **With the CEPA agreement, around US\$ 26 billion of Indian products subject to 5% import duty will benefit** and will help increase the investment flows, job creation, and ease of doing business. As one of the most important energy trading partners, India and

UAE are working together to further strengthen the relations and work towards a

low-carbon future.

2.6 INDIA SRI-LANKA RELATIONS

Context

- The Tamil National Alliance (TNA) on Tuesday “**categorically rejected**” Sri Lankan President Ranil Wickremesinghe’s offer to implement the 13th Amendment sans police powers, terming his proposal for development and power devolution “**another hollow promise**”.

Details

- The 13th Amendment is an over 30-year old Sri Lankan legislation on the devolution of power from Colombo to the nine provinces, but has never been fully implemented.
- “If the government is not willing to implement what is already in our Constitution, it is a revelation of the lack of political will to go beyond the 13th Amendment, and meaningfully devolve power.”
- India has consistently underscored “**full implementation**” of the legislation, which was enacted after the Indo-Lanka Accord of 1987. It remains the only legislative guarantee of some power devolution, following the **Sri Lankan Tamils’ historic demand for the right to self-determination**.
- However, the 13th Amendment seeks to devolve power to all nine provinces, including seven that have **Sinhala-majority populations**. **Successive governments in Colombo** have refused to part with land and police powers in the provinces.
- Meanwhile, the military is visibly present in the Tamil-majority north and east till date, 14 years after the civil war ended.

About India- Sri-Lanka relationship

Background

- India and Sri Lanka have a **legacy of intellectual, cultural, religious and linguistic interaction** and the relationship between two countries is more than 2500 years old.
- Trade and investment have grown and there is cooperation in the fields of development, education, culture and defense. Both

countries share a broad understanding on major issues of international interest.

- **In recent years, significant progress in implementation of developmental assistance projects** for Internally Displaced Persons (IDPs) and disadvantaged sections of the population in Sri Lanka has helped further cement the bonds of friendship.
- **India is Sri Lanka's closest neighbor**. The relationship between the two countries is more than 2,500 years old and both sides have built upon a legacy of intellectual, cultural, religious and **linguistic interaction**.
- In recent years, the relationship has been marked by close contacts at the highest political level, growing trade and investment, cooperation in the fields of development, education, culture and defence, as well as a broad understanding on major issues of international interest.

Education Cooperation

- Under the Indian Technical and **Economic Cooperation Scheme and the Colombo Plan**, India offers short and medium term training courses in technical and professional disciplines.
- From the **academic session 2017-18, Sri Lankan students** were allowed to appear for National Eligibility cum Entrance Test (NEET) and IIT JEE (Advanced) entrance examinations.

Economic and commercial relations

- India is one of the largest investors in Sri Lanka with cumulative investments of around USD 1.2 billion.
- Sri Lanka is one of India’s largest trading partners in SAARC. Trade between the two countries grew rapidly after India-Sri Lanka Free Trade Agreement 2000.
- Indian Chambers have signed MOU’s with Sri Lankan Chambers to promote trade, economic relations and investments.

- Government of India formally launched the e-Tourist Visa (eTV) scheme for Sri Lankan tourists
- India is the top source for tourist influx into Sri Lanka with over 4 lakh Indian tourists travelled to Sri Lanka in 2018.

Defense and security Cooperation

- To enhance regional security both countries cooperate in both **traditional (Terrorism) and non-traditional security issues** (human trafficking and drug smuggling).
- **Capacity building and training of armed forces** and police personnel of Sri Lanka has been the core area of cooperation between the two countries.
- Since 2012, India participates in **Indo-Sri Lankan Defense Dialogue**, this platform helps to review the security and defence cooperation issues between the two countries.

To ensure maritime security

- India-Sri Lanka conduct 'SLINEX' a joint naval exercise. India, Sri Lanka and Maldives conduct "DOSTI" a trilateral naval exercise
- India and Sri Lanka hold annual joint military drill 'Mitra Shakti' to boost counter-terror cooperation.

Cultural Exchange

- **Cultural Cooperation Agreement** signed in 1977 forms the basis for periodic **Cultural Exchange Programmes** between the two countries.
- **Indian Cultural Centre in Colombo** actively promotes awareness of Indian culture by offering classes in Indian music, dance, Hindi. It also organizes **International yoga day event annually**.
- India-Sri Lanka Foundation was set up to enhance scientific, technical, educational and cultural cooperation through civil society exchanges

- Both countries jointly commemorated 2600th year of the attainment of Lord Buddha Enlightenment, 150th anniversary of Anagarika, 150th Birth Anniversary Celebrations of Mahatma Gandhi and 550th Birth Anniversary of Sri Guru Nanak Dev Ji.

Issues of convergence:

- Both countries share a broad understanding on major global issues of international interest. This includes terrorism, climate change, human trafficking, arms smuggling, disaster management, biodiversity conservation, marine security etc.
- **Buddhism and democracy** still the connecting link between India-Sri Lanka.
- India needs Sri Lanka support for getting **UNSC permanent member seat**.
- Indo-Lanka cooperation is must to revive the declining regional organizations like **SAARC, BIMSTEC, and Indian Ocean Rim Association (IORA)**

Closing thoughts

- **India has been for long Sri Lanka's biggest trade partner** and has played a significant role in rebuilding Sri Lanka.
- Since India cannot match China's economic power, **India needs to focus on its traditional values of Buddhism and Ramayan** to improve relations with Sri Lanka.
- At the same time, **India can supply electricity to Sri Lanka** and further improve its trade and economic relations by introducing easier visa norms etc.
- There is an urgent need to start ferry services between India and Sri Lanka to improve people to people linkages. Finally, India needs Sri Lanka strategically as well, to ensure security in her neighborhood.

2.7 INDIA - ARGENTINA RELATIONS

Context

- Raksha Mantri Shri Rajnath Singh held talks with the visiting Minister of Defence of Argentine Republic Mr Jorge Enrique Taiana in New Delhi on July 18, 2023. Both Ministers discussed the ongoing defence cooperation initiatives, including measures to enhance defence industrial partnership.

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 RakshaMantri.
- 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.
- AnMoU 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.



India - Argentina Relations



Political Relations



- India-Argentina relations were elevated to the level of Strategic Partnership in 2019 during the State Visit of the President of Argentina.
- The two countries have strengthened their ties in various areas, including political, economic, cultural, and scientific cooperation.
- India established a Trade Commission in Buenos Aires in 1943, which later became one of its first embassies in South America.

Bilateral Exchanges



- There have been significant exchanges at the highest level between India and Argentina.
- Prime Minister Narendra Modi and President Alberto Fernandez had their first bilateral meeting in 2022, and earlier, President Mauricio Macri and President Cristina Fernández de Kirchner had visited India.

Economic and Commercial Relations



- In 2022, the trade volume reached a historic peak of USD 6.4 billion, with India becoming the fourth-largest trading partner of Argentina.
- Major items of India's exports to Argentina include petroleum oils, agrochemicals, textiles, and organic chemicals, while India imports vegetable oils, leather, cereals, and chemicals from Argentina.
- Both countries have also signed agreements to promote cooperation in sectors like oil, energy, and defense.

Cultural Relations



- India's culture, yoga, philosophy, and spiritual practices have had a significant impact in Argentina.
- Indian organizations like Brahmakumaris, Art of Living, and ISKCON have a strong following in the country.
- Cultural programs, including India Weeks, India Days, and International Day of Yoga celebrations, are organized in Argentina to promote cultural exchanges.

Technical and Development Cooperation



- India has been extending technical and economic cooperation to Argentina through scholarships, training programs, and capacity-building initiatives.
- The Indian Technical and Economic Cooperation (ITEC) program has provided opportunities for Argentine nationals to participate in various courses in India.
- Additionally, an India-Argentina Center of Excellence in IT has been established in Buenos Aires to promote cooperation in the IT sector.

2.8 INDIA VIETNAM RELATIONS

Context

- In a hugely significant development, India recently gifted an active missile corvette, INS Kirpan, to Vietnam. Interestingly, the handing over of the warship took place at a base in the South China Sea.

Details

- This is the first time that India is gifting a missile corvette to any nation, highlighting the growing strategic defence relationship between New Delhi and Hanoi. Needless to say, China is a big factor in this.
- Given souring relations between New Delhi and Beijing over the last few years, and Hanoi's disagreements with Beijing over the South China Sea, there is increasing convergence between New Delhi and Hanoi.
- This was also highlighted by the joint vision document to enhance the scope of bilateral defence ties by 2030 that was inked by the two sides last year. There is also a reciprocal logistics support pact to allow the militaries of the two countries to use each other's bases for repair and replenishment of supplies.
- For the very first time a contingent of the Vietnam People's Army was hosted by India for a field training exercise. India is also training Vietnamese military personnel on Sukhoi-30 jets and Kilo-class submarines


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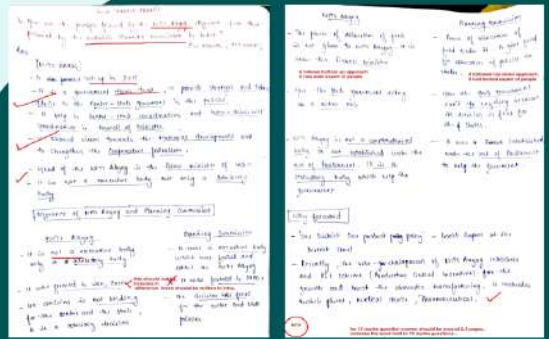
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Current Relations of India and Vietnam

Introduction

- Vietnam and India share a rich history of civilizational and cultural linkages spanning over 2000 years.
- Historical interactions and cultural exchanges have contributed to a sense of mutual understanding and cooperation between the two countries.
- President Murmu highlighted the rich history of civilizational and cultural linkages** between India and Vietnam, spanning over 2000 years.
- Vietnam is considered an important pillar of India's Act East Policy and a key partner in the **Indo-Pacific Vision**.

Background

- India-Vietnam relations have been exceptionally friendly and cordial since their foundations were laid by founding fathers of the two countries - President Ho Chi Minh and President Rajendra Prasad and Prime Minister Nehru.
- The traditionally close and cordial relations have their historical roots in the common struggle for liberation from foreign rule and the national struggle for independence.
- Pandit Jawaharlal Nehru was one of the first visitors to Vietnam after its victory against the French at Dien Bien Phu in 1954. President Ho Chi Minh went to India in February 1958. President Rajendra Prasad visited Vietnam in 1959.

Economic relations

- India's relations with Vietnam are marked by growing economic and commercial engagement. India is now among the top ten trading partners of Vietnam. During former Prime Minister Nguyen Tan Dung's visit to India in October 2014, the two sides decided to make economic cooperation a strategic thrust in the India-Vietnam Strategic Partnership.
- Bilateral trade between India and Vietnam has seen continuous growth over the past many years. India is now among the top ten trading partners of Vietnam. According to GOI data, total trade between the two countries during April - Nov of fiscal year 2016- 2017 was US\$ 6244.92 million.
- The two sides agreed to set the target of bilateral trade at USD 15 billion by 2020.
- Major export commodities from India are machinery and equipment, seafood, pharmaceuticals, cottons of all kinds, automobiles, textiles and leather accessories, cattle feed ingredient, chemicals, plastic resins, products of chemicals, fibres of all kinds, steel of all kinds, fabrics of all kinds, ordinary metals and jewellery & precious stones.

Comprehensive Strategic Partnership:

- The India-Vietnam 'Comprehensive Strategic Partnership' has broadened the scope of bilateral collaboration.
- Areas of collaboration include defense and security cooperation, trade and investment relations, energy security, development cooperation, cultural exchanges, and people-to-people relations.

Defense and Military Cooperation

- Bilateral defense cooperation is one of the strongest elements of the India-Vietnam partnership. The defense engagement encompasses various areas:



- **Capacity Building:** Efforts to enhance the military capabilities and expertise of Vietnam.
- **Industry Cooperation:** Collaborative projects and partnerships in the defense industry.
- **Peacekeeping:** Joint efforts in promoting peacekeeping operations.
- **Joint Exercises:** Participation in joint military exercises to strengthen interoperability and cooperation.

Science and Technology

- Science and Technology is an important area of bilateral cooperation. The MoUs/Agreements signed during Prime Minister Modi's visit to Vietnam last year on Exploration and Uses of Outer Space for Peaceful Purposes, IT Cooperation, CyberSecurity and the Framework Agreement signed in December on Uses of Atomic Energy for Peaceful Purposes show the importance our two countries attach to this area.
- **Information Technology** is an area with strong growth potential. Many Indian companies have established their presence in Vietnam for various IT solution and services in the area of banking, telecom, cyber security etc.

Assistance and Capacity Building

- **Lines of Credit:** Since 1976, India has offered several Lines of Credit (LoCs) to Vietnam over the years on concessional terms and conditions. A LoC agreement was signed in July 2013 for US\$ 19.5 million for execution of a Nam Trai-IV hydropower project and Binh Bo Pumping station.
- In addition, India has also offered to discuss a line of credit of US\$300 million in the textile sector.
- India has also agreed to consider earmarking an amount of up to USD 100 million under the Buyer's Credit of the National Export Insurance Account(BC-NEIA) for use by Vietnam.
- **Scholarships:** Vietnam has been a large recipient of training programmes under Indian Technical and Economic Cooperation (ITEC) programme. Presently, 150 ITEC slots are being offered to Vietnam every year along with 16 scholarships under the General Cultural Scholarship Scheme (GCSS), 14 scholarships under the Educational Exchange Programme (EEP) and 10 scholarships under the Mekong Ganga Cooperation Scholarship Scheme (MGCSS).

Indian Community

- Estimated population of Indians living in Vietnam is 2900, mostly in HCMC. **The Indian Business Chamber (INCHAM)** is an organisation of Indians living in Vietnam, primarily to promote trade and business interactions.
- **The Indian community is vibrant, law-abiding, well-educated and prosperous.** A vast majority of them are professionals working in Indian and multinational companies.
- **They retain strong family, cultural and business ties with India.** With the ongoing increase in bilateral trade, investment and tourism, the Indian community in Vietnam is set to grow and prosper further in the years ahead.

Conclusion

- Given that the China threat looms large for both Vietnam and India, this relationship is likely to gain greater traction in terms of both diplomatic and military engagements.
- The supply chain vulnerability recognized during the COVID-19 pandemic could also see expansion of ties in the economic and commercial sectors.
- More significantly, the high-level political attention from both India and Vietnam gives this relationship a major push to explore more ways to collaborate in the coming years.

2.9 INDIA JAPAN RELATIONS

Context

- Japan has contributed to many revolutions in India, said External Affairs Minister S Jaishankar during the India Japan Forum which was also attended by his Japanese counterpart Yoshimasa Hayashi.

Details

- Japan has the world's third-largest economy, having achieved remarkable growth in the second half of the 20th Century after the devastation of World War Two.
- Its role in the international community is considerable. It is a major aid donor, and a source of global capital and credit.
- More than three quarters of the population live in sprawling cities on the coastal fringes of Japan's four mountainous, heavily-wooded islands.
- Japan's rapid post-war expansion - propelled by highly successful car and consumer electronics industries - ran out of steam by the 1990s under a mounting debt burden that successive governments have failed to address.
- Japan's relations with its neighbours are still heavily influenced by the legacy of Japanese actions before and during World War Two. Japan has found it difficult to accept and atone for its treatment of the citizens of countries it occupied.

About India- Japan relationship

Historical Background

- **The exchange between Japan and India** is said to have begun in the 6th century when **Buddhism** was introduced to Japan. **Indian culture, filtered through Buddhism**, has had a great impact on Japanese culture, and this is the source of the Japanese people's sense of closeness to India.
- **After World War II, in 1949, Indian Prime Minister Jawaharlal Nehru** donated an Indian elephant to the Ueno Zoo in Tokyo. This brought a ray of light into the lives of the Japanese people who still had not recovered from defeat in the war.

- **Japan and India signed a peace treaty and established diplomatic relations** on 28th April 1952. This treaty was one of the first peace treaties Japan signed after World War II.
- Ever since the establishment of diplomatic relations, the two countries have enjoyed cordial relations.
- **In the post-World War II period**, India's iron ore helped a great deal Japan's recovery from the devastation.
- Following Japanese Prime Minister Nobusuke Kishi's visit to India in 1957, Japan started providing yen loans to India in 1958, as the first yen loan aid extended by Japanese government.

Current relations

- Prime Minister Yoshiro Mori's visit to India in August 2000 provided the momentum to strengthen the Japan-India relationship. Mr. Mori and Prime Minister Atal Bihari Vajpayee decided on the establishment of a **"Global Partnership between Japan and India"**. Since Prime Minister Junichiro Koizumi's visit to India in April 2005, Japan-India annual summit meetings have been held in respective capitals.
- When Prime Minister Manmohan Singh visited Japan in December 2006, the Japan-India relationship was elevated to the **"Global and Strategic Partnership"**.
- In September 2014, Prime Minister Narendra Modi paid an official visit to Japan and had a summit meeting with Prime Minister Shinzo Abe. They concurred to upgrade the bilateral relationship to a **"Special Strategic and Global Partnership."**
- **In March 2023, Prime Minister Kishida visited India and held Japan-India Summit Meeting** with Prime Minister Modi. The two leaders confirmed their commitment to discuss and work together on various issues in the international community in the lead-up to both the G7 and G20 summits and concurred to further develop Japan-India

relations and work closely toward the realization of a “Free and Open Indo-Pacific”.

Commitment to a Free and Open Indo-Pacific

- In the backdrop of **China's rising military manoeuvring** in the Indo-Pacific, **India and Japan** have asserted their steadfast commitment to a free and open Indo-Pacific that is inclusive and resilient.
- **Japan's Free and Open Indo-Pacific (FOIP) strategy and India's Indo-Pacific Oceans Initiative (IPOI)** have provided the framework for the two countries to deepen their strategic partnership and cooperation in the region.
- **The Japan-India Maritime Exercise (JIMEX) started off in 2012** and had its 10th edition in September 2022. The event consolidated the high degree of interoperability that exists between maritime forces of the two countries, through complex exercises in the surface, sub-surface and air domains.
- **The sixth round of this Dialogue took place in virtual format in 2021.** The two nations also, recently, concluded the inaugural edition of the bilateral air exercise 'Veer Guardian 2023' between the Indian Air Force (IAF) and Japan Air Self Defence Force (JASDF).
- Several agreements enable the exchange of supplies and services between the armed forces of the two countries, and the recently signed **Acquisition and Cross-Servicing Agreement (ACSA)** will further the interoperability of the Indian and Japanese navy.
- **The 2022 National Defense Strategy expresses Tokyo's intention** to “deepen bilateral and multilateral defence exchanges including service-to-service exchange in a broad range of fields including maritime security and cybersecurity, while promoting training and exercises as well as defence equipment and technology cooperation.”

Economic and commercial relations

- **India-Japan Comprehensive Economic Partnership (CEPA):** India-Japan Comprehensive Economic Partnership (CEPA) came into effect from 1 August 2011. The Agreement is most comprehensive of all such

agreements concluded by India and covers not only trade in goods but also services, movement of natural persons, investments, intellectual property rights, custom procedures and other trade related issues.

- **Bilateral Trade:** Bilateral trade totaled US\$ 21.96 billion during FY 2022-23. Exports from Japan to India during this period were US\$ 16.49 billion and imports were US\$ 5.46 billion.
- **India's primary exports to Japan** are petroleum products, organic chemicals; fish and crustaceans, molluscs and other aquatic invertebrates; nuclear reactors, boilers, machinery and mechanical appliances, parts thereof; vehicles other than railway or tramway rolling stock, and parts and accessories thereof etc.
- **Japan's Investment in India:** In FY2020, Japan Bank of International Cooperation (JBIC) Survey Report on Overseas Business Operations by Japanese Manufacturing Companies (Survey of Overseas Direct Investment by Japanese Companies) ranked India a close second to China for Japanese outward FDI in mid-term (3 years)

Defence and security Cooperation

- **India-Japan Defense and Security partnership** forms an integral pillar of bilateral ties. India-Japan defense exchanges have gained strength in recent years due to growing convergence on strategic matters and its significance is growing from the common outlook on **issues of peace, security and stability of the Indo-Pacific Region.**
- **The Agreement concerning Reciprocal Provision of Supplies and Services** between the Self-Defense Forces of Japan and the Indian Armed Forces (RPSS) was signed on 9 September 2020.

Indian Community in Japan

- In recent years, there has been a change in the composition of the Indian community with the arrival of many professionals, including IT professionals and engineers. The Nishikasai area in Tokyo is emerging as a “mini-India”.

- Their growing numbers had prompted the opening of three Indian schools. **Over 40,000 Indians live in Japan**, of which 282 are students with **30-40% pursuing doctoral courses**. Also, there are around 150 professors and 50 research visa holders.

S&T Cooperation

- S&T Cooperation was formalized through an **Inter-Governmental Agreement signed in 1985**. Recent initiatives include establishment of three India-Japan Joint Laboratories in the area of ICT (AI, IoT and Big Data); Initiation of **DST-JSPS Fellowship Programme for young researchers**; **MoU for third phase of Indian Beam Line at KEK Tsukuba** for advanced materials research; Setting up the **DBT-AIST International Center for Translational**

&Environmental Research (DAICENTER) at Tsukuba, Japan.

Closing thoughts

- New avenues for collaborative development of defence technologies have opened up between the two nations, given Tokyo's interest in joining India's '**self-reliance**' journey. By offering its expertise in **building fighter jets and submarines**, and **sharing of information and technology**, Japan has demonstrated its commitment to enhancing its strategic partnership with India.
- Japan has contributed to many revolutions in India, said External Affairs Minister S Jaishankar during the India Japan Forum which was also attended by his Japanese counterpart Yoshimasa Hayashi.

2.10 SHORT ARTICLE

India and Africa Ties

Context

- In the past 15 years and especially since 2014, India-Africa relations have developed steadily but more progress is achievable. In this context, the 20-member Africa Expert Group (AEG), established by the Vivekananda International Foundation, recently presented the VIF Report entitled '**India-Africa Partnership: Achievements, Challenges and Roadmap 2023**'.

Africa in transition

Political relations

- First, **political and diplomatic cooperation** should be strengthened by restoring periodic leaders' summits through the medium of the **India-Africa Forum Summit; the last summit was in 2015**.
- Besides, a new annual strategic dialogue between the **chairperson of the African Union (AU) and India's External Affairs Minister should be launched in 2023**.
- Another recommendation relates to forging consensus among G-20 members on the AU's entry into the G-20 as a full member.
- The expert group has also suggested that the



Ministry of External Affairs (MEA) should have a secretary exclusively in charge of African affairs to further enhance the implementation and impact of the Africa policy.

Defense and security

- **Second, on defence and security cooperation**, the government needs to increase the number of defence attachés deployed in Africa, expand dialogue on defence issues, widen the footprint of maritime collaboration, and expand lines of credit to facilitate defence exports.
- More can be done to increase the number of **defence training slots and enhance cooperation in counter-terrorism, cyber security and emerging technologies**.

Economic relations

- **Third, the largest number of recommendations relate to economic and development cooperation**. India-Africa trade **touching \$98 billion in FY22-23** is an encouraging development. This figure can go up if access to finance through the creation of an Africa Growth Fund (AGF) is ensured.
- A special package of measures to improve project exports and build up cooperation in the shipping domain has been suggested. A special focus on promoting trilateral cooperation and deepening science and technology cooperation could pay rich dividends.

Cultural engagement

- **Fourth, socio-cultural cooperation** should be increased through greater interaction between universities, think tanks, civil society and media organisations in India and select African countries.
- Setting up a **National Centre for African Studies** will be the right step.
- **Indian Technical and Economic Cooperation (ITEC)** and **Indian Council for Cultural Relations (ICCR) scholarships** awarded to Africans should be named after famous African figures.
- **Visa measures for African students** who come to India for higher education should be liberalised. They should also be given work visas for short periods.

Closing thoughts

- Finally, the report suggests a special mechanism for implementing the 'Roadmap 2030'. This can best be secured through close collaboration between the MEA and the **National Security Council Secretariat** through a team of officials working under the joint leadership of the Secretary, Africa in the MEA, and a designated Deputy National Security Adviser.

SCO Summit 2023

Context

- The formation of a "**more representative**" and multipolar world order is in the global interest- Leaders of the Shanghai Cooperation Organisation at the SCO's virtual online summit.

Highlights of the Summit

- **All participants of the organization share the same assessment** of the situation in global politics and security and in the social and economic spheres.
- **SCO is firmly committed to the formation of a truly equitable, multipolar world order**. A world order that is based on international law, on the universally accepted principles of the mutually respectful cooperation of sovereign states under the central coordinating role of the United Nations.
- **The practical work of the SCO** is being built on a constructive basis, with the organization playing an increasingly significant role in international affairs and **contributing** to maintaining peace and stability, ensuring the provision of the sustainable economic growth of its member states, and making international ties stronger.
- **SCO's decision to induct Iran as its ninth and latest member** was one of a number of agreements signed at the summit.

ABOUT SCO

About	<ul style="list-style-type: none"> The Shanghai Cooperation Organization (SCO) is an intergovernmental organization founded in Shanghai on 15 June 2001.
Primary function	<ul style="list-style-type: none"> Since its inception in 2001, the SCO has mainly focused on regional security issues, its fight against regional terrorism, ethnic separatism and religious extremism. To date, the SCO's priorities also include regional development.
Status in India	<ul style="list-style-type: none"> SCO currently comprises eight Member States -China, India, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan and Uzbekistan. It has Four Observer States interested in acceding to full membership - Afghanistan, Belarus, Iran, and Mongolia. It has six "Dialogue Partners" - Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka and Turkey. In 2021, the decision was made to start the accession process of Iran to the SCO as a full member, and Egypt, Qatar as well as Saudi Arabia became dialogue partners.
SCO RATS	<ul style="list-style-type: none"> The Regional Anti-Terrorist Structure (RATS), headquartered in Tashkent, Uzbekistan, is a permanent organ of the SCO, which serves to promote cooperation of member states against the three evils of terrorism, separatism and extremism

Court of Arbitration Hague

Context

- Hours after a Court of Arbitration (CoA) ruled that it has "competence" to consider matters concerning the Kishenganga and Ratle hydroelectric projects in Jammu and Kashmir.

Details

- Pakistan has opposed, India on Thursday reiterated its "consistent and principled position" that the constitution of the "so-called Court of Arbitration" is in contravention of the provisions of 1960 Indus Waters Treaty.
- In a statement, the Ministry of External Affairs (MEA) said, "A Neutral Expert is already seized of differences pertaining to Kishen-ganga and Ratle projects. Neutral Expert proceedings are the only Treaty-consistent proceedings at this juncture.
- The Treaty does not provide for parallel proceedings on same set of issues."
- New Delhi's reaction came after the Hague-based Permanent Court of Arbitration (PCA) issued a statement detailing the award of the CoA, chaired by Prof Sean D Murphy of the US.

About Permanent Court of Arbitration (PCA):

About	<ul style="list-style-type: none"> It is an intergovernmental organization located in The Hague, Netherlands.
Primary function	<ul style="list-style-type: none"> It is not a court in the traditional sense, but provides services of arbitral tribunal to resolve disputes that arise out of international agreements between member states, international organizations or private parties.
Cases	<ul style="list-style-type: none"> The cases span a range of legal issues involving territorial and maritime boundaries, sovereignty, human rights, international investment, and international and regional trade. The PCA is constituted through two separate multilateral conventions with a combined membership of 122 states.
Status	<ul style="list-style-type: none"> The organization is not a United Nations agency, but the PCA is an official United Nations Observer.

U.N. Human Rights Council

Context

- India on Wednesday voted in favour of a draft resolution tabled in the UN Human Rights Council that condemns and strongly rejects recent “public and premeditated” acts of desecration of the Holy Quran.

Details

- The Geneva-based 47-member UN Human Rights Council adopted the draft *resolution ‘Countering religious hatred constituting incitement to discrimination, hostility or violence’*, with 28 members voting in favour, seven abstentions and 12 nations voting against.
- India voted in favour of the resolution** that “condemns and strongly rejects the recent public and premeditated acts of desecration of the Holy Quran, and underscores the need for holding the perpetrators of these acts of **religious hatred to account in line with obligations of States arising from international human rights law**”.
- Those voting in favour of the resolution included **Bangladesh, China, Cuba, Malaysia, Maldives, Pakistan, Qatar, Ukraine and UAE**. Nations voting against the resolution included **Belgium, Finland, France, Germany, the U.K. and the U.S.**
- The draft resolution was brought by Pakistan on “**behalf of the States Members of the United Nations that are members of the Organisation of Islamic Cooperation**” as well as by the State of Palestine.

About United Nations Human Rights Council (UNHRC)

About	<ul style="list-style-type: none"> It is a United Nations body whose mission is to promote and protect human rights around the world.
Established	<ul style="list-style-type: none"> The Council was established by the United Nations General Assembly on 15 March 2006 to replace the United Nations Commission on Human Rights (CHR).
Primary function	<ul style="list-style-type: none"> The Council investigates allegations of breaches of human rights in United Nations member states and addresses thematic human rights issues like <u>freedom of association and assembly, freedom of expression, freedom of belief and religion, women's rights, LGBT rights, and the rights of racial and ethnic minorities.</u>
Structure	<ul style="list-style-type: none"> The members of the General Assembly elect the members who occupy 47 seats of the Human Rights Council. The term of each seat is three years, and no member may occupy a seat for more than two consecutive terms. The previous CHR had a membership of 53 elected by the Economic and Social Council (ECOSOC) through a majority of those present and voting. Members are eligible for re-election for one additional term, after which they must relinquish their seat. The seats are distributed along the following lines: <ul style="list-style-type: none"> 13 for the African Group 13 for the Asia-Pacific Group 6 for the Eastern European Group 8 for the Latin American and Caribbean Group 7 for the Western European and Others Group
Headquarters	<ul style="list-style-type: none"> The headquarters of the Council are at the United Nations Office at Geneva in Switzerland.

East Asia Summit

Context

- External Affairs Minister S. Jaishankar discussed “outstanding issues” along the Line of Actual Control (LAC) with top Chinese diplomat Wang Yi along the sidelines of the East Asia Summit (EAS) in Jakarta.

Details

- Mr. Jaishankar’s third high-level engagement with the Chinese side in recent months, following bilateral talks during visits by Foreign Minister Qin Gang to India for the G-20 Foreign Ministers’ meet in March and for a Shanghai Cooperation Organisation gathering in May.
- In both meetings with Mr. Qin, Mr. Jaishankar underlined the importance of peace on the LAC as a prerequisite for normalcy in the broader relationship, and called for China to take forward disengagement of troops in the two remaining friction points.
- A third meeting between the two Foreign Ministers was expected in Jakarta, but Mr. Qin did not travel because of reported health reasons. Instead, his predecessor, Wang Yi, who was promoted last year to the Politburo and also heads the ruling Communist Party’s Central Commission for Foreign Affairs, attended the Jakarta meetings.
- Discussed outstanding issues related to peace & tranquility in border areas. Our conversation also covered EAS/ARF [ASEAN Regional Forum] agenda, BRICS and the Indo-Pacific.

About East Asia Summit (EAS)

About	<ul style="list-style-type: none"> It is a regional forum held annually by leaders of, initially, 16 countries in the East Asian, Southeast Asian, South Asian and Oceanian regions, based on the ASEAN Plus Six mechanism.
Background	<ul style="list-style-type: none"> The concept of an East Asia Grouping has significant history going back to an idea <u>first promoted in 1991 by then Malaysian Prime Minister Mahathir Mohamad.</u> The final report in 2002 of the East Asian Study Group, established by the ASEAN Plus Three countries, was based on an EAS involving ASEAN Plus Three, therefore not involving Australia, New Zealand, or India.
Members	<ul style="list-style-type: none"> Membership expanded to 18 countries including Russia and the United States at the Sixth EAS in 2011. The 18 members of EAS are – the ten ASEAN member states (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam) along with Australia, China, India, Japan, New Zealand, the Republic of Korea, Russia and the United States. ASEAN leads the forum, and the chair rotates annually among ASEAN member states.
Global share	<ul style="list-style-type: none"> In 2020, EAS members represented 54 percent of the world's population and accounted for 62 percent of Global GDP worth an estimated US\$52.3 trillion.
First summit	<ul style="list-style-type: none"> The first summit was held in Kuala Lumpur, Malaysia on 14 December 2005.

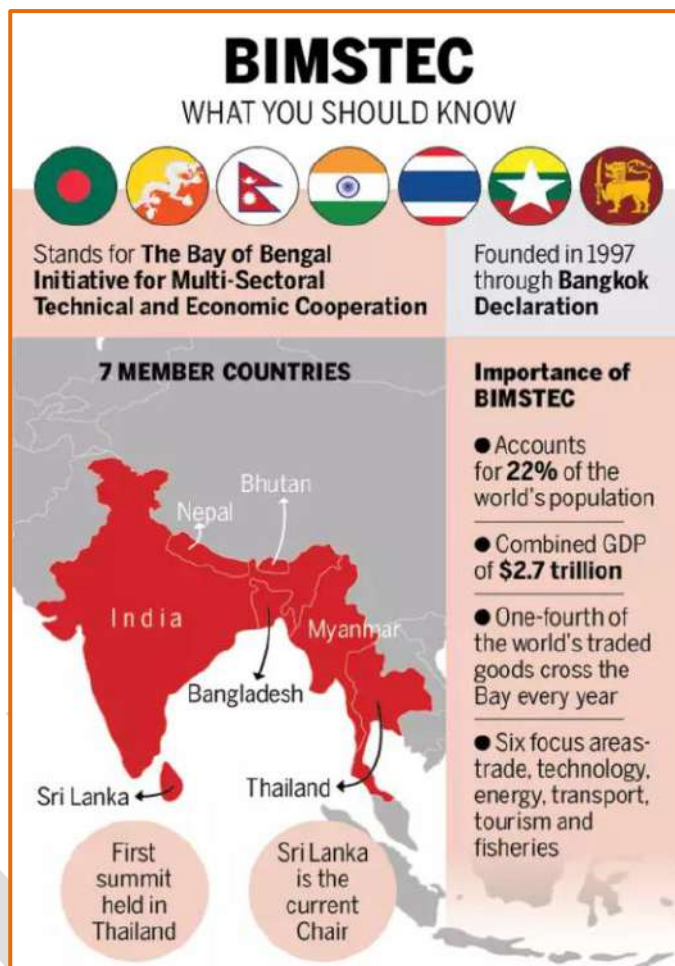
BIMSTEC

Context

- The National Security Council Secretariat, Government of India is organizing a two day Meeting of the BIMSTEC Expert Group on Cyber Security Cooperation in New Delhi.

Details

- The first-ever Foreign Ministers' meeting of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) began in Bangkok, Thailand, on July 17.
- India's External Affairs Minister S Jaishankar was also present here, and said in a tweet that areas of coordination challenges that were discussed, including health and energy security.
- The main objective of this BIMSTEC Expert Group meeting is to formulate the Action Plan which will bolster coordination and collaboration amongst the BIMSTEC Member States for strengthening Cyber Security in the use of ICTs.**
- This Action plan will cover the mechanisms for the exchanges of cyber related information, cybercrime, protection of critical information infrastructures, cyber incident response and international developments related to cyber norms.
- The Action Plan has been proposed to be implemented within the time frame of 5 years after which the Experts Group on Cyber Security will review the Action Plan.**



About Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)

About

- It is a regional organization comprising seven member countries around the Bay of Bengal.

Established

- Established in 1997 with the signing of the Bangkok Declaration, BIMSTEC aims to promote cooperation and economic integration among its member states.

Members

- BIMSTEC was initially known as BIST-EC, involving Bangladesh, India, Sri Lanka, and Thailand. Myanmar joined later in 1997, and Bhutan and Nepal became members in 2004.

Status

- The region covered by BIMSTEC is home to around 22% of the world's population, with a combined GDP of approximately \$2.7 trillion.

Secretariat

- The BIMSTEC Secretariat is in Dhaka, Bangladesh.

Maputo Protocol

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

- A group of civil society organisations, Solidarity for African Women’s Rights Coalition; Human rights organisation Equality Now and advocacy platform **Make Every Woman Count** released the landmark report, ***20 Years of the Maputo Protocol: Where are we now?***
- In July 2003, the African Union (AU) adopted the Maputo Protocol. Of the 55 member states, 44 have ratified or acceded to the Protocol on gender equality, becoming one of the most ratified instruments in the AU, the analysis stated.
- But despite these efforts, full domestication of the Protocol provisions into national legislature has, in many cases, been slow or ineffective. Some African States are yet to ratify or accede to the Protocol, said the report.
- The 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.

About Maputo Protocol

About	<ul style="list-style-type: none"> • The Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, better known as the Maputo Protocol, is an international human rights instrument established by the African Union.
Background	<ul style="list-style-type: none"> • It was adopted by the African Union in Maputo, Mozambique, in 2003 in the form of a protocol to the African Charter on Human and Peoples' Rights (adopted in 1981, enacted in 1986). It went into effect in 2005.
Membership and ratification	<ul style="list-style-type: none"> • Of the 55 member states, 44 have ratified or acceded to the Protocol on gender equality, becoming one of the most ratified instruments in the AU. • Full domestication of the Protocol provisions into the national legislature has, in many cases, been slow or ineffective. • Some African States are yet to ratify or accede to the Protocol.
Mandate	<ul style="list-style-type: none"> • It guarantees comprehensive rights to women including the right to take part in the political process, to social and political equality with men, improved autonomy in their reproductive health decisions, and an end to female genital mutilation.

2.11 SNIPPET



GLOBAL CRISIS RESPONSE GROUP

- The Global Crisis Response Group (GCRG) was set up by the United Nations Secretary-General in March 2022.
- It aims to address urgent and critical global issues pertaining to interlinked crises in food security, energy, and finance and to coordinate a global response.
- The GCRG is overseen by the Champions Group comprising of HOS/ HOGs of Bangladesh, Barbados, Denmark, Germany, Indonesia, and Senegal.



GLOBAL PEACE INDEX

- Global Peace Index (GPI) is a report produced by the Institute for Economics & Peace (IEP).
- The Index was first launched in May 2009, with subsequent reports being released annually.
- It measures the relative position of nations' and regions' peacefulness.
- The GPI ranks 163 independent states and territories (collectively accounting for 99.7 per cent of the world's population) according to their levels of peacefulness.
- This year, India fared well in the list and ranked at 126th position – climbed nine ranks up from last year's report.



URBAN 20 (U20) MAYORAL SUMMIT

- The Urban 20 (U20) Mayoral Summit, hosted by Ahmedabad, took place from 7-8 July.
- The summit concluded with the handover of the Communiqué from the Mayors to G20 leaders.
- The Communiqué received the highest ever number of endorsements for any U20 Communiqué, with 105 cities endorsing it.



HENLEY PASSPORT INDEX 2023

- The Henley Passport Index is a global ranking of countries according to the travel freedom enjoyed by their ordinary passport holders.
- India has risen seven places on the Henley Passport Index, 2023, from the 87th rank last year to the 80th rank.
- Japan, which held the top position for five years, dropped to third place.
- The U.K. climbed two places to occupy the fourth spot, while the U.S. dropped two places to the eighth spot.

2.12 1 MAINS QUESTION AND 5 MCQS

Q1. “India’s Neighbourhood First Policy” and “Sri Lanka’s India First” approach had to encounter several composite problems, eventually shaping present-day relations. Analyze.

Answer:

Introduction

- India and Sri Lanka have a **legacy of intellectual, cultural, religious and linguistic interaction** and the relationship between the two countries is more than 2500 years old. Trade and investment have grown and there is cooperation in the fields of development, education, culture and defence. Both countries share a broad understanding of major issues of international interest.

Body

Present-day relationship between India and Sri Lanka:

Development Cooperation:

- Sri Lanka is a major recipient of development assistance from the Government of India. India’s overall commitment stands close to

US\$ 3 billion, out of which around US\$ 560 million is purely in grants.

Commercial Relations:

- India is one of the largest investors in Sri Lanka with cumulative investments of around USD 1.2 billion.
- Sri Lanka is one of India’s largest trading partners in SAARC. Trade between the two countries grew rapidly after India-Sri Lanka Free Trade Agreement of 2000.

Defence and Security Cooperation:

- To enhance regional security, both countries cooperate in both traditional (Terrorism) and non-traditional security issues (human trafficking and drug smuggling).
- Capacity building and training of armed forces and police personnel of Sri Lanka has been the core area of cooperation between the two countries.

Cultural relations:

- Cultural Cooperation Agreement signed in 1977 forms the basis for periodic Cultural Exchange Programmes between the two countries.

Conclusion

- India should invest more in generating livelihoods for war-affected areas where only

Q2. Consider the following statements regarding East Asia Summit:

1. It is a regional forum held biennially by leaders of East Asia.
2. EAS members represented 54 per cent of the world's population and accounted for 62 per cent of Global GDP.
3. There are 16 member countries in the group including India.

Which of the above statements is/are correct?

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

Q3. Which among the following are part of the BIMSTEC grouping?

- a) Sri Lanka, Malaysia, Nepal
- b) Nepal, Maldives, Bangladesh
- c) Bhutan, Bangladesh, Cambodia
- d) Thailand, Myanmar, Nepal

Q4. Consider the following statements regarding Maputo Protocol:

- 1) It is an international human rights instrument established by the African Union.
- 2) All 55 members of African Union (AU) have ratified or acceded to the Protocol on gender equality.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only

ANSWER:

1. c
2. d
3. a
4. b
5. b

agriculture and fisheries are key drivers. India must negotiate with the Lankan leader to get approvals for all pending projects.

- c) 1 and 2 only
- d) Neither 1 nor 2

Q5. Consider the following statements regarding the Permanent Court of Arbitration (PCA):

1. It is an intergovernmental organisation located in the Hague, Netherlands.
2. It provides the services of an arbitral tribunal that resolves disputes arising out of international agreements between member states and international organisations only.
3. It is not a United Nations agency, but an official United Nations Observer.

Which of the above statements is/are correct?

- a) 1 and 2 only
- b) 1 and 3 only
- c) 2 only
- d) 1, 2 and 3.

Q6. Consider the following statements regarding the Global Crisis Response Group (GCRG):

1. The UNGA set up the Global Crisis Response Group (GCRG).
2. It aims to address urgent global issues pertaining to interlinked crises in food security, energy, and finance.

Which of the above statements is/are correct?

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

3. ECONOMY

3.1 PEPSICO AND ISSUE OF IPR

Context

- The Delhi High Court upheld the decision of the Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA) to cancel the intellectual property protection given to PepsiCo India Holdings Pvt. Ltd for the potato variety FL 2027.

Details

- The court agreed with the PPVFRA that PepsiCo had violated the provisions of the Protection of Plant Varieties and Farmers' Rights Act, 2001, by failing to disclose the source of the genetic material used in developing the variety and not complying with benefit-sharing obligations under the Act.
- PepsiCo had also attempted to restrict the rights of farmers to save, use, exchange, or sell the seeds of FL 2027.

Background

- The case centred around **FL 2027, a unique potato** variety suitable for chip production due to its **low moisture and sugar levels, allowing it to retain its quality and colour during processing**. PepsiCo developed this potato variety in 1996, and it has been used to produce Lay's brand potato chips in India, with around 14,000 contract farmers growing the potatoes and selling them to PepsiCo.
- PepsiCo obtained a registration certificate for FL 2027 as an "extant variety" in 2016, which granted it intellectual property protection for six years, extendable up to 15 years. However, the PPVFRA later withdrew its approval and denied PepsiCo's request for registration renewal.

Why registration was cancelled?

- The registration was cancelled because **PepsiCo violated the rules** for applying as a "new variety." The law requires that a "new variety" must not have been sold in India

more than one year before the date of application.

Protection of Plant Varieties and Farmers' Rights Act, 2001

About

- It is a **law that aims to protect the rights of plant breeders**, farmers and researchers, and to encourage the development of new varieties of plants.
- It **provides for the registration of plant varieties** and the granting of intellectual property rights to the breeders.
- It establishes a Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA) to administer the provisions of the law and to maintain a National Register of Plant Varieties.
- It **grants certain rights to the farmers** to save, use, sow, resow, exchange or sell their farm produce, including seeds of a registered variety, subject to certain conditions.
- It **provides for compulsory licensing**, revocation and cancellation of registration, infringement and penalties for violation of the law.
- Compulsory licensing is a legal mechanism that **allows a government to grant licenses to manufacture**, use, or sell a patented product or process **without the consent of the patent holder** or without the need to negotiate a voluntary license.

Features

- Under the PPV&FR Act, **applicants are required to disclose the source of the genetic material** used in developing the plant variety. This ensures transparency and prevents misrepresentation of novelty.
- The PPV&FR Act **mandates that breeders share benefits with farmers** when commercializing plant varieties. Farmers who contributed to the development and

conservation of plant genetic resources should receive fair compensation.

Significance

- Intellectual property protection incentivizes companies like PepsiCo to invest in research and development of new plant varieties that have unique characteristics and economic value.
- By obtaining intellectual property protection, companies can establish their products' uniqueness, leading to the creation of a robust seed industry.
- Developing plant varieties with specific traits, like FL 2027's suitability for chip production, can contribute to improved agricultural practices and increased crop yields.

Challenges

- Companies seeking intellectual property protection must adhere to strict **disclosure requirements**, and violations can lead to the cancellation of registration, as seen in PepsiCo's case.
- **Balancing the interests of companies and farmers** in benefit-sharing can be challenging, as disputes over fair compensation may arise.

Way Forward

- Companies engaging in plant variety development must be **aware of the legal**

obligations and disclosure requirements under the PPV&FR Act to avoid compliance issues.

- A **transparent and efficient application process** can ensure that companies provide accurate information about their plant varieties.
- Companies like PepsiCo can **explore sustainable partnerships with farmers**, ensuring that benefit-sharing arrangements are mutually beneficial and foster collaboration.
- Regulatory authorities need to **strengthen monitoring and enforcement mechanisms** to ensure that companies comply with the provisions of the PPV&FR Act.
- Public-private partnerships can **promote innovation in agriculture**, contribute to seed development, and support sustainable agriculture practices.
- By adopting a proactive and transparent approach, companies like PepsiCo can continue to innovate and contribute to the development of improved plant varieties while upholding their responsibilities under the Protection of Plant Varieties and Farmers' Rights Act 2001. These efforts can lead to mutually beneficial outcomes for the agriculture sector, companies, and farmers alike.

3.2 FARMER DISTRESS INDEX

Context

- The 'Farmers Distress Index' is being developed by the Central Research Institute for Dryland Agriculture (CRIDA) in India. It will serve as an early warning system for addressing farmers' distress and improving their well being

Details

- Farmer distress refers to the **various challenges and difficulties faced by agricultural communities**, particularly small and marginalized farmers. These challenges can be **economic, social, and environmental** in nature.

- Factors contributing to farmer distress may include declining agricultural productivity, low income, high debt burdens, inadequate access to credit, fluctuating crop prices, lack of modern technology and infrastructure, and adverse weather conditions, among others.

Farmers' Distress Index

About

- The farmers' distress index is a **comprehensive tool designed to monitor and assess the level of hardship** and suffering faced by farmers in different regions.
- By using multiple sources of data and conducting standardized phone interviews, the index aims to identify early warning signs

of distress, which can then be used by various stakeholders to take proactive steps and prevent or mitigate the adverse effects on farmers.

- It uses multiple data sources to identify early warning signs of distress in order to take proactive steps for preventing/mitigating distress.
- By providing a numerical representation of distress levels, the **index helps policymakers, government agencies**, NGOs, and other stakeholders to prioritize their efforts and resources to support vulnerable farmers effectively. **Early identification of distress signs enables timely intervention**, potentially reducing the incidence of farmer suicides and ensuring the overall well-being of agricultural communities.

Key indicators to evaluate the level of distress

- **Exposure to climatic events**: It assesses the impact of droughts, floods, crop failure due to pest attacks, and livestock deaths on farmers.
- **Debt Burden**: It evaluates the extent of the financial burden and debt-related issues faced by farmers, which is often a significant factor contributing to distress.
- **Adaptive capacity**: It considers the ability of farmers and local governments to cope with adverse situations through various schemes and support mechanisms.
- **Landholding and irrigation facilities**: Landholding size and access to irrigation facilities can significantly impact a farmer's ability to withstand distress.
- **Sensitivity and adaptation strategies**: It looks at the farmer's capacity to adapt and implement strategies such as growing contingency crops to mitigate the impact of crop failure.
- **Triggers for immediate distress**: Health-related expenditures and other immediate triggers for distress are considered to identify vulnerable farmers.
- **Socio-psychological factors**: This indicator takes into account the psychological and social impacts of distress on farmers.

Methodology

- Based on the data collected and the assessment of the indicators, **each farmer is assigned a distress score between 0 and 1**. The scale ranges from 0 (no distress) to 1 (extreme distress).
- Distress levels are further categorized into different ranges: a score between 0 and 0.5 indicates low distress, between 0.5 and 0.7 indicates moderate distress, and above 0.7 indicates severe distress.

Significance

- Farmer distress has significant implications for food security, rural economies, and social stability. Agriculture is a primary livelihood for millions; **any distress in the farming community can have ripple effects on the entire society**. It can also lead to rural-to-urban migration, increased economic inequality, and loss of traditional knowledge and practices.
- It helps **identify areas and regions that are most vulnerable to farmers' distress**, allowing for timely and targeted interventions by various agencies.
- It allow for **monitoring the effectiveness of various schemes** and policies aimed at mitigating farmers' distress and enhancing their resilience.
- It provides a **foundation for research and analysis** on the causes and consequences of farmers' distress, its impact on rural development, and food security.
- **It shows the specific problems faced by individual farmers**, enabling tailored solutions for their unique circumstances.
- It is being **developed as a mobile or desktop application**, making it accessible to various stakeholders, including government bodies, agriculture departments, rural development departments, agriculture universities, non-profits, and civil society organizations.

Challenges

- **Policy gaps**: Existing agricultural policies may not adequately address the root causes of distress or may lack effective implementation.
- **Market volatility**: Fluctuating commodity prices and market uncertainties can make it difficult for farmers to plan and invest.

- **Climate change:** Changing weather patterns can lead to unpredictable crop yields and exacerbate existing vulnerabilities.
- **Access to credit:** Farmers often face difficulties in accessing affordable credit, leading to dependence on informal lenders at high-interest rates.
- **Land reforms:** Land ownership issues and tenancy laws can limit the ability of farmers to access and utilize land efficiently.

Conclusion

- Farm distress is a complex and multifaceted issue that requires urgent attention and action from various stakeholders, including

the government, civil society, the private sector, and academia. The distress faced by farmers is influenced by factors such as climate change, crop failure, price volatility, debt burden, and socio-psychological impacts. To effectively tackle these challenges, a holistic and participatory approach is necessary. The successful utilization of the Farm Distress Index, in conjunction with comprehensive and participatory strategies, can pave the way for a brighter and more sustainable future for Indian agriculture and the millions of farmers who depend on it

3.3 GATI SHAKTI INFRASTRUCTURE PLATFORM

Context

- The government is working on a mechanism to share data with industry and potential investors about multi-modal connectivity and other infrastructure captured on the PM Gati Shakti platform.

Details

- The PM Gati Shakti platform is a digital tool to bring 16 ministries together for integrated planning and coordinated implementation of infrastructure projects.
- The Network Planning Group under the platform has evaluated and facilitated 85 large central projects worth nearly ₹5.4 lakh crore so far.
- The platform will also help in identifying critical gaps, optimizing resources, reducing delays and enhancing the competitiveness of Indian businesses.

PM Gati Shakti platform

About

- The PM Gati Shakti platform is a significant initiative by the Indian government aimed at enhancing multi-modal connectivity and improving physical and social infrastructure across the country.
- It serves as a comprehensive repository of geospatial data, providing valuable

information about various infrastructure projects.

- The Network Planning Group (NPG) operates within the platform and plays a crucial role in evaluating and facilitating large central infrastructure projects.
- It was launched in 2021 as a National Master Plan for Multi-modal Connectivity.
- It is part of the government's vision to invest Rs111 lakh crore in infrastructure over the next five years under the National Infrastructure Pipeline.

Features

- The platform integrates multiple layers of geospatial data, offering a comprehensive view of various infrastructure projects, their locations, and connectivity.
- PM Gati Shakti emphasizes multi-modal connectivity, which means it focuses on integrating different modes of transportation like roads, railways, waterways, and airways to create a seamless and efficient transportation network.
- The NPG is responsible for evaluating and facilitating infrastructure projects, ensuring they align with the country's development goals and are executed effectively.
- The government is now working on a mechanism to share data from the platform with the industry and potential investors,

enabling them to make informed decisions about investments and business opportunities.

Significance

- PM Gati Shakti aims to **boost infrastructure development** across the country, which is crucial for economic growth, job creation, and improving the quality of life for citizens.
- By sharing infrastructure data with industry and investors, the platform can **attract private sector participation and foreign investments** in key projects, leading to accelerated development.
- Emphasizing multi-modal connectivity can lead to the **seamless movement of goods and people**, reducing logistics costs and improving overall efficiency.

Challenges

- Sharing **infrastructure data with external stakeholders necessitates** robust data security measures to prevent unauthorized access and potential misuse.
- Integrating data from multiple sources and **ensuring compatibility among various infrastructure projects** can be technically challenging.
- Large infrastructure projects often face hurdles related to **land acquisition and environmental clearances**, which might slow down their implementation.

Way Forward

- The government should **adopt a collaborative approach** involving various ministries, state governments, and private stakeholders to

ensure the effective implementation of infrastructure projects.

- Encouraging **public-private partnerships can expedite infrastructure development** while sharing the financial burden between the government and private investors.
- To build trust with industry and investors, the government should **ensure transparency in sharing infrastructure data** and provide accurate and up-to-date information.
- **Streamlining policies** related to land acquisition, environmental clearances, and project approvals can accelerate the execution of infrastructure projects.

Conclusion

- The PM Gati Shakti platform and the Network Planning Group play pivotal roles in driving infrastructure development and multi-modal connectivity in India. By sharing infrastructure data with industry and investors, the government can attract investments, boost economic growth, and create a more efficient transportation network. However, addressing challenges related to data security, interoperability, and project hurdles will be critical to the platform's success. A collaborative approach, along with policy reforms, can pave the way for a robust and sustainable infrastructure ecosystem in the country.

Must Read:

GATI SHAKTI PORTAL:

<https://www.iasgyan.in/daily-current-affairs/gati-shakti-portal>

3.4 RESTRICTION ON THE SUPPLY OF GALLIUM AND GERMANIUM BY CHINA

Context

- The recent announcement by the Chinese Ministry of Commerce to implement export controls on items related to gallium and germanium has raised concerns in the global market, especially in the context of the ongoing 'chip war.'

Details

- The Chinese Ministry of Commerce announced that it would implement export

controls on gallium and germanium-related items from August 1, 2023, to safeguard national security and interests.

- Gallium and germanium are two critical raw materials for making semiconductor chips, which are used in various high-tech industries such as telecommunications, defence, aerospace, automotive, solar etc.
- **China is the world's largest producer and exporter of both gallium and germanium,**

accounting for 80% and 60% of the global market respectively.

- China's move is seen as a retaliatory measure in the ongoing 'chip war' with the U.S. and other countries that have restricted chip exports to China or imposed export controls on semiconductor equipment.

Specific measures announced

- **Licensing Requirement:** Export operators are now required to obtain a specific license to export gallium and germanium. This licensing process involves providing detailed information about the importers, end-users, and the intended end use of these raw materials.
 - An exporter will have to apply for a dual-use item export license; otherwise, no export would be permitted.
- **Stringent Application Process:** The application process for obtaining the export license requires thorough documentation and verification of the export contract. The exporter must produce the original export contract as part of the application.
- **Penalties and Criminal Liability:** Exporting gallium and germanium without proper permission or in violation of the export controls constitutes a violation, leading to administrative penalties. Additionally, such actions may also be deemed as a crime, with the exporter held "criminally responsible."

Impact on World

- China's export controls on gallium and germanium could have **serious implications for the global supply chains and the competitiveness of various sectors** that rely on these raw materials for their products.
- The announcement led to a **spike in the prices of gallium and germanium** with companies rushing to secure their supplies before the regulations take effect.
- The U.S., Europe and other countries that import gallium and germanium from China could face shortages, disruptions or higher costs in their chip production or consumption.
- According to the European industry association Critical Raw Materials Alliance (CRMA), China accounts for 80% of gallium

production. **China also accounts for 60% of total germanium output.**

Impact on India

- The Ministry of Mines has identified gallium and germanium as **crucial elements for the country's economic development and national security.** These elements are used in India's semiconductor industry, which is growing rapidly due to increasing demand from sectors such as electronics, IT, telecom, defence etc.
- India could face challenges in sourcing gallium and germanium from China due to China's export controls. This could **affect chip production or consumption capacity,** especially for strategic sectors such as defence, space and nuclear energy.
- India could also face competition from other countries that are looking for alternative sources of gallium and germanium.

Challenges for India

- **Supply Chain Dependence:** India's high dependence on Chinese imports for gallium and germanium leaves it vulnerable to supply chain disruptions caused by export controls or other trade restrictions.
- **Price Volatility:** The export controls may lead to price fluctuations for gallium and germanium, impacting the cost of production for Indian industries and potentially affecting their competitiveness.
- **Domestic Production:** India's limited domestic production capabilities for gallium and germanium could hinder its ability to meet domestic demand and reduce reliance on imports.

Way forward for India

- Investing in research and development to **develop and adopt alternative materials or technologies** that can replace or supplement gallium and germanium can enhance India's semiconductor industry's resilience. By fostering a culture of innovation and entrepreneurship in the semiconductor industry, India might develop a culture of innovation and entrepreneurship.
- Implementing supportive **policies and incentives for domestic manufacturing and**

technology development in the semiconductor sector can boost its growth and competitiveness.

- India should explore alternative supply sources for gallium and germanium to reduce dependency on Chinese imports. India should look at other possible suppliers such as Japan, Germany, Russia, and Kazakhstan, among others.
- Encouraging investments in domestic production capabilities for gallium and germanium can enhance India's self-reliance and reduce vulnerability to global supply chain disruptions. India could leverage its strengths in software, IT services and digital platforms to create value-added products and services based on chips.
- Strengthening partnerships with other countries that produce gallium and germanium can provide additional supply options and ensure a more diversified supply chain. India could engage in dialogue and

cooperation with the U.S., Europe, Japan, South Korea etc. on issues such as trade, technology, security, standards etc. related to semiconductors.

Conclusion

- By adopting a proactive and strategic approach, India can mitigate the impact of the Chinese export controls on gallium and germanium and strengthen its position in the global technology and semiconductor industry. Collaborative efforts with industry stakeholders and international partners will be vital in ensuring a secure and sustainable supply of critical raw materials.

Must Read:

Rare Earth Metals:<https://www.iasgyan.in/daily-current-affairs/rare-earth-metals-6>

Critical Minerals: [https://www.iasgyan.in/daily-current-affairs/critical-minerals#:~:text=Critical%20minerals%20have%20been%20classified,heavy%20rare%20earth%20elements%20\(HREEs\)](https://www.iasgyan.in/daily-current-affairs/critical-minerals#:~:text=Critical%20minerals%20have%20been%20classified,heavy%20rare%20earth%20elements%20(HREEs))

3.5 GOODS AND SERVICES TAX NETWORK

Context

- The Union Ministry of Finance issued a notification that brought the Goods and Services Tax Network (GSTN) under the ambit of the Prevention of Money-laundering Act (PMLA).

Details

- The Prevention of Money-laundering Act (PMLA) is a law that aims to prevent and punish the use of illegal funds for criminal activities. The PMLA also allows the Enforcement Directorate and other agencies to access and share information related to money laundering cases.
- The Finance Ministry notification amended an earlier 2006 notification that specified the provisions under Section 66 of the PMLA. Section 66 empowers the central government to designate any officer or authority to furnish or obtain information from any other officer or authority for the PMLA.

Implication of inclusion of GSTN to PMLA

- The inclusion of the GSTN in the list of authorities under Section 66 means that the GSTN can now share information with the Enforcement Directorate and other agencies that are involved in investigating money laundering cases. It also means that these agencies can access the data and records maintained by the GSTN.
- This move is seen as a step to curb GST fraud and fake registrations, which have been increasing in recent times. GST fraud involves creating fake invoices or bills to claim input tax credits or refunds without actually supplying any goods or services. Fake registrations involve obtaining GST numbers using false or forged documents or identities.
- By bringing GSTN under the PMLA, the tax authorities will have more power to trace the source and destination of funds involved in GST fraud and fake registrations. They will also be able to identify and prosecute the real

beneficiaries of such frauds, who may be hiding behind shell companies or intermediaries.

Significances of the Step taken

- It will **help in detecting and preventing tax evasion** through fake billing and fake invoicing by cross-verifying the data available on GSTN with other sources such as bank accounts, income tax returns, etc.
- It will **help in identifying and prosecuting the masterminds and beneficiaries** of fraudulent transactions involving shell companies and intermediaries.
- It will help in **recovering the revenue loss caused by tax evasion** by attaching or seizing the properties derived from or involved in such transactions.
- It will **help in improving the compliance level and trust** among genuine taxpayers by creating a deterrent effect on potential evaders.
- It will help in enhancing the coordination and cooperation among various agencies such as ED, CBIC, Income Tax Department, etc. for effective enforcement of GST laws.

Challenges related with the implementation of the new rule

- It may **increase the compliance burden and harassment** for honest taxpayers who may be subjected to unnecessary scrutiny or investigation by multiple agencies.
- It may **create confusion and conflict among various agencies** over their jurisdiction and authority to deal with GST offences.
- It may infringe upon the privacy and data security of the taxpayers who may be reluctant to share their sensitive information on GSTN.
- It may **face legal hurdles or challenges** from various stakeholders who may question the validity or constitutionality of this decision.

Way forward to ensure smooth implementation of the new rule

- It should **issue clear guidelines and standard operating procedures** for sharing information or material between ED and GSTN and among other agencies.
- It should **ensure that only relevant and necessary information or material is shared** and used for investigation or prosecution under PMLA or any other law.
- It should **ensure that adequate safeguards are provided** to protect the privacy and data security of the taxpayers and prevent any misuse or leakage of information or material.
- It should **ensure that the taxpayers are given a fair opportunity** to explain or defend themselves before any action is taken against them under PMLA or any other law.
- It should **ensure that the decision is in conformity with the constitutional and legal provisions** and does not violate any fundamental rights or principles of natural justice.

Conclusion

- The government has brought the GSTN under the PMLA to curb tax evasion through fake billing and fake invoicing. This is a significant move that will help in improving the GST system and the economy. However, it also poses some challenges that need to be addressed. The government should take appropriate measures to ensure that this decision is implemented effectively and efficiently without causing any hardship or harassment to honest taxpayers.

Must Read:

GST: <https://www.iasgyan.in/daily-current-affairs/gst-31>

GSTN: <https://www.iasgyan.in/daily-current-affairs/gstn>

3.6 INDIA AND EFTA FREE TRADE AGREEMENT

Context

- India and the four European Free Trade Association (EFTA) states— Iceland,

Liechtenstein, Norway and Switzerland— have recently expressed their willingness to resume

their negotiations towards a Trade and Economic Partnership Agreement (TEPA).

European Free Trade Association (EFTA)

- It is a regional trade organization that consists of four member states: Iceland, Liechtenstein, Norway and Switzerland.
- It was established in 1960 as an alternative to the European Economic Community (EEC), which later became the European Union (EU).
- It aims to promote free trade and economic integration among its members, as well as with other countries around the world.

Working

- One of the main instruments of the EFTA's external trade policy is the negotiation of free trade agreements (FTAs) with third countries.
- The EFTA's FTAs are compatible with the rules and principles of the World Trade Organization (WTO) and complement the bilateral agreements that the EFTA states have with the EU.

Some of the main areas of interest for EFTA negotiations

Industrial goods

- EFTA seeks to eliminate tariffs and other barriers to trade for industrial goods, including fish and other marine products, as well as processed agricultural products.
- EFTA also aims to ensure effective rules of origin, customs procedures, technical regulations, standards and conformity assessment procedures.

Services

- EFTA seeks to improve market access and national treatment for service providers in various sectors, such as financial services, telecommunications, transport, tourism, professional services and environmental services.
- EFTA also aims to ensure a high level of protection for intellectual property rights, including geographical indications.

Investments

- EFTA seeks to establish a comprehensive framework for the promotion and protection of investments, including provisions on national treatment, most-favoured-nation treatment, fair and equitable treatment,

expropriation and compensation, transfers, dispute settlement and corporate social responsibility.

Government procurement

- EFTA seeks to ensure transparency, non-discrimination and fair competition in government procurement markets, as well as mutual access to procurement opportunities at central and sub-central levels of government.

India and EFTA Relations

About

- India and EFTA are important economic partners with complementary strengths and interests.
- India is one of the fastest-growing economies in the world with a large domestic market, a young and skilled workforce, and a diversified industrial base.
- EFTA states are among the most competitive and innovative economies in the world with a high level of human development, technological expertise, and environmental standards.
- They are also major investors in India with over \$35 billion of foreign direct investment (FDI) as of 2020.
- The EFTA and India launched FTA negotiations to create a comprehensive and ambitious agreement that would enhance trade and investment flows between the two sides.

Some of the main areas of interest for EFTA negotiations

- A Trade and Economic Partnership Agreement (TEPA) between India and EFTA would create new opportunities for trade and investment by eliminating or reducing tariffs and non-tariff barriers on a wide range of products and services.
- It would also enhance cooperation in areas such as intellectual property rights, government procurement, competition policy, dispute settlement, and sustainable development.
- EFTA seeks to enhance cooperation with India in areas such as competition policy,

trade facilitation, trade and sustainable development, trade and gender equality, trade defence instruments, dispute settlement and institutional arrangements.

Expected Outcomes

- TEPA between India and EFTA would support their respective efforts to **diversify their trade partners and reduce their dependence on traditional markets** such as the European Union (EU) and China.
- It would also enable them to leverage their respective strengths in sectors such as pharmaceuticals, biotechnology, machinery manufacturing, information technology, renewable energy, and tourism.
- India could benefit from **EFTA's cutting-edge technologies** in solar, wind, hydro, and geothermal power to achieve its green growth aspirations.
- EFTA could benefit from India's highly skilled workforce in the services sector and its growing consumer demand.

Challenges

- Some challenges **need to be addressed before a TEPA can be concluded.**
- Resolving the differences on issues such as intellectual property rights protection, data security norms, agricultural subsidies, sanitary and phytosanitary measures, rules of origin, and labour standards.
- According to the latest data, India's trade with the EFTA countries showed a decline in both exports and imports during April-February 2022-23.

- India exported goods worth USD 1.67 billion to these countries, down from USD 1.74 billion in the same period of 2021-22.
- India imported goods worth USD 15 billion from these countries, a sharp drop from USD 25.5 billion in the previous year.
- The trade deficit with the EFTA group remained high at USD 13.33 billion. These issues reflect the different levels of development, economic structure, regulatory framework, and social preferences of the parties involved.
- Therefore, a successful TEPA would require a flexible and pragmatic approach that balances the interests of both sides while ensuring high standards of quality and sustainability.

Conclusion

- A TEPA between India and EFTA would be a win-win proposition for both sides as it would enhance their bilateral trade and economic partnership while contributing to a more inclusive global trading system. It would also strengthen their strategic ties and mutual understanding of changing world order. Therefore, both sides should make sincere efforts to resume their negotiations and overcome their differences at the earliest.

Must Read:

Free Trade

Agreement:<https://www.iasgyan.in/daily-current-affairs/free-trade-agreement-48>

3.7 E-WAY BILL

Context

- The GST Council, the apex decision-making body for the Goods and Services Tax (GST), held its 50th meeting on July 17, 2023. Among the various decisions taken at the meeting, one of the most significant was the approval of an **order to make an e-way bill mandatory for the intra-state movement of gold, gold jewellery and precious stones.**

Details

- The order will come into effect from August 1, 2023. The GST Council said that this decision was taken to curb the smuggling and illegal trade of these items, which are prone to evasion and under-reporting of GST.
- The Council's decision has been welcomed by some sections of the industry and trade associations, who said that it will create a level playing field for all players and eliminate unfair competition. They also said that it will

improve the ease of doing business and reduce the compliance burden for traders and transporters.

- However, some sections of the industry and trade associations have expressed their concerns and reservations about the decision. They said that **it will increase the cost and complexity of doing business and create operational challenges for the traders and transporters.** They also said that it will affect the liquidity and cash flow of the businesses and hamper their growth prospects.

What is an e-way bill?

- An e-way bill is an **electronic document that contains details of the goods being transported** from one place to another. It is generated online through a portal or an app by the supplier, transporter or recipient of the goods.
- It is mandatory for inter-state and intra-state movement of goods worth more than Rs 50,000 in India.

Why was it introduced?

- The e-way bill system was **introduced as part of the Goods and Services Tax (GST) regime** in 2018. The main objective of the system is to **facilitate faster and smoother movement of goods across the country** by reducing the physical checks and paperwork at state borders and toll plazas. It also aims to improve tax compliance and prevent evasion by tracking the movement of goods.

Features of E-way bill

- It is valid for a specified period depending on the distance to be covered by the goods.
- It can be cancelled or modified within 24 hours of generation if the goods are not transported or there is a change in the details.
- It can be extended before or after its expiry if there is a delay in transportation due to unforeseen circumstances.
- It can be verified by the tax authorities or the enforcement agencies through a QR code or a unique number.
- It can be integrated with the vehicle tracking system or the RFID tags for real-time monitoring of the goods.

- It is generated for the movement of goods worth more than Rs. 50,000. However, **in the case of gold, gold jewellery and precious stones it must be more than Rs 2 lakh.**

What are its significance?

- The Council said that this decision will bring **uniformity and transparency in the taxation of these items** across the country. It will also **facilitate the tracking and verification of these items** by the tax authorities and prevent any loss of revenue to the exchequer.
- It **reduces the cost and time of transportation** by eliminating the need for multiple documents and physical verification at state borders and toll plazas.
- It **enhances the transparency and accountability** of the supply chain by providing a digital trail of the goods movement.
- It **improves the efficiency and effectiveness** of the tax administration by facilitating data sharing and analysis among different authorities.
- It **curbs tax evasion and leakage** by detecting and preventing any mismatch or duplication of invoices or bills.

What are its challenges?

- The **lack of adequate infrastructure and connectivity** for generating and verifying e-way bills in remote areas or during network failures.
- **Technical glitches and errors in the portal** or the app cause delays or inconvenience to the users.
- The **lack of awareness and training among the stakeholders**, especially the small and medium enterprises, about the rules and procedures of the system.
- The resistance and reluctance among some traders and transporters to adopt the system are due to fear of increased scrutiny or harassment by the authorities.
- The e-way bill system is a key reform under the GST regime that has the potential to transform the logistics sector in India. However, it also requires constant improvement and innovation to overcome its challenges and limitations.

Way Forward

- Strengthening the infrastructure and connectivity for generating and verifying e-way bills across the country.
- **Streamlining and simplifying the process** and interface of the portal or the app for user convenience and ease of access.
- Increasing awareness and training among all stakeholders about the benefits and compliance requirements of the system.
- **Ensuring coordination and cooperation** among different authorities for smooth implementation and enforcement of the system.
- Encouraging feedback and suggestions from users for enhancing user satisfaction and trust in the system.

Conclusion

- The e-way bill is a key component of the GST regime that has simplified and streamlined the movement of goods across India. It has also improved the compliance level and tax collection of the government. The e-way bill system is expected to evolve further with more features and functionalities to make it more user-friendly and effective.

Must Read:

E-Way Bill: <https://www.iasgyan.in/daily-current-affairs/e-way-bill>

GST: <https://www.iasgyan.in/daily-current-affairs/gst-31>

3.8 INTERNATIONALISATION OF RUPEE

Context

- The government has outlined a long-term vision for enhancing the global role of the rupee, which could be a positive step.

Background

- The Indian rupee was once widely used in the Gulf region, where it was backed by the pound sterling and exchanged for oil revenues. In 1959, the Reserve Bank of India (RBI) introduced the "Gulf Rupee", a special currency for circulation only in West Asia, to curb gold smuggling.
- However, in 1966, India devalued its currency, which eroded the confidence of some Gulf countries in the Gulf rupee and prompted them to adopt their currencies.
- The demonetisation of 2016 also **undermined the confidence in the Indian rupee**, especially in Bhutan and Nepal.
- The decline in the rupee's stability and the rise in oil wealth gradually led to the emergence of sovereign currencies in the region. The **withdrawal of the ₹2,000 note in 2023 also affected the trust in the rupee**.

What is the internationalisation of the rupee?

Meaning

- Internationalisation of the rupee refers to the **process of increasing the use and acceptance of the rupee in international transactions**, such as trade, investment, borrowing, lending, and reserve holding.
- It involves **enhancing the liquidity and depth of the rupee market**, promoting the use of rupee-denominated instruments and contracts, and facilitating the settlement of cross-border transactions in rupees.
- It also implies that the rupee becomes a reserve currency for other countries, which means that they hold a portion of their foreign exchange reserves in rupees.

Benefits for India and its Economy

- **Reducing the exchange rate risk and transaction costs** for Indian exporters and importers, who can invoice and settle their trade in rupees instead of foreign currencies.
- **Enhancing the competitiveness and diversification** of Indian exports, especially in emerging markets where the demand for rupee-denominated goods and services may be higher.

- **Attracting more foreign direct investment (FDI) and portfolio investment (FPI)** into India, as foreign investors can hedge their currency risk more easily and access a wider range of rupee-based financial instruments.
- **Increasing the role and influence of India** in the global financial system, as the rupee becomes a more widely used medium of exchange, store of value, and unit of account.
- **Strengthening India's financial stability and resilience**, as the dependence on foreign currency reserves and external borrowing is reduced.
- The **dominance of the US dollar as the global reserve currency** and medium of exchange reduces the demand and preference for other currencies like the rupee.
- The **low share of India's trade and investment in the global economy** limits the scope and scale of using the rupee in cross-border transactions.
- The underdeveloped and illiquid domestic financial market hampers the development of a deep and diverse market for rupee-denominated instruments and contracts.

Steps taken to Promote Rupee

- The Reserve Bank of India (RBI) and the government have taken several measures to promote the internationalisation of the rupee over the years.
- **Liberalising the current account convertibility of the rupee** allows residents and non-residents to freely exchange rupees for foreign currencies for trade and other current account transactions.
- **Allowing non-residents to invest in rupee-denominated debt instruments** issued by the government, corporates, and banks, subject to certain limits and conditions.
- Establishing offshore centres for trading and clearing of rupee derivatives, such as Singapore, London, Dubai, and Hong Kong, to facilitate hedging and risk management by foreign investors and borrowers.
- **Signing currency swap agreements with various countries**, such as Japan, China, UAE, Sri Lanka, etc., to provide liquidity support to each other in times of need.
- **Issuing sovereign bonds denominated in foreign currencies**, such as Masala bonds (in US dollars), Samurai bonds (in Japanese yen), etc., to diversify the sources of external financing and create a benchmark for other Indian issuers.

What are the challenges ahead?

- The **lack of full convertibility of the rupee** on the capital account restricts the free flow of capital across borders and creates uncertainty and volatility in the exchange rate.

- The **regulatory and institutional barriers** hinder the participation and access of foreign entities in the Indian financial market.
- The high inflation rate and volatility of the rupee exchange rate erode its purchasing power and credibility as a stable currency.
- The **geopolitical risks and uncertainties** in the region affect India's relations with its neighbours and trading partners.

Way forward

- To overcome these challenges and achieve greater internationalisation of the rupee, India needs to adopt a gradual and calibrated approach that balances its benefits with its costs and risks.
- **Liberalising the capital account** further by easing or removing some of the existing controls on capital flows, especially for long-term investments that can enhance India's productive capacity and growth potential.
- **Strengthening India's macroeconomic fundamentals** by maintaining fiscal discipline, monetary stability, external balance, and financial resilience can boost confidence and credibility in India's economy and currency.
- **Enhancing India's integration with the global economy** by pursuing trade liberalisation, regional cooperation, multilateralism, and strategic partnerships with key countries can increase India's share and role in global trade and finance.
- **Developing India's domestic financial market** by improving its infrastructure, regulation, supervision, innovation, and inclusion can create a vibrant and efficient market for

rupee-denominated instruments and contracts.

- **Promoting India's soft power and cultural diplomacy** by leveraging its rich and diverse heritage, culture, values, and achievements, which can enhance its image and influence in the world and generate goodwill and affinity for India and its currency.

Conclusion

- The internationalisation of the rupee is a long-term and complex process that requires sustained efforts and coordination from various stakeholders. It can bring significant benefits for India and its economy, as well as for the global financial system. However, it also entails certain risks and challenges that

need to be carefully managed and mitigated. India should adopt a pragmatic and gradual approach that balances its domestic priorities and external aspirations while maintaining its financial stability and sovereignty.

Must Read:

Internationalisation of the Rupee:

<https://www.iasgyan.in/daily-current-affairs/internationalisation-of-rupee#:~:text=The%20internationalisation%20of%20the%20rupee%20is%20a%20desirable%20and%20achievable,challenges%20and%20seize%20the%20opportunities.>

Rupee Trade Agreement:

<https://www.iasgyan.in/daily-current-affairs/rupee-trade-arrangement>

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3.9 INDIA-UK FREE TRADE AGREEMENT

Context

- The India-UK Free Trade Agreement (FTA) is a complex and ambitious project that aims to enhance the economic ties between the two countries. However, many challenges and disagreements need to be resolved in the ongoing negotiations.

Details

- According to sources, the FTA talks between India and the UK have faced some **challenges due to the lack of political stability in the UK in the past and the introduction of new elements in the current negotiations**. These include labour and environmental standards, which are being negotiated for the first time, and global value chains, which are also a new feature of the FTA.

- India's main objective is **to secure a comprehensive deal that does not compromise its interests**, especially since this deal will set a precedent for its future trade pacts with other partners, such as the EU (European Union) and the EFTA (European Free Trade Association) countries viz., Iceland, Liechtenstein, Norway and Switzerland.
- The **FTA with the UK is also seen as a model for future FTAs with other countries**, especially the EU, which makes India more cautious about the outcome.

India-UK Free Trade Agreement (FTA)

About

- India and the United Kingdom have a long and historic relationship that dates back to the colonial era. The two countries share common values, interests and aspirations, as well as strong cultural, educational and people-to-people ties. In recent years, bilateral trade and investment between India and the UK have grown significantly, making them important economic partners.
- India and the UK formally launched negotiations for a comprehensive free trade agreement (FTA) in January 2022. The FTA is expected to cover goods, services, investment, intellectual property rights, digital trade, mobility and sustainable development.

Enhanced Trade Partnership (ETP)

- The FTA negotiations are **based on the Enhanced Trade Partnership (ETP) that was agreed by the two leaders in 2021**. The ETP aims to address some of the existing barriers to trade and investment, such as tariffs, non-tariff measures, regulatory issues and market access.
- The ETP also includes an ambitious target of **doubling bilateral trade by 2030**.

Measures announced under ETP

- **Reducing or eliminating tariffs on certain products**, such as medical devices, agricultural products and alcoholic beverages.
- **Simplifying customs procedures** and facilitating mutual recognition of standards and certifications.
- Enhancing cooperation on digital trade, e-commerce and data protection.
- **Promoting collaboration** on innovation, research and development, especially in areas like clean energy, health care and fintech.
- Expanding opportunities for skilled professionals, students and tourists to travel and work in each other's countries.
- The FTA negotiations are expected to build on these interim measures and address some of the key issues that have hampered the full potential of bilateral trade and investment.

Present Status

- India and the UK are making progress in their FTA talks, which cover 26 chapters on various aspects of trade and investment. So far, 14 chapters have been concluded, and five more chapters on contentious issues such as digital trade, environment and labour are being negotiated.
- The Indian commerce ministry said that the FTA talks have reached a "critical stage" and a delegation led by the Commerce and Industry Minister visited London from July 10 to July 12 for the discussions.
- The bilateral trade between India and the UK increased by 16% to US \$20.36 billion in 2022-23.
- **India's exports to the UK were \$11.4 billion in 2022-23**, up from \$10.5 billion in 2021-22.
- **India's imports from the UK were US \$8.96 billion in 2022-23**, up from US \$7 billion in 2021-22.

Concerns

- **High tariffs on certain products**, such as automobiles, textiles, footwear and ceramics.
- **Non-tariff barriers**, such as sanitary and phytosanitary measures, technical barriers to trade, rules of origin and local content requirements.

- **Limited market access for services sectors**, such as financial services, legal services, education services and health services.
- **Restrictions on foreign direct investment (FDI)**, especially in sectors like retail, insurance, banking and media.
- **Lack of adequate protection and enforcement of intellectual property rights (IPR)**, especially in areas like pharmaceuticals, biotechnology and creative industries.
- Divergent approaches to digital trade, data governance and cross-border data flow.
- **Different standards and regulations** on environmental, social and labour issues.
- The FTA negotiations are expected to address these issues in a balanced and mutually beneficial manner, taking into account the sensitivities and interests of both sides. The FTA is also expected to create new opportunities for cooperation in emerging sectors, such as the green economy, digital economy, circular economy and creative economy.

Some of the expected benefits of FTA

- **Increasing bilateral trade in goods and services** by reducing or eliminating tariffs and non-tariff barriers.
- **Increasing bilateral investment** flows by creating a more conducive business environment and providing legal certainty for investors.
- **Creating more jobs and income opportunities** for both countries by expanding market access for goods and services sectors.
- **Enhancing innovation and productivity** by fostering collaboration on research and development, technology transfer and intellectual property rights.
- **Promoting sustainable development** by incorporating environmental, social and labour standards into the FTA framework.
- **Strengthening strategic partnerships** by aligning their interests and values in the Indo-Pacific region.

Steps taken to facilitate the FTA negotiations with the UK

- Setting up an **empowered group of ministers (EGoM) under the chairmanship of the Commerce Minister** to oversee the FTA negotiations.
- Conducting extensive consultations with various stakeholders, including industry associations, civil society groups, state governments and parliamentarians.
- Preparing comprehensive offers on goods, services and investments based on a positive list approach.
- **Engaging with the UK counterparts** through regular conferences and discussions.

Way Forward

- The way forward for the FTA negotiations is to maintain the momentum and political will to achieve a comprehensive and ambitious agreement within a reasonable timeframe. The FTA negotiations should also be seen as part of a broader strategic partnership between India and the UK, which encompasses cooperation on various regional and global issues, such as climate change, counter-terrorism, maritime security and multilateralism. The FTA will not only benefit the two countries but also contribute to the stability and prosperity of the Indo-Pacific region and the world at large.

Must Read

India-UK FTA: <https://www.iasgyan.in/daily-current-affairs/india-uk->

[fta#:~:text=What%20does%20an%20FTA%20with,U.K.%27s%20most%20preferred%20partner.](#)

3.10 TRANS-PACIFIC PARTNERSHIP AGREEMENT

Context

- The UK has officially become the first European nation to join the CPTPP, a trade bloc that comprises Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam.

Details

- The UK's decision to join the CPTPP has generated different responses from various stakeholders and experts. Some argue that the potential benefits of the agreement are exaggerated or uncertain. There are concerns about the implications for the UK's sovereignty, standards, and regulations, as aligning with the CPTPP may require the UK to adapt to certain rules and practices set by the agreement.

Why UK decided to join the CPTPP?

CPTPP's economic significance

- The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) is a trade agreement that includes countries from the Asia-Pacific region, with a combined GDP of approximately £12 trillion, accounting for **about 15% of the global total**. It is a substantial trade bloc that aims to **promote economic cooperation and reduce barriers to trade and investment among member countries**.

Boosting trade and investment opportunities

- The UK government's perspective is that becoming a member of the CPTPP will open **up new trade and investment opportunities with some of the world's fastest-growing economies**. By accessing these markets, the UK aims to reduce its reliance on the EU market and diversify its economic partnerships.

Strengthening ties with the Indo-Pacific region

- The CPTPP serves as a means for the UK to **strengthen its strategic and economic relationships with the Indo-Pacific region**. Given the Indo-Pacific's projected role in driving global growth and innovation, aligning with the CPTPP's rules and principles can help the UK establish a more substantial presence in the region.

Significance of the Agreement for the UK

Zero tariffs on more than 99% of British exports

- The trade agreement will **eliminate tariffs on the vast majority of goods exported by the UK to the Indo-Pacific region**. This includes important markets such as cheese, vehicles, chocolate, machinery, gin, and whisky. This

will make British products more competitive and affordable in the region, boosting trade and creating jobs.

Access to over 500 million people

- British businesses will gain **access to a large market of over 500 million people in the Indo-Pacific region**. This can potentially lead to new trade opportunities and expanded markets for UK goods and services. The agreement also covers areas such as digital trade, intellectual property rights, and environmental standards, which can facilitate trade and investment flows.

Gateway to the Indo-Pacific region

- The agreement is seen as a **gateway for the UK to enhance its economic ties with the Indo-Pacific region**. The Indo-Pacific is expected to be a major driver of global economic development, accounting for 54% of such growth in the future. By being part of this agreement, the UK will have a stronger voice and influence in the region, as well as access to new partnerships and collaborations.

No need for a local office or residency to supply services

- UK firms will not be required to establish a local office or be residents in the host nations of the Indo-Pacific region to supply their services. This provision allows them to compete with local firms on a more level playing field. This can benefit sectors such as financial services, legal services, education, and health care, which are key strengths of the UK economy.
- Overall, the trade agreement holds the potential to bolster economic ties, create new opportunities for British businesses, and increase access to a rapidly developing region with a large consumer base. However, it's worth noting that the actual implementation and outcomes may depend on various factors and ongoing negotiations between the involved parties.

CPTPP

- It is a **trade agreement between 11 nations**; Australia, Brunei, Canada, Chile, Japan,

Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam.

- **It evolved from the Trans-Pacific Partnership (TPP)**, which was never ratified due to the United States' withdrawal.
- The CPTPP proposal includes extremely detailed rules for investor protection, safeguards for the host state's regulatory authorities, and the application of stringent transparency norms.
- The CPTPP commission in 2023 is chaired by New Zealand.

India's Stand on CPTPP

- India had taken a cautious approach towards the CPTPP and had **not yet joined the trade bloc**. The reasons for India's decision against joining the CPTPP were based on concerns about the extensive economic concessions and the potentially far-reaching consequences for the country.
- One of the significant factors behind India's cautious stance was related to the **stricter labour and environmental laws that the CPTPP imposes on its members**. Joining the agreement could mean that India would have to align its domestic labour and environmental regulations with the standards set by the CPTPP, which might have implications for its industrial practices and economic policies.
- India's concerns might also be related to the **potential impact on certain sectors of its economy**. While joining the CPTPP could open up new trade opportunities, it could also

lead to increased competition in some industries, which might have varying effects on Indian businesses and workers.

- India has been engaging in various regional and bilateral trade discussions and negotiations with different countries and blocs. As with any trade agreement, joining the CPTPP would require careful consideration of its potential benefits and drawbacks for the Indian economy and domestic policies.

Conclusion

- The CPTPP is designed to foster economic integration and trade liberalization among its member nations, contributing to economic growth, job creation, and increased cooperation in the Asia-Pacific region. As the United Kingdom joins the agreement, it will further extend the reach and economic opportunities within the bloc. However, as mentioned earlier, the agreement's implementation and impact will depend on how effectively the member countries adhere to its provisions and navigate the complexities of international trade.

Must Read

COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP:
<https://www.iasgyan.in/daily-current-affairs/comprehensive-and-progressive-agreement-for-trans-pacific-partnership>

3.11 SCHEME FOR COAL GASIFICATION

Context

- The Ministry of Coal has set a target of 100 million tonnes (MT) of coal gasification by FY 2030, indicating the government's commitment to utilising the power of coal gasification.

Details

Highlights of the Proposal Made by the Ministry

- The proposal includes a complete set of initiatives that leverage natural resources and

demonstrate the financial and technological viability of coal gasification. The strategy is intended to address the country's future energy needs while also promoting other sectors.

- The Ministry has taken creative **steps to speed up the development of coal gasification projects**. In accordance with the above objective, the Ministry is developing a comprehensive scheme to encourage coal/lignite gasification projects for both

government PSUs and the private sector, with a budget of Rs 6,000 crores.

- The selection of entities for the coal/lignite gasification scheme will be done through a competitive and transparent bidding process. Additionally, the **government is considering offering budgetary help to eligible government PSUs and the private sector** for them to undertake coal gasification projects.
- The Ministry also proposed an incentive to remit the Goods and Services Tax (GST) compensation cess on coal used in gasification projects for a period of ten years following the commercial operational date (COD).

Coal Gasification

About

- Coal gasification is a **process of converting coal into synthetic gas or syngas, which can be used as fuel for various applications** such as power generation, fertilizers, chemicals, and transportation.
- It offers several advantages over conventional coal combustion, such as lower emissions of greenhouse gases and other pollutants, higher efficiency, and greater flexibility in using different types of coal.

Utility

- Coal gasification is a versatile process that can convert coal into syngas, which serves as a valuable feedstock for various products and energy sources.
- The syngas can be purified and converted into **Synthetic Natural Gas (SNG), which can be used as a substitute for natural gas**. It can be distributed through existing natural gas pipelines and used for cooking, heating, and industrial purposes.
- **Methanol and ethanol** are liquid fuels that can be derived from syngas. These **can serve as alternative fuels for transportation**, either used directly or blended with gasoline or diesel.
- Syngas can be used to **produce ammonia and urea, which are essential fertilizers** for agriculture. Additionally, ammonia can act as a

feedstock for the production of various petrochemicals.

- Hydrogen is a clean and versatile fuel. It can be obtained from syngas and used as a fuel for fuel cells, which generate electricity with water as the only byproduct. Hydrogen can also be used as a raw material in various chemical processes.
- The syngas obtained from coal gasification can be **burned in gas turbines or used in combined cycle power plants to generate electricity**. This can contribute to the energy needs of the country by using a cleaner source of fuel compared to conventional coal combustion.

Significance

- Gasification technology will revolutionise the coal business in India, **lowering dependency on imports of natural gas, methanol, ammonia, and other key products**. It will contribute to India's objective of becoming Aatmanirbhar and increase employment possibilities.
- To meet domestic demand, **India currently imports over 50% of its natural gas, over 90% of its total methanol consumption**, and roughly 13-15% of its entire ammonia consumption.
- **Diversify India's energy mix and enhance its energy security**. Coal gasification can provide a reliable and stable source of energy that is not affected by fluctuations in international prices or supply disruptions.
- **Improve India's environmental performance and contribute to its climate change commitments**. Coal gasification can reduce the emissions of carbon dioxide (CO₂), sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), and mercury from coal-based power plants. It can also enable the capture and storage of CO₂ from syngas production, which can further reduce greenhouse gas emissions from coal use.
- **Create new opportunities for employment and industrial development**. It can stimulate the growth of downstream industries such as fertilizers, chemicals, and fuels, which can generate jobs and income for the people. It

can also create demand for domestic coal production and mining equipment, which can benefit the coal sector.

- The adoption of coal gasification is planned to make major contributions to the nation's development by lowering imports by 2030. This programme has the **potential to reduce the environmental load by reducing carbon emissions and supporting sustainable practises**, therefore contributing to our worldwide pledges to a greener future.

Challenges that need to be overcome

High capital cost and risk

- Coal gasification projects **require large investments** in infrastructure, equipment, and technology, which may not be feasible for small and medium enterprises. Moreover, coal gasification projects face uncertainties in terms of market demand, regulatory approvals, and environmental compliance, which increase the risk for investors.

Lack of adequate technology

- Coal gasification is a complex and sophisticated process that **requires advanced technology and skilled manpower to operate and maintain**. India does not have much experience or indigenous technology in coal gasification and relies on foreign technology and collaboration for its projects. This may pose challenges in terms of technology transfer, adaptation, and innovation.

Environmental and social concerns

- Coal gasification still **involves the use of coal, which is a non-renewable and polluting resource**. Although coal gasification reduces the emissions from coal combustion, it still produces CO₂ and other wastes that need to be managed properly. Moreover, coal gasification may have adverse impacts on the local communities and ecosystems, such as land acquisition, displacement, water consumption, and pollution.

Possible measures to realize the full potential of coal gasification

- **Providing more financial and fiscal incentives** for coal gasification projects, such as subsidies, tax breaks, loans, guarantees, etc.,

to reduce the capital cost and risk for the investors.

- **Promoting research and development** (R&D) and innovation in coal gasification technology, especially for Indian coal conditions, to improve the efficiency and performance of the projects. Establishing dedicated centres of excellence, facilitating public-private partnerships, and encouraging international cooperation are some of the ways to enhance R&D and innovation in this sector.
- **Strengthening the regulatory and institutional framework** for coal gasification, such as streamlining the approval process, ensuring compliance with environmental standards, creating a single-window clearance mechanism, etc., to facilitate the smooth implementation and operation of the projects.
- **Enhancing the capacity building and skill development** of the stakeholders involved in coal gasification, such as engineers, technicians, operators, managers, etc., to ensure the quality and safety of the projects. Organising training programs, workshops, seminars, etc., are some of the ways to improve capacity building and skill development in this sector.
- **Creating awareness and sensitisation** among the public and policymakers about the benefits and challenges of coal gasification, to increase the acceptability and support for this technology. Conducting campaigns, exhibitions, demonstrations, etc., are some of the ways to create awareness and sensitisation about coal gasification.

Conclusion

- Coal gasification is promising technologies that can help India achieve its energy security and environmental goals. It can provide a cleaner and more efficient way of using India's abundant coal resources for various applications such as power generation, fertilizers, chemicals, and fuels. It can also create new opportunities for industrial development and employment generation in India. However, there are still some challenges that need to be addressed to make

coal gasification a viable and sustainable option for India. Therefore, there is a need for concerted efforts from all stakeholders to promote coal gasification in India.

Must Read

COAL GASIFICATION:

<https://www.iasgyan.in/daily-current-affairs/coal-gasification-13>

3.12 PROGRESS OF MISSION ORGANIC VALUE CHAIN

Context

- A stakeholder workshop meeting was held to examine the development of Phase III of the Mission Organic Value Chain Development for the North Eastern Region (MOVCDNER), a Centrally Sponsored Scheme aimed at developing end-to-end organic value chains in the North Eastern States.

Details

- The Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) scheme was **launched during 2015-16**. The scheme has been instrumental in promoting organic farming and benefiting farmers in the North Eastern States of India.
- During the Stakeholder Workshop Meeting, various officials and representatives discussed opportunities for convergence with other schemes to further enhance the impact of MOVCDNER and promote comprehensive development in the North Eastern region.

Key Points of the Scheme

- The MOVCDNER scheme has contributed to bringing 1.73 lakh hectares of **land under organic farming** in the North Eastern region.
- The scheme has directly benefited 1.89 lakh farmers in the region, enabling them to participate in and benefit from organic agriculture.
- The scheme has played a significant role in the **formation of Farmer Producer Organizations (FPOs) and Farmer Producer Companies (FPCs)**. These collective entities help farmers in better access to markets, infrastructure, and resources.
- As part of the scheme's efforts to **build robust organic value chains**, 205 Collection, Aggregation, and Grading units have been established. These units assist in the efficient

collection, aggregation, and quality grading of organic produce.

- It has facilitated the creation of 190 Custom Hiring Centres. These centres provide **farmers with access to modern and specialized agricultural equipment on rent, reducing their capital expenditure**.
- A total of 123 Processing units and Pack houses have been set up under the scheme. These units aid in processing organic produce and ensuring their quality and value addition.
- It has supported the development of 7 brands for organic products. Branding helps in creating market identity and improving the marketability of organic goods.

Areas of convergence highlighted during the Workshop Meeting

- Leveraging the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) for micro-irrigation projects through FPOs.
- Developing 2 FPCs through convergence with the National Rural Livelihood Mission (NRLM) at the state level, defining roles and responsibilities of various agencies involved.
- **Conducting workshops to identify challenges faced by FPOs** and engaging banks to facilitate credit under the Agriculture Infrastructure Fund.
- Exploring support for fencing and land development through MGNREGA.
- **Undertaking a study to identify suitable agricultural machines** for the North Eastern region and generating awareness among FPOs about their benefits.
- Conducting training programs for FPOs and integrating them into the e-Nam portal to access a combination of Agricultural Marketing Infrastructure and Agriculture Infrastructure Fund Schemes.

- Engaging Agriculture Technology Management Agency (ATMA) functionaries and experts to ensure training and awareness programs for farmers.
- The focus on convergence with other schemes reflects the commitment to optimizing resources and maximizing the positive impact of MOVCDNER in promoting

organic farming, sustainable agriculture, and overall rural development in the North Eastern States.

Must Read

ORGANIC FARMING:

<https://www.iasgyan.in/daily-current-affairs/organic-farming>

3.13 UPI FOR CROSS-BORDER REMITTANCES

Context

- The Universal Postal Union (UPU) is considering the use of UPI for facilitating cross-border remittances through the global postal network.

Details

- The Universal Postal Union (UPU) is a specialized agency of the United Nations that coordinates postal policies among member nations and provides technical assistance to postal services. One of UPU's strategic objectives is to foster the development of postal financial services, especially for cross-border remittances.
- Recently, the UPU announced that it will evaluate the use of the Unified Payments Interface (UPI), a real-time payment system developed by the National Payments Corporation of India (NPCI), for facilitating cross-border remittances through the global postal network.
- The UPU believes that UPI could offer a low-cost, secure and convenient solution for cross-border remittances, especially for migrants and their families who rely on postal services to send and receive money. The UPU will conduct a feasibility study to assess the technical and operational aspects of using UPI for cross-border remittances, as well as the regulatory and legal implications.

Unified Payments Interface (UPI)

- It is a real-time payment system developed by the National Payments Corporation of India (NPCI). It was launched in 2016 to enable seamless and instant fund transfers between bank accounts using mobile phones.

- UPI enables users to send and receive money instantly using a virtual payment address, without requiring bank account details or card information. It is widely used in India for domestic payments and has been integrated with several international payment platforms such as Google Pay and WhatsApp.
- UPI has gained widespread popularity in India due to its simplicity, speed, and convenience, transforming the way people make transactions.

Key Features of Unified Payments Interface (UPI)

- It enables real-time fund transfers, making transactions quick and convenient.
- It operates 24x7, allowing users to make transactions at any time of the day, including weekends and holidays.
- It is interoperable among different banks, allowing users to link multiple bank accounts to a single UPI ID.
- It facilitates QR code-based payments, allowing users to scan QR codes at merchant outlets and make payments directly from their bank accounts.
- UPI transactions are secured through two-factor authentication, ensuring safe and reliable transactions.
- Users can link multiple bank accounts to a single UPI ID, eliminating the need to remember different bank account details.
- UPI transactions are facilitated through mobile applications provided by banks or third-party apps that are UPI-enabled.
- Users can create a unique Virtual Payment Address (VPA) as an identifier for their bank account, enhancing security and privacy during transactions.

- UPI can be used for various purposes, including bill payments, online shopping, and merchant transactions, making it a versatile payment system.

Challenges in using UPI for facilitating cross-border remittances

Regulatory Framework

- Cross-border remittances **involve compliance with various international regulations** and anti-money laundering (AML) norms, which may require adjustments to the existing UPI infrastructure. For instance, UPI may need to incorporate features such as know-your-customer (KYC) verification, transaction limits, and reporting mechanisms to meet the regulatory requirements of different countries.

Exchange Rate Management

- **Managing exchange rates and ensuring transparency in foreign currency conversions** are critical for cross-border remittances. UPI may need to partner with authorized dealers or third-party service providers to offer competitive and accurate exchange rates to users. UPI may also need to provide users with clear information on the applicable fees and charges for currency conversion.

Interoperability with Global Systems

- **Integrating UPI with global payment systems and ensuring compatibility with other countries' banking systems** may require significant coordination. UPI may need to adopt international standards and protocols to enable seamless communication and data exchange with other payment platforms. UPI may also need to establish agreements and partnerships with foreign banks and payment service providers to facilitate cross-border transactions.

Security and Fraud Prevention

- Ensuring the **security of cross-border transactions and preventing fraud are crucial aspects that need to be addressed**. UPI may need to implement robust security measures such as multi-factor authentication, fraud detection algorithms, and dispute resolution mechanisms to safeguard users' funds and data. UPI may also need to educate users on

the risks and best practices of cross-border payments.

Steps taken or considerations for using UPI for cross-border remittances

Bilateral Agreements

- The government may **negotiate and establish bilateral agreements with other countries to facilitate cross-border remittances using UPI**. Such agreements can define the terms and conditions, regulatory framework, and technical integration required for cross-border transactions.

Regulatory Framework

- The Reserve Bank of India (RBI) and other relevant regulatory bodies may need to **establish guidelines and regulations to govern cross-border remittances through UPI**. These regulations would address issues related to foreign exchange, compliance, reporting, and customer protection.

International Integration

- UPI platforms may need to be **technically integrated with foreign payment systems** to enable seamless cross-border transactions. This integration may involve working with foreign payment service providers and ensuring interoperability.

Exchange Rate Mechanisms

- An appropriate mechanism for determining exchange rates during cross-border remittances would need to be established to ensure fair and transparent currency conversions.

Security and Compliance

- **Ensuring the security and compliance of cross-border UPI transactions** would be a crucial aspect. Robust measures to prevent fraud, money laundering, and other financial crimes would need to be in place.

Customer Awareness

- Educating customers about the benefits, procedures, and potential charges associated with cross-border UPI remittances would be essential for widespread adoption.

Pilot Programs

- The government may conduct pilot programs with selected countries or financial institutions to test the feasibility and

effectiveness of using UPI for cross-border remittances.

Industry Collaboration

- Collaboration with banks, fintech companies, and other stakeholders in the financial ecosystem would be necessary to implement cross-border UPI remittance services successfully.

Conclusion

- The adoption of UPI for cross-border remittances requires close collaboration between the Indian government, financial regulators, and international stakeholders. Streamlining regulatory procedures, ensuring

interoperability with global systems, and addressing security concerns will be key focus areas. A well-planned and secure implementation could potentially enhance India's position as a leading player in the global digital payments landscape and benefit individuals and businesses alike.

Must Read

UNIVERSAL POSTAL UNION:

<https://www.iasgyan.in/daily-current-affairs/universal-postal-union-13>

UPI-PAYNOW LINKAGE:

<https://www.iasgyan.in/daily-current-affairs/upi-paynow-linkage>

3.14 COMMODITY PRICE RISE

Context

- The recent surge in commodity prices in India has been driven by a combination of factors, such as supply disruptions, rising global demand, inflationary pressures, and currency depreciation. The impact of these factors varies across different commodities and sectors, but overall, they pose significant challenges for the Indian economy and consumers.

Key reasons behind the commodity price rise

Supply-Demand Imbalances

- One of the main drivers of commodity price fluctuations is the **mismatch between supply and demand**. When supply falls short of demand, prices tend to rise, and vice versa. Supply disruptions can occur due to natural disasters, political instability, or technical issues in production or transportation.

Global Market Dynamics

- India is a major consumer and producer of various commodities, such as crude oil, gold, cotton, and spices. Therefore, the prices of these commodities in India are closely linked to the global market conditions. Factors such as **global economic growth, inflation, interest rates, and trade policies of major commodity-exporting countries can affect the demand and supply** of commodities in the world market, and consequently, their prices in

India. For instance, the US sanctions on Iran reduced the global supply of crude oil, pushing up its price in India.

Currency Fluctuations

- Another factor that affects commodity prices in India is the **exchange rate of the Indian rupee against other major currencies**, such as the US dollar. Since most commodities are traded in US dollars in the international market, a depreciation of the rupee makes imported commodities more expensive in rupee terms, and vice versa. For example, a weaker rupee increases the cost of importing gold, which is one of the largest imports in India.

Government Policies

- The Indian government also plays a **role in determining commodity prices through various policy measures**, such as import duties, export incentives, minimum support prices, and subsidies. These policies are aimed at protecting the interests of farmers, consumers, and industries involved in commodity production and consumption. However, they can also have unintended consequences on commodity prices by creating distortions in the market. For example, high import duties on edible oils can discourage imports and create a shortage in the domestic market, leading to higher prices.

Impact of the commodity price rise

On consumers

- The higher prices of commodities have increased the inflation rate in India, especially the food inflation rate, which affects the poor and vulnerable sections of society more. The **higher inflation rate has also eroded the purchasing power** of consumers and reduced their savings and consumption.

On producers

- The **higher prices of commodities have increased the input costs for producers**, especially for those who use imported raw materials or intermediate goods. This has reduced their profit margins and competitiveness in the domestic and international markets. Some producers have also passed on the higher costs to consumers by increasing their output prices.

On government

- The **higher prices of commodities have increased the fiscal burden on the government**, as it has to spend more on subsidies and welfare schemes to protect the poor and vulnerable sections of society from inflation. The higher prices of petroleum products have also increased the revenue collection from taxes and duties on them, but this has also increased the political pressure on the government to reduce them.

On central bank

- The higher prices of commodities have increased the **dilemma for the central bank, as it has to balance between controlling inflation and supporting growth**. The central bank has maintained an accommodative stance on monetary policy to support the economic recovery from the pandemic, but it has also signalled its readiness to take appropriate measures to anchor inflation expectations and ensure price stability.

Steps taken by India to deal with the commodity price rise

Increasing domestic production

- The government has taken various measures to increase domestic production of some commodities such as edible oils, pulses, and metals. These include providing incentives to

farmers, enhancing irrigation facilities, promoting contract farming, increasing minimum support prices, reducing import duties, facilitating exports, creating buffer stocks, and improving storage and distribution infrastructure.

Regulating imports

- The government has taken various measures to regulate imports of some commodities such as edible oils, pulses, metals, and petroleum products. These include imposing quantitative restrictions, increasing import duties, imposing anti-dumping duties, imposing safeguard duties, banning exports of some commodities, and negotiating with exporting countries.

Curbing speculation

- The government and the central bank have also taken various measures to curb speculation in the commodity markets. These include increasing margin requirements, imposing position limits, enhancing surveillance and monitoring mechanisms, imposing penalties for violations, strengthening regulatory coordination among various agencies, and educating investors about the risks involved.

Challenges faced by India in dealing with the commodity price rise

Uncertainty in global markets

- The commodity price movements in global markets are uncertain and volatile due to various factors such as supply and demand shocks, weather conditions, geopolitical tensions, trade policies, exchange rate fluctuations, and speculative activities. India has limited control over these factors and has to adjust its policies accordingly.

Structural issues in domestic markets

- The domestic markets for some commodities are characterized by structural issues such as low productivity, high wastage, inefficient distribution channels, lack of transparency, information asymmetry, cartelization, market manipulation etc. These issues hamper efficient price discovery and allocation of resources.

Trade-offs among policy objectives

- The policy responses to deal with commodity price rise involve trade-offs among various objectives such as inflation control, growth promotion, fiscal consolidation, external balance, social welfare etc. These trade-offs require careful calibration and coordination among various stakeholders such as the government, central bank, producers, consumers etc.

Way forward for India to deal with the commodity price rise

Diversifying sources of supply

- India should diversify its sources of supply of commodities by exploring alternative markets, developing strategic partnerships, and enhancing regional cooperation. This would reduce its dependence on a few countries or regions and increase its bargaining power and resilience.

Enhancing value addition

- India should enhance its value addition in the commodity sector by promoting research and development, innovation, technology adoption, quality improvement, branding, and marketing. This would increase its competitiveness and reduce its import dependence.

Reforming domestic markets

- India should reform its domestic markets for commodities by improving productivity, reducing wastage, enhancing infrastructure, increasing transparency, ensuring competition, protecting consumers, and

strengthening regulation. This would improve efficiency and stability in the commodity sector.

Adopting a holistic approach

- India should adopt a holistic approach to dealing with commodity price rises by integrating various policies such as fiscal, monetary, trade, agricultural, industrial, energy etc. This would ensure policy coherence and consistency and avoid policy conflicts and contradictions.

Conclusion

- The government and the central bank have taken several measures to mitigate the effects of the price rise, such as increasing imports, easing tariffs, providing subsidies, and tightening monetary policy. However, these measures may not be sufficient or sustainable in the long run, as they entail fiscal and external costs. Therefore, it is essential to address the structural issues that affect the supply and demand of commodities in India, such as improving infrastructure, enhancing productivity, diversifying sources, and promoting innovation. By doing so, India can reduce its vulnerability to commodity price shocks and enhance its economic resilience and growth prospects.

Must Read

WHOLESALE INFLATION:

<https://www.iasgyan.in/daily-current-affairs/wholesale-inflation>

3.15 SHORT ARTICLE

Greedflation

Context

- One of the topics that have been making headlines recently is greedflation, a phenomenon that affects not only India but also many other countries around the world.

Details

- Greedflation is different from normal inflation, which is caused by changes in the supply and demand of goods and services. It

is caused by excessive greed and speculation, which create unrealistic expectations of future price increases and influence the behaviour of investors, consumers and businesses.

- Greedflation can occur in different sectors of the economy, such as:
 - **Housing:** When real estate developers or landlords inflate the prices of properties or rents to maximize their profits, regardless of the demand or affordability of the market.

- **Healthcare:** When pharmaceutical companies or healthcare providers charge exorbitant prices for drugs or services, exploiting the needs or vulnerabilities of the patients.
- **Education:** When educational institutions or lenders increase the fees or interest rates of tuition or loans, creating a burden for students or graduates.
- **Energy:** When oil companies, gas stations, or electricity providers charge exorbitant prices for their products or services, exploiting the high demand and limited supply of energy resources.
- **Food:** When farmers, food processors, or retailers increase the prices of food items due to factors such as climate change, crop failures, or trade wars, making food less affordable and accessible for consumers.
- **Technology:** Greedflation can arise when tech companies or innovators hike up the prices of gadgets or software, taking advantage of the popularity or novelty of their products.

Negative impacts on the economy and society

- **Eroding the purchasing power** of consumers and workers, especially those with fixed or low incomes, who have to spend more on essential goods and services.
- **Creating asset bubbles and financial instability**, as investors chase higher returns and take on more risk, leading to overvaluation and volatility of stocks, bonds, real estate, commodities, etc.
- **Distorting the allocation of resources and incentives**, as producers focus on maximizing profits and market share, rather than innovation and quality, and as consumers engage in panic buying and hoarding, rather than saving and investing.
- **Increasing inequality and social unrest**, as the gap between the rich and the poor widens, and as people lose trust in the fairness and efficiency of the market system and government policies.

Must Read:

GREEDFLATION: <https://www.iasgyan.in/daily-current-affairs/greedflation>

Government E-Marketplace

Context

- The Union Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution praised the remarkable growth of procurement from the Government e-Marketplace (GeM) in the last three years, which has increased by ten times.

Details

Government e-Marketplace (GeM)

- GeM is a **digital platform for public procurement** in India. It was **launched by the Ministry of Commerce and Industry** in 2016 to create a more open and transparent system for government buyers.
- The platform is **owned and operated by GeM SPV (Special Purpose Vehicle)**, a non-profit entity under the Ministry of Commerce and Industry.
- It **replaced the traditional Directorate General of Supply and Disposals (DGS&D)** with a contactless, paperless, and cashless online marketplace.
- The Government has made it **mandatory for all Ministries/Departments, Central Public Sector Enterprises (CPSEs) and autonomous/statutory bodies to make purchases through GeM**. This will ensure that the Government gets the best value for money, quality products and timely delivery of goods and services.

Significance

- The Government e-Marketplace (GeM) is **built on three core principles: Efficiency, Transparency, and Inclusiveness**. These principles ensure that GeM offers a simple and fast way to do business with the government.

- It is inclusive because **it welcomes all kinds of sellers and buyers**, it is efficient because it simplifies the procurement process, and it is transparent because it promotes fair and ethical practices.
- It **provides various procurement methods**, such as direct purchase, e-bidding, e-reverse auction, and direct reverse auction. The online platform enables economies of scale, effective price discovery, and dissemination of best practices.
- According to an independent study by the World Bank, the average savings for buyers on the GeM portal are around 9.75% of the median price. The Government of India has made it **mandatory for sellers to display the 'country of origin' on products sold through the GeM portal**.
- GeM resulted in a 10% savings in public procurement costs in five years.

Must Read:

Government e-Marketplace: <https://www.iasgyan.in/daily-current-affairs/gem>

Critical Minerals for India

Context

- The Union Minister of Coal, Mines & Parliamentary Affairs has released the country's first report on "Critical Minerals for India", which was prepared by an expert team appointed by the ministry.

Details

- The report presents a systematic analysis of the minerals that are vital for various strategic sectors of India, such as defence, agriculture, energy, pharmaceuticals, and telecommunications. It also proposes a framework for prioritizing these minerals based on their importance, availability, and vulnerability.

Identification of Critical Minerals

- This is the **first time that India has developed a comprehensive list of critical minerals**, taking into account the current and future needs of different sectors and aligning with the vision of self-reliance and a strong mineral sector. The identification of critical minerals is a crucial step towards ensuring the security and sustainability of mineral resources in India.
- **The list of 30 critical minerals is as follows:** Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum,

Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

Addressing Environmental Commitments

- As part of India's commitment to reduce its carbon footprint and achieve net-zero emissions, the Ministry of Mines recognizes the need to assess the country's mineral resources for the energy transition.
- The list identifies the minerals that are essential for India's economic and strategic interests and will be updated regularly to reflect the changing environmental priorities and challenges.

Critical minerals

- Critical minerals are those that are **essential for the economic and national security of a country** but have a high risk of supply disruption due to various factors such as geopolitical issues, environmental concerns, trade barriers, etc. Some examples of critical minerals are rare earth elements, lithium, cobalt, nickel, etc.

Significance of critical minerals for India

- Critical minerals are essential for India's development and security.
- They have a **wide range of applications in various high-tech sectors** that are crucial for India's economic and strategic goals. These sectors include renewable energy, electric vehicles, aerospace, defence, electronics, and more.
- They have **unique physical and chemical properties** that enable them to perform functions that cannot be easily substituted by other materials.
- They have a **high demand and a low supply in the global market**, which creates a competitive advantage for the countries that possess them or have access to them.
- India has a **strategic interest in securing its supply of critical minerals, as they are vital for its defence and security needs**. For instance, rare earth elements are used in missile guidance systems, radar, sonar, lasers, etc.
- India has a responsibility to contribute to global efforts to combat climate change and reduce greenhouse gas emissions. Critical

minerals **can help India to achieve its targets under the Paris Agreement and the Sustainable Development Goals** by enabling a transition to clean and renewable energy sources.

Steps Taken by Government

- **Setting up a Critical Minerals Facilitation Centre (CMFC) under the Ministry of Mines** to facilitate the exploration, production, processing and research of critical minerals in India and abroad.
- India has become a **partner in the Mineral Security Partnership (MSP)** to bolster critical mineral supply chains and achieve its net zero objectives.
- **Signing memorandum of understanding (MoUs)** with countries such as Australia, Bolivia, Argentina, Chile, etc. for cooperation in the field of critical minerals.
- **Launching a National Mission on Transformative Mobility and Battery Storage** to promote domestic manufacturing of advanced batteries and electric vehicles using critical minerals.
- **Establishing a Rare Earths Development Corporation of India (REDCI)** to undertake the mining and processing of rare earths in India and abroad.
- **Developing a Critical Minerals Policy** to provide a comprehensive framework for exploration, production, processing, research and development, and strategic partnerships for critical minerals.

Challenges in acquiring and utilizing critical minerals

Limited domestic availability

- India has only 0.6% of the world's rare earth reserves and 1.6% of the world's lithium reserves, according to a report by NITI Aayog. These minerals are vital for making batteries, magnets, lasers, etc. India needs to explore and extract its own resources more efficiently and sustainably.

High import dependence

- India relies heavily on imports of critical minerals from other countries, especially China, which is the largest global producer of rare earth metals. **This makes India vulnerable**

to supply shocks, price volatility, trade conflicts, etc. For instance, India's relations with China have deteriorated in recent years due to border disputes and other issues.

Low-value addition and innovation

- India mainly imports raw materials or intermediate products and exports finished products or services based on critical minerals. This means that India loses out on the value chain and the potential to create new products and technologies. India needs to invest more in research and development, innovation and skill development in the critical minerals sector.

Geopolitical instability

- The global demand for critical minerals is increasing due to population growth, urbanization, industrialization, etc. This creates competition and conflict among countries for securing these resources. For example, the recent tension between Ukraine and Russia could affect the availability of critical minerals in Europe and elsewhere.

India should take a comprehensive approach that includes

- Surveying and mapping the potential sources of critical minerals in India and abroad, using advanced techniques and tools.
- Building domestic technology and capacity for exploring, extracting, processing and

recycling critical minerals, with a focus on efficiency and sustainability.

- Creating policies and incentives that encourage private sector involvement and investment in the critical minerals sector, while ensuring environmental and social safeguards.
- Collaborating and cooperating with other countries and international organizations to exchange best practices, technology transfer, joint ventures, etc., in the field of critical minerals.
- Innovating and researching new products and applications that use critical minerals, to create value-added and competitive industries.
- Raising awareness and demand for products made from critical minerals among the end-users and consumers, through campaigns, standards, labelling, etc.
- Monitoring and evaluating the progress and impact of the initiatives taken for critical minerals, using data and indicators.

Must Read:

Critical Minerals for India:

<https://www.iasgyan.in/daily-current-affairs/critical-minerals-for-india#:~:text=Antimony%2C%20Beryllium%2C%20Bismuth%2C%20Cobalt,%2C%20Zirconium%2C%20Selenium%20and%20Cadmium.>

Achievements in Animal Husbandry and Dairying Sector

Context

- The Ministry of Fisheries, Animal Husbandry & Dairying held a press conference to highlight the key achievements and initiatives of the Department of Animal Husbandry and Dairying in the last nine years.

Details

- The ministry officials presented a detailed report on the various schemes and programs implemented by the department to promote animal welfare, productivity, health, and income of the livestock sector.

Major achievements of the department

Livestock Sector

- The Indian economy relies heavily on the livestock sector, which is a vital subsector of agriculture. The livestock sector has shown a remarkable growth of 7.93% Compound annual growth rate (CAGR) from 2014-15 to 2020-21 (at constant prices).
- The share of livestock in the total GVA (Gross Value added) of agriculture and allied sector (at constant prices) has risen from 24.38% (2014-15) to 30.87% (2020-21).
- The livestock sector accounted for 6.2% of the total GVA in 2020-21.
- According to the 20th Livestock Census, the country has a large and diverse population of livestock, including bovines (cattle, buffalo,

Mithun and yak), sheep, goats, pigs and poultry. The total number of bovines is estimated at 303.76 million, while sheep account for 74.26 million, goats for 148.88 million, and poultry for 851.81 million.

Dairy Sector

- The dairy sector is a vital part of India's agriculture, **accounting for 5% of the GDP and providing livelihoods for over 80 million farmers.**
- **India leads the world in milk production, with 23% of the global output.** In the last eight years, milk production has grown by more than 50%, with an annual growth rate of 6.1%, compared to the global average of 1.2%.
- The **average milk consumption per person in India is 444 grams per day, higher than the world average of 394 grams per day in 2021.**

Egg and Meat Production

- India is one of the leading producers of eggs and meat in the world, according to the Food and Agriculture Organization Corporate Statistical Database (FAOSTAT) production data (2020). The country ranks 3rd in egg production and 8th in meat production globally.
- Egg production has grown with a compound annual growth rate (CAGR) of 7.4%.
- Meat production has also increased from 6.69 million tonnes in 2014-15 to 9.29 million tonnes in 2021-22.

Must Read:

Dairy sector in India: <https://www.iasgyan.in/daily-current-affairs/world-milk-day>

LIVESTOCK SCHEMES IN NEWS:

<https://www.iasgyan.in/daily-current-affairs/livestock-schemes-in-news>

Chennai-Vladivostok Maritime Route

Context

- In a bid to boost trade and connectivity between the two countries, India and Russia are working on establishing a direct maritime route that would link Chennai in India with Vladivostok in Russia.

Details

Chennai-Vladivostok Maritime Corridor (CVMC)

- CVMC is a **proposed sea route that aims to enhance bilateral trade and strategic cooperation between India and Russia.** The CVMC would cover a distance of approximately 5,600 nautical miles, or about 10,300 km, **passing through the Strait of Malacca, the South China Sea, and the Sea of Japan.**
- The CVMC was announced in September 2019, when the Indian Prime Minister signed a Memorandum of Intent (MoI) for the route during his visit to Vladivostok, the largest port city on Russia's Pacific coast and the eastern terminus of the Trans Siberian Railway.

Present Trading Route

- The **current route connecting India and Russia is the conventional European route that goes through the Red Sea, the Mediterranean Sea and the Baltic Sea.** This route, which was established in 2000, starts from the NhavaSheva Port in Mumbai and ends at the Port of St. Petersburg in Russia.
- The distance covered by this route is 8,675 nautical miles or approximately 16,000 km, and it takes around 40 days for the goods to reach their destination.



Benefits for both countries

Saving time and money

- It will **reduce the transit time of shipping goods between India and Russia** by more than 60%, from 40 days to 15 days.
- It will lower the shipping cost by about 30%, from \$1,200 per container to \$800 per container. This will make trade more efficient and profitable for both countries.

Enhancing energy security

- It will help India diversify its energy sources and import oil, gas, coal, and nuclear fuel from Russia, which is one of the world's largest energy producers. This will reduce India's dependence on the Middle East and ensure a stable supply of energy for its growing economy.

Accessing natural resources

- It will open up new opportunities for India to access the natural resources of the Russian Far East, which is rich in land, timber, tin, gold, diamonds, and other minerals. India can invest in the development of these resources and benefit from their exploitation.

Expanding strategic influence

- It will strengthen India's **presence and influence in the Indo-Pacific region**, where it faces challenges from China and other actors.
- It will demonstrate India's commitment to a free and open Indo-Pacific and its support for the rules-based international order.
- It will enhance India's cooperation with other countries along the route, such as Japan, South Korea, Vietnam, Singapore, Indonesia, and Malaysia.

Concerns

Lack of infrastructure

- The ports of Chennai and Vladivostok, as well as other potential ports along the route such as Visakhapatnam, Kolkata, Vostochny, and Olga, **need significant upgrades and modernization to handle the expected increase in cargo volume and traffic.** The CVMC also requires coordination and

cooperation among various stakeholders such as shipping companies, customs authorities, insurance agencies, etc., to ensure smooth and efficient operations.

High Costs

- The CVMC is likely to entail high costs for both India and Russia, not only in terms of infrastructure development but also in terms of operational expenses such as fuel, maintenance, security, etc. The CVMC may also face competition from other existing or emerging routes such as the Suez Canal, the Northern Sea Route, or the INSTC.

Geopolitical tensions

- The CVMC may provoke negative reactions from China, which views the Indo-Pacific region as its sphere of influence and strategic interest. China may perceive the CVMC as a threat to its BRI and MSR projects, as well as its territorial claims and maritime rights in the South China Sea. China may also try to undermine or sabotage the CVMC by using its economic leverage or military coercion against India or Russia or their partners in the region.

Environmental risks

- The CVMC may **pose environmental risks such as pollution, accidents, spills, etc.**, especially in sensitive areas such as the Bay of Bengal, the Malacca Strait, or the South China Sea. The CVMC may also have adverse impacts on the biodiversity and ecosystems of these regions, which are home to many endangered species and habitats.

Must Read:

INDIA RUSSIA TIES: <https://www.iasgyan.in/daily-current-affairs/india-russia-ties>

Sagarmala: <https://www.iasgyan.in/daily-current-affairs/sagarmala-project-17>

PM-PRANAM Scheme

Context

- The PM-PRANAM scheme is a new initiative by the government to promote the use of nutrient-based, biofertilizers for sustainable agriculture. The scheme has a total outlay of ₹3,70,128.7 crore and will be implemented in collaboration with the State governments.

PM-PRANAM Scheme

- PM Programme for Restoration, Awareness, Generation, Nourishment and Amelioration of Mother Earth (PM-PRANAM) is a new initiative of the government **to encourage farmers to adopt organic farming practices and reduce their dependence on chemical fertilizers.**
- The main objective of the scheme is **to restore, protect and enhance the health of the soil and reduce the dependence on chemical fertilizers.**
- The scheme will encourage farmers to adopt alternative fertilizers such as organic manure, compost, vermicompost, biofertilizers and biopesticides. These fertilizers are not only eco-friendly but also cost-effective and improve soil fertility and crop productivity.

Features

- The scheme will provide incentives to the States that reduce their consumption of chemical fertilizers. **The Centre will share 50% of the subsidy savings with the States for promoting the use of alternative fertilizers and other development works.**
- For example, if a State was using 10 lakh tonnes of conventional fertilizers and reduced its consumption by three lakh tonnes, then the subsidy saving would be ₹3,000 crore. Out of that subsidy savings, the Centre will give ₹1,500 crore to the State for promoting the use of alternative fertilizer and other development works.
- The grant can be utilized for creating assets related to the technological adoption of alternative fertilizers and production units at various levels, with 70% of the allocation for this purpose.

- The remaining 30% of the grant can be used to reward and encourage farmers, panchayats, and other stakeholders involved in fertilizer reduction and awareness generation.
- It will **provide financial assistance to farmers for adopting organic inputs** such as compost, vermicompost, biofertilizers, biopesticides, etc. It will also support the establishment of organic input production units at the village level.
- It will **conduct awareness campaigns and training programs** for farmers, extension workers, input dealers, and consumers on the benefits and methods of organic farming.
- It will **facilitate the creation of farmer-producer organizations (FPOs)** and link them with buyers and processors of organic products.
- It will **monitor and evaluate the impact of organic farming** on soil health, crop yield and quality, water conservation, biodiversity conservation, and carbon sequestration.

Significance

- It is a significant step towards achieving the vision of doubling farmers' income and ensuring food security for the nation.
- It will **contribute to the goals of climate change mitigation and adaptation** by reducing greenhouse gas emissions from agriculture and enhancing soil carbon sequestration.
- It will **help the farmers to reduce their input costs**, increase their income, improve their health, and enhance their resilience to climate change.
- It will help consumers to access safe and nutritious food at affordable prices.
- It will help the environment by improving soil quality, water availability, biodiversity diversity, and carbon storage.
- It will **help the economy by creating employment opportunities**, boosting rural development, and increasing exports of organic products.

Must Read:

Organic farming: <https://www.iasgyan.in/daily-current-affairs/organic-farming>

Green Credit Programme

Context

- The draft Green Credit Programme Implementation Rules 2023, notified by the Union Ministry of Environment, Forests and Climate Change on June 26, 2023, aim to encourage environment-positive actions by various stakeholders such as individuals, farmer-producer organisations (FPO), industries, rural and urban local bodies, etc.

Details

- The draft rules propose a **mechanism for issuing and trading green credits, which are incentives that can be earned by undertaking activities that enhance environmental quality**, such as afforestation, restoration of degraded lands, waste management, renewable energy generation, etc.
- The draft rules also specify the eligibility criteria, verification process, registry system and trading platform for the green credits.
- The ministry has invited objections and suggestions from the public within 60 days of the notification.

Green Credit Programme

About

- The Green Credit Programme is a new initiative that **aims to create a market for green credits, which are units of environmental value generated by various activities that enhance or conserve natural resources**.
- It was **first announced by the Union Finance Minister in the 2023-24 budget** as a way to promote voluntary environmental actions by different stakeholders, such as individuals, communities, industries and companies.

- **It will be administered by the Indian Council of Forestry Research and Education**, which will establish the criteria and standards for different types of green credit activities, as well as the processes and procedures for registration, measurement, reporting and verification.
- The green credits will be fungible and marketable, meaning that the entities that earn them can sell them on a domestic platform that will be set up for this purpose.

8 types of activities are eligible for green credit

- **Tree plantation:** This activity involves planting and maintaining trees in different areas to increase the green cover and enhance biodiversity.
- **Water conservation:** This activity involves saving water, harvesting rainwater, and treating and reusing wastewater to reduce water stress and improve water quality.
- **Sustainable agriculture:** This activity involves adopting natural and regenerative farming methods and restoring degraded land to improve soil health, crop productivity and food security.
- **Waste management:** This activity involves collecting, segregating and sustainably treating waste to prevent pollution and generate useful resources.
- **Air pollution reduction:** This activity involves implementing measures to reduce air pollution and other forms of environmental degradation caused by human activities.
- **Mangrove conservation and restoration:** This activity involves protecting and restoring mangroves, which are coastal ecosystems that provide multiple benefits such as carbon sequestration, coastal protection and habitat for wildlife.
- **Ecomark:** This activity involves obtaining the 'Ecomark' label for goods and services that meet certain environmental standards set by the government.
- **Sustainable building and infrastructure:** This activity involves constructing buildings and other infrastructure using sustainable technologies and materials that minimize environmental impact and maximize resource efficiency.

Open Market Sale Scheme

Context

- The sale of wheat and rice to state governments under the Open Market Sale Scheme (OMSS) has recently been stopped by the Union Government, except for a few northeastern, mountainous, and disaster-stricken states.

Details

- The Open Market Sale Scheme (OMSS) was a program by the Union Government to sell wheat and rice at subsidized prices to state governments. The aim was **to stabilize food prices and ensure food security for the poor.** However, the **Union Government has recently stopped** this scheme for most states, except for some northeastern, hilly, and calamity-hit states.
- This decision will have an impact on some states, such as Karnataka, that provide free grains to the poor under their schemes. They will have to bear the extra cost of procuring

grains from other sources or reduce the quantity or quality of grains distributed to the poor.

- The official reason for stopping the OMSS was to curb inflation and regulate supply in the open market. The Union Government claimed that the scheme was creating excess demand and distorting market prices of grains.

Open Market Sale Scheme (OMSS)

- It is a scheme launched **to prevent the wastage of food grains** that are stored by the Food Corporation of India (FCI) and other state agencies.
- The scheme **enables the FCI to sell its surplus stock** of wheat and rice to various buyers, such as state governments, bulk consumers, and private parties, through online auctions.
- The buyers can purchase the food grains at fixed **prices that are announced by the government in advance.**

Features

- The **FCI conducts e-auctions every week** to sell wheat and rice in the open market. The buyers can bid for the quantity and location of their choice.
- The minimum price for wheat and rice under OMSS is **determined by the Department of Food and Public Distribution (DFPD) every year. This price is the same for all states** and does not include any transportation costs. This helps the buyers to lift stocks from any place conveniently.
- The **FCI sells wheat and rice under OMSS throughout the year in the states that do not produce enough food grains.** In the states that produce surplus food grains, the FCI sells

Dark Patterns

Context

- The Secretary of the Department of Consumer Affairs strongly urged online platforms to respect consumer interests and avoid dark patterns in their web dashboards. He said that dark patterns violate the principles of fair trade and transparency and that the government will take strict action against any platform that engages in such practices.

Details

- Dark patterns are unethical strategies that **manipulate users into taking actions that benefit the designers or owners of a website, app, or service.** They use psychological tricks, hidden information, or misleading language to steer users away from their goals or interests. They often violate user consent, privacy, or autonomy.
- The Indian government has recently warned online platforms to stop using dark patterns that harm consumer rights and choices.

Dark Patterns

- Dark patterns are deceptive design techniques that manipulate users into taking actions that they might not otherwise choose. For example, a dark pattern might trick users into signing up for a subscription service,

them only when the procurement season is over.

- The amount of wheat and rice to be sold under OMSS is decided by the DFPD based on the supply and demand of food grains in the country.
- **The states that produce more paddy/rice than their requirement are not allowed to buy rice from OMSS** for their state schemes. They are advised to use their stocks for their schemes.

Must Read

Open Market Sale Scheme (OMSS):
<https://www.iasgyan.in/daily-current-affairs/open-market-sale-scheme-omss>

buying a product they don't need, or sharing their data without their consent.

- They are **unethical and often illegal, as they violate the principles of user autonomy, transparency, and informed consent.**
- They can harm users by causing them to waste time, money, or resources, or by exposing them to security or privacy risks.
- They can also damage the reputation and trustworthiness of the websites or apps that use them, as well as the overall user experience.

Consumer Affairs Ministry has identified nine types of dark patterns

- **False urgency:** This creates a sense of urgency or scarcity to pressure consumers into making a purchase or taking an action. For example, a website may display a countdown timer or a limited stock message to make consumers feel like they will miss out if they don't act fast.
- **Basket sneaking:** This is when dark patterns are used to add additional products or services to the shopping cart without the user's consent. For example, a website may pre-select an option to add insurance or a warranty to the purchase, or automatically enrol the user in a subscription service.

- **Confirm shaming:** This uses guilt to make consumers adhere; criticises or attacks consumers for not conforming to a particular belief or viewpoint. For example, a website may use negative language or imagery to make consumers feel bad for not signing up for a newsletter or donating to a cause.
- **Forced action:** This pushes consumers into taking an action they may not want to take, such as signing up for a service in order to access content. For example, a website may require the user to create an account or provide personal information before they can view a video or download a file.
- **Nagging:** This is persistent criticism, complaints, and requests for action. For example, a website may repeatedly show pop-ups or banners asking the user to rate the app, share the content, or upgrade to a premium version.
- **Subscription traps:** This is when it is easy to sign up for a service but difficult to quit or cancel; the option is hidden or requires multiple steps. For example, a website may offer a free trial but require the user to enter their credit card details and then charge them

Gramodyog Vikas Yojana

Context

- The Lieutenant Governor of Delhi distributed Honey Bee Boxes and Toolkits to 130 beneficiaries under the GramodyogVikasYojana' of the Khadi and Village Industries Commission (KVIC).

Gramodyog Vikas Yojana

About

- GramodyogVikasYojna (GVY) is a scheme **launched by the Union Ministry of Micro, Small and Medium Enterprises (MSME) to support the development of village industries in India.**
- It provides various facilities and services to artisans and entrepreneurs who are engaged in different types of village industries such as agarbatti, khadi, pottery, honey, leather work, plumbing etc.

automatically after the trial ends, without providing an easy way to cancel or unsubscribe.

- **Bait & switch:** This is when advertising a certain product/ service but delivering another, often of lower quality. For example, a website may show attractive images or descriptions of a product/ service but send something different or inferior to the consumer.
- **Hidden costs:** This is when hiding additional costs until consumers are already committed to making a purchase. For example, a website may add taxes, fees, shipping charges, or other expenses at the final stage of checkout, without disclosing them upfront.
- **Disguised ads:** This is when designed to look like content, such as news articles or user-generated content. For example, a website may display sponsored posts or reviews that look like genuine opinions or recommendations from other users, without clearly labelling them as advertisements.

Must Read:

Dark Patterns: <https://www.iasgyan.in/daily-current-affairs/dark-patterns-23>

- It is **implemented by the Khadi and Village Industries Commission (KVIC)** through its field offices and institutions.

Objectives

- To **create employment opportunities** and income generation in rural areas.
- To preserve and promote the traditional skills and crafts of rural artisans.
- To **upgrade the technology and quality** of the products of village industries.
- To provide training and skill development to the artisans and entrepreneurs.
- To enhance the marketability and competitiveness of the products of village industries.
- To **provide social security and welfare measures** to the artisans and entrepreneurs.

Features

- The central government funds the scheme entirely as a central sector scheme. This ensures that the resources for implementing the various sub-schemes under the scheme are adequate and timely.
- The scheme includes various sub-schemes such as Market Promotion and Development Assistance (MPDA), Prime Minister Employment Generation Programme (PMEGP), etc.
- These sub-schemes address the different needs and challenges of the village industries sector, such as technology upgradation, infrastructure development, credit facilitation, skill development, marketing support, etc.
- The scheme aims to improve the productivity, wages, employment and sales of the village industries and make them more competitive in the domestic and international markets. It also supports the establishment of new enterprises and the growth of existing ones in rural areas, thereby creating more income and employment opportunities for the rural population.

Sub-schemes under GVV are:

Market Promotion and Development Assistance (MPDA)

- This scheme helps in the marketing and branding of Khadi and village industry products by providing financial assistance to the Khadi institutions, sales outlets, franchisees and e-commerce platforms. It also supports product development, design intervention, packaging, publicity and exhibitions.

Interest Subsidy Eligibility Certificate (ISEC)

- This scheme offers interest subsidies to the Khadi institutions for taking loans from banks and financial institutions for working capital and fixed capital requirements. The scheme

covers 75% of the interest charged by the banks on the loans availed by the Khadi institutions.

Workshed Scheme for Khadi Artisans

- This scheme provides financial assistance to the Khadi artisans for building or improving their worksheds. The scheme aims to improve the working conditions, productivity and earnings of the Khadi artisans. The scheme provides a subsidy of 75% of the project cost for individual worksheds and 90% for community worksheds.

Prime Minister's Employment Generation Programme (PMEGP)

- This is a credit-linked subsidy programme that aims to create employment opportunities through micro-enterprises in the non-farm sector. The scheme provides a subsidy of 15% to 35% of the project cost to the beneficiaries who set up micro-enterprises with loans from banks. The scheme covers manufacturing, service and trading sectors.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY)

- These are life insurance and accidental insurance schemes for the Khadi and village industry artisans at a low premium. The schemes provide a cover of Rs. 2 lakh each for death or disability due to any cause. The premium is Rs. 330 per annum for PMJJY and Rs. 12 per annum for PMSBY.

Must Read:

GramodyogVikasYojana:

<https://www.iasgyan.in/daily-current-affairs/gramodyog-vikas-yojana>

Khadi Village Industries Commission:

<https://www.iasgyan.in/daily-current-affairs/khadi-village-industries-commission>

World Investment Report 2023 by UNCTAD

Context

- The United Nations Conference on Trade and Development (UNCTAD) published the World Investment Report 2023, which showed that developing countries in Asia received \$62

billion in foreign direct investment (FDI) in 2022, representing about 50% of the total global inflows.

Details

- The UNCTAD's World Investment Report 2023 analyzed the trends and prospects of FDI in different regions and sectors, as well as the impact of the COVID-19 pandemic and the recovery efforts.
- The report highlighted that **India and ASEAN were the most stable destinations for FDI, with growth rates of 10% and 5%, respectively**, and strong performance in project announcements.

Key findings of the Report

- **In 2022, developing countries surpassed developed economies in attracting foreign direct investment (FDI)**, which fell globally by 12% to \$1.3 trillion due to the lasting effects of the covid-19 crisis.
- **China, the second-largest recipient of FDI in the world**, saw a 5% increase in FDI inflows, while FDI in the Gulf region declined, despite a surge in announced projects.
- Many small developing countries and least developed countries (LDCs) **experienced no change or a decrease in FDI**, respectively, indicating persistent challenges and vulnerabilities.
- The report estimates that the **investment gap for achieving all the Sustainable Development Goals has widened** to more

Declining Merchandise Export

Context

- The government is cautious about declaring a definite target for exports this financial year, as merchandise exports fell 15.1% in the first quarter of 2023, following a record high of \$450 billion in 2022-23. The government is likely to choose a range of targets based on different scenarios instead.

Details

- Merchandise exports are goods that are sold to other countries, such as textiles, gems and jewellery, engineering goods, chemicals, etc. They are an important source of foreign exchange earnings, employment generation, and economic growth for any country.

Factors contributed to India's poor export performance

than \$4 trillion per year from \$2.5 trillion in 2015, mainly due to underinvestment and additional needs in energy, water and transport infrastructure.

Suggestions made in the Report

- The report emphasizes the **need for more investment in sustainable energy for all**, as most of the FDI in renewable energy has been concentrated in developed countries.
- The report calls for more **support for developing countries to bridge the gap by mobilizing massive investments in clean energy**, which require about \$1.7 trillion per year but only received \$544 billion in FDI in 2022.
- The report suggests **reducing the risk of energy transition investment in developing countries** through various instruments, such as loans, guarantees, insurance and equity, from both public and private sources, as well as multilateral development banks. It also proposes a "new model of climate-aligned dealmaking".

Must Read:

World Investment Report 2023:

<https://www.iasgyan.in/daily-current-affairs/world-investment-report-2023>

- The **slowdown in some developed economies**, such as the US and the EU, has impacted India's exports of textiles, gems and jewellery, leather goods, etc.
- The **rising prices of raw materials**, fuel, and transportation have increased the cost of production and reduced the competitiveness of Indian exporters. The high inflation has forced the government to impose export restrictions on some essential commodities, such as rice, wheat, pulses, onion, etc., to ensure domestic food security and price stability.
- India's export sector suffers from **several structural issues**, such as poor infrastructure, complex regulations, high logistics costs, low-value addition, lack of product diversification,

inadequate market access, etc. These issues hamper the efficiency and productivity of Indian exporters and prevent them from tapping into new opportunities and markets.

- The **frequent changes in export policies and incentives** have created uncertainty and confusion among the exporters and affected their long-term planning and investment decisions.

Impacts of declining merchandise export of India

Lower foreign exchange earnings

- Merchandise exports are a major source of foreign exchange earnings for India, which help in financing its imports and meeting its external obligations. A lower export growth reduces the foreign exchange inflows and widens the trade deficit (the difference between exports and imports). A high trade deficit puts pressure on the exchange rate and affects the external stability of the economy.

Lower GDP growth

- Merchandise exports are a component of GDP (gross domestic product), which measures the total value of goods and services produced in a country. A lower export growth reduces the GDP growth and affects the overall economic performance of the country.

Lower employment generation

- Merchandise exports are a labour-intensive sector that employs millions of people across various industries and regions. A lower export growth reduces employment opportunities and affects the income and livelihoods of the workers.

Must Read

INDIAN EXPORTS AND IMPORTS:

<https://www.iasgyan.in/daily-current-affairs/indian-exports-and-imports>

International Symposium on Sustainable Livestock Transformation

Context

- The International Symposium on Sustainable Livestock Transformation, held under the aegis of AzadiKaAmritMahotsav and the Agriculture Working Group (AWG) of G20, aimed to address various aspects of the livestock sector's sustainability.

Details

- The symposium **brought together more than 300 participants from G20 countries and beyond**, including experts, policymakers, researchers, farmers, industry representatives, civil society organizations, and international agencies. It aimed to provide a platform for sharing knowledge, experiences, best practices, and innovative solutions for sustainably transforming the livestock sector.
- The panellists highlighted the **need for a holistic and systemic approach to address the interlinked challenges and opportunities of the livestock sector**. They also emphasized the importance of multi-stakeholder partnerships and cooperation for advancing

the global agenda on sustainable livestock transformation.

It covered various aspects of the livestock sector's sustainability

- **Enhancing productivity and efficiency** through improved animal genetics, health, nutrition, and management.
- **Reducing greenhouse gas emissions** and improving resource use efficiency through climate-smart livestock practices.
- **Promoting animal welfare and ethical standards** through responsible livestock production systems.
- **Improving food safety and quality** through better animal health and disease control measures.
- **Strengthening resilience and adaptation** to climate change and other shocks through diversified and integrated livestock systems.
- **Enhancing socio-economic benefits and livelihoods** through inclusive and equitable livestock value chains.

- **Fostering innovation and digitalization** through cutting-edge technologies and tools for livestock data and information systems

It concluded with a set of recommendations

- **Developing a common vision and framework** for sustainable livestock transformation at the global level.
- Strengthening policy coherence and alignment among different sectors and domains related to livestock.
- **Enhancing investment and financing** for sustainable livestock development and innovation.
- **Building capacity and awareness** among different actors and stakeholders on sustainable livestock practices.
- **Scaling up successful models and initiatives** for sustainable livestock transformation at different levels.
- Enhancing data collection, analysis, and dissemination on livestock performance, impacts, and trends.
- **Promoting regional and international cooperation** and dialogue on sustainable livestock issues.

Sustainable Livestock Transformation

Meaning

- It refers to the **process of making the livestock sector more environmentally, socially, and economically sustainable**. It involves adopting practices and strategies that ensure the well-being of animals, minimize the industry's impact on the environment, and support the livelihoods of farmers and communities involved in the sector.

Key aspects of Sustainable Livestock Transformation

- **Promoting sustainable land and resource management** to minimize deforestation, soil erosion, and water pollution caused by livestock farming. Encouraging practices like rotational grazing, agroforestry, and organic feed production to reduce the sector's ecological footprint.
- **Ensuring the well-being of animals in livestock production systems**. This involves providing adequate space, nutrition, and

access to clean water, as well as implementing humane handling and transport practices.

- **Developing strategies to reduce greenhouse gas emissions** from livestock operations. This may include capturing methane from manure for energy, promoting feed efficiency, and adopting low-emission animal husbandry practices.
- **Empowering small-scale farmers** by providing access to resources, training, and technology to enhance productivity and income generation. This helps to alleviate poverty and build resilient rural communities.
- **Promoting sustainable practices** along the entire livestock value chain, from production to processing and distribution. This involves collaborating with stakeholders such as retailers, consumers, and policymakers to ensure ethical and sustainable sourcing.
- **Harnessing digital technologies**, data analytics, and precision farming to optimize livestock production, reduce waste, and improve overall efficiency.
- **Encouraging consumers** to make informed choices by opting for sustainably produced and ethically sourced livestock products. This can create a demand-driven incentive for the industry to adopt more sustainable practices.
- **Fostering partnerships** among governments, NGOs, research institutions, and private sector stakeholders to share knowledge, resources, and best practices. Collaborative efforts can accelerate the transformation towards sustainability.
- **Developing strategies** to help livestock farmers and communities adapt to the challenges posed by climate change, such as extreme weather events and changing disease patterns.

Conclusion

- Sustainable Livestock Transformation is a holistic approach that recognizes the interconnections between environmental, social, and economic aspects of livestock production. By adopting sustainable practices, the livestock sector can contribute to global efforts in addressing climate change,

promoting biodiversity, and ensuring food

security for the growing population.

Credit Guarantee Scheme for the Livestock Sector

Context

- The Credit Guarantee Scheme was launched by the Department of Animal Husbandry & Dairying (DAHD), a department under the Ministry of Fisheries, Animal Husbandry, and Dairying.

Details

- The scheme is designed to **boost the rural economy by enabling Micro, Small & Medium Enterprises (MSMEs) in the Livestock sector** to access credit facilities without collateral security.
- The scheme is part of the Animal Husbandry Infrastructure Development Fund (AHIDF), which aims to create a robust infrastructure for animal husbandry and dairy development.
- It aims to **target un-served and under-served segments of society**, such as first-time entrepreneurs and disadvantaged individuals, who have viable Livestock-related business proposals but lack adequate financial backing.

Features of the scheme

- The scheme **enables MSMEs to obtain loans without any collateral security**, based on the feasibility and viability of their projects. This makes it easier for new and existing entrepreneurs, especially those from the weaker sections, to start or expand their businesses in the livestock sector.
- It provides **credit guarantee coverage to lending institutions, which reduces their risk and encourages them to lend more to the livestock sector**. The Department of Animal Husbandry & Dairying (DAHD) has set up a Credit Guarantee Fund Trust with a corpus of

GAPS Framework

Context

- The GAPS framework is a tool that helps organisations to formalise the workforce and improve their productivity, quality and compliance.

Details

Rs. 750.00 crores, which covers up to 25% of the loans given under the scheme.

- **It supports investments in various critical areas of the livestock sector** that have a high potential for growth and value addition. These include dairy processing and value addition infrastructure, meat processing and value addition infrastructure, animal feed plants, breed improvement technology and multiplication farms, animal waste to wealth management (agricultural waste management), and setting up of veterinary vaccine and drugs manufacturing facilities.
- **It offers interest subvention of 3% on loans up to 90% of the total project cost**. These loans can be availed from Scheduled Banks and the National Cooperative Development Corporation (NCDC). The interest subvention lowers the cost of borrowing and makes credit more accessible and affordable for MSMEs.
- The Credit Guarantee Scheme under AHIDF is a major step by the government to promote investments and development in the livestock sector. By providing collateral-free credit and credit guarantee coverage, the scheme aims to improve the credit delivery system, foster entrepreneurship, and enhance the overall performance of the livestock industry.

Must Read

CREDIT GUARANTEE SCHEME FOR LIVESTOCK SECTOR: <https://www.iasgyan.in/daily-current-affairs/credit-guarantee-scheme-for-livestock-sector>

- India is on the verge of becoming the third-largest economy in the world, thanks to its rapid digitalisation, technological innovation and pro-growth policies. However, the country still faces a major challenge in the form of informal employment, which affects a large segment of its population.

- The informal sector, which comprises self-employed workers and those employed in MSMEs, was severely hit by the Covid-19 pandemic. These workers lack access to employee benefits such as health care, job security and government schemes, and they saw their incomes vanish overnight due to the lockdowns and restrictions. The pandemic exposed the vulnerability and precariousness of India's informal sector, which needs urgent attention and reform.

Why workforce formalisation is necessary?

- **Workforce formalisation is the process of bringing informal workers into the formal sector**, where they can enjoy legal protection, social benefits and fair wages. It is a crucial step towards achieving inclusive and sustainable development, especially in countries like India, where the majority of the workforce is informal.
- Informal workers are those who work without a contract, social security, minimum wage or labour rights. They are often vulnerable to exploitation, discrimination and harassment. They also face higher risks of poverty, illness and injury. **According to the International Labour Organization (ILO), India has about 400 million informal workers, accounting for almost 90% of the total employment.**
- Formalising the workforce can have **positive impacts on both the workers and the economy**. For the workers, it can improve their income, working conditions, skills and social protection. It can also empower them to voice their concerns and demand their rights. For the economy, it can increase tax revenue, productivity, efficiency and innovation. It can also reduce corruption, informality and inequality.
- However, formalising the workforce is not an easy task. It requires coordinated efforts from the government, employers, workers and civil society.

What is the GAPS framework and how can it facilitate the process of formalisation?

- The GAPS framework is a **tool designed to facilitate the process of workforce formalization in companies**, especially in

sectors like healthcare, consumer durables, and pharmaceuticals. It is aimed at addressing the challenges and barriers faced by companies while trying to formalize their informal segments of the workforce.

Key elements

Ghost Employee Elimination

- It focuses on eliminating the presence of "ghost employees," which refers to individuals who may be listed as employees but do not work for the company. In large companies with extensive networks, tracking genuine employees can be challenging, leading to unnecessary employment costs. **With the GAPS framework, complete transparency can be maintained, and companies can easily identify and eliminate ghost employees.** This ensures that resources are utilized efficiently and fairly, and blue-collar employees can benefit from authentic documentation and social security benefits through the formalization process.

Attrition Reduction

- **It addresses the issue of employee attrition.** Offering benefits like health insurance, on-the-job training, financial security, and other perks stated in an employment contract can create a sense of loyalty among employees. When employees feel valued and supported, they are more likely to be motivated to contribute to the company's growth, leading to a reduction in attrition rates and increased productivity. According to the report, companies implementing the GAPS model have seen attrition rates drop significantly, indicating the positive impact of formalization on employee retention.

Productivity Boost with Tech

- **It emphasizes the use of technology-driven tools to enhance productivity and efficiency** within the formalized workforce. Technology can assist in tracking productivity levels and attendance, leading to improved business efficiency. Balasubramanian mentions that disruptions in distribution channels often lead to products being stocked out in the markets or online stores. By ensuring the availability of the required workforce at the right time,

companies can consistently register better profits. This aspect of the framework focuses on optimizing workforce utilization to drive sales and overall business performance.

Statutory Compliance

- It emphasizes the importance of adhering to statutory laws and codes while formalizing the workforce. Compliance with labour laws and government regulations not only helps businesses avoid legal liabilities but also aids in attracting top talent and building strong

relations with employees. Following the pre-defined legal framework ensures that formalization is carried out in a smooth and employee-oriented manner, providing benefits and protection to the workforce.

Must Read

FORMALIZATION OF INDIAN ECONOMY:

<https://www.iasgyan.in/daily-current-affairs/formalization-of-indian-economy>

PERSONALISED MENTORSHIP SUPPORT PROGRAMME

Mode: Online

For details: www.iasgyan.in

- Integrated and Individual preparation
- Weekly Assignments & Sunday Tests
- Regular In-person Mentorship
- Coverage cum Revision Target Plan
- Scientific Performance Tracking

Ethanol Blending

Context

- The Prime Minister of India, at a G20 Energy Ministers' meeting announced that India has introduced 20% ethanol-blended petrol this year and aims to "cover the entire country by 2025".

Details

- India has made significant progress in its ethanol production programme in the last few years, as evidenced by the increased quantities of ethanol supplied by sugar mills/distilleries to oil marketing companies (OMCs) and the diversification of the feedstock used – from cane molasses and juice to rice, damaged grains, maize and, in the future, millets.

- Ethanol is essentially 99.9% pure alcohol that can be mixed with petrol. It is distinct from the 94% rectified spirit that has uses in paints, pharmaceuticals, personal care products and other industries, and the 96% extra neutral alcohol that is used for making potable liquor.

Ethanol blending

- Ethanol blending is the **practice of mixing ethanol, a biofuel derived from plant sources, with petrol, a fossil fuel, to use as a vehicle fuel.** Ethanol blending has several benefits, such as reducing carbon emissions, enhancing energy security, saving foreign exchange, and supporting the agricultural sector.
- **Ethanol blending in India was introduced in 2003 as part of the Ethanol Blended Petrol**

(EBP) programme, which aimed to achieve 5% ethanol blending in petrol by 2006. However, due to various challenges such as inadequate ethanol production, pricing issues, regulatory hurdles, and logistical constraints, the programme could not achieve its target. In 2018, the government revised its policy and set a new target of 20% ethanol blending in petrol by 2030, which was later advanced to 2025.

The potential impact of ethanol blending in India

- Ethanol blending can help **reduce greenhouse gas emissions from the transport sector** by replacing fossil fuels with renewable fuels. It can help **improve air quality** by reducing pollutants such as particulate matter (PM), carbon monoxide (CO), nitrogen oxides (NOx), etc.
- It can help **enhance energy security by reducing India's dependence on oil imports**. It can help to create employment opportunities

National Coal Index

Context

- The National Coal Index (NCI) in India fell 33.8% year on year in May, showing that there is ample supply of coal in the market to satisfy rising demand.

Details

- The National Coal Index (NCI) is a reliable **indication of market dynamics and price variations since it integrates coal prices from all sales channels**, including notified prices, auction prices, and import prices. The index, which was created with fiscal year 2017-18 as the base year, provides significant insights into the coal industry.
- According to reports, the Indian coal industry has a large stockpile, assuring a steady supply for various sectors that rely on coal, such as thermal power plants. The availability of coal greatly adds to the nation's overall energy security.
- With sufficient coal supply, India will be able to meet not only the expanding demand for coal but also its long-term energy needs. This contributes to the country's more resilient

and income generation for the farmers, entrepreneurs, and workers involved in the ethanol value chain.

- It can help **support the agricultural sector by providing an alternative market and income source for the farmers**. It can also help address the problem of crop burning and stubble management by utilizing agricultural residues for ethanol production. It can help improve public health by reducing exposure to harmful air pollutants and associated diseases.

Must Read

ETHANOL BLENDING:

[https://www.iasgyan.in/daily-current-affairs/ethanol-](https://www.iasgyan.in/daily-current-affairs/ethanol-blending#:~:text=The%20aim%20is%20to%20promote,is%20around%208.5%20per%20cent.)

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ETHANOL BLENDING IN INDIA:

<https://www.iasgyan.in/daily-current-affairs/ethanol-blending-in-india>

and sustainable coal sector. The NCI trend implies that India's coal market is currently more balanced.

Coal Sector in India

- Coal is the most important and abundant fossil fuel in India. It **accounts for 55% of the country's energy needs and is the main source of electricity generation**. Coal has been mined in India since 1774, and the country is the second-largest producer and consumer of coal in the world.
- Coal in India is **mostly found in the eastern and central parts of the country**, especially in Jharkhand, Chhattisgarh, Odisha, Madhya Pradesh, and West Bengal. The major coalfields are located in the Damodar valley, Jharia, Raniganj, Bokaro, Singrauli, Godavari valley, and Neyveli.
- The coal sector in India was **nationalized in 1973** to ensure energy security and social welfare. Coal India Limited (CIL), a state-owned enterprise, was established as the monopoly coal producer in the country. CIL produces about 80% of India's coal. The

remaining 20% is produced by private companies, captive mines of steel and power sectors, and state-owned Singareni Collieries Company Limited (SCCL).

Major reforms taken in the coal sector

- Allowing private sector participation in captive coal mining for the power, steel, and cement sectors.
- Introducing competitive bidding for allocation of coal blocks.
- Liberalizing coal imports and exports.
- Establishing an independent regulator for the coal sector.
- Opening up commercial coal mining for the private sector.
- Implementing a new coal distribution policy to ensure an equitable supply of coal.
- Promoting clean coal technologies and renewable energy sources

Challenges in the coal sector

- The **quality of Indian coal is generally poor, with high ash content** (ranging from 25% to

45%), low calorific value (ranging from 3,000 to 4,500 kcal/kg), and high moisture content (ranging from 5% to 15%). This affects the efficiency of coal utilization and increases the cost of transportation and handling. Moreover, Indian coal has high sulphur content (ranging from 0.5% to 4%), which contributes to air pollution and acid rain.

- The **recovery rate of Indian coal is low**, at about 60%, compared to the global average of 80%. This means that a large amount of coal remains unextracted or wasted during mining operations. The low recovery rate is due to various factors such as outdated mining methods, inadequate mechanization, geological constraints, environmental regulations, and land acquisition issues.

Must Read

COAL INDUSTRY: <https://www.iasgyan.in/daily-current-affairs/coal-industry>

Resource Efficiency Circular Economy Industry Coalition

Context

- The Resource Efficiency Circular Economy Industry Coalition (RECEIC) was inaugurated by the Union Minister of Environment, Forest and Climate Change. The Minister emphasized the need for a circular economy model to adopt a more sustainable and regenerative approach.

Details

- RECEIC is a network of 39 global companies from different industries, such as steel, FMCG (Fast-Moving Consumer Goods), and electronics. These companies have agreed to follow circular economy principles to tackle environmental issues, especially those related to waste management, such as plastics, microplastics, e-waste, and chemical waste.

Circular economy

- A circular economy is a system that **aims to eliminate waste and promote the continual use of resources. It is based on three principles: reduce, reuse, and recycle.** In a circular economy, products and materials are

designed to last longer, be repaired, refurbished, or remanufactured, and eventually recycled or composted. This way, the value of resources is preserved and the environmental impact is minimized.

- The concept of circular economy has its roots in various schools of thought, such as industrial ecology, biomimicry, cradle-to-cradle design, and regenerative development. **It emerged as a response to the linear economy, which follows a "take-make-dispose" model that depletes natural resources and generates waste and pollution.** The linear economy is unsustainable in the long run, as it depends on finite resources and causes environmental and social problems.

Key features of the circular economy

- It focuses on **extracting the maximum value from resources and products throughout their lifecycle.** This means using less resource, minimizing waste, and optimizing energy use.
- Emphasis is placed on **designing products for durability, reparability, and recyclability.**

- Products are made to last longer, to be easily repaired or upgraded, and to be easily dismantled and recycled at the end of their life.
- Instead of disposing of products, materials are **recycled or reused to create new products**. This reduces the need for virgin materials and saves natural resources. Recycling also reduces the environmental impact of waste disposal, such as landfilling or incineration.
 - **Producers are held responsible for the entire lifecycle of their products**, including proper disposal and recycling. Extended Producer Responsibility (EPR) encourages producers to design products that are easier to recycle and to provide collection and recycling services for their customers.
 - **Encourages the sharing or renting of products to extend their useful life**. For example, car-sharing platforms allow people to access cars without owning them, reducing the number of cars on the road and the associated emissions.
 - **Refurbishing and remanufacturing products** to give them a second life. For example, old computers can be upgraded with new components and software, or old furniture can be restored and repainted.

Full-Reserve Banking

Context

- Full-Reserve Banking is in the news due to several reasons.

Details

- Full-reserve banking, **also known as 100% reserve banking, is a monetary system in which banks are required to hold reserves equal to 100% of their liabilities in the form of demand deposits**. This means that banks are not allowed to lend out the money they receive from customers as demand deposits. Instead, they act as mere custodians and are mandated to keep all customer deposits in their vaults at all times.
- In a full-reserve banking system, **banks are only permitted to lend funds that their clients deposit as time deposits**. Time deposits are

Significance

- It reduces greenhouse gas emissions and mitigates climate change by using renewable energy sources and minimizing waste.
- It preserves natural capital and enhances biodiversity by reducing resource extraction and land use.
- It improves human health and well-being by reducing exposure to harmful substances and creating more livable spaces.
- It fosters innovation and competitiveness by stimulating new business models, products, and services that create value from waste and underutilized assets.
- It creates jobs and social inclusion by supporting local communities, empowering marginalized groups, and enhancing skills and education.
- India has taken several steps to adopt a circular economy approach in various sectors, such as energy, agriculture, water, waste management, mobility, and manufacturing.

Must Read

CIRCULAR ECONOMY COALITION:

<https://www.iasgyan.in/daily-current-affairs/circular-economy-coalition>

sums of money that consumers can only withdraw from a bank after a predetermined amount of time that has been set by the bank and its clients. With the help of this arrangement, banks are given time to lend these deposits to borrowers at a specific interest rate, collect payments from the borrowers, and then finally return the depositors' money plus a specific amount of interest.

Main features of full-reserve banking

Reserve Requirement

- This obliges banks to hold 100% of their customers' deposits in reserve, either as cash or as deposits at the central bank. This means that banks cannot use these funds for any other purpose, such as lending or investing.

This ensures that customers can always withdraw their money on demand, without having to wait for the bank to collect it from other sources.

No Money Creation

- Unlike fractional-reserve banking, where banks can create new money by lending out a portion of their deposits, full-reserve banking does not involve any money creation by banks. The only way new money can enter the economy is through the central bank, which can issue currency or make loans to the government or other institutions. This gives the central bank more control over the money supply and inflation.

Prevention of Bank Runs

- One of the main advantages of full-reserve banking is that **it eliminates the risk of bank runs and depositor panics**. A bank run occurs

when many customers lose confidence in a bank and try to withdraw their money at the same time, causing the bank to run out of cash and become insolvent. Under full-reserve banking, this cannot happen, since all deposits are fully backed by reserves and available for withdrawal at any time.

Depositor Safety

- Another benefit of full-reserve banking is that it protects depositors' funds from being lost due to bank insolvency or failure. Since deposits are not used for lending or investing, they are not exposed to the risks and uncertainties of these activities. Depositors do not have to worry about losing their money if the bank goes bankrupt or defaults on its obligations. Their money is always safe and secure in the reserve account.

White Level ATMs

Context

- The Reserve Bank of India (RBI) has taken steps to enhance ATM accessibility across various tiers of centres, with a focus on Tier III to VI areas. This initiative involves allowing non-bank companies to establish and operate White Label ATMs (WLAs) in the country.

What are White Label ATMs (WLAs)?

- White Label ATMs (WLAs) are ATMs that are **not owned or branded by any specific bank**. They are **managed and operated by non-bank entities**, such as Non-Banking Financial Companies (NBFCs) or other authorized entities that are incorporated under the Companies Act of India. These entities have to meet the regulatory criteria set by the Reserve Bank of India (RBI) to operate WLAs.
- WLAs provide banking services to customers based on cards (debit/credit/prepaid) issued by various banks. Customers can use their cards to withdraw cash from their bank accounts at any WLA, regardless of which bank they belong to. WLAs charge a fee for their services, which may vary depending on the location and type of transaction.

What are the key features of WLAs?

Types of ATM

- **White Label ATM is owned and operated by a non-banking entity while cash is provided by sponsored bank.**
- **Brown Label ATM is owned by the bank but its operation and maintenance is outsourced to third entity.**
- **Green Label ATM is used for Agricultural transactions.**
- **Orange Label ATM is used for transacting shares.**
- **Yellow Label ATM is used for E-commerce.**
- **Pink Label ATM is used for women banking.**

- WLAs are **owned and operated by non-bank entities that have a valid license from the RBI**. These entities are responsible for maintaining and servicing the WLAs, as well as ensuring adequate cash availability and security.
- They act as authorized service providers, extending banking services to customers beyond the traditional banking network. They have to follow the guidelines and standards issued by the RBI and other relevant authorities for providing safe and reliable services.
- **WLAs do not carry the branding of any specific bank**. They offer a neutral and non-affiliated platform for banking services. They may display their logo or name, or that of their sponsor bank, if any.
- WLAs play a crucial role in expanding the reach of banking services, particularly in areas where traditional banks might have a limited presence.
- By deploying WLAs in remote or underserved locations, financial inclusion efforts are bolstered, allowing a broader segment of the population to access banking facilities. WLAs can also help in promoting digital payments and reducing cash dependency.
- Regular ATMs are usually concentrated in urban and semi-urban areas, where banking infrastructure is more established.
- WLAs are often deployed in areas with limited banking presence, contributing to enhanced financial inclusion by reaching underserved populations.

Must Read

MICRO ATM: <https://www.iasgyan.in/blogs/micro-atm>

FAME India Scheme

Context

- The Minister of State for Heavy Industries in the Lok Sabha highlighted the progress made under the Fame India Scheme.

Details

- The Faster Adoption and Manufacturing of Electric Vehicles (FAME) Scheme is an **initiative launched by the Government of India to promote the adoption of electric vehicles (EVs)** and to facilitate the manufacturing of EVs and their components in the country. The scheme, which is **administered by the Ministry of Heavy Industries**, provides subsidies to buyers of electric vehicles and funds the development of charging stations across the country.
- The main objective of the scheme is to **encourage the electrification of public and shared transportation, such as buses, taxis, three-wheelers and two-wheelers**. It also aims to support the creation of a robust ecosystem for electric mobility in India, including manufacturing, research and development, and skill development. The scheme is expected to boost the demand for

electric vehicles and enhance their affordability and accessibility.

Features

- The FAME Scheme **provides financial incentives to buyers of electric vehicles in the form of subsidies to reduce the upfront cost of EVs**. The subsidies vary depending on the type and size of the vehicle, ranging from Rs. 10,000 to Rs. 1.5 lakh per vehicle.
- The scheme aims to **establish a robust charging infrastructure across the country** to address the issue of range anxiety and encourage more people to switch to electric vehicles. The scheme provides support for setting up charging stations in public places, such as malls, parking lots, and highways.
- It **supports research and development activities related to EV technologies and their components**. The scheme funds various projects and programs that focus on improving the performance, efficiency, and affordability of EVs and their batteries, motors, controllers, etc.
- It promotes domestic manufacturing of EVs and their components to create jobs and boost the local economy. The scheme offers

incentives and tax benefits to manufacturers and suppliers of EVs and their parts, such as lower GST rates, customs duty exemptions, and income tax deductions.

Must Read

FAME-II SCHEME: <https://www.iasgyan.in/daily-current-affairs/fame-ii-scheme>

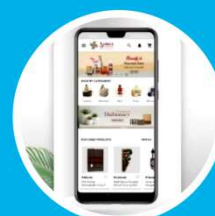
3.16 SNIPPET



UDYAMI BHARAT-MSME DAY

- On 27th June 2023, the Ministry of Micro, Small & Medium Enterprises (MSME) celebrated 'Udyami Bharat-MSME Day' at Vigyan Bhawan, New Delhi, to mark the International MSME Day.
- The Union Minister for MSME launched CHAMPIONS 2.0 Portal and Mobile App for Geo-tagging of Cluster Projects and Technology Centers to enable real-time monitoring and evaluation of various schemes and projects implemented by the Ministry of MSME across the country.
- It will also facilitate online feedback and grievance redressal mechanisms for MSMEs.
- The Union Ministers lauded the contribution of MSMEs to the country's GDP and exports and expressed their vision of making India a USD 5 trillion economy by 2030.

Must Read:
MSME Day:



eSARAS MOBILE APP

- The Deendayal Antyodaya Yojna- National Rural Livelihoods Mission (DAY-NRLM) has launched the eSARAS mobile App to support the marketing of products made by women of Self-help Groups (SHGs).
- The App is a platform for customers to buy authentic and quality handicrafts and hand looms made by the SHGs.
- It was launched by the Union Ministry of Rural Development (MoRD), which also inaugurated the eSARAS Fulfillment Centre. The Centre, managed by the Foundation for Development of Rural Value Chains (FDRVC), a joint initiative of MoRD and Tata Trust, will take care of the logistics involved in processing, packaging and shipping the products ordered through the eSARAS Portal and App.
- It allows customers to access a wide range of handmade products made by SHG women from different parts of the country. It will enable customers to rate and review the products, as well as share feedback with the SHG women directly.

Must Read:
eSARAS Mobile App:



OBLIGATORY CESSION

- The government has announced that the compulsory share of the business that general insurers have to give to the state-owned reinsurer General Insurance Corporation of India (GIC Re) will remain unchanged at 4% for the next financial year.
 - This means that all general insurers, whether public or private, have to transfer 4% of their premiums to GIC Re as part of the obligatory cession scheme.
- Obligatory cession, also known as mandatory cession or compulsory cession, is a term used in the insurance industry, particularly in the context of reinsurance.
- It refers to a regulatory requirement imposed on insurance companies by a government or regulatory authority to cede a certain portion of their insurance business to a designated reinsurer.
- In countries where obligatory cession is in place, insurance companies are legally obligated to transfer a specified percentage or portion of their insurance risks to a designated reinsurer that is usually a government-owned or government-controlled entity.
- Insurance Regulatory and Development Authority of India (IRDAI) is the regulatory body for the insurance sector in India, responsible for overseeing and regulating the functioning of insurance companies, intermediaries, and other stakeholders in the industry.



AT-1 BOND

- The State Bank of India (SBI) has recently issued AT-1 bonds worth Rs 10,000 crore. These bonds have a coupon rate of 8.1%, which is higher than the prevailing market rates
- AT-1 bonds are a type of perpetual debt instrument issued by banks to raise capital and strengthen their capital base. They are considered hybrid securities as they have features of both equity and debt.
- They do not have a fixed maturity date, and they can be redeemed only at the discretion of the issuer.
- AT-1 bonds play an essential role in helping banks meet the Basel III norms, which are global standards for banking regulation. Basel III requires banks to maintain a minimum Capital Adequacy Ratio (CAR) to ensure they have enough capital to cover their risk-weighted assets.
- The bonds carry higher interest rates than regular bonds due to their higher risk profile. Investors are compensated for this additional risk they take by receiving a higher coupon rate.

Must Read
AT-1 BOND:



PRODUCT DESIGN CENTRE AND GRAIN-EX SYSTEM



- The Centre for Development of Advanced Computing (C-DAC), Kolkata, has established a Product Design Centre (PDC) with the support of the Ministry of Electronics and Information Technology (MeitY).
- The PDC is a state-of-the-art facility that provides end-to-end solutions for product design, prototyping, testing and validation. It is equipped with advanced software and hardware tools, such as 3D printers, CNC machines, PCB design software, CAD/CAM software, etc.
 - ♦ It aims to foster innovation and entrepreneurship in the electronics and ICT sector, especially among startups, MSMEs and academia in the eastern region of India.
- On the same occasion, the Ministry launched the Grain-Ex system, an appearance-based quality detection system for pulses, under the National Programme on Electronics and ICT Applications in Agriculture and Environment (AgriEnIc).
- The Grain-Ex system uses machine vision technology to analyze the colour, shape, size and defects of 14 types of pulses and provide a quality score based on predefined standards.
 - ♦ The system is soon to be integrated with the e-NAM platform to enable quality-based pricing and transparent transactions for farmers and traders.

SOCIAL TRAILBLAZER PROGRAM FOR ENTREPRENEURS



- The Union Minister for Education and Skill Development & Entrepreneurship launched the 2nd edition of the Social Trailblazer Program by Incubator for Social Enterprises and Entrepreneurs Development.
- The program aims to further boost the social entrepreneurship ecosystem at the grassroots and nurture early-stage entrepreneurs.
- It is a unique initiative that provides mentoring, training, networking and funding opportunities to aspiring social entrepreneurs who have innovative ideas to solve pressing social problems.
- The program is supported by the Ministry of Skill Development & Entrepreneurship, Incubator for Social Enterprises and Entrepreneurs Development, Institute of Rural Management, Anand (IRMA).
- IRMA's incubator ISEED (Incubator for Social Enterprises and Entrepreneurs for Development) is a platform provides mentoring, training, networking, and funding opportunities to aspiring and established social entrepreneurs who are working to create positive social change in various sectors such as agriculture, health, education, environment, and livelihoods.

BANKS HERALDING ACCELERATED RURAL & AGRICULTURE TRANSFORMATION (BHARAT)



- To facilitate the development of agri-infra projects and improve the income and livelihood of farmers, the Ministry of Agriculture & Farmers Welfare (MoA&FW) has initiated a new campaign for banks under the Agriculture Infrastructure Fund (AIF) called BHARAT (Banks Herald Accelerated Rural & Agriculture Transformation).
- The campaign was inaugurated on 15th July 2023 through a virtual meeting with the participation of over 100 banking officials from various public and private sector banks, regional rural banks, small finance banks, Non-Banking Financial Companies (NBFCs) and select cooperative banks.
- The campaign will continue for one month till 15th August 2023, with an objective of Rs 7200 crore as a loan amount under the Agriculture Infrastructure Fund (AIF).
 - ♦ The AIF is a central sector scheme launched by the Government of India in 2020 to provide medium to long-term debt financing for investment in post-harvest infrastructure and community farming assets.
 - ♦ It aims to create a strong rural infrastructure that can increase the value of agricultural produce, reduce wastage and enhance farmers' income.

Must Read:
BHARAT:



SCORES PORTAL



- SCORES is a web-based system that allows investors to register and monitor their complaints against a listed company/ intermediary registered with SEBI.
- SCORES is an acronym for Sebi Complaints Redress System, a platform that was introduced in 2011.
- It facilitates investors to lodge their grievances online with SEBI, the authority that regulates the securities market in India, against any entity engaged in the market, such as companies, intermediaries and market infrastructure institutions.
- It offers a prompt and effective resolution of complaints and enhances investor protection and confidence.

Must Read:
SCORES Portal:



FORCE MAJEURE



- The term "Force majeure" was in the news related to the Indian Oil Corporation and Engineers India Ltd project of liquefied natural gas (LNG) terminal in Iraq.
- Force majeure clauses are commonly included in contracts to address situations where external factors make it impossible or impractical for one or both parties to fulfil their obligations as originally agreed.
- It is a legal concept that provides a contractual provision to excuse a party from fulfilling its obligations under certain circumstances that are beyond its control.
 - It acts as a safeguard for parties in contracts against unforeseen and unavoidable events that could disrupt the performance of the agreement.
- Typically, force majeure events include natural disasters (e.g., earthquakes, hurricanes), acts of war, terrorism, labour strikes, government actions (e.g., regulatory changes, embargoes), and other extraordinary events that are unforeseeable and uncontrollable.
- When a force majeure event occurs, the affected party is generally excused from performance during the duration of the event or until it is resolved. This provision helps provide a level of flexibility and protection for parties facing unforeseen challenges that may hinder their ability to meet their contractual commitments.

Must Read
Force Majeure:



TCRM MATRIX



- The Techno-Commercial Readiness and Market Maturity Matrix (TCRM Matrix) framework has been developed by the NITI Aayog.
- The framework is intended to transform technology evaluation, stimulate innovation, and drive entrepreneurship in India.
- It is an assessment tool that builds on existing technology assessment frameworks such as the Technology Readiness Level (TRL), Commercialization Readiness Level (CRL), and Market Readiness Level (MRL) scales.
- It provides an integrated evaluation model that gives comprehensive insights and relevant information to stakeholders at every step of the technology development cycle by merging the basic ideas of these frameworks.
- The goal of the framework is to provide policymakers, strategists, academics, and investors with the tools they need to make educated decisions, improve technology commercialization chances, and promote substantial change in India's innovation and entrepreneurial scene.
- Adoption of the framework requires an integrated examination of the diverse national and sectoral innovation ecosystems. The framework lays forward a clear plan for integrating the TCRM Matrix into the larger innovation ecosystem and realizing its full potential.

HELI SUMMIT 2023



- The Heli Summit 2023 was inaugurated by the Minister of Civil Aviation in Khajuraho, Madhya Pradesh.
- It aimed to provide a common platform for industry stakeholders and policymakers to discuss the growth story of the Indian Helicopter and Small Aircraft industry.
- It focused on enhancing the scope of the UDAN Scheme, which aims to improve connectivity in remote and hilly areas, as well as expanding rural-to-urban connectivity.
- The theme of the summit was "Reaching the Last Mile: Regional Connectivity through Helicopters & Small Aircraft."
- During the event, the Minister launched RCS UDAN 5.2, which is an initiative to further enhance connectivity to remote and regional areas of the country using small aircraft such as 1A (<9 seats) and Category 1 (<20 seats).
 - The UDAN 5.2 initiative includes increased viability gap funding (VGF) and reduced fare caps to make air travel more affordable and accessible.
- The Minister also launched the HeliSewa mobile application to create a common platform between helicopter operators and district authorities to streamline approvals and enhance user experience.

MAITREE SUPER THERMAL POWER PROJECT



- The Maitree Super Thermal Power Project is a 1,320 MW coal-fired power station located in Rampal, Bangladesh.
- It is being developed by the Bangladesh India Friendship Power Company (BIFPCL), which is a 50:50 joint venture between India's state-run National Thermal Power Corporation (NTPC) and the Bangladesh Power Development Board (BPDB).
- The power plant is one of the largest coal-fired power plants in Bangladesh, along with the Payra Power Plant in Pataukhali.
- The financing for the Maitree Super Thermal Power Project comes from a £1.3 billion (\$1.6 billion) loan from the Export-Import (EXIM) Bank of India. This loan agreement was entered into by BIFPCL and the EXIM Bank of India in 2017.
 - ◆ The EXIM Bank of India was established by the Government under the Export-Import Bank of India Act 1981.
 - ◆ The bank is wholly owned by the Government of India and plays a crucial role in facilitating and supporting India's international trade.
 - ◆ The primary objective of EXIM Bank is to provide financial assistance to both exporters and importers in India.

3.18 1 MAINS QUESTION AND 5 MCQS

Q1. In the context of sustainability and resource management, explain the significance of the circular economy. Identify and discuss its major challenges, and propose effective strategies or initiatives that can lead us towards a more sustainable way forward with the adoption of circular economy principles.

Answer

- The circular economy is a concept that aims to reduce waste and pollution by designing products and systems that can be reused, repaired, remanufactured, or recycled. It is based on three principles: eliminate waste and pollution, keep products and materials in use, and regenerate natural systems. The circular economy is significant for sustainability and resource management because it can help us conserve natural resources, reduce greenhouse gas emissions, create new jobs and business opportunities, and improve human well-being.

However, the circular economy also faces many challenges, such as:

- The lack of awareness and education among consumers, producers, and policymakers about the benefits and practices of the circular economy.
- The lack of incentives and regulations to support the transition from a linear to a circular economy.
- The lack of infrastructure and technology to facilitate the collection, sorting, processing, and distribution of circular products and materials.
- The lack of collaboration and coordination among different stakeholders, such as governments, businesses, NGOs, and communities.
- To overcome these challenges and achieve a more sustainable way forward with the adoption of circular economy principles, we can propose some effective strategies or initiatives, such as:
 - Developing and implementing educational programs and campaigns to raise awareness and knowledge about the circular economy among various groups of society.
 - Introducing and enforcing policies and standards that encourage or require the use of circular products and materials, such as extended producer responsibility, eco-design, green procurement, carbon tax, etc.
 - Investing and innovating in circular technologies and solutions that can enable the efficient and effective management of circular products and materials, such as digital platforms, blockchain, biotechnology, etc.
 - Fostering and facilitating cross-sectoral and multi-stakeholder partnerships and networks that can support the exchange of information, resources, and best practices for the circular economy.
- The circular economy is not only a vision but also a necessity for a more sustainable future. By applying the circular economy principles to our products and systems, we can create a positive impact on the environment, society, and economy. For education use.

Q2. What is the term "greedflation" commonly used to describe economics?

- A situation where excessive consumer spending leads to high inflation.
- An economic theory proposing that greed drives inflationary pressures.
- A combination of greed-driven economic policies leading to deflation.
- The concept of speculative behaviour causing hyperinflation.

Q3. Consider the following statements;

- Government e-Marketplace (GeM) was launched by the Ministry of Finance to create a more open and transparent system for government buyers.
- India accounts for about 10% of the global milk production.
- Chennai-Vladivostok Maritime Corridor (CVMC) is a proposed sea route that aims to enhance bilateral trade and strategic cooperation between India and Ukraine.
- Green Credit Programme was announced by the Union Finance Minister in the 2023-24 budget.

How many of the above statements is/are correct?

- Only 1
- Only 2
- Only 3
- All

Q4. Consider the Following statements in the context of the PM Programme for Restoration, Awareness, Generation, Nourishment and Amelioration of Mother Earth (PM-PRANAM) initiative:

- It aims to encourage farmers to adopt organic farming practices and reduce their dependence on chemical fertilizers.
- The Union Government will share 60% of the subsidy savings with the States for promoting

the use of alternative fertilizers and other development works.

- It will facilitate the creation of farmer-producer organizations (FPOs).

Which of the following Statement is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Q5. Consider the Following statements:

- Dark patterns are ethical strategies that manipulate users into taking actions that benefit the designers or owners of a website, app, or service.
- GramodyogVikasYojna (GVY) is a scheme launched by the Union Ministry of Rural Development to support the development of village industries in India.
- World Bank published the World Investment Report 2023.
- The Ministry of Youth Affairs and Sports launched CHAMPIONS 2.0 Portal.

How many of the above statements is/are incorrect?

- Only 1
- Only 2
- Only 3
- All

Q6. Consider the Following statements in the context of AT-1 bonds:

- AT-1 bonds have a fixed maturity date.
- They have characteristics of both debt and equity.
- AT-1 bonds typically offer higher yields to investors.

Choose the correct code;

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

ANSWER

2. B

3. A

4. C

5. D

6. B

4. DEFENCE & SECURITY

4.1 CYBERCRIMES

Context

- The Minister of State for Home Affairs has highlighted the various steps taken to deal with cybercrimes in India in a reply to a question in the Lok Sabha.

Details

- According to the Seventh Schedule of the Constitution of India, the States/UTs have the primary authority over 'Police' and 'Public Order', and they are responsible for preventing, detecting, investigating, and prosecuting crimes, including cybercrimes, through their Law Enforcement Agencies (LEAs).
- The Central Government supports and supplements the efforts of the State LEAs in addressing cybercrimes by providing them with technical, legal, and financial assistance, as well as setting up specialized institutions and frameworks for cyber security and cyber forensics.

Initiatives taken by the Union Government in addressing cyber crimes

- **National Cyber Forensic Laboratory (Investigation)** provides early-stage cyber forensic assistance to Investigating Officers (IOs) of all State/UT Police both through online and offline modes. It also conducts advanced cyber forensic analysis of digital evidence and provides expert opinions in court cases.
- **CyTrain Portal** offers online courses on critical aspects of cybercrime investigation, forensics, and prosecution, along with certification. It aims to build the capacity of police officers, judicial officers, and prosecutors in handling cybercrime cases effectively and efficiently.
- **Training Programs** have been prepared for police personnel, public prosecutors, and judicial officers to enhance their skills in handling cybercrime investigations and prosecutions. The training covers topics such

as cyber law, cybercrime trends and challenges, cybercrime investigation tools and techniques, digital evidence collection and preservation, cyber forensics, cybercrime prosecution and adjudication, etc.

- **National Cyber Crime Reporting Portal** allows the public to report incidents of cybercrimes, with special attention to cyber-crimes against women and children. The reported incidents are converted into FIRs and addressed by the concerned State/UT Law Enforcement Agencies. The portal also provides awareness material on various types of cybercrimes and preventive measures.
- **Citizen Financial Cyber Fraud Reporting and Management System** was launched to report financial frauds and prevent fund siphoning by fraudsters. A toll-free Helpline number '1930' has been provided for lodging online cyber complaints. The system also enables the blocking or freezing of bank accounts or credit/debit cards involved in fraudulent transactions within a stipulated time frame.
- **Central Assistance for Modernization of Police** by the Ministry of Home Affairs to States and UTs for upgrading their police forces with modern weapons, training gadgets, communication/forensic equipment, and Cyber Policing equipment.

Cybercrimes

About

- Cybercrimes refer to criminal activities that are committed using computers, networks, and the internet as tools or targets. These crimes can include unauthorized access to computer systems, data theft, hacking, spreading malware, phishing, online fraud, cyberbullying, identity theft, online harassment, and various other malicious activities conducted through digital means.
- The National Crime Records Bureau's 'Crime In India - 2021' report indicate the following:

- The number of **cybercrime cases in India has been steadily increasing** over the years, with a 5% rise in 2021 compared to 2020 and a significant 15% increase from 2019 to 2021.
- Over 70% of the cybercrime cases were reported from Telangana, Uttar Pradesh, Karnataka, Maharashtra, and Assam.

Impact

- Individuals and businesses can suffer **financial losses** due to online fraud, data breaches, and ransomware attacks.
- Cyberattacks can lead to the **compromise of sensitive information**, including personal data, financial details, and intellectual property.
- It can **tarnish the reputation** of individuals, companies, or institutions, affecting trust and credibility.
- It can pose **threats to national security** by targeting critical infrastructure, government networks, or military systems.
- It raises **concerns about data privacy** and the misuse of personal information.
- **Cyberbullying and online harassment** can have severe psychological effects on individuals, especially young people.
- It can **hinder the growth of digital businesses** and deter foreign investment in India's digital economy.

Challenges

- As **technology evolves**, cybercriminals find new and sophisticated ways to exploit vulnerabilities, making it challenging for law enforcement to keep up.
- Cybercriminals can **hide their identities online**, making it difficult to trace and apprehend them.
- Cybercrimes can occur **across national borders**, leading to challenges in coordinating investigations and extradition of offenders.
- Many individuals and organizations **lack awareness about cybersecurity** best practices, leaving them vulnerable to attacks.
- Law enforcement agencies may have **limited resources and expertise** to tackle cybercrimes effectively.
- Balancing data localization requirements with data privacy concerns can be a challenge in combating cybercrimes.

- By addressing these challenges and implementing effective strategies, India can better combat cybercrimes and safeguard its citizens, businesses, and critical infrastructure from digital threats.

Way Forward

- India should **invest in advanced cybersecurity infrastructure** to protect critical systems, government agencies, and businesses from cyber threats.
- **Continuously update and strengthen cybercrime laws** to address emerging threats and ensure effective deterrence and prosecution.
- **Provide specialized training** to law enforcement agencies in digital forensics, cyber investigation, and cybersecurity techniques.
- **Conduct campaigns to raise awareness** about cybersecurity among the public, businesses, and government institutions.
- **Foster cooperation with other countries** to address cross-border cybercrimes effectively and improve intelligence sharing.
- **Collaborate with private companies and organizations** to develop and implement best practices for cybersecurity.
- **Promote responsible use of technology** and the internet to reduce the likelihood of individuals engaging in cybercriminal activities.
- **Encourage individuals and organizations** to report cyber incidents promptly to relevant authorities for timely action.
- **Support research and development** in the field of cybersecurity to stay ahead of emerging threats and develop innovative solutions.

Conclusion

- The increasing trend of cybercrime cases in India underscores the urgency to address the challenges and strengthen the country's cybersecurity infrastructure and capabilities. A comprehensive approach involving government, law enforcement, private sector, and public cooperation is vital to mitigate the risks posed by cyber threats effectively.

Must Read

TYPES OF CYBERCRIME:

<https://www.iasgyan.in/blogs/types-of-cybercrime>

4.2 SHORT ARTICLE

India and UN Report on Children and Armed Conflict

Context

- The report of the United Nations Secretary-General Antonio Guterres on the impact of armed conflict on children has excluded India from its list of situations of concern.

Details

- The report stated that the decision was based on "measures taken by the government to better protect" children affected by violence and insecurity. It acknowledged the positive engagement of the Indian government with the special representative of the UN Secretary-General on children and armed conflict, which had been noted in the previous report as a possible reason for the removal of India from the list.
- **This is the first time since 2010 that India has not been named in the report** alongside countries like Burkina Faso, Cameroon, Lake Chad basin, Nigeria, Pakistan and the Philippines, where grave violations against

children in situations of armed conflict are documented.

- The Ministry of Women and Child Development attributed this achievement to various policies and institutional changes introduced since 2019, such as the National Action Plan for Children Affected by Armed Conflict, the Juvenile Justice (Care and Protection of Children) Amendment Act, 2021, and the strengthening of child protection mechanisms at the state and district levels.

UN Report on Children and armed conflict

- The **UN Secretary-General's Annual Report on Children and Armed Conflict is an annual document that covers the situation of children in countries where there is armed violence**, such as war, insurgency, terrorism or civil unrest.
- It **identifies six grave violations against children**: killing and maiming, recruitment and use, sexual violence, abduction, attacks on schools and hospitals, and denial of humanitarian access.

- The report names and shames the parties that are responsible for these violations and calls for action to end them.
- It has significant implications for the countries that are named in it.
- It can affect their reputation, credibility and international relations. It can also trigger sanctions, investigations or prosecutions by the UN Security Council or other bodies. Moreover, the report can influence the allocation of humanitarian aid and development assistance to these countries.
- India has made remarkable strides in tackling the problem of children and armed conflict since 2019.

Challenges for Children protection in India

- According to the latest census data, there are about 472 million children in India, constituting 39% of the total population. However, many of these children face various forms of violence, abuse, exploitation, neglect and discrimination that threaten their survival, development and well-being.
- **Child labour:** It deprives children of their right to education, health, leisure and dignity, and exposes them to physical, psychological and sexual harm.
- **Child marriage:** It increases the risk of early pregnancy, maternal mortality, infant mortality and HIV infection.
- **Child trafficking:** India is a source, destination and transit country for child trafficking for various purposes, such as commercial sexual exploitation, forced labour, domestic servitude, begging, organ harvesting and illegal adoption.
- **Child sexual abuse:** It has severe and long-lasting consequences for the physical, mental and emotional health of children, as well as their social and educational outcomes.

Some of the measures and reforms that India has implemented are

- The passage of the Protection of Children from Sexual Offences (Amendment) Act, 2019, raised the punishments for sexual crimes against children, including those perpetrated during armed conflict.

- The creation of a National Commission for Protection of Child Rights (NCPCR) as a legal entity to oversee and enforce child rights in India, including in situations of armed conflict.
- The endorsement of a National Action Plan for Children (NAPC) 2020-2030, which contained a specific section on children affected by armed conflict, outlining various approaches and actions to prevent and address violations against children.
- The ratification of the Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict (OPAC) in 2020, obliged India to ban and criminalize the recruitment and use of children in hostilities.
- The introduction of a Child Protection Information Management System (CPIMS) in 2021, facilitated data collection and analysis on child protection issues, including those related to armed conflict.
- The formulation of a Standard Operating Procedure (SOP) for the identification, verification and release of children associated with armed groups or forces in 2022, which provided clear guidelines and protocols for dealing with such cases.
- The government of India has enacted several laws and policies, such as the Juvenile Justice (Care and Protection of Children) Act 2015, the Protection of Children from Sexual Offences Act 2012, and the National Policy for Children 2013.

Conclusion

- Children protection in India is a complex and urgent issue that requires the collaboration of various stakeholders, such as the government, civil society, international organizations, and the children themselves. Some possible solutions to address the challenges of child abuse, exploitation, trafficking, and neglect are: strengthening the legal and policy framework, enhancing the capacity and accountability of child protection services, raising awareness and changing social norms, empowering children and their families, and promoting evidence-based interventions. By implementing these solutions, India can

ensure that its children are safe, healthy, and

Armed Forces Special Powers Act (AFSPA)

Context

- The Armed Forces Special Powers Act (AFSPA), which gives special powers to the armed forces in disturbed areas, has been lifted over the year in many parts of Manipur. The Army, which has been deployed in the state to control the violence, says it faces challenges in maintaining law and order and combating militant groups without the legal protection of AFSPA.

Details

- According to Army sources, the troops have been sensitised "not to take any action" that could alienate the citizens or violate their human rights, even if this means falling back in the face of protests or attacks.
- The Army claims that AFSPA is necessary to deal with the complex security situation in Manipur, where various armed groups are fighting for secession, autonomy or ethnic rights.

Armed Forces Special Powers Act (AFSPA)

About

- It is a law that **grants special powers to the Indian Armed Forces** in certain regions of the country that are declared as "disturbed areas".
- The law was **first enacted in 1958 to deal with the insurgency in the northeastern states** and later extended to Punjab and Jammu and Kashmir.
- The Act was **amended in 1972** and the powers to declare an area as a "disturbed area" were granted to the Central government along with the States.
- Currently, AFSPA is in some parts of Assam, Nagaland, Manipur and Arunachal Pradesh.

Special Powers to the Security Forces

- The **power to fire upon or use force against any person** who is acting in violation of any law or order, even if it causes death if such person is carrying weapons or explosive substances.
- **Arrest any person without a warrant**, who

able to realize their full potential.

has committed or is suspected of committing a cognizable offence.

- Enter and search any premises without a warrant, and seize any property that is suspected to be connected with an offence.
- **Stop, search and seize any vehicle** that is suspected to be carrying an offender or any person against whom a reasonable suspicion exists.
- The power to destroy any arms dump, hideout, or shelter used by armed gangs or absconders.
- **Prohibit the assembly of five or more persons** or the carrying of weapons or explosive substances.
- The **power to impose a curfew** and restrict the movement of people.
- Any person arrested and taken into custody shall be handed over to the officer in charge of the nearest police station.
- **Army officers have legal immunity for their actions**. There can be no prosecution or any other legal proceeding against anyone acting under that law.
- The Government's Power to declare an area as a 'disturbed area' is **not under judicial review**.

Arguments in favour of the act

Empower armed forces to manage disturbed areas

- One of the main arguments in support of AFSPA is that it is **necessary to empower the armed forces to deal with insurgency and militancy in disturbed areas**.
- The supporters of the act claim that the regular laws and procedures are inadequate and ineffective in such situations, where the security forces face armed opposition from separatist groups, terrorists, and foreign agents. They argue that the armed forces need special powers to arrest, search, and shoot anyone who poses a threat to the national security and integrity of India.

Essential to maintain peace and unity

- The supporters of the act argue that **repealing or diluting the act would encourage the anti-**

national elements and encourage more violence and unrest in the disturbed areas. They assert that the act is a deterrent against secessionist movements and external interference and that it helps to preserve the sovereignty and territorial integrity of India.

Extraordinary circumstances demand extraordinary measures

- The advocates of the act maintain that the army is only deployed when there is a grave threat to national security and public order and that such situations require extraordinary measures. They point out that neither the soldiers nor their superiors have any training or expertise in civilian law or policing procedures, and that they need a special law like AFSPA to legitimize their presence and actions in the disturbed areas.

Criticism and Controversy

- AFSPA has been widely condemned by various national and international human rights organizations, civil society groups, political parties, and individuals for violating the fundamental rights of the people living in disturbed areas.

Human rights violations

- The Act gives sweeping and unchecked powers to the security forces, which can lead to abuse of authority and human rights violations. There have been numerous reports of extrajudicial killings, fake encounters, torture, rape, and disappearances of civilians by the security forces under the pretext of AFSPA.

Against the rule of law and Democracy

- The Act undermines the rule of law and democracy in disturbed areas. It overrides the normal criminal justice system and gives discretionary powers to the executive authorities.
- The Act also curtails the civil and political rights of the people, such as the right to life, liberty, dignity, expression, assembly, and association.

Ineffective

- The Act is counterproductive and ineffective in resolving the conflicts and restoring peace in the disturbed areas.

- The Act also fails to address the root causes of the conflicts, such as the political, economic, social, and cultural grievances of the people.

Demands for repeal or amendment

- The Justice Jeevan Reddy Committee recommended the repeal of the Act and suggested that its provisions be incorporated into the Unlawful Activities (Prevention) Act, 1967, with suitable modifications. It also suggested that a grievance cell be set up in each district where AFSPA is in force, to receive complaints of human rights violations by the security forces.
- The Justice Santosh Hegde Commission recommended that AFSPA be repealed or amended to make it more humane and democratic.
- The Justice Verma Committee recommended that sexual violence against women by members of the armed forces or uniformed personnel in conflict areas be brought under the purview of ordinary criminal law and that AFSPA be reviewed to ensure its compliance with international human rights standards.

Supreme Court on AFSPA

- The Supreme Court ruled that the Central government has the authority to declare any area as "disturbed" under AFSPA, without consulting the state government. However, the court also said that it would be better if the Central government takes the opinion of the state government before making such a declaration.
- The Court said that the declaration of a "disturbed area" should not be indefinite and should be reviewed every six months. The government should revoke the declaration if the situation improves and normalcy is restored.
- The Court said that the officers of the armed forces who are given special powers under AFSPA should use them with caution and restraint. The court said that the officers should use only the minimum force necessary to deal with the situation and should respect the human rights of the people.
- The Court ruled that any encounter carried

out by armed forces under AFSPA should be subjected to thorough inquiry.

Conclusion

- The AFSPA debate remains a divisive and controversial topic in India. The people who suffer from its impact need to hear from the government that it will act to safeguard their rights and dignity. The government also needs to assess the need for AFSPA in different areas and apply it only where it is required. It should not cover the whole state with AFSPA

if only some parts face insurgency. The government and the security forces must follow the rules and recommendations given by the Supreme Court when they use AFSPA. These recommendations aim to stop the misuse and abuse of AFSPA and ensure accountability and transparency in its use.

Must Read:


Armed Forces Special Powers Act:
<https://www.iasgyan.in/daily-current-affairs/armed-forces-special-powers-act-afspa-8>

4.3 SNIPPET



JAPAN INDIA MARITIME EXERCISE 2023

- The bilateral Japan-India Maritime Exercise 2023 (JIMEX 23) was held in Visakhapatnam from July 5 to July 10, 2023.
- The Indian Navy deployed INS Delhi (the first indigenously built Guided Missile Destroyer), INS Kamorta (indigenously designed and built Anti-Submarine Warfare Corvette), fleet tanker INS Shakti, a submarine, maritime patrol aircraft P8I and Dornier, ship-borne helicopters and fighter aircraft.
- The exercise aims to enhance the warfighting skills and interoperability of the two navies and to strengthen their cooperation and commitment towards maritime security in the region.



SALVEX EXERCISE

- The 7th joint exercise SALVEX between Indian Navy and US Navy was held in Kochi from 26 June to 6 July 2023.
- The exercise focused on Salvage and Explosive Ordnance Disposal (EOD) operations, which are essential for ensuring maritime security and safety.
- The participating ships were INS Nireekshak and USNS Salvor, along with Specialist Diving and EOD teams from both navies.
- The exercise provided an opportunity for the Diving teams to exchange best practices and learn from each other's experiences in various aspects of EOD operations, such as mine clearance, wreck recovery and salvage.



ATACMS MISSILES

- Ukraine is seeking to acquire ATACMS missiles that could threaten Russia's vulnerable supply lines.
- ATACMS stands for Army Tactical Missile System, a conventional artillery weapon system that can launch long-range guided missiles.
- It is designed to give commanders the ability to strike deep into enemy territory with precision and speed.
- It is produced by Lockheed Martin, a US defence company. It can hit targets far beyond the reach of existing Army cannons, rockets and other missiles.
- The missile has a maximum range of 300 km.
- It has an improved guidance package with Global Positioning System (GPS).

CLUSTER MUNITIONS



- Cluster munitions are a type of explosive weapon that is designed to disperse multiple smaller submunitions (also known as bomblets or submunitions) over a wide area.
 - These submunitions are often designed to explode upon impact with the ground or a target, creating a lethal blast and fragmentation effect.
- The US has recently announced that it will provide Ukraine with cluster munitions, a controversial type of weapon that has been banned by more than 100 countries.
- Cluster munitions are designed to cover a large area with explosive submunitions, or bomblets, that can destroy multiple targets at once.
- They are often used against enemy troops, vehicles, or infrastructure. However, they also pose a serious threat to civilians, both during and after the conflict.
- The Convention on Cluster Munitions (CCM) is an international treaty that prohibits all use, transfer, production, and stockpiling of cluster munitions. It aims to address the humanitarian consequences of these weapons and to prevent their use in conflicts to protect civilians from harm.
- The US is one of the few countries that still produces and stockpiles cluster munitions, and has not signed the 2008 Convention on Cluster Munitions, which prohibits the use, transfer, and stockpiling of these weapons.
 - The US argues that cluster munitions have a legitimate military purpose and that it has taken steps to reduce the humanitarian harm they cause.

Must Read:
Cluster
Munition:



OP SOUTHERN READINESS 2023



- INS Sunayna, an Indian naval ship, recently visited Seychelles as part of the multinational maritime security exercise known as Op Southern Readiness 2023.
- Op Southern Readiness 2023 is a joint initiative of the Combined Maritime Forces (CMF), aimed to enhance cooperation and counter-piracy while ensuring the safety and freedom of navigation in the region.
- The exercise aims to enhance interoperability, readiness and cooperation among the participating forces in the Indo-Pacific region.
- The CMF is a coalition of 38 countries that work together to ensure maritime security and stability in international waters.
- The CMF operates under the principle of the Rules-Based International Order (RBIO), which means that it respects the sovereignty and rights of all nations and follows the established norms and laws of the sea.
- The CMF is led by a U.S. Navy Vice Admiral, who also holds the positions of Commander US Naval Forces Central Command (NAVCENT) and US Navy Fifth Fleet.
- The CMF's participation is voluntary and flexible, allowing each nation to decide how and when to join or leave the coalition.
- The CMF's headquarters are located in Bahrain.

Must Read:
Op Southern
Readiness
2023:



SAGAR SAMPARK



- The Ministry of Ports, Shipping and Waterways has launched the indigenous Differential Global Navigation Satellite System (DGNSS) also known as 'SAGAR SAMPARK'.
- It is a land-based augmentation system that enhances the accuracy and reliability of the Global Navigation Satellite System (GNSS) by providing corrections to the GNSS signals. Able to transmit corrections of GPS and GLONASS.
- Its service will assist mariners in navigating safely and will minimize the possibility of collisions, groundings, and accidents in the port and harbour areas. This will result in smooth & effective movement of vessels.
- It considerably improves the precision of GPS positioning, eliminating errors caused by atmospheric disturbances, satellite clock drift and other factors. This is accomplished with the help of modern state of art technology receivers and the latest software.
- The error correction accuracy has been enhanced from 5 to 10 meters to less than 5 meters for 100 Nautical Miles from Indian coastlines.

HWASONG-18



- North Korea has successfully tested its latest Hwasong-18 intercontinental ballistic missile (ICBM), which is capable of reaching most of the United States.
- The Hwasong-18 is the first ICBM of North Korea to use solid propellants, which can allow faster deployment of missiles during a war.
 - Solid propellants are more stable and easier to store than liquid ones, which require special vehicles and facilities to transport and fuel the missiles.
- The Hwasong-18's 74-minute flight time was the longest ever for a North Korean missile test. It also reached an unprecedented altitude of 6,648 km, demonstrating a high degree of accuracy and reliability.
- North Korea said the missile flew 1,001 km before landing in the Sea of Japan, within Japan's exclusive economic zone.
- The Hwasong-18 is estimated to have a potential range of about 15,000 km, which means it can reach most of the continental US, as well as Alaska and Hawaii.
- The test is a major provocation and challenge to the international community, especially the US and its allies in the region. It also shows that North Korea is making rapid progress in its nuclear and missile programs, despite sanctions and diplomatic pressure.
- The US and its partners have condemned the test and called for more action to curb North Korea's ambitions.

Must Read
HWASONG
-18:



EXERCISE NOMADIC ELEPHANT-23



- The 15th edition of the bilateral joint military exercise "NOMADIC ELEPHANT-23" between India and Mongolia was held at Ulaanbaatar, Mongolia from 17 to 31 July 2023.
- It is an annual training event conducted alternatively in Mongolia and India. The previous edition was held at Special Forces Training School, Bakloh (Himachal Pradesh) in 2019.
- It aims to strengthen positive military relations, exchange best practices, and develop interoperability, camaraderie, and friendship between the two armies.
- It focuses on counter-terrorism operations in mountainous terrain under the United Nations mandate.
- The exercise plays a vital role in further fostering bilateral relations between India and Mongolia, as both countries share a commitment to regional security and cooperation.

Must Read
Nomadic
Elephant
2023:



INS VIKRANT



- India commissioned its first indigenous aircraft carrier, INS Vikrant.
- INS Vikrant is named after India's first aircraft carrier, which was acquired from the UK and played a crucial role in the 1971 war with Pakistan
- It was built by Cochin Shipyard Limited, a public sector shipyard under the Ministry of Ports, Shipping and Waterways.
- It is the largest ship ever built in India, with a length of 262 meters.
- It is capable of operating an air wing consisting of 30 aircraft, including MiG-29K fighter jets, Kamov-31, MH-60R multi-role helicopters, as well as indigenously manufactured Advanced Light Helicopters (ALH) and Light Combat Aircraft (LCA) (Navy).
- The commissioning of INS Vikrant marks India's entry into the elite group of nations (US, Russia, France, the UK and China) that can indigenously design and build an aircraft carrier.

Must Read
INS VIKRANT:



LEOPARD 2 BATTLE TANKS



- Italy is planning to buy German-made Leopard 2 Battle Tanks in response to the Russian invasion of Ukraine.
- It was developed in the 1970s and entered service in 1979 and has since become one of the most modern and advanced MBTs in the world.
- The tank is known for its impressive mobility, with a top speed of around 68 km/h (42 mph) on roads. Its operational range is about 500 km (311 miles), making it suitable for various types of missions.
- It is well-protected with composite armour, offering enhanced survivability on the battlefield. Its armour design protects against various threats, including anti-tank missiles and projectiles.
- The tank features a fully-digital fire-control system, enabling accurate and effective firing on the move, as well as engaging targets at significant distances with a high first-hit probability.
- It has been adopted by several countries worldwide due to its outstanding performance and capabilities. Apart from the German military, it is in service in more than a dozen European nations, including Canada, as well as other countries.

Must Read
Leopard 2
Battle Tanks:



8TH INDIA-AUSTRALIA DEFENCE POLICY TALKS



- The 8th India-Australia Defence Policy Talks (DPT) took place in Canberra, Australia on July 24-25, reflecting the growing defence and security ties between the two countries.
- The DPT was an opportunity for both sides to review the progress of bilateral defence cooperation and to explore new avenues for enhancing and deepening defence engagements.
- The talks also focused on finding ways to strengthen collaboration in the co-development and co-production of defence equipment, according to a statement by India's Ministry of Defence (MoD).
- India and Australia have a Comprehensive Strategic Partnership since 2020, with defence being a key pillar of this partnership.
- The Quadrilateral Group - or the Quad - a four-nation grouping that includes the US, Japan, Australia and India, also provides the strategic framework for Indo-Australian security cooperation in the Indian Ocean Region (IOR).

Must Read
AUSTRALIA
-INDIA
RELATIONS:



4.4 1 MAINS QUESTION AND 5 MCQS

Q1. What are the key features of the Armed Forces Special Powers Act (AFSPA), what challenges does it present in terms of security and human rights, and what potential paths forward could strike a balance between maintaining security and addressing these challenges?

Answer:

- The Armed Forces Special Powers Act (AFSPA) is a law that grants special powers to the Indian armed forces in "disturbed areas" of the country. The act was first enacted in 1958 to deal with the insurgency in the northeastern states and later extended to other regions such as Jammu and Kashmir, Punjab, and parts of central India.
- Some of the key features of the AFSPA are:
 - It empowers the armed forces to arrest, search, and use force against any person or property suspected of being involved in unlawful activities, without a warrant or any legal oversight.
 - It gives immunity to the armed forces from prosecution for any action taken under the act, unless sanctioned by the central government.
 - It allows the central government to declare any area as "disturbed" if it believes that there is a threat to public order or national security due to armed conflict or violence.
- The AFSPA has been widely criticized for violating human rights and enabling impunity for the armed forces. Some of the challenges that it poses are:
 - It violates the right to life, liberty, and dignity of the people living in the affected areas, as they are subjected to arbitrary arrests, torture, extrajudicial killings,

- enforced disappearances, and sexual violence by the armed forces.
- It undermines the rule of law and democracy, as it bypasses the judicial system and grants unchecked power to the executive branch.
 - It fuels resentment and alienation among the local population.
 - It hampers the peace process and dialogue with various stakeholders, as it creates a climate of fear and mistrust among civil society, human rights activists, and insurgent groups.
- There is no easy solution to balance security and human rights in the context of AFSPA. However, some possible paths forward could be:
 - Repealing or amending the act to make it more humane and accountable, in

accordance with the recommendations of various commissions and committees such as the Justice Jeevan Reddy Committee, the Justice Santosh Hegde Commission, and the Second Administrative Reforms Commission.

- Strengthening the role of the judiciary and human rights institutions in monitoring and redressing the violations committed under the act, as well as ensuring speedy justice for the victims and their families.
- Engaging in meaningful dialogue and consultation with the affected communities, civil society groups, and insurgent groups.
- The AFSPA is a controversial and complex issue that requires a holistic and nuanced approach.

Q2. Which of the following was the partner country of India during exercise SALVEX?

- A) UK
- B) USA
- C) UAE
- D) Russia

Q3. Exercise NOMADIC ELEPHANT is a joint military exercise involving which countries?

- A) India and Japan
- B) India and Australia
- C) India and Mongolia
- D) India and South Korea

Q4. The term "Hwasong-18" is frequently seen in the news, it is related with:

- A) Intercontinental ballistic missile
- B) Malware
- C) A type of Influenza Virus
- D) A type of Cryptocurrency

Q5. The term "Cluster munitions" is frequently seen in the news, What are cluster munitions?

- A) Non-lethal devices used for crowd control.
- B) Explosive devices that disperse smaller submunitions over a wide area.
- C) Biological agents used for agricultural purposes.
- D) Communication devices for military coordination.

Q6. Consider the following statements in the context of the SagarSampark initiative.

1. It was launched by the Ministry of Ports, Shipping and Waterways.
2. It is a land-based augmentation system that enhances the accuracy and reliability of the Global Navigation Satellite System (GNSS).

Which of the above statements is/are incorrect?

- A) 1 only
- B) 2 only
- C) Both 1 and 2
- D) Neither 1 nor 2

ANSWER

- 2. D
- 3. B
- 4. A
- 5. C
- 6. B

5. ENVIRONMENT & ECOLOGY

5.1 ENERGY TRANSITION INDEX

Context

- The World Economic Forum ranked India at 67th place globally on its Energy Transition Index and said it is the only major economy with energy transition momentum accelerating across all dimensions.

What is energy transition	<ul style="list-style-type: none"> The energy transition” refers to the shift from energy production and consumption systems, which rely primarily on fossil fuels (oil, natural gas and Coal),to an energy mix that is more efficient and less carbon-intensive. For example, Coal in the middle of the 19th century, oil in the middle of the 20th, and civilian nuclear in the 1970s, all brought about major changes in the energy mixes.
About the report	<ul style="list-style-type: none"> The report is released biannually by The World Economic Forum. The report is titled ‘Fostering Effective Energy Transition 2023’. The report benchmarks 120 economies on the current performance of their energy systems across economic development and growth, environmental sustainability and energy security and access indicators.
Some other reports published by WEF	<ul style="list-style-type: none"> Global Competitiveness Report. Global IT Report WEF along with INSEAD, and Cornell University publishes this report. Global Gender Gap Report. Global Risk Report. Global Travel and Tourism Report.

Key highlights of the report

- Sweden once again topped** the ETI followed by Denmark and Norway. These countries have been in the top three for the past decade.
- India and Singapore (70th) are the only major economies showing transition momentum** by advancing sustainability, energy security and equity in a balanced way, according to the report.
- Along with China and Indonesia, India** is among the 55 countries that have **improved their ETI score by more than 10 percentage points** over a decade.
- The US (12), Australia (24) and Estonia (10) scored the **highest in energy security** which measures the resilience and reliability of supply.
- Brazil (14) and China (17) are among the top 20 countries due to their **abundant hydroelectricity capacity and leadership in biofuels**. Brazil scored high on energy security and environmental sustainability, accounting for 7 percent of renewable energy production worldwide.
- China leads in renewable energy investments** and capacity development, supported by mature domestic supply chains, and in the incubation of industries such as electric vehicles and energy storage.

India specific findings

- India jumped 20 places to the 67th position** among 120 countries in the ‘Energy Transition Index’ (ETI).
- In 2021, India was in the 87th position among 115 countries.
- While India’s share of clean energy is low in the final demand and the energy mix is largely carbon intensive, the sustainability profile has improved due to the increasing share of renewable energy.

- Achieving universal access to electricity, replacing solid fuels with clean cooking options (primarily liquified petroleum gas) and increasing renewable energy deployment have been primary contributors to the improvement of India's ETI performance.
- Improvements in the enabling environment have been **driven by political commitment, an ambitious reform agenda, infrastructure investments and a competitive renewable energy landscape.**
- India also emerged relatively less affected by the recent energy crisis, largely due to the low share of natural gas in power generation and increased use of existing generation capacities.

What is new in the report?	<ul style="list-style-type: none"> • This time, the ETI was based on an updated framework reflecting emerging shifts in the global energy landscape to benchmark 120 countries. • It judges countries in two areas: • the performance of their energy systems in the dimensions of equity, energy security and environmental sustainability, and • The readiness of the enabling environment for energy transition. • The 'transition momentum' was evaluated for the first time.
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Challenges in Energy Transition

- **Issue of equity of transition:** While there has been broad progress on clean, sustainable energy, there are emerging challenges to the equity of transition due to countries shifting their focus to energy security. The focus is on the security of energy by any means, be it thermal or renewable. The issue of equity has been less concern for countries.
- **The slow pace of transition:** This speed of transition is not sufficient to meet the Paris Agreement targets inclusively and securely. The Paris Agreement, signed in 2015 to beat climate change, aims to keep the global temperature rise this century below 2 degrees Celsius and to further limit the increase to 1.5 degrees Celsius. But at the current pace meeting the Paris Agreement targets is difficult.
- **A decline in the ETI scores:** ETI scores declined for approximately 50 per cent of the countries in the past year, which disproportionately impacted vulnerable consumers, small businesses and developing economies.
- **Interconnectivity of energy prices and macroeconomic and social stability:** The recent turbulence in energy markets has exposed the interconnectivity of energy prices and macroeconomic and social stability. Such events as the Russia-Ukraine wars,

macroeconomic stability, and trade wars can, and have, put developing countries at risk of losing the momentum gained before the energy crisis on access to affordable, sustainable energy.

- **No unanimity in ideal energy mix:** There is no ideal mix that will be unanimously adopted worldwide. The energy transition is specific to each country or group of countries, even if the aim during international climate summits is to adopt major global objectives.

Way ahead

- **Need for disruptive technologies:** The International Energy Agency and UN have however worked on global scenarios and insisted on the need to move fast – by 2050 – if we are to limit the global average temperature rise to 1.5°C before the end of the century. Energy transitions cannot be achieved without disruptive technologies and without radical changes in how energy is used by consumers.
- **Common but differentiated responsibilities:** Climate change is a global collective action problem. Reports from various sources, including the Intergovernmental Panel on Climate Change, highlight that the challenges faced due to global warming are mainly due to cumulative historical and current greenhouse gas

emissions of developed countries. There is a need for common but differentiated responsibilities.

- **Role of developed countries:** The UNFCCC notes that the emissions originating in developing countries, including India, will grow to meet their social and development needs. Developed countries have to take the lead in mitigation and provide climate finance, low-cost climate technologies and capacity building.
- **Balanced approach:** There is a need of balancing improvements in energy security, sustainability and equity at the same time to enable an effective energy transition.
- **Financing:** developing and SIDS countries lack adequate finance to transition to green sectors. There is a need to enhance financial mobilization to support these countries in energy transition.
- To enable India's energy transition, a skilled workforce, public-private collaboration in

innovation, and investment in research and development in low-carbon technologies are necessary.

Conclusion

- India, for its part, abides by commitments to the UNFCCC in letter and spirit. **India with more than 17% of the global population has contributed only about 4% of the global cumulative greenhouse gas emissions between 1850 and 2019.** Even though we are not part of the problem, India is committed to being part of the solution and has done far more than its fair share. India has progressively continued decoupling of economic growth from greenhouse gas emissions. In key sectors of the economy, the mitigation efforts have been undertaken with a **vision of low-carbon, sustainable development.** Now there is a need for concerted effort from countries to ensure smooth energy transition.

5.2 NATIONAL GREEN HYDROGEN MISSION

Context

- The three-day **International Conference on Green Hydrogen (ICGH-2023)**, being organized during 5th - 7th July 2023 at Vigyan Bhawan, New Delhi by the Government of India, was inaugurated today, by the Union Minister for Power and New and Renewable Energy Shri R. K. Singh.

About the International Conference on Green Hydrogen (ICGH-2023)

- The conference is being organized by the Ministry of New and Renewable Energy, in partnership with the Ministry of Petroleum and Natural Gas, Council of Scientific and Industrial Research, Office of Principal Scientific Advisor to Government of India and the Confederation of Indian Industry.
- The conference brings together global scientific, policy, academic and industrial leaders to discuss recent advances and

emerging technologies in the entire green hydrogen value chain.

- The fundamental aim of the Conference is **to explore how we can establish a Green Hydrogen ecosystem and foster a systemic approach** to meeting the global goals for decarbonization through Green Hydrogen.
- The conference will enable the sector stakeholders to explore the evolving green hydrogen landscape and innovation-driven solutions in the sector, thus strengthening the sustainability ecosystem of the sector.

India's achievements in emission reduction areas

- India has over-delivered on its Nationally Determined Contributions target, having **achieved 40% of the non-fossil electricity target in 2021, 9 years before the target of 2030.**

- The programme for LEDs has resulted in a reduction of carbon dioxide emissions by 103 million tons per annum.
- Our Perform Achieve Trade Scheme has reduced emissions reductions of around **106 million tons per annum**.
- 42% of the power generation capacity of India today is based on non-fossil fuels and we will overachieve the **target of 50% capacity from non-fossil fuels by 2030**.
- National Green Hydrogen Mission projects have been commenced for setting up 3.5 million tons of green hydrogen manufacturing capacity already.
- We have **almost 25,000 MW of solar manufacturing capacity** and another 40 GW – 50 GW under construction. India is going to emerge as the largest manufacturer of solar cells and modules outside of China as per IEA reports.

The National Green Hydrogen Mission

- The National Green Hydrogen Mission was approved by the **Union Cabinet in January 2022**.
- It was launched with the objectives of making India a leading producer and supplier of **Green Hydrogen** in the world and creation of export opportunities for Green Hydrogen and its derivatives in India.
- The Mission will facilitate demand **creation, production, utilization and export of Green Hydrogen**.
- Under the Strategic Interventions for **Green Hydrogen Transition Programme (SIGHT)** component of the mission, two distinct financial incentive mechanisms targeting domestic manufacturing of electrolysers and production of Green Hydrogen will be provided under the Mission.
- The Mission will also **support pilot projects in emerging end-use sectors and production pathways**.

Challenges with green hydrogen production

- The production of green hydrogen **requires vast amounts of resources such as land, water, and renewable energy**. This can fuel land-use and water conflicts, human rights violations, energy poverty, and the delay of the de-carbonisation of the electricity grid in producer countries.
- Some of the locations chosen suffer from **water scarcity**. For electrolysis, about 9 kilograms (kg) of water is required per kg of hydrogen. It is difficult to meet such a high requirement.
- The high cost of manufacturing green hydrogen using renewable energy is a major issue for India. **According to the European Commission, the cost of producing GH2 is between Rs 252-255/kg**.
- The energy produced using **green hydrogen will be costly for India and It will face astute competition** from other sectors such as solar energy.
- **Due to its high cost and low production potential**, investment in the Green Hydrogen sector is lacking. Very few investors are interested to invest in green hydrogen economy.
- The production of hydrogen in general and green hydrogen in particular **requires more energy than other fuels**.
- **Hydrogen is a highly volatile and flammable element** and extensive safety measures are therefore required to prevent leakage and explosions.

<p>What is green hydrogen?</p>	<ul style="list-style-type: none"> • Green hydrogen is hydrogen generated by renewable energy or from low-carbon power. Green hydrogen has significantly lower carbon emissions than gray hydrogen, which is primarily produced by steam reforming of natural gas.
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	<h3 style="text-align: center;">HOW IS GREEN HYDROGEN OBTAINED ?</h3> <p style="text-align: center;"><i>Producing green hydrogen by electrolysis from renewable sources involves breaking down water molecules (H₂O) into oxygen (O₂) and hydrogen (H₂).</i></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <ol style="list-style-type: none"> 1 The water used in the electrolysis must contain salts and minerals to conduct the electricity. 2 Two electrodes are immersed in the water and connected to a power source and a direct current is applied. 3 The dissociation of hydrogen and oxygen occurs when the electrodes attract ions with an opposite charge to them. 4 During the electrolysis an oxidation-reduction reaction occurs due to the effect of the electricity. </div> <div style="width: 45%; text-align: center;"> </div> </div>
<p>Types Of Hydrogen Based On Extraction Methods</p>	<ul style="list-style-type: none"> • Depending on the nature of the method of its extraction, hydrogen is categorized into three categories, namely, Grey, Blue and Green. • Grey Hydrogen:It is produced via coal or lignite gasification (black or brown), or via a process called steam methane reformation (SMR) of natural gas or methane (gray). These tend to be mostly carbon-intensive processes. • Blue Hydrogen: It is produced via natural gas or coal gasification combined with carbon capture storage (CCS) or carbon capture use (CCU) technologies to reduce carbon emissions. • Green Hydrogen:It is produced using electrolysis of water with electricity generated by renewable energy. The carbon intensity ultimately depends on the carbon neutrality of the source of electricity (i.e., the more renewable energy there is in the electricity fuel mix, the "greener" the hydrogen produced).
<p>The importance of Green Hydrogen and Why is India pursuing green hydrogen?</p>	<ul style="list-style-type: none"> • Green economy:The latest estimates by the International Energy Agency (IEA), published at the end of 2019, predict that global energy demand will increase by between 25 % and 30 % by 2040, which in an economy dependent on coal and oil would mean more CO₂, exacerbating climate change. Green Hydrogen is suitable to move towards a green economy. • To cater to the growing demand: Energy demand in India is expected to double by 2050 from present levels as. India becomes a 7 trillion dollar economy. To meet the demand for energy India needs green hydrogen. • 100 % sustainable: green hydrogen does not emit polluting gasses either during combustion or during production. • Storable:hydrogen is easy to store, which allows it to be used subsequently for other purposes and at times other than immediately after its production. • Versatile:green hydrogen can be transformed into electricity or synthetic gas and used for commercial, industrial or mobility purposes. • Net Zero emission Targets: To meet Net Zero emission targets by 2070 and to meet the commitments under Intended Nationally determined contributions India needs to invest more on the green economy. Green

hydrogen provides a promising sector towards that goal.

Conclusion

- During our G20 presidency, India is pushing for a global biofuel alliance, which not only includes countries like Brazil but also opens it up to others as well. India has set its sight on becoming energy **independent by 2047 and achieving Net Zero by 2070**. To achieve this target, increasing renewable energy use across all economic spheres is central to India's Energy Transition. Green Hydrogen is considered a promising alternative for enabling this transition.

5.3 IMPACT OF CLIMATE CHANGE ON THE COLOR OF TROPICAL WATERS

Context

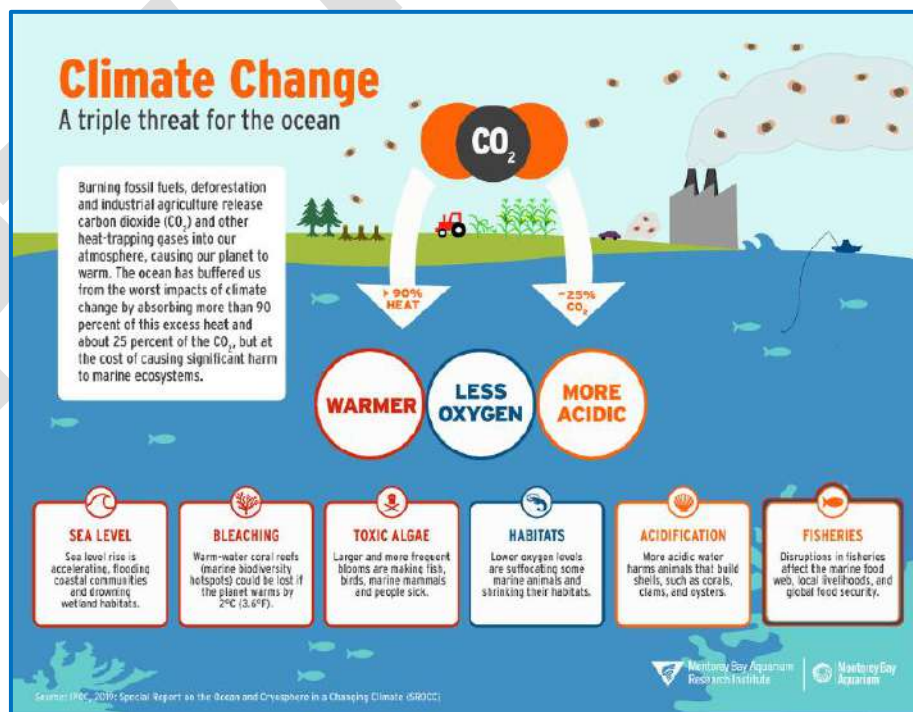
- According to a new study, Climate change has altered the colour of a significant portion of the world's oceans.

Findings of the study

- Climate change has altered the colour of 56 per cent of the world's oceans.
- The study predicted that more than 50 per cent of the world's oceans will shift in colour due to climate change by 2100.
- The waters in the tropics have turned green and the southern Indian Ocean, in particular, has seen a significant colour change.

What does the change in colour indicate

- Green-coloured water indicates life, especially **phytoplankton**, which are microscopic plant-like organisms.
- The **green hue comes from chlorophyll**, a pigment that helps phytoplankton make food. A change in colour due to an increase or decline in the population will impact organisms that feed on plankton.
- It will also change how much the ocean will take up carbon because different types of **plankton have different abilities** to do that.
- **Blue colour indicates little life**. The colour also determines the amount of carbon dioxide absorbed by the ocean. Currently, oceans absorb 25 per cent of all carbon dioxide (CO₂) emissions.



- Changes in the ocean colour indicate alterations to the phytoplankton communities since phytoplankton are essential for most life in the ocean as the base of the marine food web (in the same way as plants are essential for life on the earth).

How is climate change impacting tropical waters and the world's ocean

- **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.

Threat of 1.5°C

- Latest estimates from the **UN Educational, Scientific and Cultural Organization** warn that more than half of the world's marine species may stand on the brink of extinction by 2100.
- At a 1.1°C increase in temperature today, an estimated 60 per cent of the world's marine ecosystems have already been degraded or are being used unsustainably.
- A warming of 1.5°C threatens to destroy 70 to 90 percent of coral reefs, and a 2°C increase means a nearly 100 per cent loss - a point of no return.

Way ahead to protect tropical waters and oceans

- **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.
- **Only 2 countries (the UK & Palau) have protected more than 30% of their waters** under highly and fully MPAs and only 7 more have protected more than 10%.
- **Protection of seabed:** The seabed is one of the **biggest pools of organic carbon on Earth** as it accumulates sediments. When they are being disturbed (for example by trawling or mining), these sediments release huge amounts of **carbon into the ocean, worsening the climate situation**. However if left undisturbed, they will play the role of long-term carbon storage.
- **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.**

- These ecosystems are also important for coastal protection as they slow down the wave energy coming from the open ocean, **protecting coastal populations from storms, erosion and sea-level rise** all of which are supposed to increase in frequency and intensity with climate change.
- **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

- Today, the **ocean has absorbed about 90 percent of the heat generated by rising emissions.** There are around 680 million people living in low-lying coastal areas, almost 2 billion who live in half of the world's megacities that are coastal, **nearly half of the world's population (3.3 billion) that depends on fish for protein, and almost 60 million people who work in fisheries and the aquaculture sector worldwide.**
- As 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.

5.4 DISCOVERY OF DESICCATION-TOLERANT VASCULAR PLANTS

Context

- In the biodiversity hotspot Western Ghats, researchers have found 62 species of plants that can withstand harsh environments.

Findings

- The findings revealed that **Indian desiccation-tolerant plants are spread mainly in rock outcrops and partially shaded tree trunks** inside the forests. Ferricretes (layers of sedimentary rock) and basaltic plateaus seemed to be the preferred habitats.
- *Glyphochloa* *genesis*, *Glyphochloa* *Ratnagiri* and *Glyphochloa* *santapau* were **found only on the ferric retest**, while the rest of the species were found in both **ferricretes and basaltic plateaus.** The dominant genus was *Glyphochloa*, with mostly annual species occurring on plateaus.
- Species like **Indopopaupercula** and **Dimeria** preferred boulders, gravelly patches, cryptogamic crusts, and shallow and deep soil depressions.

- The Northern Western Ghats (NWG) cliff habitat is otherwise **dominated by the grass genus Tripogon**, along with ferns that desiccate for eight months and revive during monsoon.
- **Colour changes and morphological characteristics** were also observed in the species. It was found that *Tripogon* species changed colours from greyish in dry conditions to green in hydrated situations while turning orange to brownish yellow at the beginning of greening.
- In another species, *Oropetium* *thomaeum*, **the leaf colour changed from green in the hydrated phase to dark purple or orange** and ranged from greyish to ash colour during the period of desiccation.
- 62 species have been identified and out of the 62 species identified, 16 are endemic to India while 12 are exclusive to Western Ghats outcrops.

Importance of the findings

- The findings underline the importance of Western Ghats as a global desiccation-tolerant hotspot.
- The understanding of DT plants is poor in India. Because India is such a vastly diverse country with a variety of habitats, such as forests, grasslands and outcrops, the species have received less research. The findings are significant for that reason.
- India now has nine new generic records for the global list. They are identified as *Pyrrosia*, *Aleuritopteris*, *Corallodiscus*, *Arundinella*, *Bhidea*, *Bothriochloa*, *Danthonidium*, *Dimeria* and *Glyphochloa*.

The extremophytes and The desiccation-tolerant (DT) vascular plants

- Some plant species, ranging from algae to angiosperms, **thrive in harsh environments** and are termed as **extremophytes**.
- These species are **found in extreme habitats**, like hot and cold deserts, estuaries, rock outcrops, glaciers and other arid and semi-arid regions.
- Organisms living in such habitats face consistent droughts, but some experience cycles of desiccation and to adapt to extreme conditions, these plant species develop adaptive strategies to survive through morphological and physiological traits. So, **the desiccation-tolerant (DT) vascular plants are extremophytes**.
- The desiccation-tolerance is the process by which plants can tolerate a loss of 80–95 per cent of their relative water content and resurrect back.
- DT plant varieties are found in both flowering and non-flowering species and in both temperate and tropical climates.

Examples

- Bryophytes, ferns, lycophytes and angiosperms grow in seasonally dry and semi-arid habitats. The global population of these species ranges between 300 and 1,500.

Hydration and desiccation-tolerance- Difference

- Hydration and desiccation tolerance are two commonly studied strategies for plants in extreme habitats.
- Hydration is a condition where plant tissues can tolerate more than 30 per cent of water content. But in desiccation, plants undergo longer dry days during which the moisture content of the leaves is the same as in the air.

Importance of desiccation-tolerant (DT) vascular plants

- **Application in agriculture:** The desiccation-tolerant (DT) vascular plants, has potential applications in agriculture, particularly in areas where water is scarce.
- **High dehydration tolerance capability:** DT plants can withstand extreme dehydration, losing up to 95 per cent of their water content. They are usually found in rocky outcrops in the tropics and can recover quickly when water supplies are restored.
- **Climate change tolerance:** Some species were found to survive at increasing temperatures, which is crucial for the warming planet.
- **Development of high temperature tolerant crops:** In Future, the genes of these plants could be used to create a high-temperature tolerant variety of crops to improve climate resilience and ensure food security for the mass. The new inventory opens new avenues for research and the need to explore more DT plants elsewhere.

What are vascular plants?

- Vascular plants form a large group of land plants (c. 300,000 accepted known species) that **have lignified tissues (the xylem) for conducting water** and minerals throughout the plant. They **also have a specialized non-lignified tissue (the phloem) to conduct products of photosynthesis**.

Scientific name

- Scientific names for the group include Tracheophyta and Tracheobionta.

Examples

- Vascular plants include clubmosses, conifers), and angiosperms (flowering plants). horsetails, ferns, gymnosperms (including

5.5 GROUND WATER MANAGEMENT & REGULATION

Context

- Govt. Highlights the Various initiatives and measures taken by the Central Government of India to improve and manage groundwater conditions in the country.

Various initiatives towards Groundwater Management & Regulation

Central Sector Scheme 'Ground Water Management & Regulation'

- Central Ground Water Board (CGWB)'s **Central Sector Scheme 'Ground Water Management & Regulation'** aims at delineation of aquifer disposition & their characterization for preparation of aquifer/area-specific groundwater management plans, Ground Water (GW) Monitoring, GW Resource Assessment, GW Regulation, etc. The information generated is shared with States/UTs for their suitable interventions.

Model Bill Groundwater Management & Regulation

- The bill has the provision of rainwater harvesting. So far, 21 States/UTs have adopted and implemented the groundwater legislation along the lines of the Model Bill including West Bengal.

Jal Shakti Abhiyan (JSA)

- The government of India was **first launched in 2019** in water-stressed blocks of 256 districts which continued during the years 2021, and 2022 also (across the entire country both rural and urban areas).
- Its primary aim is to effectively harvest the monsoon rainfall through the creation of artificial recharge structures, watershed management, recharge and reuse structures, intensive afforestation and awareness generation etc.

Amrit Sarovar Mission

- The Prime Minister **launched Amrit Sarovar Mission on 24th April 2022**. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of the celebration of Azadi ka Amrit Mahotsav.

AtalBhujalYojana

- The Central Government is implementing Atal Bhujal Yojana with an outlay of Rs. 6,000 crores, in collaboration with States, **in certain water-stressed areas of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh**.
- The primary aim of the scheme is demand-side management through scientific means involving the local communities at village levels leading to sustainable groundwater management in the targeted areas.

National Aquifer Mapping Program (NAQUIM)

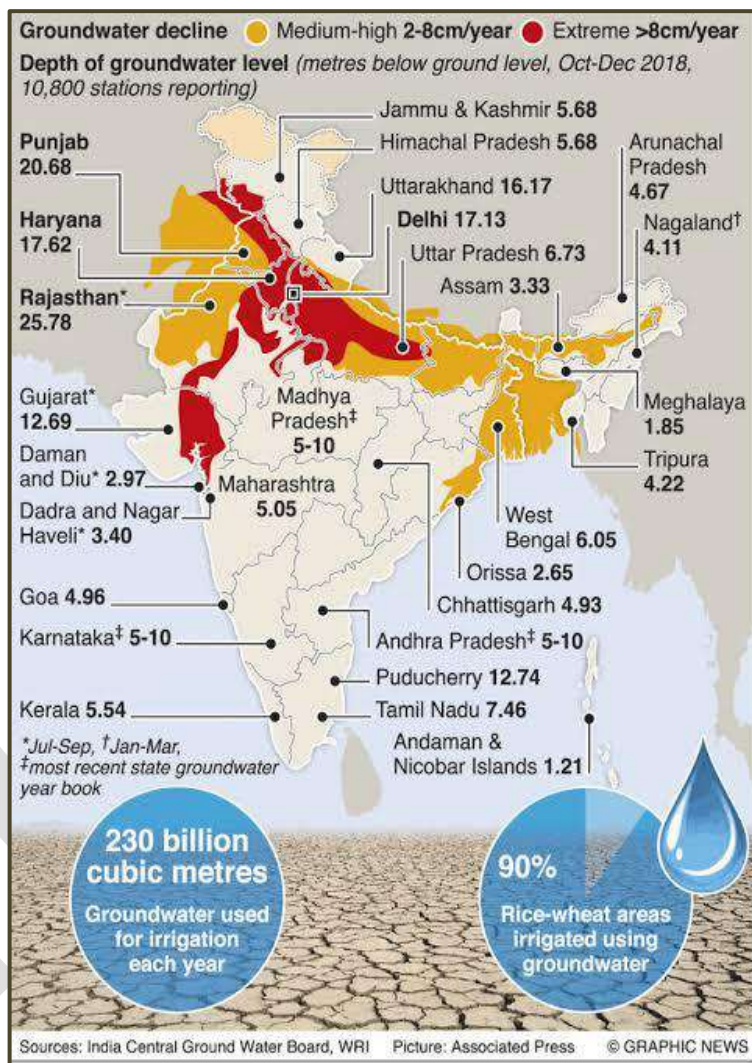
- CGWB is implementing the National Aquifer Mapping Program (NAQUIM) in the country and an area of 25.15 lakh sq km (the available mappable area) has been covered under the NAQUIM studies.
- The NAQUIM study reports along with management plans are shared with States/UTs for suitable interventions.

Master Plan for Artificial Recharge to Groundwater- 2020

- Master Plan for Artificial Recharge to Groundwater- 2020 prepared by the CGWB in **collaboration with States/UTs** envisages the construction of about 1.42 crore Rain Water Harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Metres (BCM) of water.

Challenges Associated with Groundwater Use in India

- More than a third of India's population lives in water-stressed areas, a number set to increase with intensifying climate impacts and accelerated urbanization.
- **High groundwater. Dependency:** India is the **largest user of groundwater in the world**. It uses an estimated 230 cubic kilometers of groundwater per year - over a quarter of the global total. Groundwater extraction in India is **more than the combined extraction in China and the US**. More than 60% of irrigated agriculture and 85% of drinking water supplies are dependent on groundwater.
- **Unregulated extraction:** Triggered by the Green Revolution, groundwater use has exploded in India since the 1970s. Availability of cheap electricity after the green revolution shifted farmers' dependency from surface water to groundwater. For instance, of the total irrigated area in Punjab, only 26.2% is irrigated by surface water.
- **Excessive irrigation:** Irrigation alone accounts for 90% of the total groundwater used in India today. Tube and well irrigation have been cheaper in India with subsidized electricity. This has resulted in above optional levels of groundwater extraction.
- **Comprehensive and integrated land use planning" framework:** There is a lack of a "comprehensive and integrated land use planning" framework in India, effects of which are seen in declining water tables. Irresponsible and unscientific land use planning leading to higher water consumption affects groundwater table. Thus there is a need for better agriculture planning and land use management.
- **individual "access" and lack of aquifer boundaries. ;** There has been a shift to individual "access" as opposed to a community model in government policies. Shared water management by the community has declined. Moreover, a lack of clarity on the aquifer boundaries further makes it difficult to formulate clear guidelines for proper management of groundwater systems.
- **Role of panchayats:** Studies reveal that the **role of Panchayats in groundwater management has been negligible**, or at best, casual. Even with communities empowered with governance rights and awareness, success was limited due to weak local institutions. Moreover the expertise and ethnically know-how of gram panchayats are lacking in India.
- **Issue of quality in groundwater:** A significant area of India is affected by groundwater pollution with heavy metals such as **arsenic, cadmium, lead etc**. The risk gets riskier with falling water tables as water



becomes more concentrated with pollutants. With demand shooting up, deeper digging is inevitable. This further raises the level of contamination as heavy metal concentration in the earth's crust is higher than on the surface.

- **Percolation from surface water;** Surface water pollution also affects groundwater quality as pollutants at the water surface percolate through the layers of the land, contaminating groundwater, and may even alter the soil structure in case of oil leakages or spillage. **Excessive fertilizers and chemicals percolate down to the grounder.**

Present Status of Groundwater Depletion in India

- Data given by Central Ground Water Board (CGWB) shows that the stage of extraction in India has **disturbingly increased from 58% to 63% over 13 years**. The number has exceeded the 100% mark in 13 states/UTs.
- **More than 29% of groundwater blocks are semi-critical, critical, or overexploited**, and the situation is deteriorating rapidly (2004 nationwide assessment.). Moreover, aquifers are depleting in the most populated and economically productive areas. Climate change will further strain groundwater resources.
- The groundwater level in 33 per cent of the wells monitored by the Central Ground Water Board (CGWB) showed a **decline of more than 4 m of the water table in a few pockets of Delhi, Chennai, Indore, Coimbatore, Madurai, Vijayawada, Dehradun, Jaipur, Allahabad, Ghaziabad, Kanpur, and Lucknow over the years.**
- Aside from its diminishing quantity, the quality of the remaining groundwater is a significant concern. Water quality data obtained by the **Central Ground Water Board shows that groundwater in as many as 154 districts across 21 states has arsenic contamination.**

Way Forward

- **Empowering local bodies:** As hydrologic conditions vary intricately yet considerably at the local level, centralized approaches remain limited in their reach and impact. This unequivocally transfers the responsibility to local regulatory bodies at the block level, the Panchayat and Municipality, which are well-placed to address these issues. **Ensuring technical competence and financial sufficiency of gram panchayats are necessary.**
- **Integrated Water Resource Management framework:** For planning and management of groundwater, there is a need to focus on the **Integrated Water Resource Management framework**. It promotes the coordinated development and management of water, land and related resources.
- **Promote the circular economy:** Provision for **wastewater recycle and its reuse to promote the circular economy** of one water cycle will also help in source sustainability and groundwater pollution mitigation. Further Biofertilizers and natural farming should be promoted.
- **Innovative methods:** Interventions like **rainwater harvesting, stormwater harvesting, rain-garden and bioretention ponds that intercept rainfall with vegetated land are low-maintenance** alternatives to conventional systems. These help in groundwater recharge and urban flood mitigation.
- **strengthening of regulatory frameworks and stakeholder participation:** The **strengthening of regulatory frameworks and stakeholder participation** need to be formulated and imposed. Aquifer characterisation and robust monitoring of urban groundwater quality as well as quantity are imperative. Data collection, formulation of effective regulatory legal policies, laws and acts for better management will go a long way.
- **Public awareness and participation:** **Public awareness and participation** as well as trust-building between formal water sector institutions and communities will further fill the void in urban groundwater management.

5.6 INDIA ENERGY SECURITY SCENARIOS 2047

Context

- The latest version of the India Energy Security Scenarios (IESS) 2047 V3.0 has been launched by NITI Aayog.

About Revamped India Energy Security Scenarios (IESS) 2047 (IESS 2047 V3.0)

- A Revamped India Energy Security Scenarios (IESS) 2047 (IESS 2047 V3.0) is designed with the help of IIT Bombay.
- It is an open-source tool.
- The revamped IESS 2047 will be updated on a yearly basis.
- The baseline has been standardized in 2020 and calibrated up to 2022.

Features

- **Comprehensive assessment of Energy Scenario:** It is used to assess the integrated impact of various green energy policies of the Government of India and the demand and supply of energy in the country and helps in analyzing emissions, cost, land, and water requirements till 2047.
- **Incorporation of policies related to alternative energy resources:** It incorporates several policies related to alternative energy resources like Green Hydrogen, Energy Storage, Renewable Purchase Obligations, PM-KUSUM, offshore wind strategy, Electric Vehicle policy, Energy efficiency, etc.
- **Downloadable:** This version of IESS is easily downloadable and facilitates users to generate their own pathways.
- **Help develop user-specific scenarios:** It will help researchers and think tanks to develop user-specific scenarios and the option of customized applications on the basis of the share of industry/services/agriculture, population, the pace of urbanization, end-use energy demand etc.
- **Open-Source and User-Friendly:** IESS 2047 is a **user-friendly interactive tool** that can help ministries/ departments to develop a variety of energy transition scenarios to achieve net zero.
- **Compute energy needs:** It provides capabilities to compute the energy needs and estimates of the country and hence reduces India's dependency on external agencies for the estimates.

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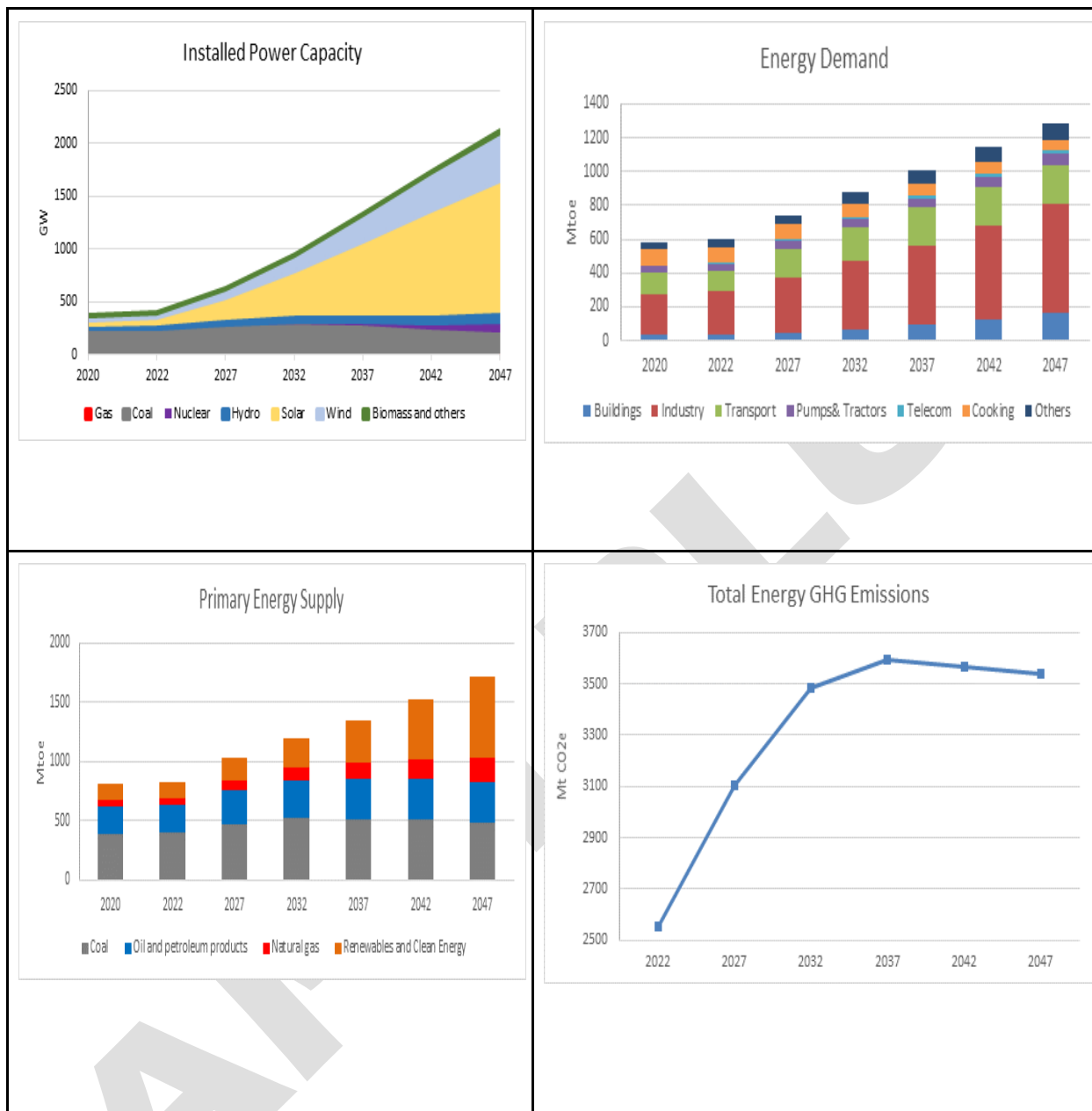
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The results of some of the illustrative scenarios from IESS are shown below



Challenges in India’s Energy Security:

- **Coal Dependency:** It is a major energy source of energy in India. It accounts for 81% of total energy generation in India. They contribute significantly towards climate change.
- **Energy security in electricity:** As per the government India is suffering from huge shortages in energy amounting to 8.5% energy shortage. 10.6% is the peak shortage.
- **The rapid pace of urbanization and Industrial development:** Urban transport, households and Industries are major consumers of energy consumption in India. The use of commercial energy is increasing rapidly in residential and commercial sectors, demand for energy in Industries is growing with rapid industrial development, etc

- **Energy access:** Increasing energy supply for sustained economic growth is needed with the expanding rural areas. There are still challenges to energizing rural areas and their Socio Economic development. Also despite access frequent power outages are prevalent in rural areas.
- **Energy import vulnerabilities:** India imports **83% of its crude oil and 45 % of its Natural gas** from abroad. India's coal imports increased by 30 per cent to 162.46 million tonnes in the 2022-23 financial year against 124.99 MT in the year-ago period, according to a report.

Way ahead

- **Need for disruptive technologies:** The International Energy Agency and UN have however worked on global scenarios and insisted on the need to move fast – by 2050 – if we are to limit the global average temperature rise to 1.5°C before the end of the century. Energy transitions cannot be achieved without disruptive technologies and without radical changes in how energy is used by consumers.
- **Common but differentiated responsibilities:** Climate change is a global collective action problem. Reports from various sources, including the Intergovernmental Panel on Climate Change, highlight that the challenges faced due to global warming are mainly due to cumulative historical and current greenhouse gas emissions of developed countries. There is a need for common but differentiated responsibilities.
- **Role of developed countries:** The UNFCCC notes that the emissions originating in developing countries, including India, will grow to meet their social and development needs. Developed countries have to take the lead in mitigation and provide climate finance, low-cost climate technologies and capacity building.
- **Balanced approach:** There is a need of balancing improvements in energy security, sustainability and equity at the same time to enable an effective energy transition.
- **Financing:** developing and SIDS countries lack adequate finance to transition to green sectors. There is a need to enhance financial mobilization to support these counties in energy transition.
- To enable India's energy transition, a skilled workforce, public-private collaboration in innovation, and investment in research and development in low-carbon technologies are necessary.

Conclusion

- India has abundant renewable energy resources, which can contribute towards reduction in dependency on imported fossil fuels. Renewables assume **special significance in India considering its geographic diversity and size, not to mention the size of its rural economy.** India has to chart out a course of action that meets its growing energy needs in a sustainable and environmentally benign fashion.

5.7 EFFICACY OF QUICK-FIX SOLUTIONS FOR WATER MANAGEMENT

Context

- Article title “Can quick-fix solutions address India's growing water woes?” Appeared in Down to earth highlighting issues of water management in India.

Quick-Fix Solutions

- Quick-Fix Solutions to water management are often immediate and often temporary measures to address the issue of water crisis.

Some quick fix-water solutions

- **Jalyukt Shivar Abhiyan:** A Maharashtra government initiative of 2014 that targeted river widening, deepening and straightening to make the state drought-free by 2019.
- **Water Cups:** A competition initiated by non-profits in 2016 to incentivise Maharashtra villages to harvest water for drought-proofing the state.

- **Planting of trees:** planting trees along the banks to rejuvenate rivers are an example of such a quick-fix solution.

Assessment of the Water crisis scenario in India

- In the 75 years since Independence, annual per capita availability of water has declined by 75% – from 6,042 cubic meters in 1947 to **1,486 cubic meters in 2021**.
- Data given by Central Ground Water Board (CGWB) shows that the **stage of extraction** in India has disturbingly increased from **58% to 63% over 13 years**. The number has exceeded the 100% mark in 13 states/UTs.
- More than 29% of groundwater blocks are **semi-critical, critical, or overexploited**, and the situation is deteriorating rapidly (2004 nationwide assessment.). Moreover, aquifers are depleting in the most populated and economically productive areas. Climate change will further strain groundwater resources.
- The groundwater level in 33 per cent of the wells monitored by the Central Ground Water Board (CGWB) showed a **decline of more than 4 m of the water table** in a few pockets of Delhi, Chennai, Indore, Coimbatore, Madurai, Vijayawada, Dehradun, Jaipur, Allahabad, Ghaziabad, Kanpur, and Lucknow over the years.
- Aside from its diminishing quantity, the **quality of the remaining groundwater is a significant concern**. Water quality data obtained by the Central Ground Water Board shows that groundwater in as many as 154 districts across 21 states has arsenic contamination.

Issues with quick fix-water solutions

- **Impact on the environment:** These solutions only look at the narrow picture by addressing the immediate and short-term issues. These often can have a detrimental impact on the environment in the long run. Artificial rains through cloud seeding is one such example.

- **Low social base:** These solutions overlook the importance of communities and age-old practices of water conservation solutions.
- **Dependency on CSR:** Most of these solutions rely on access to quick and easy money through the corporate social responsibility (CSR) route for such works.
- **Neglect of groundwater management:** India's most pressing challenge is grunder depletion but these quick-fix solutions mostly focus on the above-the-ground aspect of the water issues.
- **Shift from Critical Engagement to Techno-Managerial Approach:** The "critical engagement" approach is being replaced by a "techno-managerial approach" that focuses on technical knowledge, people management and problem-solving.
- **Comprehensive and integrated land use planning" framework;** There is a **lack of a "comprehensive and integrated land use planning"** framework in India , effects of which are seen in declining water tables. Irresponsible and unscientific land use planning leading to higher water consumption affects groundwater table. Thus there is a need for better agriculture planning and land use management.
- **Individual "access" and lack of aquifer boundaries. ;** There has been a **shift to individual "access" as opposed to a community model in government policies**. Shared water management by the community has declined. Moreover, a lack of clarity on the aquifer boundaries further makes it difficult to formulate clear guidelines for proper management of groundwater systems.
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Way Forward

- **Empowering local bodies:** As hydrologic conditions vary intricately yet considerably at the local level, centralized approaches remain limited in their reach and impact. This unequivocally transfers the responsibility to local regulatory bodies at the block level, the Panchayat and Municipality, which are well-placed to address these issues. **Ensuring technical competence and financial sufficiency of gram panchayats are necessary.**
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- **Public awareness and participation :** **Public awareness and participation** as well as trust-building between formal water sector institutions and communities will further fill the void in urban groundwater management.

5.8 NEED FOR NATIONALIZED CLIMATE TARGETS

Context

- An article “Climate targets are becoming outdated, so India needs its own” which appeared on the Hindu highlights the need to have nationalized climate targets.

Need for Nationalized Climate Targets

- **Regional differences:** The discussions on the average temperature rise do not imply that the current warming is uniform across the planet. For example, **warming greater than the global average is being experienced in the Arctic, with the term ‘polar amplification’** gaining more traction. The regional differences and the vulnerability factors spell more urgency for climate action at national levels.
- **Similar world at below 1.5 degree centigrade:** Even if the world’s average surface temperature warms by more than 1.5 degrees Celsius for a year, nothing dramatic may happen, other than the heatwaves, floods, droughts, and similar events that are already happening.
- **No significant reductions in emissions:** Despite negotiations among the representatives of the world’s countries for more than two decades, global carbon emissions have shown no signs of slowing down.
- **Unscientific earth system models (ESMs):** As per the critics the 2 degrees Celsius target was **not derived scientifically**. It was based on a model of the socioeconomic impacts of crossing this threshold.
- **Climate projections at the national level:** As ESMs were prepared to compute climate projections at the global level. It is not entirely clear whether the earth system models (ESMs) can reliably reproduce the consequences of a world that has warmed by 2 degrees Celsius at the scale of the Indian subcontinent.

- **Difficult to distinguish the impacts:** As of today, The ESMs certainly cannot do so accurately at scales smaller than the subcontinent, particularly for rainfall. It is difficult to distinguish between worlds warmer by 1.5 and 2 degrees Celsius with the current models.
- **Socio-economic and geopolitical factors in claimed modelling:** As ESM was based on a model of the socioeconomic impacts only, the impacts of the COVID-19 pandemic and Russia's invasion of Ukraine have made it abundantly clear that it is very important to consider all the possible socioeconomic and geopolitical events in claimed modelling.
- **Population factors:** Even population projections considering China's population is currently peaking and India is en route seem inevitable to be included in climate modelling.

Note: The economics Nobel laureate **William Nordhaus** gave the theory in the 1970s that a warming of 2 degrees Celsius above the pre-industrial level could render the planet warmer than it has ever been in several hundred-thousand years.

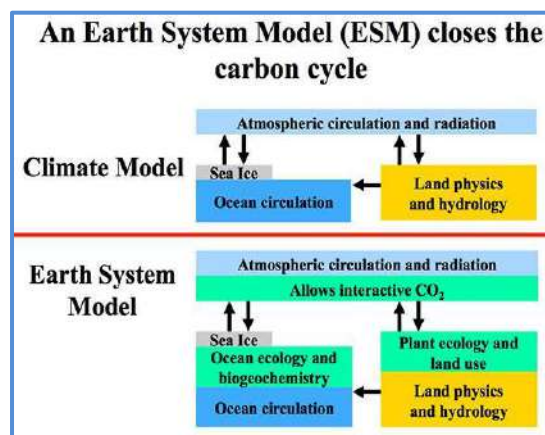
- The inherent uncertainties, leave India, and the economically developing world, with some tough choices. This group of countries needs to develop its own tools to determine the crisis's local impacts, especially for adaptation plans that deal with unavoidable consequences.

What is a Climate model and Earth System Model (ESM)?

- A **coupled climate model** is a computer code that estimates the solution to **differential equations of fluid motion and thermodynamics** to obtain time and space-dependent values for temperature, winds and currents, moisture and/or salinity and pressure in the atmosphere and ocean.
- Components of a climate model simulate the **atmosphere, the ocean, sea, ice, the land surface and the vegetation on land** and the biogeochemistry of the ocean
- An **Earth System Model (ESM)** is a **coupled climate** model that also explicitly models the movement of carbon through the earth system.

Advantages and importance of ESM over Climate models

- Instead of using predetermined inputs of atmospheric composition such as **aerosols and greenhouse gasses**, an **ESM can simulate how these components change over time in response to anthropogenic activity and changing climate conditions**. Therefore, a changing climate will affect the concentration of greenhouse gasses and aerosols which will in turn feedback to the climate.
- ESMs are therefore able to represent human influence on climate more completely, e.g. by deforestation and greenhouse gas emissions.



Way ahead

- **International engagement:** India's engagement with the international community on climate mitigation, to try and avoid the unmanageable, should also keep an eye on all dangerous experiments by richer countries.
- For instance, some countries are looking for solutions such as spraying dust in the upper atmosphere (a climate geoengineering solution that scientists know carries an unreasonable risk of droughts and crop losses).

- **Leadership role:** India should continue its leadership role by demanding that the community centred on the U.N. Intergovernmental Panel on Climate Change (IPCC) be prepared to improve projections that quantify impacts at local scales.
- **Tracking climate change:** The IPCC and India must also track climate change and its consequences continuously at the socially relevant timescale of a few years.
- **Focus on non-market goods:** Rather than focusing on market-driven “negative emission technologies” the country must consider non-market goods such as equity, well-being, and biodiversity more deliberately.
- **Green technologies:** Decarbonising the system is more likely to save us from climate change. India utilizes the opportunities in the green sector and grows its economy by focusing on green technologies to decarbonise the future.

5.9 BIOLOGICAL DIVERSITY AMENDMENT BILL

Context

- The Biological Diversity (Amendment) Bill was passed in the Lok Sabha, bringing in several changes to the **over-20-year-old Biological Diversity Act of 2002**.

Objectives of The Biological Diversity (Amendment) Bill

- It seeks to address the concerns of several central ministries, state governments, researchers, industry, and other stakeholders, regarding the implementation of the Biological Diversity Act of 2002.
- The amendments aim to **encourage Indian systems of medicine like Ayurveda, attract more foreign investment in the preservation and commercial utilization of India's biological resources**, and simplify and streamline processes so that it is easy for everyone to comply with its provisions.

The need for amendments to the law

- Several stakeholders, representatives of the Indian system of medicine, the seed sector, pharmaceutical and other industries, and the research community, have pointed out that some of the provisions of the 2002 law **restricted their activities, and thus needed to be modified**.
- India is a **signatory to the Nagoya Protocol in 2010**, an important international agreement under the CBD, that contained an Access and Benefit Sharing mechanism.
- Under this mechanism, **biodiversity-rich countries needed to provide access to their biological resources** to those wanting to use them for research or commercial reasons, and the user agencies, in turn, were mandated to share the benefits of their use with the local communities. This access and benefit-sharing works at both the domestic and the international levels.
- The government too has been trying to **encourage traditional systems of medicine**, all of which rely on these biological resources.

Changes in the Act

- **Benefit sharing:** Certain categories of users of biological resources, like practitioners of Indian systems of medicine, bio-survey, and bio-utilization, have been exempted from making payments towards the access and benefit-sharing mechanism.
- **Indian companies:** Companies registered in India and controlled by Indians are now treated as Indian companies, even if they have foreign equity or partnership, thereby reducing the restrictions on them.
- **Speed up application process:** Provisions have been included to speed up the approval process in cases of use of biological resources in scientific research, or for filing of patent applications.

- **Exemption to AYUSH practitioners:** It seeks to exempt registered AYUSH medical practitioners and people accessing codified traditional knowledge, among others, from giving prior intimation to State biodiversity boards for accessing biological resources for certain purposes.
- **Application for IPRs:** The Bill suggests that approval will be required before the actual grant of the Intellectual property rights, not during the application process.
- **Decriminalization of offences:** The Bill decriminalizes the various offences in the Act and introduces fines ranging from one lakh to fifty lakh rupees instead. It empowers government officials to hold inquiries and determine penalties.

Significance of the amendments

- **Boost to Indian Medicine System:** The Bill would give a boost to the "Indian system of medicine," which is also called AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy).
- **Promote Cultivation and farming of Medicinal Plants:** The bill will reduce the pressure on wild medicinal plants and encourage the cultivation of medicinal plants.
- **Expand the National Biodiversity Authority (NBA):** the amendment will lead to greater integration of biodiversity issues policy and decision-making processes.
- **Favourable Business Environment:** The proposed changes in the Bill will create a more conducive business environment by simplifying the patent application process.
- **Boost Research and development:** This amendment may lead to faster innovation and technological advancements in the field of biodiversity along with more research.

Issues with the bill

- **Limited beneficiaries of the bill:** Environmentalist organizations such as Legal Initiative for Forests and Environment (LIFE) have said that the amendments were made to "solely benefit" the AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) Ministry and related organizations.
- **Bio-piracy:** The blanket exceptions and relaxations in the approval process might pave the way for "bio piracy."
- **Dilutes the provisions of the act:** The modifications would exempt AYUSH manufacturing companies from needing approvals from the NBA and thus will go against one of the core provisions of the Act.
- **Corruption and misuse of power:** It empowers government officials to hold inquiries and determine penalties. These powers could be misused and corrupt practices could flourish.
- **Inadequate data:** There was no data available, barring a few States, on the money received from companies and traders for access and benefit-sharing from the use of traditional knowledge and resources. It was unclear if companies had even paid communities despite commitments.
- **Inadequate consultation:** The final text of the Bill was sent back to the Lok Sabha by the Committee without any modifications despite the opposition that these exemptions could open the law for abuse.

About the Biological Diversity Act, 2002

- The Biological Diversity Act, of 2002 was framed to give effect to the United Nations Convention on Biological Diversity (CBD), 1992, which strives for sustainable, fair and equitable sharing of benefits arising out of the utilisation of biological resources and associated traditional knowledge.
- It formulates a **three-tier structure consisting of a National Biodiversity Authority (NBA)** at the national level, **State Biodiversity Boards (SBBs)** at the State level and **Biodiversity Management Committees (BMCs)** at local body levels.
- The primary responsibility of the BMCs is to document local biodiversity and associated knowledge in the form of a People's Biodiversity Register.

5.10 FOREST (CONSERVATION) AMENDMENT BILL 2023

Context

- Lok Sabha passes the Forest (Conservation) Amendment Bill 2023.

Need for the Bill

- **Dynamic applicability:** Many forest lands were already put to non-forestry use such as habitations, institutions, roads, etc. with the required approval of the competent authority. As even the forests outside the reserve forests are under FCA, the situation resulted in different interpretations of the provisions of the Act with respect to their applicability especially in recorded forest lands, private forest lands, plantations, etc.
- **Neglect of areas outside the forests:** The afforestation and plantation of trees outside forests are not getting desired impetus, which in turn is becoming a hindrance in enhancing green cover to fulfil the Nationally Determined Contribution targets of creating additional carbon sink of 2.5 to 3.0 billion tons of CO₂ equivalent.
- **Strategic interest:** The strategic and security-related projects of national importance need to be fast-tracked to ensure the development of vital security infrastructures, especially along the international border areas such as Line of Actual Control (LAC), Line of Control (LoC), as also in the notified LWE areas.
- **Development on the sides of roads and railways:** Small establishments and habitations on the side of roads/railways also need to be facilitated by providing them access and connectivity to main arterial roads and other public utilities.
- **New challenges:** New challenges relating to ecological, social and environmental developments have emerged at national as well as international levels. For example, mitigating the impact of climate change, achieving the national targets of Net Zero Emission by 2070, maintaining or enhancing the forest carbon stock, etc.
- **Preservation of forests and biodiversity:** to carry forward the country's rich tradition of preserving forests and their bio-diversity and to tackle the climate change challenges, it was necessary to amend the act.

Changes made in the bill

- **Insertion of a Preamble to broaden the scope of the Act:** Changing the name of the Act to Van (SanrakshanEvamSamvardhan) Adhiniy 1980 so as to ensure that the potential of its provisions is reflected in its name. Clarifying the **scope of applicability of the Act** in various lands to eliminate ambiguities.

Certain exemptions have also been passed by the Lok Sabha which includes exemption of:

- **Strategic projects** concerning national security located within 100 km of distance from the International Borders, Line of Actual Control, Line of Control,
- **0.10 ha of forest land proposed** to provide connectivity to habitation and establishments located on the side of roads and railways,
- **Up to 10 ha of land** is proposed for security-related infrastructure and
- **Up to 5 ha of forest land in Left Wing Extremism Affected Districts** for public utility projects.
- **Leasing rule:** To bring uniformity, existing provisions relating to the assignment of forest land on lease to private entities have been extended to Government companies as well.

- **Addition to the list of forestry-related activities:** The Bill also added new activities viz. infrastructure for frontline forest staff, ecotourism, zoo and safari into the array of forestry activities for the cause of conservation of forests.
- **Expansion of Non- Forestry activity List:** Surveys and investigations in the forest areas will not be considered as a non-forestry activities in view of the fact that such activities are temporary in nature and involve no perceptible change in the land use.
- **Section 6 of the Bill:** Section 6 empowering the Central Government to issue directions for the proper implementation of the Act has been added.
- **Ecotourism and establishment of Zoo and Safaris:** Activities like establishment of Zoo and Safaris, etc. will be owned by the Government and will be set up as per the Plan approved by the Central Zoo Authority outside the Protected Areas. Similarly, ecotourism, as per the approved Working Plan or Wildlife Management Plan or Tiger Conservation Plan will be taken up in the forest areas.
- **Exemption for diverted areas:** Exemption of such recorded forest land which has already been put to non-forestry use before 12.12.1996 by the orders of the competent authority can be used for taking benefits of various developmental schemes of the State as well as Central Government.

Significance of the Bill

- **Faster decision making:** Elimination of ambiguities in the applicability of the Act will facilitate the decisions making process on the proposals involving non-forestry use of forest land by the authorities.
- **Quick response to natural hazards:** It is difficult to create basic infrastructure in the forest area thereby affecting the forestry operations, regeneration activities, monitoring and supervision, prevention of forest fires, etc. The inclusion of more forestry activities in the Bill such as infrastructure for the frontline will help to secure quick response to natural hazards in the forests.
- **Better management of forests:** The provisions for infrastructures will pave the way for better management of forests for improved productivity and the flow of ecosystem goods and services will also add to mitigate the impact of climate change and conservation of forests.
- **Livelihood opportunities:** Promotion of ecotourism and establishment of Zoo and Safaris, besides sensitizing and generating awareness about the importance of protection and conservation of forest land and wildlife, will also add to the livelihood sources of local communities and thereby provide them opportunities to connect with the mainstream of development.


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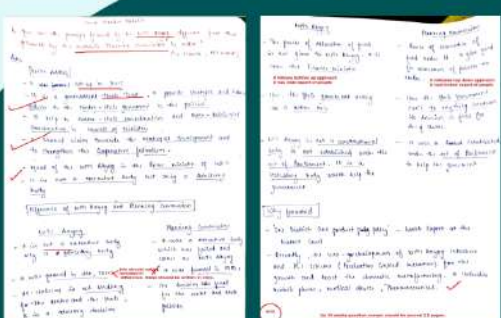
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About Forest (Conservation) Act, of 1980

- The Forest (Conservation) Act, of 1980, is an important Central statute for the conservation of forests in the country.
- It provides that the dereservation of reserved forests, use of forest land for non-forest purposes, assigning forest land by way of lease or otherwise to private entities and clearing of naturally grown trees for the purpose of reforestation requires prior permission of the Central Government.

Applicability

- Initially, provisions of the Act were being applied to the notified forest land only.
- **In Godavarman judgment, 1966, the Supreme Court ordered that the Forest (Conservation) Act of 1980 apply to all forests recorded in government records regardless of ownership, recognition, and classification, as well as those areas which fall within the “dictionary meaning” of a forest.** It further ordered that state expert committees identify forest areas to which the law would also be applicable.
- After the Judgement dated 12.12.1996, the Act was made applicable to revenue forest land or in lands which were recorded as forest in government records and to areas which look like forest in their dictionary meaning.
- At present, **only 21% are under such forest cover** and it is about 24% if one also accounts for tree cover outside areas under-recorded forests, plantations, and orchards.

Issues with the Bill

- **Deemed forests are outside its purview:** The Bill's text, as opposed to the Godavarman judgment, indicates it will apply only to forest lands that are notified under the Indian Forests Act or recorded as forests in government records. This had raised concerns that deemed forests would be excluded from protection.

Note: “Deemed” forests are those that fall within the dictionary meaning of a forest but don't find official recognition in any government record.

- **Hasty action:** The government has said it will rely on data from the state expert committees which have recorded deemed forests. But not all states have submitted such reports. Those that have are mostly hastily prepared documents which do not reflect the situation in the field and therefore they may be inadequate.
- **Objections from states:** Few states including the government of Nagaland pointed out that “most forest areas in the state are not recorded as forests as no land record is maintained,” as they are privately owned and that the Bill fails to specify how such land will be treated.
- **Impact on forest rights:** Exception of almost entire state areas: Apart from Nagaland, Sikkim, Mizoram and Tripura also objected to the clause giving exemption to linear projects of strategic importance that fall within 100 kilometres of international borders, because the entirety of these states would be exempted.
- **The Bill as such has no provision to comply with FRA.** Submissions from MoTA objected to the changes in the proposed law's applicability on account of possible conflicts with the rights of forest-dwelling communities, which are enshrined in the Forest Rights Act (FRA) and Panchayat Extension to Scheduled Areas.

Amendment to the Forest (Conservation) Rules 2022 rules make it mandatory to obtain Gram Sabha consent before the land is handed over to the user agency.

Way ahead

- Govt should consider inserting a **saving clause mentioning that ‘the said definition of forest land will not be in derogation of FRA,’** and that the land on which forest rights have been recognised continue to be considered forest land.
- Forests and other **natural ecosystems cannot be considered a luxury**. They are an absolute necessity. Government must keep conservation at its core in the objectives of any forest law.
- Forests are an important source of revenues for the government as well as the people. The Government should ensure the **balance between forest conservation and economic activities**.
- Recent events in Joshimath-Uttarakhand have shown the need for proper **geological and environmental assessments for all development projects**.

Conclusion

- Over the last five years, over 80,000 hectares of forest land has been diverted for infrastructure projects, government data shows. Experts say that the Bill is likely to facilitate more diversions of forest because of the proposed changes. There is need for mandatory changes before the bill becomes the act.

5.11 SILVOPASTURE SYSTEMS

Context

- In light of the global deterioration of natural resources and forests, silvopasture systems offer a relevant solution to deforestation trends.

What are Silvopasture systems?

- Silvopasture is an ancient and proven practice that harmoniously **integrates trees, forage and livestock on the same land**. By combining these elements, silvopasture brings numerous environmental advantages, including improved local climate resilience.

Advantages of Silvopasture systems

- **The solution to deforestation trends:** A study on deforestation drivers in seven **South American countries found that more than 70 per cent of deforestation was driven by increased demand for pasture**. As silvopasture systems combine trees and livestock on the same land, silvopasture can play a vital role in reversing the negative trend of deforestation for pasture land.
- **As carbon sinks:** The trees on silvopasture lands act as natural carbon sinks, sequestering significantly five-10 times more carbon than pastures without trees, all while maintaining or enhancing productivity.
- **High annual carbon sequestration rate:** Silvopasture practices currently cover a vast expanse of 550 million hectares worldwide. If adoption expands to around **750 million hectares**, the carbon dioxide emissions can be reduced by 26-42 gigatonnes attributed to the high annual carbon sequestration rate of 2.74 metric tonnes of carbon per hectare per year in both the soil and biomass of silvopasture systems.
- **Favorable living environment for livestock:** Silvopasture systems also regulate local climatic conditions, buffering against temperature and wind extremes, providing a favorable living environment for livestock.

- **Reduction of soil erosion:** The extensive root systems of trees within silvopasture plots contribute to nutrient cycling, improved soil stability and quality, while effectively combating erosion.
- **Enhanced water storage potential:** Soil infiltration rates in silvopasture systems surpass those of open pastures, enhancing water storage potential.
- **Better microclimatic conditions:** The studies have revealed that silvopasture systems fostered milder microclimatic conditions compared to their open-pasture counterparts.

Case studies	
A research study in Florida, United States	<ul style="list-style-type: none"> • Study delved into the microclimatic disparities between mature loblolly-pine silvopasture and open pasture systems. • The study focused on air temperature, wind speed, relative humidity and solar radiation. • The study revealed that silvopasture systems fostered milder microclimatic conditions compared to their open-pasture counterparts. • Further, the cattle utilised the silvopasture landscape more evenly as there was more shading throughout the plot, reducing heat stress during the warm-weather portions of the year.
Research study in southeastern Brazil	<ul style="list-style-type: none"> • The study in southeastern Brazil quantified the microclimatic transformations within silvopasture systems compared to single-pasture systems. • Including rows of native trees in silvopasture plots resulted in a 46 per cent reduction in wind speed, significantly improving the microclimate and animal comfort.
Indonesia study	<ul style="list-style-type: none"> • Observing a silvopasture plot in Indonesia over four years, researchers discovered substantial changes in microclimatic conditions. • The air temperature range decreased from 28-40 to 22-39 degrees Celsius, while the air humidity range increased from 63-94 per cent to 77-89 per cent. Moreover, the soil organic matter exhibited an astonishing nearly 200 per cent increase by the third year, and soil nitrogen levels rose by almost 300 per cent by the fourth year.

Challenges and Mitigation Strategies

- **Fragmented lands:** Silvopasture requires large areas but India has fragmented landholdings. The average landholding in India is 1.08 hectares; it would typically sustain eight persons. Smallholders now cultivate 42 per cent of the land.
- **Time-consuming process:** Balancing livestock grazing with tree growth can be challenging. Tree growth is slow and time taking. Thus the time required for the development of silvopasture is high.
- **Economic Considerations:** Initial investment in establishing silvopasture systems may be higher than conventional grazing systems. However, long-term returns through enhanced productivity and environmental benefits can offset these costs.
- **Impact of climate change on livestock:** Climate change impacts livestock directly through heat stress, resulting in increased mortality rates and Indirectly through lower availability of feed and forages.
- **Lack of government support:** There is no direct support or schemes by the government of India to support the silvopastures.

Way ahead

- **Land pooling and cooperation:** Proper zoning and planning can address this issue of land effectively. Moreover, cooperative silvopasture and land pooling can prove to be effective.

- **Community engagement:** Engaging stakeholders, including local communities and landowners, in decision-making processes, can lead to better conflict resolution.
- **Fencing and tree guards:** Protecting young trees from livestock damage can be achieved through the use of fencing and tree guards.
- **Tree Establishment and Growth:** Regular tree maintenance, such as pruning and fertilization, can help promote healthy tree growth.
- **Explore market opportunities:** Identifying market opportunities for silvopasture products, such as sustainably produced timber, fruits, or speciality livestock products, can generate additional income for farmers.

Conclusion

- Diverse research findings provide compelling evidence for the manifold benefits of silvopasture systems, including **creating more favourable microclimates, improved animal welfare and significant soil quality enhancements**. Silvopasture may offer a 'middle ground' between intact secondary forests and managed open fields, retaining the climate benefits of forests while enabling the expansion of agricultural land.

5.12 SHORT ARTICLE

Deep Sea Mining

Context

- The International Seabed Authority, the United Nations body that regulates the world's ocean floor, is preparing to resume negotiations that could open the international seabed for mining, including for materials critical for the green energy transition.

What is Deep Sea Mining?

- Deep-sea mining involves **removing mineral deposits and metals from the ocean's seabed**.
- There are **three types of such mining**: taking deposit-rich polymetallic nodules off the ocean floor, mining massive seafloor sulfide deposits and stripping cobalt crusts from rock.
- These nodules, deposits and crusts contain materials, **such as nickel, rare piles of earth, cobalt and more**, that are needed for batteries and other materials used in tapping renewable energy and also for everyday technology like cellphones and computers.

<p>Technologies for deep-sea mining</p>	<ul style="list-style-type: none"> • Engineering and technology used for deep sea mining are still evolving. Some companies are looking to vacuum materials from the seafloor using massive pumps. Others are developing artificial intelligence-based technology that would teach deep sea robots how to pluck nodules from the floor. • Some are looking to use advanced machines that could mine materials offside of huge underwater mountains and volcanoes.
<p>Why Is There Pressure On The Isa To Establish Regulations Now?</p>	<ul style="list-style-type: none"> • In 2021 the Pacific island nation of Nauru in partnership with mining company Nauru Ocean Resources Inc, a wholly-owned subsidiary of Canada-based The Metals Company, applied to the ISA to exploit minerals in a specified deep sea area. That triggered a clause of the UN treaty that requires the ISA to complete regulations governing deep sea exploitation by July 2023. • If no regulations are finalized, Nauru can submit an application to conduct the mining without any governing regulations. Other countries and private companies can start applying for provisional licenses if the UN body fails to

<p>How Is Deep-Sea Mining Regulated Now?</p>	<p>approve a set of rules and regulations by July 9.</p> <ul style="list-style-type: none"> • Countries manage their maritime territory and exclusive economic zones. • The high seas and the international ocean floor are governed by the United Nations Convention on the Law of the Seas. It is considered to apply to states regardless of whether or not they have signed or ratified it. • Under the treaty, the seabed and its mineral resources are considered the “common heritage of mankind” that must be managed in a way that protects the interests of humanity through the sharing of economic benefits, support for marine scientific research, and protecting marine environments. • Mining companies interested in deep sea exploitation are partnering with countries to help them get exploration licenses. • More than 30 exploration licenses have been issued so far, with activity mostly focused in an area called the Clarion-Clipperton Fracture Zone, which spans 1.7 million square miles (4.5 million square kilometres) between Hawaii and Mexico.
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American Bald Eagle

Context

- The American bald eagle was removed from the United States list of endangered species on June 28, 2007. Since then, the population of the bird has steadily risen. A 2021 report by the US Fish and Wildlife Service said that the number of bald eagles in the wild has quadrupled since 2009.

Cause for the decline before the recovery programmes

- **Hunting:** Their populations began to decline in the early 1800s. Bald eagles began to be seen as a threat to livestock, especially domestic chickens and started to be hunted.
- **Farmer's interest:** Often, counties placed bounties on bald eagles, ostensibly to protect farmers' interests. State-imposed killings further led to their decline.
- **Feather:** Hunting intensified in the latter half of the century when feather hats became a fashion staple.
- **The appearance of DDT:** DDT or dichloro-diphenyl-trichloroethane was first synthesized in 1874. However, it was in 1939 that it was first promoted as an insecticide and began to be used to kill malaria-carrying mosquitos and agricultural pests. By the mid to late 1940s, DDT was being widely used for agriculture across the US.

- While extremely effective as an insecticide, **DDT had a catastrophic impact on the bald eagle population.**
- Notably, DDT resulted in female eagles laying extremely thin-shelled eggs, leading to nesting failures.

Protection measures

- While the **Migratory Birds Treaty Act** came into force in 1918, populations steadily declined till about the 1940s. This compelled the US Congress to pass the Bald and Golden Eagle Protection Act in 1940 expanding protections and prohibiting even the possession of eagle feathers.
- **A nationwide ban on the use of DDT** for agricultural use was introduced in 1972 and in 1973, the Endangered Species Act was enacted. This act broadened protections already in place for endangered species, particularly focussing on the protection of animal habitats.
- **Captive breeding programmes** were launched in the 1970s and proved to be crucial in helping the resurgence of bald eagles.
- A practice known as **hacking** was commonly used by conservationists. Hacking is a **controlled way to raise and release bald eagles into a wild** viable environment from artificial nesting towers. This method

simulates a wild eagle nesting site and aids in recovery in an area where re-population is desirable.

- Moreover, **strict restrictions were brought in with regard to human activity around eagle nests** or known nesting areas. For instance, any construction activity was barred within a radius of roughly 100 m of a bald eagle nesting site.

Lessons for the future

- The success of bald eagle conservation teaches some important lessons about conservation.
- It shows that there is seldom a silver bullet when it comes to conservation, **policies have to be comprehensive, taking into account the complexity of factors** that generally lead to the decline of animal populations. While the

Fukushima Wastewater

Context

- Japanese regulators began a final inspection before **treated radioactive wastewater is released from the wrecked Fukushima nuclear plant into the Pacific Ocean.**

Issues with nuclear Wastewater

- **Emissions for a long time:** Nuclear waste radiates emissions for a long time. Nuclear Wastewater contains many nuclear wastes. So, they cannot be disposed of in the open area.
- **Affect the living species and plants:** Nuclear wastewater coming from the plant **can contaminate the whole water source and affect the living species and plants** under the water.
- Research has shown that a number of marine species **could have their DNA damaged** through extended exposure to radionuclides in seawater. Experiments with both marine and freshwater mussels have found that when radionuclides are present in seawater alongside commonly-occurring metals like

banning of DDT was monumental, without habitat protections and captive breeding programmes, the success would be far from certain.

- It shows how **conservation efforts often take a long period of time** to bear fruit. It took years of lobbying to get DDT banned. Since then, bald eagle populations have taken about half a century to reach the levels they are today.
- Protecting against hunting, banning of DDT, breeding programs, and habitat protection around nesting sites, led to a steady growth in bald eagle populations. In 1995, the bald eagle was **moved from “endangered” to “threatened” status and in 2007, it was delisted completely.**

copper, the DNA damage caused by radionuclides to the mussels was increased.

- **Affects revenue of fish farmers:** In a world where global dependence on fisheries for food is increasing and **at least 10% of the world’s population depends on fisheries** for their livelihood, a potentially contaminated environment could result in a contaminated food chain, raising consumer concerns. Fishing groups fear the **wastewater release might cause consumers to stop buying seafood from the area.**
- **Cancer and genetic diseases:** **95% of cancers in humans are triggered by exposure to toxic substances** present in the environment, food included. If these substances damage genetic material within our cells, that damage must be repaired.
- If that genetic damage happens to egg or sperm cells, it may be passed down from parent to child, triggering new diseases in future generations. To neutralise these complex threats, it’s key to ensure that **only safe levels of nuclear waste are being released into the ocean.**

Addition of Flora and Fauna Species to Database

Context

- India added 664 animal species to its faunal database in the year 2022. These comprise 467 new species and 197 new records, which are species found in India for the first time, The Union Minister for Environment, Forests, and Climate Change Bhupender Yadav announced information on new discoveries and records in Kolkata.

About Faunal and floral discoveries list

- The faunal findings have been collated in a publication titled "Animal Discoveries - New Species and New Records 2023" by the Zoological Survey of India (ZSI), while the floral discoveries are featured in "Plant Discoveries 2022" by the Botanical Survey of India (BSI).

Animal Discoveries	New Species and New Records 2023	<ul style="list-style-type: none"> Three new species and one new record of mammals were discovered, as well as two new records of birds, 30 new species and two new recordings of reptiles, six new species and one new record of amphibia, and 28 new species and eight new records of fish. Two bat species were identified among the mammal species discovered. Invertebrates have had the newest faunal discoveries, with 583 species, followed by vertebrates with 81. With 384 species, insects dominate invertebrates, while fish lead vertebrates, followed by reptiles, amphibians, mammals, and aves.
	A state-by-state examination	<ul style="list-style-type: none"> Kerala recorded the most number of new discoveries in 2022. As many as 82 animal species are new to science, with 15 new records from Kerala accounting for 14.6% of all new species and records. Karnataka came in second with 64 new species and 24 new records, accounting for 13.2% of the total. Tamil Nadu witnessed 71 new discoveries and 13 new records, accounting for 12.6% of the country's total new discoveries and new records. The Andaman and Nicobar Islands produced around 8.4% of the findings, while West Bengal supplied 7.6% and Arunachal Pradesh contributed 5.7%. The fauna variety of the nation has expanded to 1,03,922 due to new discoveries and records.
Plant Discoveries 2022	New Species and New Records	<ul style="list-style-type: none"> 'Plant Discoveries 2022' lists 339 taxa that have been added to the Indian flora during 2022. These include 319 new species and 20 infraspecific taxa to the Indian flora. 186 of them are new to science, while 153 are new distributional records from India. 37% of the new discoveries are seed plants, 29% are fungi, 16% are lichen, 8% are algae, 6% are bryophytes, 3% are bacteria, and 1% are pteridophytes. Seed plants contributed the most discoveries, with dicotyledons accounting for 73% and monocotyledons accounting for 27%. The western Himalayas accounted for around 21% of all discoveries, with the Western Ghats accounting for 16%. There are 125 angiosperms, one gymnosperm, five

		pteridophytes, 19 bryophytes, 55 lichens, 99 fungi, 27 algae, and nine microorganisms in Plant Discoveries 2022.
	A state-by-state examination	<ul style="list-style-type: none"> A state-by-state examination of plant taxa reveals that Kerala has made the most discoveries (57), accounting for 16.8% of all plant discoveries in the country in 2022. Wild relatives of numerous potential horticultural, agricultural, medicinal, and decorative plants, such as begonia, impatiens (balsams), legumes, zingibers, and orchids, were discovered in 2022.

64th Global Environment Facility' Meeting

Context

- The 64th Global Environment Facility's (GEF) governing board has approved plans to establish a new fund to finance the implementation of the Kunming-Montreal Global Biodiversity Framework adopted in December 2022.

The 64th GEF Council meeting

- The 64th GEF Council meeting was held in Brazil.
- Council members agreed on the establishment of a new trust fund, called the Global Biodiversity Framework Fund and the programming directions for it.

Ratification

- The Global Biodiversity Framework Fund (GBFF) can be ratified by ministers of environment and finance of member countries **at the Seventh GEF Assembly in Vancouver, Canada in August.**
- The members agreed to support the new agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction.

The proposed fund allocations are as follows

- 20 per cent will go to **Indigenous Peoples and local communities (IPLC)**. This is an aspirational goal.
- 25 per cent will go to **GEF agencies** and must be enforced.
- Allocation of funds to IPLCs would be reviewed two years after ratification in August.
- SIDS and LDC will get 36 per cent and 3 per cent**, respectively. This would be reviewed three years after ratification.

Importance

- The approval is important as nearly 50 per cent of its funds are to be used for biodiversity-related work in the coming years during the GEF-8 period.
- will provide \$1.4 billion to support efforts on environmental protection.
- The establishment of GBFF is the first test of the robustness of the Framework(GEF).
- The role of Indigenous Peoples and local communities as irreplaceable biodiversity stewards has been recognised.

Global Environment Facility's (GEF) Council

- The Council, **the GEF's main governing body, comprises 32 members appointed by constituencies of GEF member countries** (14 from developed countries, 16 from developing countries, and two from economies in transition).
- Council members rotate at different intervals determined by each constituency. The Council, which **meets twice annually**, develops, adopts and evaluates the operational policies and programs for GEF-financed activities.
- It also reviews and approves the work program (projects submitted for approval), making decisions by consensus.

<p>The Global Environment Facility (GEF)</p>	<ul style="list-style-type: none"> • The Global Environment Facility (GEF) was established on the eve of the 1992 Rio Earth Summit. • Through its strategic investments, the GEF works with partners to tackle the planet's biggest environmental issues. • The GEF is A UNIQUE PARTNERSHIP of 18 agencies, including United Nations agencies, multilateral development banks, national entities and international NGOs, working with 183 countries to address the world's most challenging environmental issues.
<p>The GEF is a FINANCIAL MECHANISM for five major international environmental conventions:</p>	<ul style="list-style-type: none"> • the Minamata Convention on Mercury, • the Stockholm Convention on Persistent Organic Pollutants (POPs), • the United Nations Convention on Biological Diversity (UNCBD), • the United Nations Convention to Combat Desertification (UNCCD) and • the United Nations Framework Convention on Climate Change (UNFCCC).
<p>Other areas of work</p>	<ul style="list-style-type: none"> • GEF is also an INNOVATOR AND CATALYST that supports multi-stakeholder alliances to preserve threatened ecosystems on land and in the oceans, build greener cities, boost food security and promote clean energy for a more prosperous, climate-resilient world. • The GEF Trust Fund was established to help tackle our planet's most pressing environmental problems. • Funds are available to developing countries and countries with economies in transition to meet the objectives of international environmental conventions and agreements.

Mo Jungle Jami Yojana

Context

- The state government of Orissa will soon launch '**Mo Jungle Jami Yojana**' to **saturnate recognition of rights about the Forest Rights Act (FRA)** and speed up the post-rights recognition activities within the prescribed time frame.

About the scheme

- The scheme is designed by the ST & SC Development Department of the state government.
- The scheme aims to saturnate recognition of rights about the Forest Rights Act (FRA) and speed up the post-rights recognition activities within the prescribed time frame.
- Forest rights cells will be constituted at the tehsil and district level with human resources to ensure and assist in the effective implementation of FRA, 2006.

<p>Forest Rights Act/ Scheduled Tribes And Other Traditional Forest Dwellers (Recognition Of Forest Rights) Act, 2006</p>	<ul style="list-style-type: none"> • The Forest Rights Act (FRA), 2006 recognizes the rights of the forest-dwelling tribal communities and other traditional forest dwellers to forest resources, on which these communities were dependent for a variety of needs, including livelihood, habitation and other socio-cultural needs. • This Act recognizes the symbiotic relationship of the STs with the forests, reflected in their dependence on the forest as well as in their traditional wisdom regarding the conservation of the forests.
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<p>Objectives</p>	<ul style="list-style-type: none"> • To undo the historical injustice that occurred to the forest-dwelling communities • To ensure land tenure, livelihood and food security of the forest-dwelling Scheduled Tribes and other traditional forest dwellers • To strengthen the conservation regime of the forests by including the responsibilities and authority of Forest Rights holders for sustainable use, conservation of biodiversity and maintenance of ecological balance.
<p>Rights granted under the act</p>	<ul style="list-style-type: none"> • The Act encompasses the Rights of Self-cultivation and Habitation which are usually regarded as Individual rights; and • Community Rights such as Grazing, Fishing and access to Water bodies in forests, Habitat Rights for PVTGs, Traditional Seasonal Resource access of Nomadic and Pastoral communities, access to biodiversity, community right to intellectual property and traditional knowledge, recognition of traditional customary rights and rights to protect, regenerate or conserve or manage any community forest resource for sustainable use. • It also provides rights to the allocation of forest land for developmental purposes to fulfil the basic infrastructural needs of the community. • In conjunction with the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Settlement Act, 2013 FRA protects the tribal population from eviction without rehabilitation and settlement.
<p>Powers of Gram Sabha</p>	<ul style="list-style-type: none"> • The Act further enjoins upon the Gram Sabha and rights holders the responsibility of conservation and protection of bio-diversity, wildlife, forests, adjoining catchment areas, water sources and other ecologically sensitive areas as well as to stop any destructive practices affecting these resources or cultural and natural heritage of the tribals.
<p>Tribal Status in Odisha</p>	<ul style="list-style-type: none"> • The state is home to 62 types of tribes, 13 of which are categorized as Particularly Vulnerable Tribal Groups (PVTGs). • As per the 2011 census, the state is ranked third in terms of Scheduled Tribe population nationally. • The tribal population of the state stands at 95,90,756 which constitutes 22.85 per cent of its total population.

Lessons in Water Management

Context

- **Tamil Nadu's Namakkal district** could offer significant lessons to the country to cope with water crises. The district, with a population of 1.7 million, successfully addressed its water scarcity challenges and became the **second-best district in India in terms of groundwater availability**.

Case Study of the success story

- The groundwater table fell from 10.35 meters below ground level (mbgl) in January 2018 to 8.7 mbgl in pure monsoon and for post-monsoon, it was 6.9 mbgl in 2021.
- In 2022, various water resources conservation activities, lakes, rivers, springs protection and

reconstruction works were carried out by the district administration in five municipalities, **19 town panchayats and 322 village Panchayats across the district.**

- The district's comprehensive approach, involving community participation, rainwater harvesting, sustainable agriculture, efficient water management systems and robust policies, has yielded tangible results. The district also **focused on creating artificial recharge structures.**
- They started locating **check dams and ponds in rechargeable areas.** The district turned to a traditional water harvesting practice: It implemented widespread rainwater harvesting systems across residential and public spaces.
- **Rooftop collection systems, percolation tanks and check dams** were constructed to capture rainwater and replenish the groundwater table.
- These efforts have significantly reduced the reliance on unsustainable sources and helped recharge aquifers.

Lessons

- **Implementation of efficient rainwater harvesting systems** for water conservation is important for water conservation.
- **Ensuring the restoration of natural water bodies** and tackling pollution and encroachment of water bodies is mandatory for groundwater recharge.
- **Utilization of advanced technologies** for monitoring, leak detection, and efficient distribution ensures better water management
- **Community awareness and participation** through education and collaborative initiatives and the use of ICT in public outreach programmes help build awareness and increase people's participation.
- **Cooperation between states, districts, blocks and panchayats** along with communities is crucial for the success of any community development programmes.

Maritime Environmental Protection Committee - IMO

Context

- India Urges IMO For **Realistic Target Of 5% Net Zero Carbon Fuels** In Marine Fuel Mix By 2030.

<p>About the 80th session of the Maritime Environmental Protection Committee</p>	<ul style="list-style-type: none"> • The plenary of the 80th session of the Maritime Environmental Protection Committee of the IMO was held at IMO Headquarters in London. • During the session, India asked the International Maritime Organisation (IMO) to focus on a realistic target to ensure that net zero carbon fuels occupy 5 percent of the Marine fuel mix by 2030, without any additional checkpoints during this exploratory and take-off period.
<p>Agendas</p>	<ul style="list-style-type: none"> • The MEPC 80 session is expected to adopt an upgraded IMO greenhouse gas strategy. • The revised IMO GHG Strategy will contain concrete greenhouse gas reduction targets for the sector. • The strategy is expected to outline a basket of technical and economic measures to be developed to set global shipping on an ambitious path towards phasing out greenhouse gas emissions. • Work on the revision will continue during the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 15), which meets 26-30 June 2023, preceding MEPC 80.

MEPC 80 highlights

- **Tackling climate change** - cutting GHG emissions from ships, including the adoption of the revised IMO GHG Strategy. IMO has developed global regulations on energy efficiency for ships.
- **The energy efficiency of ships**-The Committee is expected to consider and finalize draft amendments to MARPOL Annex VI regarding the revision of the IMO ship fuel oil consumption Data Collection System (DCS).
- **Ballast water management** - including approval of the Convention Review Plan and adoption of amendments to the BWM Convention.
- **Biofouling management** - The MEPC is expected to adopt the revised Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines), following a comprehensive review of the Guidelines.
- **Designation of a Particularly Sensitive Sea Area**-The MEPC is expected to designate a particularly sensitive sea area in the North-Western Mediterranean Sea (NW Med PSSA) to protect cetaceans from international shipping.
- **Underwater noise** - The MEPC is expected to approve draft revised Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life.

Diversity for Restoration (D4R) Tool

Context

- Researchers have devised a tool that enables appropriate agroforestry and aids systematic ecosystem restoration.

About the tool

- The Diversity for Restoration (D4R) tool was devised by **Bioversity International**. It was later modified by another team of researchers to adapt it to the Indian context.
- The team from **Ashoka Trust for Research in Ecology and the Environment (ATREE)**, with the help of Bioversity International, modified it to promote restoration programmes in India.

Features of the tool

- **Identifying the match:** The tool will help improve the effectiveness of restoration programmes by providing manifold benefits to interested stakeholders while promoting sustainable development. The tool helps the user in identifying species that match their restoration objectives.
- **Identification of species:** It further helps identify species that can resist local stresses and adapt to evolving environmental conditions.
- **Pinpointing suitable areas:** It also helps pinpoint areas and regions to procure the seeds for the required species.

- **Functional traits:** The tool has information about 100 plant functional traits that have been considered to offer the best possible solution. Functional traits include information on economic and ecological uses from the tree species chosen for plantation.
- **Habitat predictions:** The tool has been incorporated with habitat suitability modelling for species-specific suitable habitat predictions under present and future climate scenarios.
- **Commercially beneficial trees:** The tool informs the user whether the tree species offers timber, fruit, manure or other commercial benefits. It also informs if the tree is resilient to physiological stresses such as extreme high or low temperatures, salinity or acidity tolerance in the soil among others.
- **Identification of windbreaks:** The tool could also identify windbreakers, the trees can act as a barrier against high winds. The user can also know if the species offers better nitrogen fixing and whether it serves as a good pollinator for birds and bees.
- **The score for trees:** It provides a score of a particular tree species for plantations. This score helps determine and decide how well the species match the given site conditions and restoration objectives.

- **Provides recommendations:** The tool also provides varied recommendations that help in maximizing the chances of restoration along with propagation information and monitoring suggestions.

Halogens

Context

- As per the study by Nature, **Oceans cool the planet by releasing short-lived halogens** that contribute 8-10 percent of cooling.

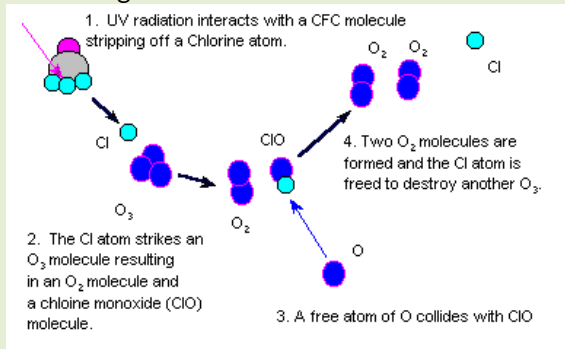
Findings of the report

- Oceans do more than just absorb carbon dioxide and moderate the climate. They also **cool the planet by releasing short-lived halogens such as chlorine, bromine and iodine.**
- Currently, these **halogens contribute 8-10 per cent of cooling.** This could increase to 18-31 per cent by 2100.
- The short-lived halogens from oceans **reduce warming by depleting ozone.** Its cooling effect was -0.24 ± 0.02 Watts per square meter ($W m^{-2}$).
- Their effect on methane is the opposite. Short-lived halogens **increase methane's lifetime in the atmosphere by destroying hydroxyl radicals (OH).**
- These short-lived halogens **increased the global methane burden by 14 per cent and 9 per cent** for pre-industrial and present-day conditions, respectively.
- Similarly, these **halogens increase the levels of water vapour, a greenhouse gas, in the atmosphere** causing a few warming effects.
- These short-lived halogens **reduce the formation of cooling aerosols, which are minute particles** suspended in the atmosphere that reflect sunlight causing a warming effect.
- Though these halogens drive an increase in warming by influencing methane, water vapour and aerosols, they compensate for this by destroying ozone, which exerts a cooling effect. Overall, **there is a net cooling effect.**
- The **cooling by chlorine, bromine and iodine since the preindustrial era has risen** by -0.05 ± 0.03 watts per square metre, which **represents a 61 per cent spike.** "This is driven by the anthropogenic amplification of natural halogen emissions.

The role that the ocean plays in absorbing greenhouse gases

- The oceans are by far the largest active carbon reservoir on the planet, storing about 38,000 billion tonnes of carbon. By comparison, **this is over 28 times more than the quantity of carbon stored by land vegetation and atmosphere combined.** Thus they play a crucial role in global warming by absorbing greenhouse gasses.

<p>About short-lived halogens</p>	<ul style="list-style-type: none"> • Short-lived halogens are halogens viz. Fluorine, Chlorine, Bromine, Iodine, etc, have a lifetime of fewer than six months in the atmosphere and are naturally produced by the oceans.
<p>Emissions and their Impact</p>	<ul style="list-style-type: none"> • Halogen emissions from the ocean are not the same across the world. "Over continents, the emissions are small while it is bigger in polar regions and some places with higher ozone levels. • Human activities have amplified their release into the atmosphere. Human activities cause pollutants such as ozone to deposit in the ocean, which then convert the soluble short-lived halogens into insoluble ones, forcing them out of the sea water and into the atmosphere. • Halogens cause a depletion of ozone in the troposphere. Ozone is a greenhouse gas that traps outgoing radiation, leading to warming.

<p>Ozone depletion by halogens</p>	<p>However, as discussed above they also have cooling effects.</p> <ul style="list-style-type: none"> Chlorine, fluorine, and bromine (halogens) have a strong affinity("liking") for oxygen. They can strip the 'extra' oxygen from an Ozone O₃ molecule because the bond is weaker than the normal bond of O₂. Ex. A CFC molecule has 3 Cl and 1 F atoms joined to a carbon. If a Cl comes into contact with ozone, the former strip off an oxygen atom creating ClO and O₂. 
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Microplastics' Impact on Gut Microbiome

Context

- Microplastics and nanoplastics considerably impact human and animal gut microbiomes as well as the environment, **noted a report by the Food and Agriculture Organization (FAO)**.

Findings of the study

- Deterioration of plastics and interactions with microorganisms:** When plastic spreads in the environment, they undergo ageing, weathering and deterioration. Such changes cause mechanical abrasion, breakage, fragmentation and photo-oxidation, which involves chemical release or adsorption. Plastics eventually break into different sizes and shapes and undergo changes during interactions with microorganisms and other substances.
- Deposition of microplastics:** Microplastics found in water bottles and food items such as sugar, honey, sea salt, tea and others eventually deposits in human lung tissue, placenta, stool, blood and meconium.
- Alterations of gene and biochemical markers:** Every study showed some level of alteration in the host to the microplastic exposure. In

some instances, alterations of gene markings and biochemical markers were also observed.

- Metabolic changes:** Physical abrasion of microplastic and its accumulation in the gut can lead to satiety in the organism and even reduce appetite and food consumption. It may eventually lead to weight loss and metabolic changes.
- Impairs liver function:** A few studies indicated the impact of microplastics on liver function. The release of hormones and enzymes in the liver are adversely affected due to microplastics.
- Microbial dysbiosis:** Microplastics act as stressors and cause inflammatory responses in the host, affecting certain microorganisms. Researchers found that exposure to plastic has led to intestinal inflammation and gut dysbiosis which are changes in the gut microbiome and microbiota of human, aquatic species and rodents.
- Penetration into the food chain:** microplastics and nano plastics are known to affect larger soil microorganisms and penetrate the entire food web.

- **Adsorption of hydrophobic pollutants:** Plastics of hydrophobic nature, for instance, can adsorb hydrophobic chemicals or persistent organic pollutants from the environment (for example, polychlorinated biphenyls, polycyclic aromatic hydrocarbons and dichlorodiphenyltrichloroethane), which in turn cause harmful effects in guts.

Concerns Regarding Battery Electric Vehicles

Context

- India's electric mobility plan is largely focussed on battery electric vehicles (BEVs) replacing internal combustion engine (ICE) vehicles, with Li-ion seen as the most viable battery option for now.

<p>About Battery Electric Vehicles</p>	<ul style="list-style-type: none"> • Battery Electric Vehicles, also called BEVs and more frequently called EVs, are fully electric vehicles with rechargeable batteries and no gasoline engine. • All energy to run the vehicle comes from the battery pack which is recharged from the grid. BEVs are zero-emissions vehicles, as they do not generate any harmful tailpipe emissions or air pollution hazards caused by traditional gasoline-powered vehicles
<p>Concerns regarding Battery Electric Vehicles</p>	<ul style="list-style-type: none"> • UPFRONT SUBSIDY: The BEV experience across markets from Norway to the US and China shows the electric push works only if it is backed by state subsidies. The problem with this overt subsidization of EVs, especially in the context of developing nations like India, is that much of the subsidy, especially the one offered as tax breaks for cars, end up in the hands of the middle or upper middle classes, who are typically the buyers of battery electric four-wheelers. • Suboptimal Battery Technology: An EV's driving range is limited, making it difficult for drivers to travel long distances without recharging. Besides limited charging stations, battery capacity, aerodynamic drag, and vehicle weight also compound the problem. This is because current batteries are small, and have low voltage capacities, so they aren't enough to increase EV propulsion and travel longer distances. • Purchase Cost: The EV industry's biggest challenge is vehicle purchase cost. Electric vehicles are more expensive to build than gasoline-powered ones, primarily because of battery technology. EV batteries must hold a massive charge to provide the minimum range for most owners, requiring expensive raw materials to manufacture. • Lack of Clean Energy: In several countries that have pushed EVs, much of the electricity is generated from renewables. For instance, Norway has 99% hydroelectric power. Much of India's electricity is generated from burning coal. Relying on coal to generate power for all the EVs would defeat the purpose of reducing carbon emissions through EV adoption. • Underdeveloped Charging Infrastructure: India's current charging infrastructure may not be enough to handle the increased demand for EVs. Today, India has 2000 charging stations, most of which are located in urban areas. In comparison, China has 1.8 million electric charging stations as of 2022. Building bigger batteries and fast-charging stations will mean investing in high-speed, commercial-grade chargers. This, however, requires significant capital investment.

	<ul style="list-style-type: none"> • VALUE CHAIN: The demand for Li-ion batteries from India is projected to grow at a CAGR of more than 30% by volume up to 2030, which translates to more than 50,000 tonnes of lithium requirement for the country to manufacture EV batteries alone. • But more than 90% of the global Li production is concentrated in Chile, Argentina, and Bolivia alongside Australia and China, and other key inputs such as cobalt and nickel are mined in the Congo and Indonesia. India would, therefore, be almost entirely dependent on imports from a small pool of countries to cater to its demand.
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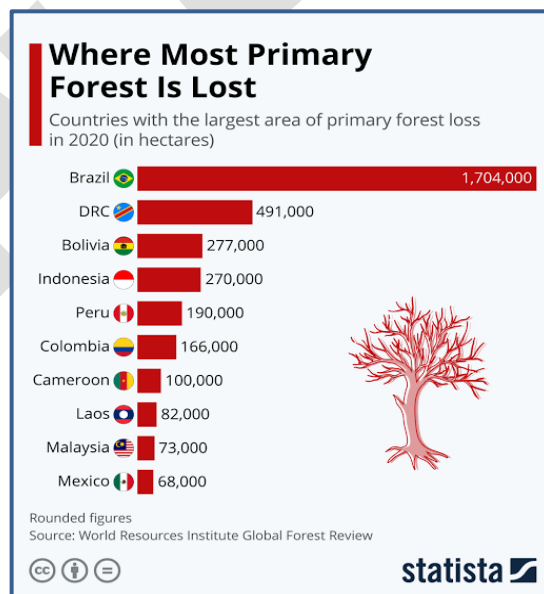
The Decline in Global Tropical Primary Forest Cover

Context

- Tropical areas lost 4.1 million hectares of forest cover, equivalent to losing an area of 11 football fields per minute – in 2022, new research quoted by the World Resources Institute’s (WRI) Global Forest Watch has said.

Key findings of the report

- **Forest cover loss in Tropical areas:** Tropical areas lost around 4.1 million hectares of forest cover in 2022 which is equivalent to loss of an area of 11 football fields per minute.
- The primary forest cover loss in tropical areas in the year 2022 was 10% more compared to 2021.
- **The world does not seem to be on track to meet its forest-related commitments:** Two key goals set by the World Resources Institute are:
 - **Ending deforestation by 2030:** To achieve the target, the global deforestation rate has to decrease by at least 10% annually to meet the 2030 target.
 - The rate of deforestation reduced by 3.1% in 2022 when compared with 2018-2020. However, it is still away from the 2030 targets.
- **Restoration of 350 million hectares of lost and degraded forests by 2030:** There has been a net loss of 100 million hectares in tree cover over the past two decades. This shows that forests are still being lost instead of being restored at the required rate.
- **Countries Tropical forest cover:** Brazil and the Democratic Republic of Congo are the two countries with the most tropical forest cover and both have registered losses of this resource in 2022.
- Indonesia and Malaysia managed to keep their primary forest cover loss to record-low levels in 2022.
- **India:** India lost 43.9 thousand hectares of humid primary forest between 2021 and 2022, which accounts for 17% of the country’s total tree cover loss in the period. The total tree cover loss in India between 2021 and 2022 was 255 thousand hectares.



<p>What are Primary Forests?</p>	<ul style="list-style-type: none"> • Primary forests are some of the densest, wildest and most ecologically significant forests on Earth. Primary forests must meet certain requirements of ecological integrity, showing little to no human interference. • They span the globe, from the snow-locked boreal region to the steamy tropics, though 75% of them can be found in just seven countries. • Primary forests comprise an estimated 26% of the world’s natural forest,
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	with the remaining “secondary forests” falling somewhere in the intermediate stages of regeneration from recent human disturbance.
Succession stages to primary forest	<ul style="list-style-type: none"> • The first organisms to return are called “pioneer species”, typically fast-growing grasses, annual plants and other low, scrubby things that can take quick advantage of the now abundant sunlight. • As these species live and die, they build up nutrients in the soil, allowing for a new guard of species to move in. • This replacement of species assemblages repeats itself as the years' progress. Each new community inherits an environment better suited to its growth than that of the species that came before it. • Over time the ecosystem begins to change. From the sun-loving grasses to quick-growing softwood trees and finally to the tall hardwoods whose crowns knit together to form a thick canopy. This final forest form is often referred to as a “climax community” and it's these communities that are considered primary forests.

Marine Heatwave

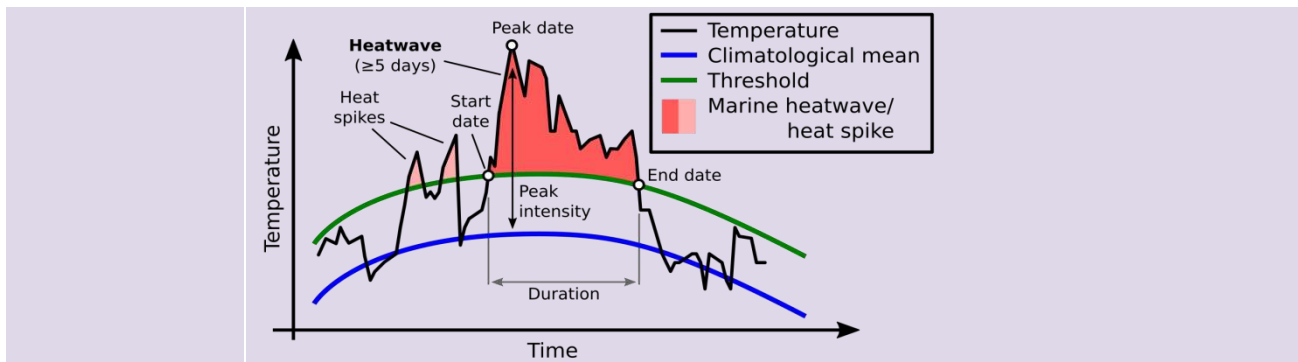
Context

- The northern Bay of Bengal has been experiencing an intense marine heat wave since June 28, 2023. This has led to India's usually arid northwest receiving extreme rainfall, experts have told Down To Earth (DTE).

Importance of warm Bay of Bengal

- The Bay of Bengal, especially its northern part, is usually warm. This enables it to play an important role in the southwest monsoon's trajectory.
- “During the monsoon, the northern Bay of Bengal tends to be warm and needs to be warm because **this is where the monsoon winds blowing from the southwest over the Arabian Sea cross over into the Bay of Bengal and make a U-turn to pump moisture into the Indian subcontinent,**”

What are marine heatwaves?	<ul style="list-style-type: none"> • Marine heatwaves, according to NOAA, “are prolonged periods of anomalously high sea surface temperature”. These marine heatwaves, when ocean temperatures are extremely warm for an extended period of time can have significant impacts on marine ecosystems and industries. • There were 94 heatwave events from 1982 to 2018.
How do we measure marine heatwaves?	<ul style="list-style-type: none"> • A marine heatwave is defined when seawater temperatures exceed a seasonally-varying threshold (usually the 90th percentile) for at least 5 consecutive days. • Successive heatwaves with gaps of 2 days or less are considered part of the same event.



<p>What causes marine heat waves?</p>	<p>Marine heat waves can be caused by a whole range of factors.</p> <ul style="list-style-type: none"> • The most common drivers of marine heatwaves include ocean currents which can build up areas of warm water and air-sea heat flux. • The warming through the ocean surface from the atmosphere. • Winds can enhance or suppress the warming in a marine heatwave. • Climate modes like El Niño can change the likelihood of events occurring in certain regions.
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Impact of marine heatwaves in the Bay of Bengal

- **Extreme rainfall in some regions:** Warmer-than-normal Bay of Bengal means heatwaves. They are likely contributing some extreme rainfall, especially over northwest India.
- **Drier monsoon in some regions:** Marine heatwaves in the Bay of Bengal usually means a drier monsoon for central India and enhanced rain over India’s southern peninsula.
- **Increased faster timescale depressions:** A warmer Bay of Bengal is likely playing a role in increasing faster timescale depressions and reducing slower timescale depressions. Northwest India is witnessing above-average rainfall because of the current trajectory that the depression has charted, coupled with a faster timescale.
- **Affects marine biodiversity:** Apart from meteorological implications, marine heatwaves also adversely affect marine biodiversity. According to a study in 2020, 85 per cent of the corals in the Gulf of Mannar near the Tamil Nadu coast got bleached after the marine heatwave in May 2020.
- **Impact on mangroves:** The current heatwave in the Bay of Bengal could also negatively impact the mangroves in the Sundarbans. The intrusion of hot water in sunder bans leads to adverse effects in mangroves.

Impact of marine heatwaves in other regions

- **Affects marine ecosystem:** Marine heat waves affect ecosystem structure, by supporting certain species and suppressing others. For example, after the 2011 marine heatwave in Western Australia, the fish communities had a much more “tropical” nature than previously and switched from kelp forests to seaweed turfs.
- **Habitat changes:** Marine heat waves can change the habitat ranges of certain species, such as the spiny sea urchin off southeastern Australia which has been expanding southward into Tasmania at the expense of kelp forests which it feeds upon.
- **Economic losses:** Marine heat waves can cause economic losses through impacts on fisheries and aquaculture. In 2011 in Western Australia, the marine heatwave impacted the abalone fishery in the north of the state and in 2015/16 the marine heatwave off southeastern Australia led to high levels of abalone mortality in Tasmania.

- **Coral bleaching:** Biodiversity can be drastically affected by marine heat waves. In 2016, marine heatwaves across northern Australia led to severe bleaching of the Great Barrier Reef and have been speculated to be linked to mangrove die-offs in the Gulf of Carpentaria.

Nature Restoration Law of the European Commission

Context

- The European Parliament narrowly **backed a key biodiversity bill aimed at rewilding EU land and water habitats**, overcoming a backlash by conservative lawmakers who said it would hurt farmers.

The Nature Restoration Act

- The Nature Restoration Act, initiated by the European Commission, **aims to resuscitate degraded ecosystems by boosting forested areas, marine habitats and increasing connectivity between rivers.**
- It seeks to **grow populations of bees, birds and butterflies**, especially on farmland, which would also be encouraged to bring back marsh and peatlands previously drained.
- The bill **allows for 30% of all former peatlands currently exploited for agriculture to be restored** and partially shifted to other use by the end of the decade.
- The nature restoration law will place recovery measures on **20% of the EU's land and sea by 2030**, rising to cover all degraded ecosystems by 2050.
- In the EU's proposed legislation, **rewetting has been planned for half the former peatlands across Europe**. For the other half, less effective measures would be used.

Peatlands absorb more carbon than forests

- Peatland, which is a type of wetland, forms over thousands of years from the remains of dead plants, storing more carbon than any other ecosystem.
- Globally, **peatlands take up some 3% of the planet's land area and yet, they absorb nearly twice as much carbon dioxide as all the Earth's forests combined.**

Impact of peat land destruction/conversion

- However, when damp peatlands are drained and used for other purposes, like agriculture or fertilizer, they go from being a CO₂ sink to yet another potent source of greenhouse gas.
- Across Europe, **7% of the continent's greenhouse gas emissions are the result of drained peatlands and wetlands**. That's nearly as much CO₂ as the emissions produced by the EU's entire industrial output.

Need for the bill

- **More than half of Europe's peatlands were lost:** European peatlands, full of nutrients and especially important for biodiversity, make up a patch of land roughly the size of Germany. More than half have suffered permanent damage. In Germany, the amount of degraded peatlands is estimated to be as high as 90%.
- **Conversion of peat lands into farmlands:** Former peatlands in Scandinavia and the Baltic states are mainly used for forestry. But in the Netherlands, Poland and Germany, large swathes of these drained areas are now farmland.
- **Greenhouse gas emission increasing:** Former peatlands account for about 7% of Germany's agricultural land, and now generate 37% of all greenhouse gas emissions from agriculture.

Reasons for Opposition to the bill

- There is **political resistance** and resistance from farmers over plans to restore drained peatlands.
- The EU Parliament's biggest political grouping, the conservative European People's Party (EPP), argued that it would **reduce EU food security and limit the possibility to build wind and hydroelectric energy facilities.**
- It could mean **less land for farmers, less sea for fishermen, less activity for businesses, and fewer European products and jobs for their citizens.**

- A non-governmental organization which is lobbying for maritime environmental protections, **Seas At Risk**, has also criticized the bill.

Air Pollution Impact on Rural and Urban Areas

Context

- Air pollution impacts villages and cities almost equally but pollution control funds only for urban India, as per the **analysis carried out by the non-profit Climate Trends based on satellite-based data generated by IIT Delhi scientists.**

Rural-Urban gap in pollution control measures and their impacts

- **Contradictory results:** In 2022, the annual average of the most toxic air pollutant, **ultrafine particulate matter (PM) 2.5**, was as poor in rural India as in urban India; putting under scanner the Union government's policy of only investing in selected urban areas of the country for controlling toxic air pollution.
- On the contrary, according to another analysis carried out by the Delhi-based think tank Centre for Science and Environment (CSE), **the rural population suffers more than its urban counterpart when it comes to the length of losing life span** due to exposure to the toxic pollutant.
- **Similar PM 2.5 levels:** The urban and rural levels of PM 2.5 in India since 2017 show almost similar pollution concentrations.
- **Population living outside the monitoring network:** 47 per cent of the population lives outside the air quality monitoring network. Around 62 per cent do not have access to daily alerts on the local air quality index and almost the entire rural India stands outside the purview of the air pollution network.
- **Similar trends:** According to the Climate Trends analysis, in 2022, the average annual PM 2.5 level was 46.4 microgrammes in rural India, barely below the urban level of 46.8 microgrammes. The national limit is 40 microgrammes.
- **No ground pollution measurement in rural India:** So far NCAP has released around Rs 9,000 crores mainly for 131 cities, called non-attainment cities, which are consistently going above the national air pollution limits, according to sources. However, most rural areas do not have even any on ground pollution measuring mechanism.
- **Lifespan lost:** A CSE analysis earlier showed that villagers, on average, lose over five years and two months of lifespan due to air pollution exposure, while city dwellers lose about four years and five months. While a loss of over eight years of lifespan was recorded for rural residents in Uttar Pradesh; Bihar, Haryana villagers were found to lose over seven years on average.

Mosquitofish - Gambusia

Context

- The Andhra Pradesh government has released approximately 10 million Gambusia fish into the state's water bodies to combat mosquito-borne diseases like malaria and dengue.

Threats

- **Increased mosquito larvae population:** While there are studies that showed a reduction in malaria cases where the fish were introduced, there are others that reported increased mosquito larvae population where they were introduced, as the latter preyed on other predators that ate mosquito larvae.
- **Reduced predatory efficacy:** Some studies reported that Gambusia's predatory efficacy was reduced when they were introduced in running water streams, water bodies with high insecticide levels and waterbodies with thick vegetation.

- **Confusion over the two species:** It is not clear which of the two species was introduced, whether the species said to be introduced originally in the country in 1928 is **G affinis** or **G holbrookia** as there has been no systematic molecular taxonomy work.
- This is a major concern since **G holbrooki** has been suggested to be ineffective for mosquito control, as mosquito larvae comprise a negligible part of its diet. Therefore, it could well be possible that the authorities have been introducing invasive alien species into freshwater bodies across the country with no real benefit.
- **Concerns about the potential harm:** The release of these invasive alien fish species has raised concerns about the potential harm that will be sustained by native species that abound in the freshwater bodies.
- **Competitive nature:** Known to outcompete and prey upon native species, *Gambusia* also get aggressive in environments where they need to compete with other species for resources. They are known to eat the eggs of competing fishes and frog tadpoles.
- **Threat to ecosystem health:** It affects the ecosystem health of lakes and water bodies. For example, In India, mosquitofish affected the ecosystem health of the lake after its introduction into the Nainital Lake in the 1990s to control malaria.

Gambusia fish

- *Gambusia* fish, also known as is widely used as a biological agent for controlling mosquito larvae.
- *Gambusia affinis* (*G affinis*) is native to the mosquitofish, waters of the southeastern United States.
- There are two species of fish. **G affinis** has a sister species, **Gambusia holbrooki** (**G holbrooki**), also known as the eastern mosquito fish.
- A single full-grown fish eats about 100 to 300 mosquito larvae per day.
- *Gambusia* has been a part of mosquito-control strategies for over a century in various parts of the world, including India.
- Mosquitofish has been part of various malaria control strategies in India since 1928, including the Urban Malaria Scheme.

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Indian Identity to Cicada Species

Context

- An insect cicada species, which is commonly found in South India, previously misidentified as *Puranatigrina* from Malaysia, has been identified as **Puranacheeveeda (after their Malayalam name Cheeveedu)** by the Association for Advancement in Entomology.

Significance

- Removal of Foreign Identity:** The identification corrects the decades of error in taxonomic identification and elimination of the foreign tag attached to the cicada species.
- Gradual Disappearance:** *Puranacheeveeda* used to be commonly seen in South India, is now going through a decline. This indicates the deterioration of the Ecosystem in the region, as cautioned by researchers.
- Identity assignment:** Assignment of the identity of the cicada species will contribute towards a more precise understanding of cicada fauna and highlights the importance of precise taxonomic research in ecological studies.

Threats

- Human development activities** and the felling of trees as a result affects the cicadas which depend on them for feeding and reproduction.
- Climate change** might disrupt their breeding cycle and the habitats of cicadas.
- Excessive use of Pesticides, herbicides and fungicides** is known to contaminate the soil and water bodies, which affect the health and survivability of cicadas and their host plants.

About Cicada	<ul style="list-style-type: none"> These are hemipteran insects, also known as true bugs, belonging to the superfamily of Cicadoidea. There are more than 3,000 known species of cicadas. Most diversity of this species is found in India and the neighbouring country Bangladesh.
Distribution	<ul style="list-style-type: none"> Mainly found in the Malabar, Travancore and Malaya regions of South India. It can also be believed to be found across the tropical evergreen forests ranging from Goa to Kanyakumari.
Features	<ul style="list-style-type: none"> These generally have two pairs of membranous wings and prominent compound eyes. The length is in the range of 2 to 5 cm (0.8 to 2 inches). They produce loud, high-pitched buzzing sounds during hot weather. These are generally found on large trees in natural forests. They also occur in deserts and grasslands.
Importance of Cicdas	<ul style="list-style-type: none"> They help in aerating the soil. They are used in folk medicines. In some regions, they act as religious and monetary symbols. This species is an indicator of soil health and vegetation. The dead body acts as a nutrient source, nitrogen to be specific, which helps in the growth of the plants. In some communities, they are important sources of food.

Death of Cheetahs and Radio Collars

Context

- Recent incidents in Kuno revealed that radio collars on cheetahs led to festering neck wounds, resulting in **death of 2 cheetahs** and similar injuries in **3 others**.
- **Oban, Elton, and Freddie.**

Collar-induced wounds

- Issues arose when the monsoon arrived, as **collars retained moisture**.
- Increased rainfall in India compared to Africa prevents skin from drying completely between spells of rain, leading to secondary bacterial infections under collars.
- Previous records show instances of **festering collar-induced injuries in wild cats in India, although they are rare**.
- Cats cannot clean neck wounds by licking.

Problem with collars

- Radio collars have become **lighter and more sophisticated over time**.
- The weight of a radio collar should be kept below 3% of the animal's body weight. Modern collars for wild cats weigh around 400 g, suitable for cheetahs weighing between 20 kg and 60 kg.
- Cheetahs are challenging to collar due to their small heads compared to their necks, **making it difficult to find collars lighter than 400 g**.
- Tight-fitting collars can **cause pressure necrosis and worsen conditions** like acute moist dermatitis or hot spots, commonly found under collars. This can result in rapid hair loss around the neck.

Factors contributing to increased vulnerability of Kuno cheetahs to collar-related injuries:

- Cheetah's winter coat holds more water and takes longer to dry.
- Significant weight carried by a sprinting cheetah, making a 400 g collar feel like over 7 kg on a wet coat
- Pathogens under the collar could be new to African cheetahs or unique to Indian conditions.**

Clean Energy Partnership Between India and USA

Context

- The Ministerial meeting of the **U.S.-India Strategic Clean Energy Partnership (SCEP)** was held between **Indian Minister of Petroleum and Natural Gas, HE Hardeep S. Puri** and **U.S. Energy Secretary HE Jennifer Granholm** in New Delhi.

Outcomes the Ministers welcomed

- public-private Energy Storage Task Force** : Ministers welcomed establishment of the **public-private Energy Storage Task Force** and related efforts to support the large-scale integration of renewable energy needed to support the clean energy transition;
- A public-private Hydrogen Task Force** : Countries agreed a deepened collaboration to scale and accelerate deployment of hydrogen technologies through the **public-private Hydrogen Task Force** and other efforts in support of their national hydrogen strategies, including a focus on common cost reduction goals;
- U.S.-India New and Emerging Renewable Energy Technologies Action Platform (RETAP)** : They decided to launch in the **U.S.-India New and Emerging Renewable Energy Technologies Action Platform (RETAP)** to accelerate the development of key technologies to advance common ambitious clean energy goals.
- The importance of the "Electric Vehicle (EV) financing services facility**: Both sides recognized the importance of the "Electric Vehicle (EV) financing services facility" which will create dedicated funds for e-mobility.

- **Addition of Carbon Capture, Utilization and Storage:** The sides welcomed the addition of Carbon Capture, Utilization and Storage as a work stream under the Emerging Fuels and Technology Pillar.
- **Engagement through the Low-Emissions Gas Task Force:** The sides also welcomed engagement through the Low-Emissions Gas Task Force to reduce emissions across the sector through the deployment of emerging technologies (i.e., CCUS, hydrogen), alternative fuels, and methane abatement technologies.
- **South Asia Group for Energy (SAGE):** The South Asia Group for Energy (SAGE) for engagement in support research, analysis and capacity-building activities has been launched.
- **Partnership to Advance Clean Energy-Research (PACE-R):** The longstanding joint R&D under the Partnership to Advance Clean Energy-Research (PACE-R), including the US-India Collaborative for Smart Distribution System with Storage (UI-ASSIST) consortium co-led by Indian Institute of Technology, Kanpur and Washington State University, was praised.

About SCEP

- The revamped USISCEP was launched in accordance with the **U.S -India Climate and Clean Energy Agenda 2030 Partnership** announced by Prime Minister Narendra Modi and President Joe Biden.
- The Strategic Clean Energy Partnership (SCEP), together with a **complementary Climate Action and Finance Mobilization Dialogue under the Agenda 2030 Partnership** – to be launched on September 13 – builds upon our longstanding and productive bilateral energy dialogue that advanced energy security and innovation.

Pillars

- Under the SCEP, the United States and India agreed to collaborate across five pillars:
 - Power and Energy Efficiency;
 - Renewable Energy;
 - Responsible Oil and Gas;
 - Sustainable Growth; and
 - Emerging Fuel

Installed Renewable Energy Capacity in the Country

Context

- **176.49 GW renewable energy capacity installed in the country:** Union Power & NRE Minister Shri R. K. Singh

What is Renewable Energy?

- Renewable Energy is energy **derived from natural resources that are replenished at a higher rate than they are consumed**. Such energy sources include solar, wind, hydro, biomass, geothermal, etc. Using these sources for energy is beneficial to the environment.

Installed Renewable Energy Capacity in the India

- **India's position:** India stands **4th globally in Renewable Energy Installed Capacity** (including Large Hydro), 4th in Wind Power capacity & 4th in Solar Power capacity
- **Total installed capacity:** A total of **172.72 GW of capacity from non-fossil fuel sources** was installed in the country as of 31.10.2022, including 119.09 GW RE, 46.85 GW Large Hydro and 6.78 GW Nuclear Power capacity Generation from non-fossil fuel sources is 42.26% of total installed generation capacity in the country
- **14.21 GW addition in one year:** A total of **14.21 GW of Renewable Energy (RE) capacity** was added during the period Jan to Oct. 2022 as compared to the capacity of 11.9 GW added during the period January to October 2021

- **Solar parks:** As of 31-10-2022, with a cumulative capacity of 39.28 GW in 14 states **56 Solar Parks sanctioned**
- **Solar pumps:** As of 31.10.2022, cumulatively over **1.52 lakh stand-alone solar pumps installed** under Component-B and 73.45 MW cumulative capacity solar power plants installed under Component-A
- **Solarisation of pumps:** Against a total target of **solarization of 15 lakh pumps under Component-C**, the demand of over 57 lakh pumps received under feeder solarization sub-component
- **Wind energy:** A total capacity addition of 1761.28 MW of Wind energy was achieved during the period of January to October 2022.

Ramgarh Reserve

Context

- **Tigress RVT-2** was spotted with her three cubs in the camera trap in Rajasthan's Ramgarh **Visdhari Tiger Reserve (RVTR)**. RVT-2 aka **Begum**, the daughter of **T-73** was shifted from Ranthambore to Ramgarh last year in July, in addition to a male tiger T-115.

Ramgarh Vishadhari Sanctuary

- **Ramgarh Vishadhari Sanctuary in Rajasthan's Bundi** was approved as the **fourth tiger reserve in the state** by the Ministry of environment, Forest and climate change in July 2022.

Tiger reserves in Rajasthan

- **Rajasthan has presently four tiger reserves.**
- Apart from the **Ranthambore Tiger Reserve**, which is the source population of tigers in the state, **Sariska Tiger Reserve** in Alwar, **Mukundra Hills Tiger Reserve** in Kota, and **Ramgarh Vishdhari Tiger Reserve** in Bundi are the habitat of Rajasthan's big cats.

Habitat	<ul style="list-style-type: none"> • Its habitat stretches from Siberian temperate forests to subtropical and tropical forests on the Indian subcontinent and Sumatra. • It is the largest cat species and a member of the genus Panthera. • Traditionally eight subspecies of tigers have been recognized, out of which three are extinct.
Protection Status	<ul style="list-style-type: none"> • Indian Wildlife (Protection) Act, 1972: Schedule I • International Union for Conservation of Nature (IUCN) Red List: Endangered. • Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Appendix I.
Tiger Reserves in India	<ul style="list-style-type: none"> • There are 53 TRs in India according to NTCA. • Largest: Nagarjunsagar Srisailem Tiger Reserve, Andhra Pradesh on the basis of core area. • Smallest: Orang tiger reserve in Assam on the basis of core area.

Demand for Settlement Survey in Little Rann

Context

- Saltpan workers who were debarred from entering Little Rann write to Gujarat CM requesting state intervention.

Who are saltpan workers?

- Members of Koli, Sandhi and Miyana communities residing in 100-125 villages surrounding the Little Rann of Kutch areas under North Gujarat, Kutch and Saurashtra regions are dependent on salt cultivation in the area.
- These saltpan workers have been in the profession for 600-700 years, ever since British rule.

The main issue of Saltpan workers through a chronology

- In 1972, a significant area of Little Rann of Kutch was declared a **wild ass (ghudkhar) sanctuary**.
- **A settlement survey was undertaken in 1997**, based on which salt pan workers were issued permits and land on lease to cultivate salt in the Little Rann of Kutch.
- The Gujarat government **missed listing several traditional margaritas** in the survey undertaken in 2007. Due to this, they are denied entry into the Little Rann of Kutch area.
- Gujarat High Court as well as in the **National Green Tribunal alleged land-poaching activities** in the Little Rann of Kutch, for which the forest department needs to submit a report on the procedures done in the same matter.
- The above orders from forest department officials have **compelled them to make representation to Gujarat Chief Minister** under the aegis of the AgariyaHeetRakshakManch (AHRM).

Defence by saltpan workers

- **Wild Ass Population Growth vs. Man-Animal Conflict:** Census data shows a significant rise in the wild ass population in the area from 700 in 1973 to 6,082 in 2019.
- Census data also ruled out the possibility of man-animal conflict in the Wild Ass Sanctuary is attributable to Salt Pan workers.
- **Land Use by them:** Saltpan workers use only 6% of the total land in the area for salt cultivation in Little Rann of Kutch, which is negligible as compared to the total area.
- **Deliberate removal of names:** In meetings held at 16 out of 100-125 villages, forest department officials removed the names of 95% of the 8000 families of agariyas. Official cited invalid reasons such as that most of the agariyas listed in the settlement survey report are not alive.

Roadmap of Solar Energy for Universal Energy Access

Context

- At an event of the 4th Energy Transition Working Group in Goa today, the Ministry of New and Renewable Energy (MNRE), the Government of India, in association with the International Solar Alliance, released a report Roadmap of Solar Energy for Universal Energy Access.

About the report on 'Roadmap of Solar Energy for Universal Energy Access

- The Ministry of New and Renewable Energy (MNRE), Government of India, in association with the International Solar Alliance, prepared the report.
- It was developed under India's G20 presidency in 2023.
- It aims to showcase how solar energy, in its various configurations, can play a key role in achieving electricity access and in providing socio-economic benefits in countries around the world.

Highlights of the report

- **Enabling framework:** Roadmap will enable the target of **50 per cent cumulative electric power** installed capacity from non-fossil fuel-based energy resources **by 2030**.
- **Universal energy access:** The report aims to develop a roadmap to achieve **universal energy access by 2030**.
- **Mini grids:** Achieving Universal Energy Access by 2030, as outlined in Sustainable Development **Goal 7**, requires Increased Efforts on Solar Mini-grids.
- **Suitability of electrifications**
- Around 59% (396 million people) of the unelectrified population can be best suited for electrification through solar-based mini-grids
- About 30% (203 million people) can be best suited for electrification through grid extensions
- The remaining 11% (77 million people) through Decentralized Renewable Energy solutions.

- **Investments required:** To achieve universal certifications, a **total investment of around USD 192 billion** will be required, comprising USD 97 billion in **Solar-based mini-grids** for approximately 25,738 MW of capacity.
- **VGFs: Viability gap funding of 50% of project costs**, which is financial support of around USD 48.5 billion will be needed to achieve the required mini-grid deployment.

Invasive Weed *Ludwigia Peruviana*

Context

- An invasion of *Ludwigia peruviana* over the last decade is suppressing edible forage for elephants, gaurs and other herbivores, increasing the risk of man-animal conflict in the area.

Problems

- *Ludwigia peruviana* grows fast along water bodies.
- They have **infested the majority of the hill station's swamps, locally known as vayals**, where elephants used to find lush grass even in the summer.
- Its unique challenge is that most of these swamps are **located in private estates, which are responsible for the tricky process of removing the weed**, many not trying to pull it out and help it spread even more.
- In Tamil Nadu, it has limited the growth of grass and native plants that is a source of food for elephants and other animals including gaur. This has revived the risk of human-elephant conflicts in the region.

Ludwigia peruviana

- *Ludwigia peruviana* is alternatively known as **primrose willow**
- It is an aquatic weed.
- They are native to some countries in Central and South America, including Peru.

What is an invasive species?

- An invasive species is an organism that causes ecological or economic harm in a new environment **where it is not native**.
- An invasive species can be introduced to a new area via the ballast water of oceangoing ships, intentional and accidental releases of aquaculture species, aquarium specimens or bait, and other means.

Meri Mati Mera Desh Campaign

Context

- The Union government has launched the '**Meri Maati Mera Desh**' campaign, envisaged as a culminating event of the 'Azadi Ka Amrit Mahotsav' celebration of 75 years of Indian Independence.

Highlights of the campaign

Development of garden

- Soil collected from different parts of the country in August will be used to develop a garden along the Kartavya Path in Delhi.

Levels

- Events have been planned at the panchayat, village, block, urban local body, and State and national levels, respectively. The panchayat-level programmes will be organised between August 9 and 15.

A five-point agenda has been developed under this. The five-point agenda includes

- **Shilaphalakam:** A shilaphalakam (memorial plaque), bearing the "names of those who have made the supreme sacrifice" will be installed. The veers (Bravehearts) include freedom fighters, defence personnel, personnel of the Central Armed Police Forces (CAPF), and State Police, which falls under this.
- Work for the shilaphalakam may be executed through the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), leveraging local materials and resources.

- **VasudhaVandhan:** 'VasudhaVandhan' envisages every gram panchayat or village renewing "Mother Earth by planting 75 saplings of indigenous species and developing an AmritVatika".
- **VeeronKaVandan:** 'Veeron Ka Vandan' will facilitate freedom fighters, and the families of deceased freedom fighters.
- **MittiKalash:** Young volunteers and others will collect soil from every panchayat/village and bring it to the block, from where the 'MittiKalash' will be transported to Delhi. The mitti (soil) from all parts of the country will be utilised to develop a unique garden, called the AmritVatika, with the planting of indigenous species.
- **Azadi Ka Amrit Mahotsav' memorial:** An 'Azadi Ka Amrit Mahotsav' memorial, dedicated to all the heroes who have contributed to the freedom, unity and integrity of the country, will be erected.

Mekedatu Reservoir Project

Context

- Environmentalists advocate for the revival of the raja kaluve network and dead lakes in Bengaluru to resolve the city's drinking water problem instead of moving ahead with the Mekedatu Reservoir Project.



- It would help regulate water flow and provide drinking water to Bengaluru, the capital city of Karnataka.
- Additionally, the project intends to support agricultural activities in the Cauvery basin and ensure water availability for farmers in both Karnataka and Tamil Nadu.
- The approval from MoEFCC is in highlights because 63% of the forest area of the Cauvery Wildlife Sanctuary will be submerged.

About the project

- The Mekedatu project aims to create a balancing reservoir on the Cauvery River in Karnataka.
- The project was approved by the Karnataka state government in 2017.
- It received approval from the erstwhile Ministry of Water Resources for the detailed project report and is awaiting approval from the Ministry of Environment, Forest and Climate Change (MoEFCC).

Opposition from Tamil Nadu

- Mekedatu area represents the last free point in Karnataka from where Cauvery water flows unrestricted into Tamil Nadu.
- Since there is no dam there at present, water from there has been reaching Tamil Nadu without any hindrance. The Tamil Nadu Government has alleged that the Mekedatu dam project is an attempt by Karnataka to block this free flow of water and if the dam is built, Karnataka will only release residual quantities of water to Tamil Nadu.

Ambergris

Context

- The huge chunk of ambergris was found lodged inside the sperm whale and scientists believe it ruptured its intestine, causing its death and subsequent beaching in La Palma.

Ambergris

What are they?

- Ambergris is a waxy material secreted by sperm whales when they swallow indigestible material such as squid beaks.
- It is a secretion from the bile duct that is believed to coat indigestible objects the animal has eaten. Normally whales regurgitate these objects, but when they don't, the ambergris helps protect the whale's organs from the sharp material.

	<p>Uses</p> <ul style="list-style-type: none"> Ambergris is used to make perfumes and can sell for thousands of dollars per pound. This rare substance has been used in perfume-making for hundreds of years because it can help a scent stick to a person's skin and while synthetic alternatives have since been invented, some companies still use it for certain fragrances. <p>Sperm Whale</p> <ul style="list-style-type: none"> The sperm whale or cachalot (<i>Physeter macrocephalus</i>) is the largest of the toothed whales and the largest toothed predator. It is the only living member of the genus <i>Physeter</i>. The sperm whale is a pelagic mammal with a worldwide range, and will migrate seasonally for feeding and breeding. <p>Protection</p> <ul style="list-style-type: none"> Sperm whales are given vulnerable level of protection under the Convention on International Trade in Endangered Species.
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SalsolaOppositifoliaDesfontania

Context

- A team of researchers from Gandhinagar-based **Gujarat Ecological Education and Research (GEER) Foundation** has discovered a new species of saltwort called *Salsola Oppositifolia*.

SalsolaoppositifoliaDesfontania	<p>About SalsolaoppositifoliaDesfontania</p> <ul style="list-style-type: none"> It is a perennial shrub that grows in saline, arid to semi-arid environments of the Kutch district. It belongs to the family of Amaranthaceae. <p>Species range</p> <ul style="list-style-type: none"> This species, earlier known from Italy, Northern Africa, Palestine, Spain and Western Sahara, has been reported for the first time from India based on the collection made from Khadir Bet, Kutch, Gujarat at 15.5-m altitude. <p>About the GEER Foundation and GFRF</p> <ul style="list-style-type: none"> The new plant species was discovered by GEER Foundation researchers in August 2020, while studying the flora and fauna of the Great Rann of Kutch (GRK) as part of a project assigned to them by the Gujarat Forestry Research Foundation (GFRF). Both GEER Foundation and GFRF are autonomous bodies functioning with support from the Gujarat forest department.
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Pilot Whales

Context

- Thousands of cruise ship passengers were left horrified after several **pilot whales were slaughtered in front of them** on July 9, ABC News reported. Notably, the mass slaughter of pilot whales is a centuries-old hunting tradition in the Faroe Islands.

Pilot Whales	<ul style="list-style-type: none"> Pilot whales are cetaceans belonging to the genus Globicephala. The two extant species are the long-finned pilot whale (<i>G. melas</i>) and the short-finned pilot whale (<i>G. macrorhynchus</i>).
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- The two are not readily distinguishable at sea, and analysis of the skulls is the best way to distinguish between the species.
- Pilot whales are among the largest of the oceanic dolphins, exceeded in size only by the orca.
- They and other large members of the **dolphin family are also known as blackfish.**

The amazing fact about Pilot whales

- Short-finned pilot whales are one of the few mammal species in which females go through menopause, and postreproductive females continue to contribute to their pod.
- Conservation status
- The conservation status of short-finned and long-finned pilot whales has been determined to be the least concern.

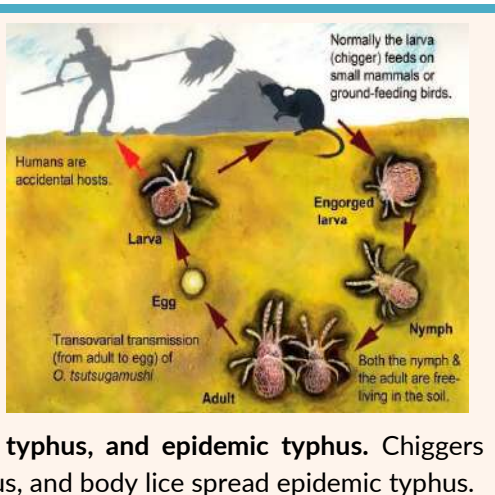
The Faroe Islands

- The Faroe Islands is a self-governing archipelago, part of the Kingdom of Denmark. It comprises 18 rocky, volcanic islands between Iceland and Norway in the North Atlantic Ocean, connected by road tunnels, ferries, causeways and bridges.
- Capital: Tórshavn

Scrub Typhus

Context


- The Health department of Kerala has issued an **alert against scrub typhus in Alappuzha** as fresh cases of the disease have been reported from Kalath and District Court wards in Alappuzha municipality.

<p>Scrub Typhus</p>	<ul style="list-style-type: none"> • Scrub typhus, also known as bush typhus, is a disease caused by a bacteria called Orientiatsutsugamushi. • Scrub typhus is spread to people through bites of infected chiggers (larval mites). • Trombiculid mites ("chiggers", particularly Leptotrombidiumdeliense), are found in areas of heavy scrub vegetation. • The most common symptoms of scrub typhus include fever, headache, body aches, and sometimes rash. • Typhus fevers include scrub typhus, murine typhus, and epidemic typhus. Chiggers spread scrub typhus, fleas spread murine typhus, and body lice spread epidemic typhus. 	 <p>The diagram illustrates the life cycle of the chigger mite <i>O. tsutsugamushi</i>. It shows the stages: Egg, Larva, Engorged larva, Nymph, and Adult. Key points include: 'Normally the larva (chigger) feeds on small mammals or ground-feeding birds.', 'Humans are accidental hosts.', 'Transovarial transmission (from adult to egg) of <i>O. tsutsugamushi</i>', and 'Both the nymph & the adult are free-living in the soil.'</p>
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Tiger Orchids

Context

- Tiger orchids, largest orchid species, bloom at Kerala’s Jawaharlal Nehru botanic garden

<p>Tiger Orchids</p>	<ul style="list-style-type: none"> • The orchid variety is native to South East Asia. • Its scientific name is <i>Grammatophyllumspeciosum</i>. • They are the largest orchid species in the world. • They are so called because of their splendid flowers which sport striking brown spots against a yellow backdrop, bringing to mind tigers. 	
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5.13 1 MAINS QUESTION AND 5 MCQS

Q1. Highlighting the challenges associated with the quick fix solutions for water conservation in India, enumerate the initiatives taken by the government towards water conservation in India. (15 marks, 250 words)

Introduction

- Quick-Fix Solutions to water management are often immediate and often temporary measures to address the issue of water crisis.

Some quick fix-water solutions

- Jalyukt Shivar Abhiyan: A Maharashtra government initiative of 2014 that targeted river widening, deepening and straightening to make the state drought-free by 2019.
- Water Cups: A competition initiated by non-profits in 2016 to incentivise Maharashtra villages to harvest water for drought-proofing the state.
- Planting of trees: planting trees along the banks to rejuvenate rivers are an example of such a quick-fix solution.

Issues with quick fix-water solutions

- Impact on the environment: These solutions only look at the narrow picture by addressing the immediate and short-term issues. These often can have a detrimental impact on the environment in the long run. Artificial rains through cloud seeding is one such example.
- Low social base: These solutions overlook the importance of communities and age-old practices of water conservation solutions.
- Dependency on CSR: Most of these solutions rely on access to quick and easy money through the corporate social responsibility (CSR) route for such works.
- Neglect of groundwater management: India's most pressing challenge is groundwater depletion but these quick-fix solutions mostly focus on the above-the-ground aspect of the water issues.
- Shift from Critical Engagement to Techno-Managerial Approach: The "critical engagement" approach is being replaced by a "techno-managerial approach" that focuses on technical knowledge, people management and problem-solving.

- Comprehensive and integrated land use planning framework; There is a lack of a "comprehensive and integrated land use planning" framework in India, effects of which are seen in declining water tables. Irresponsible and unscientific land use planning leading to higher water consumption affects groundwater table. Thus there is a need for better agriculture planning and land use management.
- Role of panchayats; Studies reveal that the **role of Panchayats in groundwater management has been negligible**, or at best, casual. Even with communities empowered with governance rights and awareness, success was limited due to weak local institutions. Moreover, the expertise and ethnically know-how of gram panchayats are lacking in India.

Government initiatives towards Water Conservation

Central Sector Scheme 'Ground Water Management & Regulation'

- Central Ground Water Board (CGWB)'s **Central Sector Scheme 'Ground Water Management & Regulation'** aims at delineation of aquifer disposition & their characterization for preparation of aquifer/area-specific groundwater management plans, Ground Water (GW) Monitoring, GW Resource Assessment, GW Regulation, etc. The information generated is shared with States/UTs for their suitable interventions.

Model Bill Groundwater Management & Regulation

- The bill has the provision of rainwater harvesting. So far, 21 States/UTs have adopted and implemented the groundwater legislation along the lines of the Model Bill including West Bengal.

Jal Shakti Abhiyan (JSA)

- The government of India was **first launched in 2019** in water-stressed blocks of 256 districts which continued during the years 2021, and 2022 also (across the entire country both rural and urban areas).
- Its primary aim is to effectively harvest the monsoon rainfall through the creation of artificial recharge structures, watershed management, recharge and reuse structures, intensive afforestation and awareness generation etc.

Amrit Sarovar Mission

- The Prime Minister launched **Amrit Sarovar Mission on 24th April 2022**. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of the celebration of Azadi ka Amrit Mahotsav.

Atal Bhujal Yojana

- The Central Government is implementing Atal Bhujal Yojana with an outlay of Rs. 6,000 crores, in collaboration with States, **in certain water-stressed areas of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh**.
- The primary aim of the scheme is demand-side management through scientific means involving the local communities at village levels leading to sustainable groundwater management in the targeted areas.

National Aquifer Mapping Program (NAQUIM)

- CGWB is implementing the National Aquifer Mapping Program (NAQUIM) in the country and an area of 25.15 lakh sq km (the available mappable area) has been covered under the NAQUIM studies.
- The NAQUIM study reports along with management plans are shared with States/UTs for suitable interventions.

Master Plan for Artificial Recharge to Groundwater- 2020

- Master Plan for Artificial Recharge to Groundwater- 2020 prepared by the CGWB in **collaboration with States/UTs** envisages the construction of about 1.42 crore Rain Water Harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Metres (BCM) of water.

Way Forward

- **Empowering local bodies:** As hydrologic conditions vary intricately yet considerably at the local level, centralized approaches remain limited in their reach and impact. This unequivocally transfers the responsibility to local regulatory bodies at the block level, the Panchayat and Municipality, which are well-placed to address these issues. **Ensuring technical competence and financial sufficiency of gram panchayats are necessary.**
- **Integrated Water Resource Management framework:** For planning and management of groundwater, there is a need to focus on the **Integrated Water Resource Management framework**. It promotes the coordinated development and management of water, land and related resources.
- **Promote the circular economy:** Provision for **wastewater recycle and its reuse to promote the circular economy** of one water cycle will also help in source sustainability and groundwater pollution mitigation. Further Biofertilizers and natural farming should be promoted.
- **Innovative methods:** Interventions like **rainwater harvesting, stormwater harvesting, rain-garden and bioretention ponds that intercept rainfall with vegetated land are low-maintenance** alternatives to conventional systems. These help in groundwater recharge and urban flood mitigation.
- **Strengthening of regulatory frameworks and stakeholder participation :** The **strengthening of regulatory frameworks and stakeholder participation** need to be formulated and imposed. Aquifer characterisation and robust monitoring of urban groundwater quality as well as quantity are imperative. Data collection, formulation of effective regulatory legal policies, laws and acts for better management will go a long way.

Conclusion

- **Public awareness and participation** as well as trust-building between formal water sector institutions and communities will further fill the void in urban groundwater management.

Q2. Consider the following statements:

1. 'Meri Maati Mera Desh' campaign is soil conservation campaign of the Union government.
2. A garden along the Kartavya Path in Delhi will be developed under the campaign.
3. Events have been planned at the panchayat, village, block, urban local body, and State and national levels, respectively.

Which of the above statements are correct?

- A. One only
- B. Two only
- C. All Three
- D. None

Q3. Which of the following statements describes the "Ludwigia peruviana" recently seen in the news?

- A. Ludwigia peruviana is an invasive species that grows fast along water bodies.
- B. It is a species of butterfly recently discovered in western ghats.
- C. It is a species of Frogs recently discovered in western ghats.
- D. None of the above

Q4. Consider the following statements:

1. Maldharis are herdsman community in Gujarat, India.
2. They practice dairy farming and pastoralism in Bani grasslands.
3. All of these communities are included in the list of scheduled tribes.

Which of the above statements are correct?

- A. 1 only

- B. 1 and 2 only
- C. 2 and 3 only
- D. All are correct

Q5. Consider the following statements:

1. Silvopasture integrates trees, forage and livestock on the same land.
2. Silvopasture can play a vital role in reversing the negative trend of deforestation for pasture land.
3. The trees on silvopasture lands sequesters significantly five-10 times more carbon than pastures without trees.

Which of the above statements are correct?

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. All are correct

Q6. Consider the following statements about Forest (Conservation) Amendment Bill 2023:

1. The bill Changed the name of the Act to Van (Sanrakshan Evam Samvardhan) Adhiniy 1980.
2. Strategic projects concerning national security located within 50 km of distance from the International Borders, Line of Actual Control, Line of Control

Which of the above statements are correct?

- A. 1 only
- B. 2 only
- C. Both statements are correct.
- D. None are correct

ANSWER

2. B, 3. A,
4. B, 5. D, 6. A

6. SOCIAL ISSUES

6.1 MISSION VATSALYA

Context

- Mission Vatsalya scheme of Ministry of Women and Child Development envisages a robust ecosystem through the network of state and local governments to ensure the safety and security of children in the country.

Details

- Under the existing scheme guidelines, Standing/Sub-Committee system of the local bodies, the function of child welfare and protection issues may be assigned to the existing committee of the urban local body/Panchayati Raj Institution/Gram Panchayat which deals with issues of social justice/welfare of women and children.
- **In this spirit, Child Welfare and Protection Committee (CW&PC) at village level** will identify the children who are eligible for support likely to be in difficult circumstances, orphans, street children etc.
- These children will be facilitated under the sponsorship component of Mission Vatsalya Scheme.
- **Sponsorship facilities will be provided to these Children as per recommendation of CWC** and approved by the Sponsorship and Foster Care Approval Committee (SFCAC). States/UTs will be requested accordingly to extend facilities of sponsorship to the eligible children.

About the Scheme

- **Aim:** Mission Vatsalya Scheme is a roadmap to achieve development and child protection priorities aligned with the Sustainable Development Goals (SDGs).
- The Scheme is implemented as a **Centrally Sponsored Scheme** in partnership with State

Governments and UT Administrations to support the States and UTs in universalizing access and improving quality of services across the country.

- **It lays emphasis on child rights, advocacy and awareness** along with strengthening of the juvenile justice care and protection system with the motto to 'leave no child behind'.
- **The Juvenile Justice (Care and Protection of Children) Act, 2015** provisions and the **Protection of Children from Sexual Offences Act, 2012** form the basic framework for implementation of the Mission.
- **Funds under the Scheme** are released according to the requirements and demands made by the States/UTs.
- **The scheme supports the children through Non-Institutional Care** under Private Aided Sponsorship wherein interested sponsors (individuals/ institutions/ company/ banks/ industrial units/ trusts etc.) can provide assistance to children in difficult circumstances.
- **The District Magistrates take measures to encourage** individuals or Public/ Private Sector Organisations to sponsor a child or a group of children or an Institution.

Objective of the scheme

- To secure a healthy and happy childhood for every child in the country.
- To ensure opportunities to enable them to discover their full potential and assist them in flourishing in all respects, in a sustained manner.
- To foster a sensitive, supportive and synchronized ecosystem for the development of children.

6.2 REPORT ON PROGRESS IN WOMEN DEVELOPMENT BY UNITED NATIONS

Context

- The first-of-its-kind report that presents a comprehensive analysis of the progress made in human development of women and girls was jointly created by two UN agencies – UN Women and UN Development Programme.

Key findings of the report

- Only an abysmal 1 per cent of women across the world live in countries that have managed to achieve both high women empowerment and gender parity, according to a new report by the United Nations.
- The bodies collated data from 114 countries** and analysed them based on the twin indices of **Women's Empowerment Index (WEI)** and the **Global Gender Parity Index (GGPI)**. These complementary indices together, the authors proposed, are the best tool to develop the most accurate understanding of the progress made towards women's empowerment and gender parity in a country.
- WEI showed that, on an average, women are empowered to achieve **only 60 per cent of their full potential**. They also were found to achieve **28 per cent less than men** across key human development dimensions, as measured by the GGPI.
- None of the 114 countries analysed achieved full women's empowerment or complete gender parity, they found.
- More than 90 per cent of the global population** of women live in countries with low or middle women's empowerment and

low or middle performance in achieving gender parity.

- India can be cited as an example**, based on the findings. In the country, women's empowerment and gender parity were both found to be 'low', although it was assessed to be in the 'medium' category in terms of human development.

The report identified areas where comprehensive policy action is needed:

- Health policies:** Support and promote long and healthy lives for all, with a focus on universal access to sexual and reproductive health
- Equality in education:** Address gaps in skills and quality of education, especially in fields such as STEM, to empower women and girls in the digital age
- Work-life balance and support for families:** Invest in policies and services that address work-life balance, including affordable quality childcare services, parental leave schemes, and flexible working arrangements
- Women's equal participation:** Set targets and action plans for achieving gender parity in all spheres of public life and eliminate discriminatory laws and regulations that hold women back
- Violence against women:** Implement comprehensive measures focused on prevention, changing social norms, and eliminating discriminatory laws and policies.

6.3 SCHEME FOR DEVELOPMENT OF MINORITY COMMUNITIES

Context

- The Government already implements various Schemes for the welfare and upliftment of every strata, including minorities, specially the economically weaker and lesser privileged sections of the society, through the Ministry of Skill Development and Entrepreneurship, Ministry of Textiles, Ministry of Culture,

Ministry of Women and Child Development and Ministry of Rural Development.

- Ministry of Minority Affairs specifically implements various Schemes across the country for socio-economic and educational empowerment of the six (6) centrally notified minority communities. The schemes/programmes implemented by the Ministry are as under:**

Educational Empowerment Schemes

Pre-Matric Scholarship Scheme

- The scholarship at pre-matric level will encourage parents from minority communities to send their school going children to school, lighten their financial burden on school education and sustain their efforts to support their children to complete school education.

Post-Matric Scholarship Scheme

- A scholarship scheme by **Ministry of Minority Affairs** for students from minority communities pursuing a post-matric course from a notified institution in India in a government or private school, including such residential **Government institutes and eligible private institutes** selected and notified in a transparent manner by the **State Government and Union Territory Administration** concerned.

Merit-cum-Means based Scholarship Scheme

- **The Central Sector Scheme 'National Means-cum-Merit Scholarship Scheme'** was launched in 2008, after getting approval from CCEA, with the objective to award scholarships to meritorious students of economically weaker sections to arrest their drop out at class VIII and encourage them to continue their education at secondary stage.
- **One lakh fresh scholarship is awarded to selected students of class IX every year and their continuation / renewal in classes X to XII for study in State Government, Government-aided and Local body schools under the scheme.** The amount of scholarship is **Rs. 12000/- per annum from 1st April 2017 (earlier it was Rs. 6000/- per annum).**

Employment and Economic Empowerment Schemes

Pradhan Mantri Virasat Ka Samvardhan (PMVIKAS)

- The **Ministry of Minority Affairs (MoMA)** seeks to facilitate opportunities for minority communities in education, skilling, and employment to ensure their inclusive development in the national fabric.

- MoMA has designed an integrated scheme, called the **Pradhan Mantri Virasat Ka Samvardhan (PM VIKAS)**, combining five (5) existing schemes of MoMA viz. **Seekhoaur Kamao, USTTAD, Hamari Dharohar, Nai Roshni and Nai Manzil.**
- PM VIKAS is aligned to the **15th Finance Commission cycle** period up to 2025-26 and is a Central sector (CS) scheme under the Ministry of Minority Affairs.

National Minorities Development and Finance Corporation (NMDFC) Scheme for providing concessional loans to minorities.

- NMDFC is a Govt. Company under section 8 of Companies Act 2013, under the administrative control of **Ministry of Minority Affairs, Government of India.**
- The Corporation has been set up to promote economic development for the benefit of "**Backward Sections**" amongst the Minority Communities i.e., Muslims, Christians, Sikhs, Buddhists, Parsis & Jains, preference being given to the occupational group and women.

Special Schemes

Jiyoparsi: A scheme for reversing the population decline of Parsis in India.

- **Jiyoparsi is a unique Central Sector Scheme** for arresting the population decline of the Parsi Community. The scheme was launched in 2013-14.
- **The objective of the scheme** is to reverse the declining trend of **Parsi Population** by adopting scientific protocol and structured interventions to stabilize their population in India.
- **The scheme has three components, Medical Assistance, Advocacy & Health of Community:**
 - a) **Under Medical Component of the scheme, financial assistance** is provided to Parsi Couples for medical treatment under standard medical protocol;
 - b) **Under Health of Community Component, financial assistance** is provided to Parsi Couples for child care and assistance of elderly people and

- c) Under **Advocacy Component**, **advocacy/outreach programmes** are conducted to generate awareness among the Parsi Population.

Qaumi Waqf Board Taraqqiati Scheme (QWBTS) and Shahari Waqf Sampatti Vikas Yojana (SWSVY)

- The Ministry provides Grant-in-Aid to Central Waqf Council (CWC), a statutory body under Ministry of Minority Affairs under Central Sector Scheme namely Shahari Waqf Sampatti Vikas Yojana (SWSVY).
- Under the scheme, interest free loans are provided to **State Waqf Boards/Waqf Institutions** for construction of economically viable buildings on the urban Waqf land such as commercial complexes, marriage halls, hospitals, cold storages etc.
- **Digitization to safeguard and prevent encroachment of Waqf properties** is carried out under **Qaumi Waqf Board Taraqqiati Scheme (QWBTS)**.
- Under QWBTS financial assistance is provided to SWBs towards computerization,

digitization of records of Waqf properties and GIS Mapping of Waqf properties.

Infrastructure Development Schemes

- **Pradhan Mantri Jan Vikas Karyakram (PMJVK)** seeks to support states/UTs to provide better **socio-economic infrastructure** facilities to the **minority communities** particularly in the field of education, health & skill development which would further lead to lessening of the **gap between the national average** and the minority communities with regard to backwardness parameters.
- The erstwhile **Multi-sectoral Development Programme (MsDP)** has been restructured and renamed as **Pradhan Mantri Jan Vikas Karyakram** for effective implementation since 2018.
- The revised PMJVK has been approved by the Government for continuation over the 15th Finance Commission Cycle i.e., during **FY 2021-22 to 2025-26**.

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6.4 SHORT ARTICLE

World Population Day and Change in Women's Life

Context

- The passage of World Population Day (July 11) is also a time to look at how India's demographic journey has changed the lives of its citizens, particularly its women.

Details

- India's population grew from about 340 million at Independence to 1.4 billion. This growth was fuelled by the gift of life that receding starvation, improved public health, and medical miracles brought to India.
- In 1941, male life expectancy was about 56 years; only 50% of boys survived to age 28.
- Today, life expectancy for men is 69 years, and nearly 50% live to see the ripe old age of 75. This rapid decline in mortality took parents by surprise, who no longer needed to have four children to ensure that at least two would survive, causing population growth until fertility decline caught up with the mortality decline, and the Total Fertility Rate fell from 5.7 in 1950 to 2.1 in 2019.

Change for Indian women

- As families began having fewer children, ensuring at least one son became more difficult. With four children, the chance of not having a son was barely 6%, but with two children, it grew to 25%.
- Social norms and patrilocal kinship patterns combined with lack of financial security reinforce a preference for sons.
- The India Human Development Survey (IHDS) found that 85% of women respondents expected to rely on their sons for old age support, while only 11% expected support from their daughters. Hence, parents who want to ensure that they have at least one son among their one or two child family,

resorted to sex-selective abortion, and, in some cases, the neglect of sick daughters.

- Consequently, **the number of girls per 100 boys, ages under five dropped from 96 to 91 between 1950 and 2019.**
- **With a fertility decline,** active mothering occupies a smaller proportion of women's lives, creating space for education and employment
- Data on this only goes back 30 years **National Family Health Survey**, finds that the number of years women spend caring for children under five declined from 14 years in 1992-93 to eight in 2018-20; the years spent caring for children ages six to 15 dropped from 20 to 14 years.
- **While women's educational attainment increased, with over 70% of girls enrolling in secondary education, early marriage and childbearing remain the predominant forces defining women's lives.**

About World Population Day

- World Population Day, which seeks to focus attention on the urgency and importance of population issues, was established by the then-Governing Council of the United Nations Development Programme in 1989.
- **By a resolution in December 1990,** the United Nations General Assembly decided to continue observing World Population Day to enhance awareness of population issues, including their relations to the environment and development.
- **First observed:** The Day was first marked on 11th July 1990 in more than 90 countries.
- **Theme 2023:** The theme for World Population Day 2023 is 'Unleashing the power of gender equality: Uplifting the voices of women and girls to unlock our world's infinite possibilities.'

Atal Vayoabhyuday Yojana

Context

- Nearly 1.5 lakh beneficiaries are staying in the Senior Citizen homes. 361 districts across the country have been covered. During the last 3 financial years a total of Rs. 288.08 crore grants in aid released and number of beneficiaries is 363570.

Details

- The Ministry of Social Justice and Empowerment has been working towards creating an inclusive and equitable society for all its citizens. Over the past nine years, the Ministry has launched several schemes and initiatives aimed at empowering marginalized sections of society, including students from Scheduled Castes, Scheduled Tribes, and Other Backward Classes through Scholarships, Elderly Citizens, Safai Karmcharis, and Transgender people.
- The Department of Social Justice and Empowerment, being the Nodal Department for welfare of senior citizens,** is implementing various programs and schemes. National Action Plan for Senior Citizen (NAPSrc) had been revamped, renamed as Atal Vayo Abhyuday Yojana (AVYAY) and subsumed in April 2021.
- Under the umbrella Scheme, Atal Vayo Abhyuday Yojana (AVYAY), an **Integrated Programme for Senior Citizens (IPSrc)** provides financial assistance to eligible organization's for running and maintenance of Senior Citizen Homes/ Continuous Care Homes to improve the quality of life of the senior citizens, especially indigent senior citizens by providing basic amenities, entertainment opportunities and by encouraging productive and active ageing.
- Another component under the AVYAY Scheme is RashtriyaVayoshriYojana (RVY),** to provide eligible senior citizens suffering from any of the age-related disability/ infirmity, with assisted living devices which can restore near normalcy in their bodily functions, overcoming the disability/ infirmity manifested such as low vision, hearing impairment, loss of teeth and loco-motor disabilities.
- Financial criteria for beneficiaries** are either the Senior Citizen belongs to 'Below Poverty Line' (BPL) category or he/ she has income up to **Rs. 15,000 (Rupees Fifteen Thousand) per month.**

AVYAY is an umbrella scheme has following schemes under it, namely:

- Scheme of Integrated Programme for Senior Citizens (IPSrc)
- State Action Plan for Senior Citizens (SAPSrc)
- Rashtriya Vayoshri Yojana' (RVY)
- Livelihood and Skilling Initiatives
- Promoting silver economy
- Channelizing CSR funds for Elderly care
- Scheme for Awareness Generation and Capacity Building

About Atal Vayo Abhyuday Yojana

Objective	<ul style="list-style-type: none"> It stands as a testament to the government's commitment to the well-being and empowerment of senior citizens in India.
Launched by	<ul style="list-style-type: none"> Ministry of Social Justice and Empowerment.
Aim	<ul style="list-style-type: none"> By addressing their financial, healthcare, and social needs, the scheme aims to empower the elderly, ensuring their active participation and inclusion in society.
Significance	<ul style="list-style-type: none"> Through this initiative, the government strives to create an environment where <u>senior citizens can live a life of dignity, respect, and fulfilment, acknowledging their invaluable contributions to the nation.</u>
Funding	<ul style="list-style-type: none"> A grant in aid is given to NGOs and voluntary organisations (VOs) under the AtalVayoAbhyudayYojana (AVYAY) for the operation and maintenance of Senior Citizens Homes (old age homes), Continuous Care Homes, etc. The elderly destitute residents of these houses receive free services such as housing, food, medical treatment, and other activities.

SAGE and SACRED Portal

Context

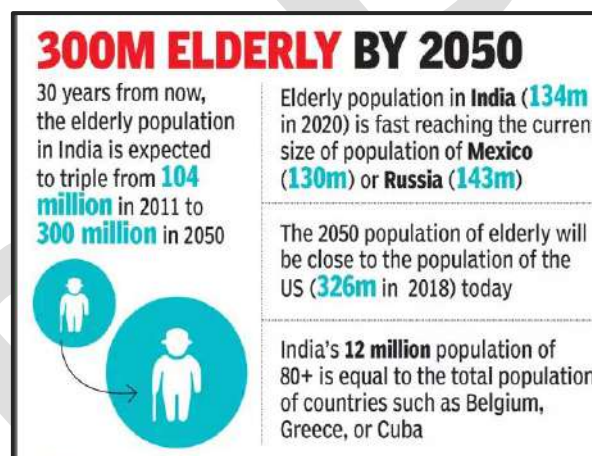
- The SAGE portal would encourage entrepreneurs and start-ups to enter the "silver economy" and thereby promote business innovation as well as provide a "one-stop access" of elderly care products and services by credible start-ups.

Details

- As per Census Report-2011, population of senior citizens is 10.38 crore, amounting to 8.6% of the total population of the country. Government of India's National Commission on Population's Report of the Technical Group on Population Projections (2011-2036) for India and States, released in July 2020, states that population of senior citizens in 2036 will be 22.7 Crore i.e., 15% of the total population of India.

About the Scheme

- The SAGE scheme identifies, evaluate, verify, aggregate, and deliver products, solutions and services directly to the stakeholders. The Government acts as a facilitator, enabling the elderly to access the products through these identified start-ups.
- The selected Start Ups / Start-up ideas is provided equity support of upto Rs. 1 crore per project through IFCI while ensuring that the total Govt. equity in the start-up should not exceed 49%.
- In accordance with the recommendations of the Standing Finance Committee (SFC), for the Financial Year 2021-22, the Senior Able Citizens for Re-Employment in Dignity (SACRED) Portal was launched allowing citizens above 60 years of age to register on the designated portal and to find jobs and work opportunities, thus bringing people together by virtual matching of preferences by providing the senior citizens a platform to connect with the private enterprises for certain positions.



The Umbrella Scheme of Atal Vayo Abhyuday Yojana (AVYAY), being run by Department of Social Justice and Empowerment, includes schemes to provide financial security, healthcare, nutrition, shelter, welfare etc. for senior citizens. The brief on various components of the scheme is as under:

- Integrated Programme for Senior Citizens (IPSRc):** Under this component, Grant-in-Aid is given to Implementing Agencies for running and maintenance of Senior Citizens Homes where basic amenities like shelter, food, medical care, entertainment opportunities etc. are provided free of cost to indigent senior citizens.
- State Action Plan for Senior Citizens (SAPSRc):** Under this component, Grant-in-aid is provided to States/UTs for creation of pool of trained geriatric caregivers, for special cataract drives for senior citizens and other any other State specific activities for welfare of senior citizens, especially those who are indigent.
- Rashtriya Vayoshri Yojana (RVY):** This component is to provide eligible senior citizens suffering from any of the age related disability/ infirmity, with assisted living devices which can restore near normalcy in their bodily functions, overcoming the disability/ infirmity manifested.
- Elder line: National Helpline for Senior Citizens (NHSC) - Toll-free No.14567:** The objective of this component is to provide free information, Guidance, Emotional Support and field intervention in cases of abuse and rescues in order to improve the quality of life of senior citizens.

- **Senior-care Ageing Growth Engine (SAGE):** This component aims to encourage youth to think about the problems of the elderly and come out with innovative ideas for the elderly care and promoting them into start-ups by providing equity support.

Status of Persons with Disabilities

Context

- Already under fire from rights activists and the Opposition over dropping disability-related questions in the sixth round of the National Family Health Survey (NFHS), the Union government was pulled up by the Parliamentary Standing Committee on Social Justice and Empowerment for failing to accurately estimate the current population of Persons with Disabilities (PwDs) in the country.

Details

- In its report on the action taken by the government on its recommendations made in March at least until the results of Census 2021 were made available, which might take “considerable time”, the government ought to use every resource it has to correctly estimate the population of PwDs.
- This included collaborating with State governments, using data from surveys they are conducting, consulting experts, and sensitising surveyors of the Ministry of Statistics.
- In its reply to the committee’s recommendations in March, the government explained that data on PwDs are largely taken from the decennial censuses conducted by the office of the Registrar General and sample surveys on disability conducted by the **National Sample Survey of the National Statistical Office**.
- **The Department of Empowerment of Persons with Disabilities** went on to explain that the government had introduced a measure to provide **Unique Disability ID (UDID) cards** to all those covered under schemes meant for them.
- It said anyone could sign up to get the certificate and based on that policies can be designed and delivered.

Key facts

- **An estimated 1.3 billion people** experience significant disability. This represents 16% of the world’s population, or 1 in 6 of us.
- Some persons with **disabilities die up to 20 years** earlier than those without disabilities.
- Persons with disabilities have **twice the risk of developing conditions** such as depression, asthma, diabetes, stroke, obesity or poor oral health.
- **Persons with disabilities** face many health inequities.
- Persons with disabilities find inaccessible and unaffordable transportation 15 times more difficult than for those without disabilities.
- **Health inequities arise from unfair conditions** faced by persons with disabilities, including stigma, discrimination, poverty, exclusion from education and employment, and barriers faced in the health system itself.

Global Education Monitoring Report, 2023

Context

- The UN body’s Global Education Monitoring Report, 2023, titled “Technology in education: a tool on whose terms?”, has endorsed banning smartphones in schools in situations where “technology integration does not improve learning or if it worsens student well-being”.

Key details of the report

- **The United Nations Educational, Scientific and Cultural Organization (UNESCO)** has warned against an uncritical rush toward an embrace of digital products in educational settings, noting that “there is little robust evidence on digital technology’s added value in education” and that “a lot of the evidence comes from those trying to sell it”.

- There was ample evidence of a negative link between excessive screen time and a child’s educational performance and emotional stability, it said.
- **The Report has endorsed banning smartphones** in schools in situations where “technology integration does not improve learning or if it worsens student well-being”.
- It highlighted that “mere proximity to a mobile device was found to distract students and to have a negative impact on learning in 14 countries, yet less than one in four have banned smartphone use in schools”.
- It also cited research studies to point out that “banning mobile phones from schools improves academic performance, especially for low-performing students”.
- Detailing the rationale for restricting smartphone usage for children, the report cited a study of young people between the ages of two and 17 which “showed that higher screen time was associated with poorer well-being; less curiosity, self-control and emotional stability; higher anxiety; and depression diagnoses”.
- The report also flagged the higher costs of delivering basic education where there is a dependence on the setting up of digital infrastructure, and how this could worsen the problem of unequal access in low-income countries. “Technology is often bought to plug a gap, with no view to the long-term costs for national budgets.
- The cost of moving to basic digital learning in low-income countries and connecting all schools to the Internet in lower-middle-income countries would add 50% to their current financing gap for achieving national SDG 4 targets,” the report stated.

About the Global Education Monitoring Report


- The Global Education Monitoring Report is an editorially independent annual report hosted and published by UNESCO.
- It has the mandate to monitor progress on education in the SDGs and on the implementation of national and international education strategies to help hold all relevant partners to account for their commitments.

Title

- Global Education Monitoring Report, 2023, has been titled as “Technology in education: a tool on whose terms?”

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6.5 1 MAINS QUESTION AND 5 MCQS

Q1. Mission Vatsalya is a flagship initiative of the Government of India to provide comprehensive care and protection to children in need. Discuss the challenges of the scheme and suggest measures.

Answer:

- Mission Vatsalya is a centrally sponsored scheme that aims to achieve the objectives of child protection and development under the Sustainable Development Goals (SDGs). It was launched by the Ministry of Women and Child Development in 2021-22 as a revamped version of the Integrated Child Protection Scheme (ICPS), which was started in 2010.

The mission faces several challenges in achieving its objectives, such as:

- Lack of coordination and convergence among various stakeholders, such as central and state governments, civil society organizations, the corporate sector, media, and academia.
- Inadequate infrastructure and human resources for providing quality care and protection services to children in need.
- Low awareness and sensitivity among the public and duty bearers about the rights and needs of children in need.
- Gaps in data collection, monitoring, evaluation, and reporting on the status and progress of children in need.

To overcome these challenges and ensure the effective implementation of Mission Vatsalya, the following steps are suggested:

- Strengthening the policy and legal framework for child protection by harmonizing existing laws and schemes with the United Nations Convention on the Rights of the Child (UNCRC) and other international standards.
- Enhancing the capacity and accountability of child protection functionaries at all levels by providing regular training, supervision, mentoring, and performance appraisal.
- Developing a robust information management system for collecting, analyzing, and disseminating data on children in need and their services.
- Mission Vatsalya is a visionary and ambitious endeavour that has the potential to transform the lives of millions of children in need in India. Addressing their vulnerabilities and deprivations holistically can enable them to realize their full potential and contribute to the nation's development.

Q2. Consider the following statements about World Population Day:

1. The Day was first marked on 11th July 1990 in more than 90 countries.
2. The theme for World Population Day 2023 is 'Unleashing the power of gender equality: Uplifting the voices of women and girls to unlock our world's infinite possibilities.'

Which of the statements given above is/are correct

- A) 1 only
- B) 2 only
- C) Both 1 and 2
- D) Neither 1 nor 2

Q3. 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) Neither 1 nor 2

Q4. Consider the following statements about Mission Vatsalya Scheme:

1. It is a roadmap to achieve development and child protection priorities aligned with the Sustainable Development Goals (SDGs).
2. Funds under the Scheme are released according to the requirements and demands made by the Central government to states.

Which of the statements given above is/are correct?

- A) 1 only
- B) 2 only
- C) Both 1 and 2
- D) Neither 1 nor 2

Q5. Global Education Monitoring Report is an editorially independent annual report hosted and published by UNESCO. How many of the following are the recommendations of the report?

1. It has endorsed banning smartphones in schools in situations where “technology integration does not improve learning or if it worsens student well-being”.
2. It highlighted that “mere proximity to a mobile device was found to distract students and to

have a negative impact on learning in 14 countries.

3. 39 of 42 governments providing online education during the pandemic fostered uses that risked or infringed on children’s rights.

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 Women Deliver 2023 Conference:

1. It took place in Kigali, Rwanda.
2. The theme of WD2023 is Spaces, Solidarity, and Solutions. WD2023 will enable inclusive and co-created spaces that foster solidarity for sustainable solutions on gender equality.

Which of the above statements is/are correct?

- A) 1 only
- B) 2 only
- C) Both 1 and 2
- D) Neither 1 nor 2

Answers:

2. C,
3. A,
4. A,
5. C,
6. C

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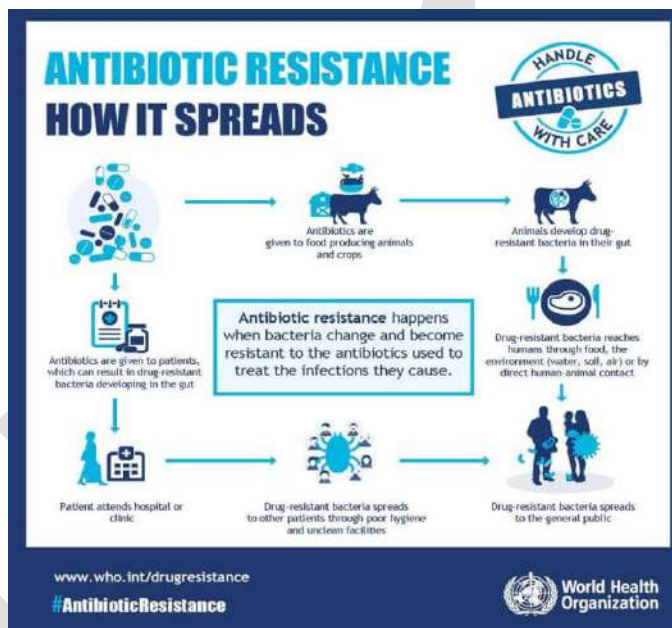
7.1 ANTIMICROBIAL RESISTANCE AND ONE HEALTH

Context

- Four multilateral agencies have launched a priority research agenda on June 28, 2023, to better advocate for increased research and investment in antimicrobial resistance (AMR).

Key findings

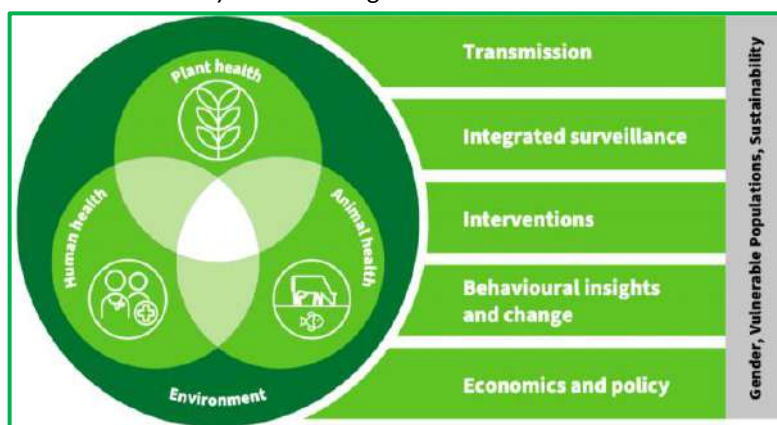
- The agenda prioritises 40 research topics for evidence generation to inform policy and interventions by 2030.
- It also aims to guide a variety of stakeholders in generating new evidence to address antimicrobial resistance, with a focus on low- and middle-income countries.
- The agenda will serve as a guide for countries, research institutes and funding bodies to support One Health AMR research. It will also allow policymakers, researchers, and the multidisciplinary scientific community to collaborate across sectors.
- It defined 'One Health' as an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems.**



- The concept acknowledges the health of humans, domestic and wild animals, plants, and the larger environment, including ecosystems, are inextricably linked and interdependent. At this One Health interface, addressing global health issues necessitates a multisectoral, multidisciplinary response to AMR.
- The 'Quadripartite' – comprising the **United Nations (UN) Food and Agriculture Organization (FAO)**, the **UN Environment Programme (UNEP)**, the **World Health Organization (WHO)** and the **World Organisation for Animal Health (WOAH)** – released the One Health Priority Research Agenda on Antimicrobial Resistance through a webinar.

Transmission

- This pillar focuses on the **environment, plant, animal, and human** sectors where AMR transmission, circulation and spread occur.
- This includes what drives this transmission across these areas, where these interactions occur, and the impact on different sectors.



Integrated surveillance

- This pillar aims to identify cross-cutting priority research questions in order to improve common technical understanding and information exchange among One Health stakeholders.
- The surveillance aims for harmonisation, effectiveness, and implementation of integrated surveillance with a focus on LMICs.

Interventions

- This pillar focuses on programmes, practises, tools, and activities aimed at preventing, containing, or reducing the incidence, prevalence, and spread of AMR.
- This also calls for the best use of existing vaccines, as well as other One Health-related measures to reduce AMR.

Behavioural insights and change

- The priority research areas under this pillar are concerned with comprehending behaviour across various groups and actors involved in the development and spread of AMR at the One Health interface.
- It focuses on research addressing human behaviour that affects AMR, including ways to combat it.

Economics and policy

- From a One Health standpoint, this pillar addressed investment and action in AMR prevention and control.
- This pillar also takes into account the cost-effectiveness of an AMR investment case, financial sustainability, and long-term financial impact.

Closing remarks

- This research agenda aims to direct future research in One Health AMR with a focus on low-resource settings.
- The agenda also emphasises the importance of developing research capacity in LMICs, which will be critical for addressing research gaps and developing evidence.
- The agenda at the regional and national levels requires tailoring and the development of specific research questions.

7.2 NATIONAL SICKLE CELL ANAEMIA ELIMINATION MISSION

Context

- The Prime Minister, Shri Narendra Modi launched the National Sickle Cell Anaemia Elimination Mission in Shahdol, Madhya Pradesh.

Details

- The Prime Minister also kickstarted the distribution of about 3.57 crore Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) cards in Madhya Pradesh.
- During the programme, the Prime Minister honoured Rani Durgavati the ruling queen of Gondwana in the mid-16th century.
- The ceremony for the distribution of Ayushman cards is being organized at Urban bodies, Gram panchayats and Development Blocks across the state.



- The Ayushman card distribution campaign is a step towards realizing the Prime Minister's vision of reaching out to every beneficiary to ensure 100 percent saturation of welfare schemes.

Background of National Sickle Cell Anaemia Elimination Mission

Aim of the mission

- The Mission aims to address the **pressing health challenges posed by sickle cell disease**, particularly among the tribal population. The launch will mark a crucial milestone in the Government's ongoing efforts to eliminate sickle cell disease as a **public health problem by 2047**.

Launched:

- The National Sickle Cell Anaemia Elimination Mission was announced in the **Union Budget 2023**.

Objectives:

- The mission will **create awareness among the public and health workers** about the prevention and management of sickle cell anaemia.
- **It will reduce the morbidity and mortality** associated with sickle cell anaemia, and enhances the quality of life of the affected individuals and families.
- **It will also contribute to the achievement of the Sustainable Development Goals** related to health, education and social inclusion.

Implementation:

- **This will be implemented in 278 districts of 17 high-focus states in the country** namely Gujarat, Maharashtra, Rajasthan, Madhya Pradesh, Jharkhand, Chhattisgarh, West Bengal, Odisha, Tamil Nadu, Telangana, Andhra Pradesh, Karnataka, Assam, Uttar Pradesh, Kerala, Bihar, and Uttarakhand.

Components of the mission

Screening

- All newborns and pregnant women will be screened for sickle cell trait or disease using a simple and rapid test.
- Those who are found positive will be given a genetic status card, which will help them in accessing appropriate health care and counselling services.

Prevention

- **Couples who are carriers of sickle cell trait** will be counselled about the risk of having a child with sickle cell disease and the available options for prevention.
- Prenatal diagnosis and medical termination of pregnancy will be offered to those who wish to avoid having an affected child.

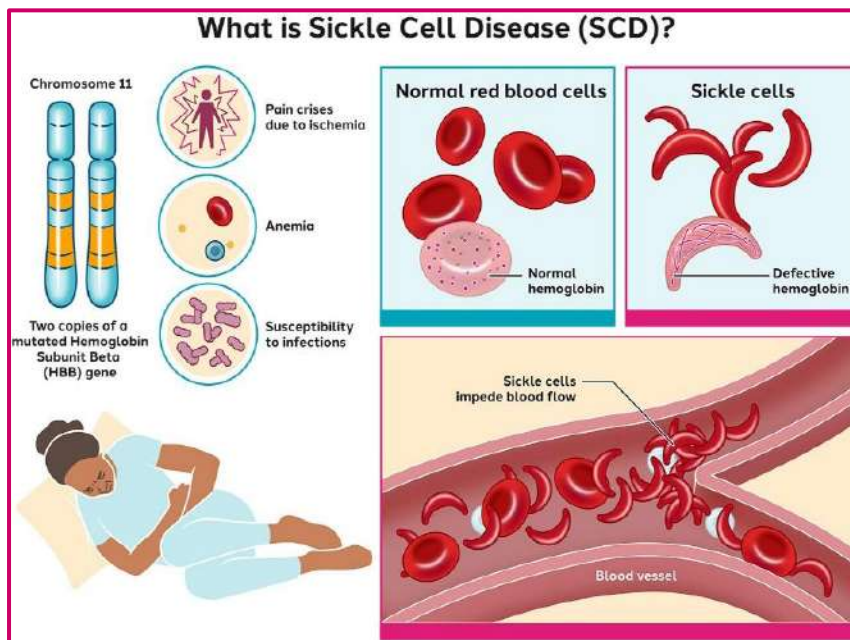
Treatment

- Patients with sickle cell disease will be provided with **free and regular treatment, including blood transfusions, hydroxyurea therapy, pain management and antibiotics**.
- They will also be enrolled in a national registry, which will help in monitoring their health outcomes and quality of life.

Research

- The mission will support research and innovation in the field of sickle cell anaemia, such **as developing new drugs, vaccines, gene therapy and stem cell therapy**.
- It will also promote awareness and education among the **public and health professionals about the disorder**.

Sickle Cell Anaemia (SCA)



About	<ul style="list-style-type: none"> Sickle cell anaemia (SCA) is a genetic disorder that affects the shape and function of red blood cells (RBCs), which carry oxygen to all parts of the body.
Extent	<ul style="list-style-type: none"> SCA is one of the most common inherited blood disorders in the world, affecting millions of people, especially those of African, Asian and Mediterranean descent.
Status in India	<ul style="list-style-type: none"> SCA is prevalent in some tribal and non-tribal communities in states like Maharashtra, Madhya Pradesh, Chhattisgarh, Gujarat, Odisha, Jharkhand and Bihar. According to a 2018 report by the Indian Council of Medical Research (ICMR), about 1.2% of the Indian population has sickle cell trait (SCT), which means they carry one copy of the mutated gene that causes SCA.

Closing remarks

- The National Sickle Cell Anaemia Elimination Mission is a commendable initiative that reflects the commitment of the Prime Minister of India to free the tribal communities and the country from the menace of sickle cell anaemia by 2047.
- It is hoped that with collective efforts and cooperation, this mission will succeed in its noble objective and create a healthier and happier India.

7.3 CMV AND TOMV - MOSAIC VIRUSES

Context

- Farmers in Maharashtra have said their tomato crop was impacted by attacks of the **cucumber mosaic virus (CMV)**, while growers in Karnataka blamed the **tomato mosaic virus (ToMV)**.

What are CMV and ToMV?

- The two plant pathogens have similar names and cause similar damage to crops**, but they belong to different viral families, and spread differently.

Family

- ToMV belongs to the Virgaviridae family** and is closely related to the tobacco mosaic virus (TMV).

- ToMV hosts include **tomato, tobacco, peppers, and certain ornamental plants.**
- **CMV** has a much larger host pool that includes cucumber, melon, eggplant, tomato, carrot, lettuce, celery, cucurbits (members of the gourd family, including squash, pumpkin, zucchini, some gourds, etc.), and some ornamentals. CMV was identified in cucumber in 1934, which gave the virus its name.

How do these two viruses spread?

- **ToMV spreads mainly through infected seeds, saplings, agricultural tools** and often, through the hands of nursery workers who have failed to sanitise themselves properly before entering the fields. It would require only a few infected saplings for the virus to take over an entire field in a matter of days.
- **CMV is spread by aphids,** which are sap-sucking insects. CMV too can spread through human touch, but the chances of that are extremely low.
- **Conditions of high temperature followed by intermittent rain,** which allow aphids to multiply, are conducive to the spread of CMV. These conditions were seen in Maharashtra – the late rabi crop (planted in January-February) faced a sudden bout of rain followed by extreme heat.
- **For ToMV, farmers in Maharashtra have blamed seed manufacturers and nurseries.** Tomato growers plant 3-4-inch saplings in their fields, which they buy from nurseries. It is very important to ensure that nurseries maintain bio safety, and restrict entry into the premises.

How do the viruses affect the crop?

- **Both viruses can cause almost 100 per cent crop loss unless properly treated on time.** The foliage of plants infected with ToMV shows alternating yellowish and dark green areas, which often appear as blisters on the leaves.
- **Distortion of leaves and twisting of younger leaves are also symptoms.** The fruit develops necrotic spots, which leads to overripening.

Younger plants are dwarfed, and fruit setting is affected.

- **CMV too causes distortion of leaves, but the pattern is different.** Often leaves at the top and bottom are distorted while those in the middle remain relatively blemish-free.
- **For eg:** In cucumber, the virus causes a mosaic-like pattern of alternating yellow and green spots. In tomato, fruit formation is affected, and in some cases the fruit is distorted and small.
- While specific effects vary depending on the host, overall, **CMV causes stunting and lower production.**

How can the viruses be controlled?

- **Farmers who buy trays of saplings should check before planting,** and discard any visible infected material. They should also look out for signs of infection throughout the cropping cycle, and remove infected plants without allowing it to touch healthy ones.
- **ToMV can remain dormant in weeds** and plant remains around the field, and come back later.
- **Fields must, therefore, be cleared of weeds and plant material before fresh planting.** Plants cannot be cured of ToMV, but the infection can be controlled with good agricultural practices.
- *“Earlier we had reports about the virus mostly from Maharashtra, but reports are now coming from Karnataka, Andhra Pradesh, and other states.”*

Conclusion

- **Controlling CMV is more difficult, given the large number of hosts the virus can live on.** The best way is to stop the aphids, which can be done by spraying quick acting insecticides or mineral oils on the plants. Irritating the aphids can spread the virus to other fields. An eye must be kept on aphid migration so that measures can be taken while planting the crop.

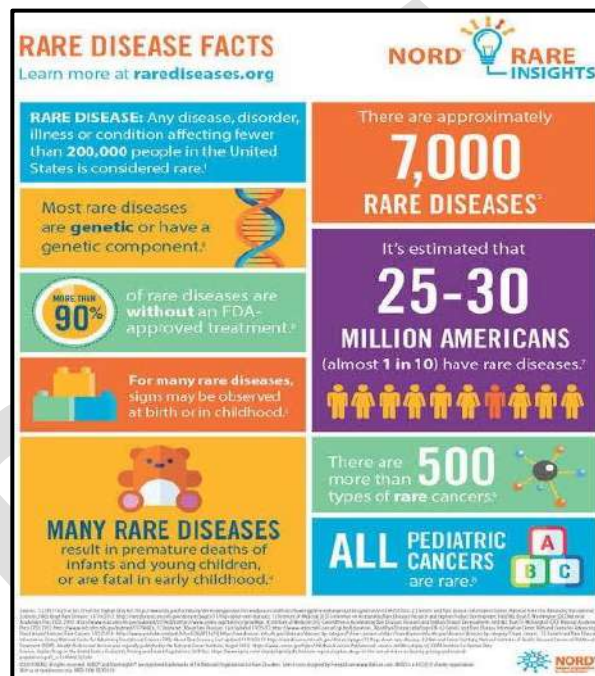
7.4 NATIONAL POLICY FOR RARE DISEASE

Context

- India's pharma sector said the Goods and Services Tax (GST) Council's decision to exempt tax on rare diseases drugs is unlikely to benefit the population unless the waiver is extended to drugs that are made commercially available in the country.

Details

- The GST Council on Tuesday said the Integrated Goods and Services Tax (IGST) on medicines and Food for **Special Medical Purposes (FSMP)** used for treating rare diseases enlisted under the National Policy for Rare Diseases, 2021, will be exempt when imported for personal use subject to existing conditions.
- The 50th GST Council recommended exempting Dinutuximab (Qarziba), a rare cancer drug, as well as medicines and Food for Special Medical Purposes (FSMP) used in the treatment of rare diseases listed under the **National Policy for Rare Diseases, 2021**, from IGST when imported for personal use, subject to certain conditions.
- Additionally, imports of medicines and FSMP** used in the treatment of rare diseases were also exempted from Integrated GST (IGST). Earlier, such imports were subject to an IGST of either 5% or 12%.
- Industry experts highlighted the significance of extending Customs and GST waiver benefits to all life-saving medicines, including cancer medicines that are imported.**
- The experts contended that this would enable patients in India to avail of duty waiver benefits and reduce their treatment costs.
- In a country like India that already struggles to provide basic health facilities to its vast population, it becomes very difficult for people suffering from rare diseases to access treatment options. Currently, about 96 million people in India are living with a rare disease with almost no access to any kind of treatment.**



About Rare Diseases and the National Policy for Rare Diseases 2021

- Rare diseases are diseases that **affect a very small percentage of the overall population**. Globally, there is no unanimity on a cut-off number for a disease to be considered rare. WHO does have its definition, but different countries have different definitions based on studies conducted in their country and the rarity of the disease.
- These rare diseases are majorly thought to be genetic and are passed on from one generation to the next. There are many rare diseases like autoimmune diseases and cancers, that might not be inherited.



Aim of National Policy for Rare Disease

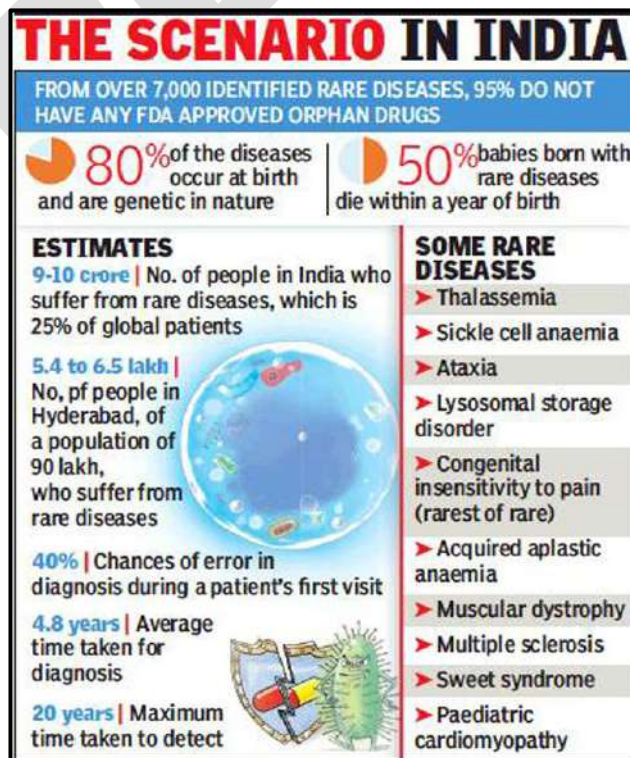
- The National Policy for Rare Diseases 2021 aims to provide a comprehensive framework for the prevention, control, screening, diagnosis, management, and treatment of rare diseases in India.
- The policy was formulated after extensive consultations with various stakeholders, including experts, patient associations, civil society organizations, state governments, and international agencies.
- **According to some estimates, there are about 6,000 to 8,000 rare diseases in the world, affecting about 6% to 8% of the population. However, 80% of rare disease patients are affected by approximately 350 rare diseases. Some of the common rare diseases affecting people in India are haemophilia, sickle cell anaemia, thalassemia, etc.**

Definition and classification of rare diseases

- The policy defines a rare disease and also classifies rare diseases into three groups based on the availability and feasibility of treatment:
- **Group 1 includes disorders that are amenable to one-time curative treatment** such as bone marrow transplantation or gene therapy.
- **Group 2 includes disorders that require long-term or lifelong treatment** such as enzyme replacement therapy or hormonal therapy.
- **Group 3 includes disorders that have no definitive treatment** but can be managed with supportive care or symptomatic treatment.

Issues and challenges

- The field of rare diseases is complex and heterogeneous. The landscape of rare diseases is constantly changing, as there are new rare diseases and conditions being identified and reported regularly in medical literature.
- Apart from a few rare diseases, where significant progress has been made, the field is still at a nascent stage. **For a long time, doctors, researchers and policy makers were unaware of rare diseases** and until very recently there was no real research or public health policy concerning issues related to the field.
- This poses formidable challenges in development of a comprehensive policy on rare diseases.
- Nevertheless, it is important to take steps, in the short as well as long term, with the objective of tackling rare diseases in a holistic and comprehensive manner.
- **A fundamental challenge in research and development** for the majority of rare diseases is that there is relatively little known about the pathophysiology or the natural history of these diseases.
- Rare diseases are difficult to research upon as the patient pool is very small and it often results in **inadequate clinical experience**. Therefore, the clinical explanation of rare diseases may be skewed or partial.
- **The challenge becomes even greater as rare diseases are chronic in nature**, where long term follow-up is particularly important. As a result, rare diseases **lack published data on long-term treatment outcomes** and are often incompletely characterised.



Suggestions and prevention

- The policy emphasizes the need for the prevention and control of rare diseases through various measures such as prenatal screening and testing, newborn screening, carrier testing, premarital counselling, genetic counselling, and public awareness campaigns.
- The policy also proposes to establish a national registry for rare diseases to collect data on the prevalence, incidence, morbidity, mortality, and outcomes of rare diseases in India.
- Before India loses any more patients to rare diseases that can be cured with timely treatment, the obstacles blocking the policy implementation need to be urgently addressed.
- The treatments that are available for rare diseases are lifesaving and extremely beneficial as they improve the patient's quality of life and can potentially decrease their utilizing healthcare systems again and again. This becomes apparent when one looks at frequent hospitalizations of several rare disease patients for
- There is also an urgent need both from industry and government to rapidly build infrastructure, skilled manpower that can do indigenous R&D, and contract manufacturing of cell and gene therapy products. This can be achieved by strategic partnering with institutions in UK, USA, and in Europe.
- Providing this next-gen GMP / GLP infrastructure for R&D at the Startup level can help create breakthrough products that pharma in India can take up for further value addition.

Closing remarks

- Looking forward, the road ahead is long but extremely critical for the patients and their families suffering from the burden of the diseases.
- In addition, rare diseases can provide an interesting and much needed opportunity for the government to infuse a fresh breath of economic and technical innovation into the pharmacy of the world, that is India.
- Last, but not least, it is extremely crucial that the Union Government pays heed to the patients who were promised financial aid and facilitates the process to implement the National Policy. Innocent lives can be saved with this policy implementation at the earliest.

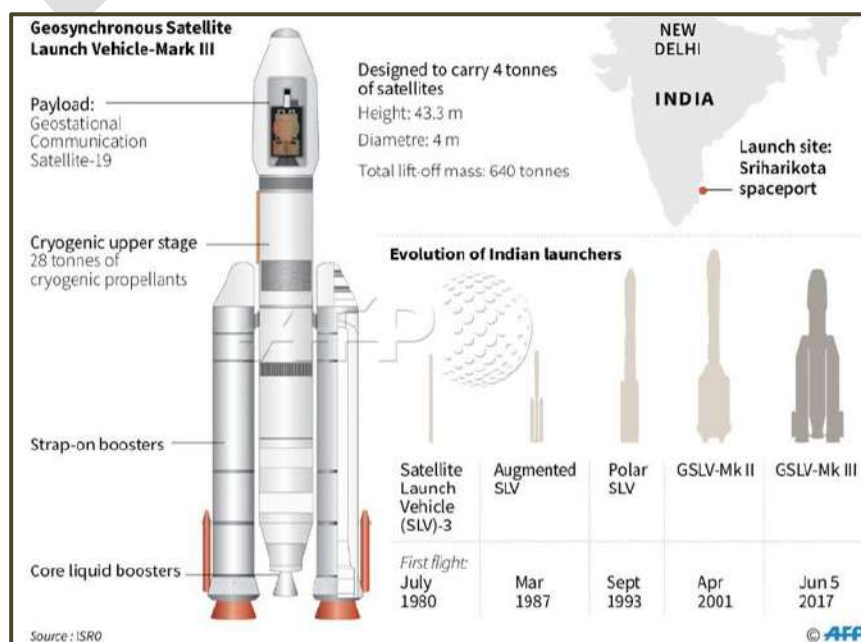
7.1 LAUNCH VEHICLES OF ISRO

Context

- India launched its third attempt to land on the moon. The mission, named Chandrayaan-3, carries a lander and a rover that will try to touch down softly on the lunar terrain and conduct scientific experiments

About LMV-3

- The Launch Vehicle Mark 3 (LVM3) is ISRO's newest medium-heavy lift launch vehicle, the heaviest rocket currently in use by India. Formerly called the Geosynchronous Satellite



Launch Vehicle Mark III (GSLV Mk III), the rocket is designed to mainly launch satellites into geostationary orbit at 35,000km.

- The **LVM3 is capable of lifting much heavier satellites than the GSLV Mk II** with a bigger cryogenic upper stage and a larger first stage. Both GSLV Mk II and LVM3 are three-stage vehicles, while the PSLV, which launches to low earth polar orbits, is a four-stage vehicle.
- The **GSLV Mk-II can place up to 2,500kg in geosynchronous orbits and up to 5,000kg to low earth orbit**. By comparison, the LVM3 can lift 4,000kg to GTO and up to 8,000 kg to LEO.
- Currently, America's SpaceX's non-human rated Falcon Heavy, a super-heavy lift vehicle, is the **heaviest rocket that is operational**.
- The LVM3 also has the human-rated variant which will be used for **Gaganyaan missions**.

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 **GSLV MkIII** from SDSC, Sriharikota.
- The propulsion module will carry the lander and rover configuration till 100km lunar orbit. The propulsion module has Spectro-polarimetry of Habitable Planet Earth (SHAPE) payload to study the spectral and polarimetric measurements of Earth from the lunar orbit.
- **Lander payloads: Chandra's Surface Thermo physical 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 Spectroscopy (LIBS) for deriving the elemental composition in the vicinity of landing site.

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7.5 HEALTH INFRASTRUCTURE IN INDIA

Context

- There are no nursing colleges in 40% of districts across India, according to Health

Ministry data. In fact, 42% of nursing institutions are clustered in five southern States, while three western States have 17%.

Details

- The Centre has attempted to correct such regional disparity with a scheme to **establish 157 new nursing colleges co-located with medical colleges by April 2025**, as well as providing short term training for nurses. However, it says that a number of States have failed to utilise such schemes properly.
- **The largest needs-based shortages of nurses and midwives are in Southeast Asia and Africa.**
- **To counter regional disparity**, the Central government has announced a scheme to set up 157 new nursing colleges co-located with medical colleges in the next two years, with financial support of ₹10 crore per college.
- **“To expedite this scheme**, States would be required to send their proposals for establishing their nursing colleges and to constitute a state level monitoring committee to monitor the progress of the project for timely completion.

Data related to health infrastructure in India

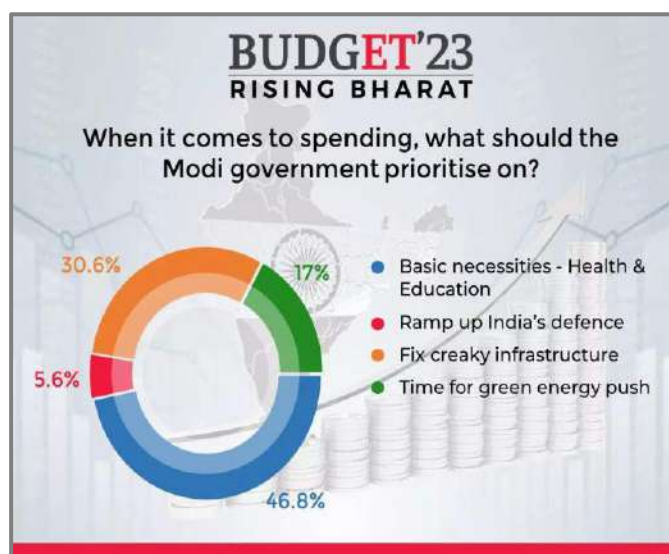
- Nursing services form the backbone of any medical establishment. **India currently has close to 35 lakh nurses, but its nurse-to-population ratio is only 2.06:1000 against a global benchmark of 3:1000.**
- **Although there has been a 36% growth in the number of institutions** offering undergraduate nursing education since 2014-15, resulting in a **40% growth in nursing seats**, there is a regional skew within these statistics.
- **About 64% of the nursing workforce** is currently trained in just eight States; **42% of nursing institutions** are concentrated in **Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Telangana**, while 17% are in the western states of Rajasthan, Gujarat, and Maharashtra.
- **Only 2% of nursing colleges** are in the northeastern states.
- The growth of nursing colleges also lags far behind the **81% growth rate of medical colleges**, with the number of undergraduate and postgraduate **medical seats surging at 110% and 114% respectively**, since 2014-15.
- **According to the World Health Organisation (WHO), approximately 27 million men and women make up the global nursing and midwifery workforce, accounting for nearly 50% of the global health workforce. “There is a global shortage of health workers, in particular nurses and midwives, who represent more than 50% of the current shortage in health workers.**

Current status of Health Infrastructure

- India had **7 physicians per 1,00,000 people in 2017** (in contrast to 98 in Pakistan, 100 in Sri Lanka and 241 in Japan).
- **53 beds per 1,00,000 people**(in contrast to 63 in Pakistan, 79.5 in Bangladesh, 415 in Sri Lanka and 1,298 in Japan).
- **7 nurses and midwives per 1,00,000 people**(in contrast to 220 in Sri Lanka, 40 in Bangladesh, 70 in Pakistan, and 1,220 in Japan).
- **India has among the highest out-of-pocket (OOP) expenditures** of all countries in the world- 62% of the total health expenditure in India is OOP.

Strong Demand

- Healthcare market in India is expected to **reach US\$ 372 billion by 2022**, driven by rising income, better health awareness, lifestyle diseases and increasing access to insurance.



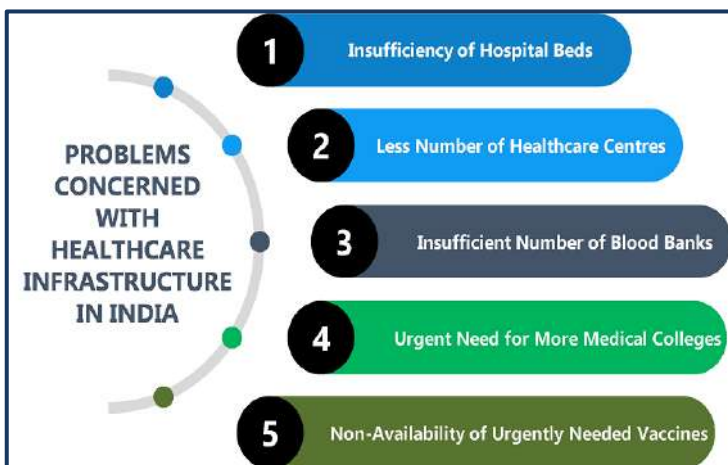
- As of 2021, the Indian **healthcare sector is one of India's largest employers**, as it employs a total of 4.7 million people.

Attractive opportunities

- In the Economic Survey of 2023, India's public expenditure on healthcare stood at 2.1% of GDP in 2021-22 against 1.8% in 2020-21.
- Two vaccines (Bharat Biotech's Covaxin and Oxford-AstraZeneca's Covishield manufactured by SII) were instrumental in medically safeguarding the Indian population against COVID-19.

Rising Manpower

- Availability of a large pool of well-trained medical professionals in the country.
- The number of allopathic doctors with recognised medical qualifications (under the I.M.C Act) registered with state medical councils/national medical council increased to 1.3 million in November 2021, from 0.83 million in 2010.



Issues and challenges

- Shortage of Staff and Equipment's:** Health care infrastructure is heavily skewed in favour of urban areas
- The evidence show that private health care market occupies a large share of hospitals (75%), hospital beds (50.7%) and medical institutions (54.3%) largely located in urban areas.
- No proper regulatory mechanism and monitoring:** According to WHO report published in 2016 Only one in five doctors in rural India is qualified to practice medicine.
- The report said that 31.4% of those calling themselves allopathic doctors were educated only up to class 12 and 57.3% doctors did not have a medical qualification.
- Lack of Affordability:** The contribution of private sector in healthcare expenditure in India is around 80 percent while the rest 20 percent is contributed by Public Sector.
- The private sector also provides for 58 percent of the hospitals and 81 percent of the doctors in India.

Government initiatives

- In the Union Budget 2023-24:**
 - Under the Union Budget 2023-24, the **Ministry of Health and Family Welfare** has been allocated Rs. 89,155 crore (US\$ 10.76 billion), an increase of 3.43% compared to Rs. 86,200.65 crore (US\$ 10.4 billion) in 2021-22.
 - PradhanMantriSwasthyaSurakshaYojana (PMSSY)** was allocated Rs. 3,365 crore (US\$ 0.41 billion)
 - Human Resources for Health and Medical Education** was allotted Rs. 6,500 crore (US\$ 780 million).
 - National Health Mission** was allotted Rs. 29,085 crore (US\$ 3.51 billion).
 - Ayushman Bharat – PradhanMantri Jan ArogyaYojana (AB-PMJAY)** was allotted Rs. 7,200 crore (US\$ 870 million).
 - Rs. 5,156 crore (US\$ 675.72 million) was allocated to the newly announced **PM-ABHIM** to **strengthen India's health infrastructure** and improve the country's primary, secondary and tertiary care services.
 - In July 2022, the **World Bank** approved a **US\$ 1 billion** loan towards India's PradhanMantri-Ayushman Bharat Health Infrastructure Mission.

Way ahead:

- India's healthcare sector is extremely diversified** and is full of opportunities in every segment, which includes providers, payers, and medical technology.

- **With the increase in the competition**, businesses are looking to explore the latest dynamics and trends which will have a positive impact on their business.
The hospital industry in India is forecast to increase to Rs. 8.6 trillion (US\$ 132.84 billion) by FY22 from Rs. 4 trillion (US\$ 61.79 billion) in FY17 at a CAGR of 16–17%.

Closing remarks

- **India is a land full of opportunities for players in the medical devices industry.** The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a greater proportion of the population.
- **Besides, Indian medical service consumers** have become more conscious towards their healthcare upkeep. Rising income levels, an ageing population, growing health awareness and a changing attitude towards preventive healthcare is expected to boost healthcare services demand in the future.
- **Greater penetration of health insurance** aided the rise in healthcare spending, a trend likely to intensify in the coming decade.
- The Government aims to develop India as a global healthcare hub, and is planning to increase **public health spending to 2.5% of the country's GDP by 2025.**

7.6 TRENDS IN CHILDHOOD IMMUNISATION

Context

- Over 4 million more children were vaccinated in 2022 compared to the year before, the World Health Organization (WHO) and United Nations Children's Fund (UNICEF).

Key facts

- **The number of children missing out on any vaccination** – so-called zero-dose children – improved from 18.1 million in 2021 to 14.3 million in 2022, nearly back to pre-pandemic 2019 level with 12.9 million.
- Coverage of a third dose of vaccine protecting against **diphtheria, tetanus, and pertussis (DTP3) recovered from 81% in 2021 to 84% in 2022.**
- The proportion of children receiving a first dose of measles vaccine **increased from 81% in 2021 to 83% in 2022, well below the 2019 level of 86%.**
- **Global coverage for the first dose of HPV in girls** raised from 16% in 2021 to 21% in 2022.
- **Coverage of yellow fever vaccine** in the countries at risk of it is 48%, well below the 80% coverage that is recommended.

Trend

- **Over 20.5 million children missed out** on one or more vaccines delivered through routine

immunisation services in 2022, compared to **24.4 million children in 2021.**

- The number remains higher than the 18.4 million children who missed out in 2019 before pandemic-related disruptions, underscoring the need for ongoing catch-up, recovery and system strengthening efforts.
- **The numbers were estimated from 183 countries**, using data based on the take-up of the DTP jab.
- It included children who got no vaccines at all as well as those who missed any of the doses necessary for protection. Globally, coverage rates were at **86 per cent pre-pandemic and 84 per cent in 2022.**
- **The progress is also unequal.** Large lower-middle income countries such as India and Indonesia have shown strong recoveries as they stepped up efforts to address the historic backsliding in immunisation caused by the COVID-19 pandemic.
- However, this has masked ongoing problems in many smaller and poorer countries.
- **The first dose measles vaccination** coverage increased to **83 per cent in 2022 from 81 per cent in 2021**, but remained lower than the 86 per cent achieved in 2019, according to WHO and UNICEF.

- Only rates of the cervical cancer-preventative human papillomavirus or HPV vaccination have returned to pre-pandemic levels. However, they remain below the **90 per cent target**, at **67 per cent in high-income countries** and **55 per cent in low- and middle-income countries** where the vaccine has been implemented.
- **Vaccination against one of the most contagious pathogens, measles, has not recovered as well as other vaccines. This has increased the risk of measles infection for an additional 35.2 million children.**

Immunization Agenda 2030

- **IA2030 sets an ambitious, overarching global vision** and strategy for vaccines and immunization for the decade 2021–2030.
- It was co-created with thousands of contributions from countries and organizations around the world.
- It draws on lessons from the past decade and acknowledges continuing and new challenges posed by infectious diseases (e.g. **Ebola, COVID-19**).

Timeline	Vaccines	Coverage (%)	Timeliness (%)
Birth	BCG	93	63.4
	OPV-0	67	97
6 weeks	OPV-1	96.5	58
	DPT-1	97	56.7
10 weeks	OPV-2	95	32.6
	DPT--2	95	39.4
14 weeks	OPV-3	91	22
	DPT-3	91	21.4
9-12 months	Measles	29.5	88.1

Key challenges

- **In 2022, 14.3 million infants did not receive an initial dose of DTP vaccine**, pointing to a lack of access to immunization and other health services, and an additional 6.2 million are partially vaccinated.
- Of the 20.5 million, just under 60% of these children live in 10 countries: **Angola, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Indonesia, Mozambique, Nigeria, Pakistan and the Philippines.**
- **Monitoring data at subnational levels is critical to helping countries prioritize and tailor vaccination strategies and operational plans to address immunization gaps and reach every person with life-saving vaccines.**

Closing remarks

- **World Health Assembly adopted the global strategy towards eliminating cervical cancer.** In this strategy, the first of the 3 pillars require the introduction of the HPV vaccine in all countries and has set a target of reaching **90% coverage.**
- **With introduction currently in 67% of Member States**, large investments towards introduction in low and middle-income countries will be required in the next 10 years as well as programme improvements to reach the 90% coverage targets in low and high-income settings alike will be required to reach the 2030 targets.

7.7 ASSESSING AYUSHMAN PM-JAY

Context

- Over a third of hospitals empanelled under Ayushman Bharat are inactive, official data showed, in a worrying trend for the world's largest health insurance scheme aiming for universal health coverage.

Details

- Out of 27,000 hospitals empanelled for **Ayushman Bharat PradhanMantri Jan Arogya Yojana (PM-JAY)** since its 2018 launch, **only 18,783 remain active**, the latest health ministry data showed.

- Among the rest, 4,682 hospitals have been inactive since the beginning, having never catered to a single PM-JAY beneficiary.
- Further, 3,632 hospitals turned inactive in last six months, taking the total number of inactive hospitals to 8,314.
- PMJAY offers free health cover of up to ₹5 lakh to over 107.4 million poor and vulnerable families (about 500 million beneficiaries), with free and cashless treatment through a network of private (15,000) and government (12,000) empanelled hospitals across the country.
- National Health Authority (NHA) is implementing and executing the scheme under the Union health ministry.

About Ayushman Bharat PradhanMantri Jan ArogyaYojana

- **Aim:** The scheme was launched in 2018 to achieve the vision of Universal Health Coverage (UHC).
- It is a **Centrally Sponsored Scheme**.
- PM-JAY was earlier known as the National Health Protection Scheme (NHPS) before being rechristened. It subsumed the then-existing RashtriyaSwasthyaBimaYojana (RSBY) which had been launched in 2008.

- It 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 10.74 crores poor and vulnerable families (approximately 50 crores beneficiaries) that form the bottom 40% of the Indian population.
- There are no restrictions on the number of family members, age, or gender.

Eligibility

- Households included are based on the deprivation and occupational standards of the Rural and Urban Socio-Economic Caste Census 2011 (SECC 2011).
- It provides the point of service, the beneficiaries in the hospital, with cashless access to medical services.
- The program has expanded its reach to 33 states/regions in the Union, making the lives of beneficiaries easier while receiving treatment.
- Under the program, more than one crore of treatment is available to beneficiaries. More than half of the total number of beneficiaries who receive benefits under this system are female.

national health agency

ABOUT PMJAY

AYUSHMAN BHARAT – PRADHAN MANTRI JAN AROGYA YOJANA PMJAY

- A cover of Rs. 5 lakh per family per year
- 10.74 crore poor & vulnerable families entitled as per SECC. No cap on family size or age
- States given flexibility to decide on mode of implementation
- Benefits will be portable across the country
- Around 85% of rural families and 60% of urban families have been identified
- To be launched on 25th September – the birth anniversary of Pandit Deendayal Upadhyay

Features

Universal Health Coverage

- PM-JAY aims to cover over 100 million poor and vulnerable families, approximately 500

million beneficiaries, with a health insurance cover of up to ₹5 lakhs per family per year for specified secondary and tertiary care treatments.

Cashless Treatment

- Beneficiaries can avail of **cashless and paperless treatment** at empanelled public and private hospitals across India.

Empanelled Hospitals

- The scheme has a network of both public (government) and private hospitals. As of the data mentioned earlier, **around 15,000 private and 12,000 government hospitals** are empanelled under PM-JAY.

No Cap on Family Size

- The scheme covers the entire family, **including up to five members**, and there is no cap on the family size or age of family members.

Pre-existing Conditions

- PM-JAY covers **pre-existing conditions** from day one of enrollment, ensuring access to treatment for existing health issues.

Portability

- The scheme is portable across India, meaning beneficiaries can avail treatment in any empanelled hospital in any state or union territory.

Closing remarks

- After nearly 6 years since the inception of the PM-JAY program, the coverage of the scheme is still inadequate.
- Despite the huge burden of health expenses arising from the COVID-19 pandemic, coverage, and awareness about the scheme among the people remains scarce.
- The local government bodies and health workers need to take the initiatives to identify such families and ensure that they avail of this scheme to reduce the OOPE toward health care in future.

7.8 SHORT ARTICLE

India's Largest Radio Telescope

Context

- An international team of astronomers has published the results from monitoring pulsars, **called 'nature's best clocks', by using six of the world's most sensitive radio telescopes**, including India's largest telescope - the upgraded Giant Metrewave Radio Telescope (u-GMRT).

Details

- India's Giant Metrewave Radio Telescope (GMRT) was **one of the world's six large telescopes** that played a key role in finding the first direct evidence for the relentless vibrations of the fabric of the universe, caused by **ultra-low frequency gravitational waves**.

Giant Metre wave Radio Telescope (GMRT)

About	• The Giant Metrewave Radio Telescope (GMRT), is an array of thirty fully steerable parabolic radio telescopes of 45 metre diameter, observing at metre wavelengths . It is one of the largest and most sensitive low-frequency radio observatories in the world.
Location	• It is located about 80 km north of Pune at Khodad.
Aim	• To determine the epoch of galaxy formation in the universe .
Established	• The GMRT was conceptualised in the late 1980s , built and made operational during the 1990s, and was opened for use by the global astronomy community in 2002.
Purpose	• GMRT pioneered new techniques in antenna design, receiver systems, and signal transport over optical fibre. GMRT has produced important discoveries in domains such as pulsars, supernovae, galaxies, quasars , and cosmology, greatly enhancing our understanding of the Universe.

- Astronomers **from all over the world** regularly use this telescope to observe many different astronomical objects such as HII regions, galaxies, pulsars, supernovae, and Sun and solar winds.

WHO Report on WASH

Context

- WHO urges governments to take action with support from UN agencies, multilateral partners, the private sector and civil society organisations to reduce the WASH-attributable burden of disease.

Key findings of the report

- Unsafe drinking water, sanitation and hygiene (WASH) were responsible for 395,000 deaths among children under the age of five in 2019 according to a new World Health Organization (WHO) report named ***Burden of Disease Attributable to unsafe drinking water, sanitation and Hygiene.***
- Out of these, 273,000 deaths are attributed to diarrhoea, while 112,000 deaths are from acute respiratory infections.
- **The report showed that half of the world's population still does not have adequate access** to drinking water, sanitation and hygiene causing the death of at least 1.4 million people in 2019.
- **The report also mentioned that diarrhoeal diseases accounted for most of the attributable burden**, with more than a million deaths and 55 million *Disability-adjusted life years (DALY)*. One DALY represents the loss of the equivalent of one year of full health.

- **The WHO report assessed data from 183 member states for the year 2019.** It pointed out that 771 million people lack access to safe water and 1.7 billion people don't have a toilet, globally.
- **The WHO also noted other major diseases attributable to unsafe WASH** – namely undernutrition and soil-transmitted helminthiasis (STH). Soil-transmitted helminthiasis are transmitted by eggs in human faeces, which in turn contaminate soil in areas where sanitation is poor.
- **STHs affect an estimated 1.5 billion people or 24 per cent of the world's population.** WASH also attributes to 10 per cent of the burden of undernutrition. There are significant disparities between regions and income groups.
- Almost 384,000 diarrhoea deaths in every age group in 2019 were attributed to inadequate hand hygiene practices in Africa and South-East Asia.
- But the WHO report also had some silver linings with many countries making rapid progress in improving access to WASH. In Jordan, there was an **increase of 11 per cent in access to safe drinking-water services between 2015 and 2020 (From 75 per cent to 86 per cent).**

Childhood Diabetes and Deaths in India

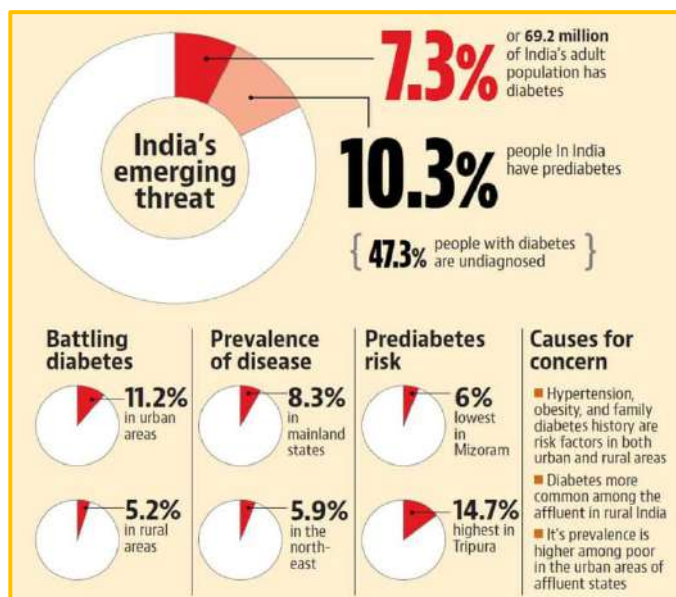
Context

- India, a country with the highest disability-adjusted life-years (DALY), also saw the highest number of childhood diabetes cases and deaths in 2019 in the world.

Details

- One DALY represents the loss of the equivalent of one year of full health, according to the World Health Organization.
- Globally, there has been a **39.4 per cent increase in incident cases since 1990.**
- For many years, childhood diabetes generally constituted type 1 diabetes (where the pancreas does not make insulin).
- An increasing prevalence of type 2 diabetes in children (where the pancreas makes less insulin than it used to, and the body becomes resistant to insulin) is being recorded due to the global epidemic of childhood obesity.

- The largest increase in cases (52.06 per cent) was recorded in children aged 10 to 14 years and the smallest increase (30.52 per cent) in those aged between 1 and 4 years. Incidence rate, which describes how quickly a disease occurs in a population, was 10.92 and 11.68 in 1990 and 2019, respectively.
- Further, the low-middle SDI region saw the highest increase in 2019 (with 55,496 cases), and the high-middle SDI region topped the list in diabetes incidence.
- In 2019, the low SDI region showed the highest number of diabetes-associated deaths, (with 2,367 fatal cases) and the most diabetes-associated DALYs (59.92 per cent increase in 2019 from 1990.)



Bharat 6G Alliance

Context

- The Department of Telecommunications (DoT) has launched the Bharat 6G Alliance, a platform to bring together stakeholders from academia, industry, government and civil society to foster innovation and collaboration in the development of 6G technology.

Details

- The Bharat 6G Alliance was inaugurated by the Union Minister of Communications, Electronics & Information Technology and Railways, on the occasion of the Digital Communication Innovation Square (DCIS) Awards Ceremony held on July 5, 2023.
- The minister felicitated more than 75 innovators who have contributed to the advancement of digital communication technologies in India.

About Bharat 6G Alliance (B6GA)

Primary objective	<ul style="list-style-type: none"> • The primary objective of B6GA is to <u>understand the business and societal needs of 6G beyond technology requirements</u>, foster consensus on these needs, and promote high-impact open research and development (R&D) initiatives.
Aim	<ul style="list-style-type: none"> • <u>B6GA aims to bring together Indian startups, companies, and the manufacturing ecosystem to establish</u> consortia that drive the design, development and deployment of 6G technologies in India. • <u>By accelerating standards-related patent creation within the country</u> and actively contributing to international standardization organizations such as 3GPP and ITU, B6GA seeks to position India at the forefront of 6G innovation.
Goals	<ul style="list-style-type: none"> • One of the key goals of B6GA is to facilitate market access for Indian telecom technology products and services, enabling the country to emerge as a global leader in 6G technology. • To achieve this, These efforts shall <u>promote technology ownership and indigenous manufacturing, create a culture of technology co-innovation, reduce imports</u>, boost export opportunities and augment creation of Intellectual Property.

About Telecom Technology Development Fund (TTDF)

- **Telecom Technology Development Fund (TTDF) scheme was launched by DoT/USOF on 01.10.2022. 5% of annual collections from USOF will be available for TTDF** Scheme for funding research & development of technologies, products, and services.
- **The scheme is envisaged to bridge digital divide by developing** and manufacturing state-of-the-art technologies and to form synergies among academia, start-ups, research institutes, and the industry to build and develop the telecom ecosystem
- The **Telecom Technology Development Fund (TTDF) scheme entails grants to Indian entities** to encourage and induct indigenous technologies tailor-made to meet domestic needs.
- **Under the TTDF scheme, USOF, DoT is also targeting to develop standards to meet countrywide requirements and create the ecosystem for research, design, prototyping, use cases, pilots, and proof of concept testing, among others.**

National Research Foundation Bill

Context

- The Union Cabinet, chaired by the Prime Minister Shri Narendra Modi, today approved the introduction of the National Research Foundation (NRF) Bill, 2023 in the Parliament.

Details

- The approved Bill will pave the way to **establish NRF that will 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 bill, after approval in the Parliament, will establish NRF, an apex body to provide high-level strategic direction of scientific research in the country as per recommendations of the **National Education Policy (NEP), at a total estimated cost of Rs. 50,000 crores during five years (2023-28).**

About the Bill

- The Department of Science and Technology (DST) will be the administrative Department of NRF which will be governed by a Governing Board consisting of eminent researchers and professionals across disciplines.
- Since the scope of the NRF is wide-ranging - impacting all ministries - the Prime Minister will be the ex-officio President of the **Board and the Union Minister of Science & Technology & Union Minister of Education will be the ex-officio Vice-Presidents.**
- NRF's functioning will be governed by an Executive Council chaired by the Principal Scientific Adviser to the Government of India.
- The bill will also repeal the **Science and Engineering Research Board (SERB)** established by an act of Parliament in 2008 and subsume it into **NRF which has an expanded mandate and covers activities over and above the activities of SERB.**

About National Research Foundation (NRF)

Focus areas	• It will focus on <u>creating a policy framework and putting in place regulatory processes</u> that can encourage collaboration and <u>increased spending by the industry on R&D.</u>
Collaboration	• NRF will forge collaborations among the <u>industry, academia, and government departments and research institutions, and create an interface mechanism</u> for participation and contribution of industries and State governments in addition to the scientific and line ministries.
Administration	• The NRF would be administratively housed in the <u>Department of Science and Technology (DST).</u>

	<ul style="list-style-type: none"> The NRF's functioning will be governed by an executive council chaired by the Principal Scientific Advisor to the government of India.
Composition	<ul style="list-style-type: none"> It would have a 16-member governing board with <u>two members from DST, five from industry, one from humanities, and six experts</u> who would be selected depending on the nature of the project being evaluated. Prime Minister will be the ex-officio president of the board and the Minister of Science and Technology and the Minister of Education will be the ex-officio vice presidents.
Funding	<ul style="list-style-type: none"> The estimated cost of the project during five years (2023-28) is ₹50,000 crore.

NCD guidelines for Palliative care

Context

- India is home to nearly 20% of the world's population, two-thirds of which reside in rural areas. Apart from a rising population, India has experienced a steep rise in the burden of lifestyle-related non-communicable diseases.

Details

- Nearly 1.4 million people** are diagnosed with cancer in India every year while diabetes, hypertension, and respiratory diseases are also on the rise. All these diseases need palliative care sooner or later in the disease trajectory.

About palliative care

- Palliative care is the branch of medicine focusing on improving the quality of life and preventing suffering** among those with life-limiting illnesses.

Aim

- It aims to identify patients at risk of **over-medicalisation at the expense of quality of life** and financial burden on the family. It is often misinterpreted as end-of-life care. However, palliative care aims to improve the quality of life by addressing the physical, psychological, spiritual, and social domains of the health of people suffering from life-limiting diseases like heart failure, kidney failure, certain neurological diseases, cancer, etc.

Need of palliative care

- Palliative care in India has largely been available at tertiary healthcare facilities in urban areas. Due to this skewed availability of services, it is accessible to only 1-2% of the estimated 7-10 million people who require it in the country.
- For example:** A medical oncologist from Kerala, as many as 7 out of 10 patients he sees daily need palliative care.
- Post-independence India has made considerable efforts to improve the health of its people.** A three-tier health system, multiple national health programmes and schemes, and the **Ayushman Bharat Health Insurance Scheme** are all positive steps taken towards universal health coverage.
- But despite these efforts, **55 million people in India are pushed below the poverty line every year** due to health-related expenditures. Over-medicalisation plays a significant role in this financial burden.

Government programme

- The **National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke (NPCDCS)**, now the **National Programme for Prevention & Control of Non-Communicable Diseases (NP-NCD)**, includes chronic diseases whose treatment contributes the most to health-related expenses. These diseases progress to a stage where, in an ideal scenario, palliative care should take over curative care.

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Zoonotic Diseases

Context

- As part of AazadiKaAmritMahostav, the Department of Animal Husbandry and Dairying organized an awareness Programme on zoonotic disease through Common Service Centres network. More than 1.5 lac farmers participated the awareness programme across the country connected through CSC Network.

Details

- Department of Animal Husbandry and Dairying addressed the farmers and emphasized the risks associated with zoonotic disease and its impact on livestock sector and national economy.
- Department is implementing **National Animal Disease Control Programme (NADCP)**, a flagship scheme launched by Prime Minister in September 2019 for control of two major prevailing zoonotic disease Le. **Foot & Mouth Disease and Brucellosis by vaccinating 100% buffalo, sheep, goat and pig population** for FMD and 100% bovine female calves of 4-8 months of age for brucellosis.
- Department is also assisting States/UTs for vaccination against zoonotic diseases like anthrax and rabies and **'Control of Emergent and Exotic Diseases**.
- To minimize socio economical losses, Department is providing veterinary service at farmer's doorstep through Mobile Veterinary Units (MVUS) for disease diagnosis, treatment, minor surgeries and awareness in care & management of diseased animals etc.

About Zoonotic disease

About	<ul style="list-style-type: none"> A zoonosis is an infectious disease of humans caused by a pathogen (an infectious agent, such as a bacterium, virus, parasite or prion) that can jump from a non-human (usually a vertebrate) to a human and vice versa.
Modes of Transmission	<ul style="list-style-type: none"> Direct Zoonosis:Zoonoses have different modes of transmission. In direct zoonosis the disease is directly transmitted from non-humans to humans through media such as air (influenza) or through bites and saliva (rabies). Reverse zoonosis or Anthroponosis: In contrast, transmission can also occur via an intermediate species (referred to as a vector), which carry the disease pathogen without getting sick. When humans infect non-humans, it is called reverse zoonosis or anthroponosis.

Causes	<ul style="list-style-type: none"> • Zoonotic transmission can occur in any context in which there is contact with or consumption of animals, animal products, or animal derivatives. • This can occur in a companionistic (pets), economic (farming, trade, butchering, etc.), predatory (hunting, butchering or consuming wild game) or research context.
Risk associated	<ul style="list-style-type: none"> • According to the World Health Organization (WHO), zoonoses account for about 60% of known infectious diseases in humans and 75% of new or emerging ones.

Guidelines to Protect Children from the Harmful Impacts of Food Marketing

Context

- The World Health Organization (WHO) released July 3, 2023 new guidelines on shaping policies to protect children from the harmful impacts of food marketing that promote unhealthy dietary choices.

Details

Policy Recommendations

- The guideline recommends implementation of comprehensive mandatory policies to protect children of all ages from the **marketing of foods and non-alcoholic beverages that are high in saturated fatty acids, trans-fatty acids, free sugars and / or salt (HFSS).**
- **The most frequently marketed food categories** were fast food, sugar-sweetened beverages, chocolate and confectionery, salty and savoury snacks, sweet bakery items and snacks, breakfast cereals and desserts, according to WHO.
- **Evidence showed that food marketing mainly promoted HFSS foods,** the United Nations health agency noted. Food marketing was prevalent in places such as schools and sports clubs where children gather; during children's television viewing times; digital spaces popular among young people and in magazines targeting children and adolescents, it observed.
- The **guidelines build on the 2010 WHO 'Set of recommendations** on the marketing of foods and non-alcoholic beverages to children' and take into consideration more recent evidence specific to children and to the context of food marketing.
- **The survey, meant for children of 9–17 years of age,** also provided an instant diet report to each respondent. Over 13,000 children responded from various states of India.
- **Most school children were not eating a balanced diet,** with about 66 per cent of children having a low frequency of intake of cereals and millets, the survey revealed. **Around 45 per cent children had a low frequency of intake of vegetables, it showed.**
- **The survey found that packaged food was more popular among** children than non-packaged food and around 53 per cent children consumed packaged food or beverages at least once a day.

New marketing media have also evolved, most notably digital marketing, which poses a growing concern

- Policies should be formulated keeping in mind the best interest of children and also the country context.
- This includes the country's nutritional situation, cultural context, locally available foods, dietary customs, available resources and capacities, existing governance structures and mechanisms among others.
- A total of 179 studies published from 2009 onwards were taken into consideration and it was found that "marketing of HFSS foods remains pervasive and persuasive across the globe".

Naegleria Fowleri: A Brain-Eating Amoeba

Context

- A 15-year-old boy in Kerala's Alappuzha district has died due to a rare infection caused by Naegleriafowleri or "brain-eating amoeba" after a week of high fever and rapid deterioration in his vitals.

Details

- According to experts, *Naegleria fowleri* has existed for a long time in nature but cases of infection are extremely rare. Last December, a 50-year-old South Korean man and in March, a man in Florida succumbed to the infection.
- Dr PN Renjen, Senior Consultant, Neurology, at Indraprastha Apollo Hospitals, New Delhi, says that the exact reason for an infection is not fully understood. **“However, warm water temperatures, particularly during the summer months, create favourable conditions for the amoeba’s growth.”**

About *Naegleriafowleri*

About	<ul style="list-style-type: none"> • <i>Naegleria</i> is an amoeba, a single-celled organism, and only one of its species, called <i>Naegleriafowleri</i>, can infect humans.
Discovered	<ul style="list-style-type: none"> • It was first discovered in Australia in 1965 and is commonly found in warm freshwater bodies, such as hot springs, rivers and lakes.
Symptoms of Primary Amebicmeningoencephalitis (PAM)	<ul style="list-style-type: none"> • The first signs of PAM start showing within one to 12 days after the infection. In the initial stages, they might be similar to symptoms of meningitis, which are headache, nausea and fever. In the later stages, one can suffer from a stiff neck, seizures, hallucinations, and even coma. • The infection spreads rapidly and on average causes death within about five days.
Treatment	<ul style="list-style-type: none"> • As the <i>Naegleria fowleri</i> infection is rare and progresses quickly, scientists haven’t been able to identify any effective treatments yet. • At present, doctors treat it with a combination of drugs, including amphotericin B, azithromycin, fluconazole, rifampin, miltefosine, and dexamethasone.
How it infects?	<ul style="list-style-type: none"> • The amoeba enters the human body through the nose and then travels up to the brain. This can usually happen when someone goes for a swim, or dive or even when they dip their head in a freshwater body. • In some cases, it was found that people got infected when they cleaned their nostrils with contaminated water. • Scientists haven’t found any evidence of the spreading of <i>Naegleriafowleri</i> through water vapour or aerosol droplets. • Once <i>Naegleriafowleri</i> goes to the brain, it destroys brain tissues and causes a dangerous infection known as primary amebic meningoencephalitis (PAM).

Quantum Supercomputer

Context

- Microsoft announced that they had figured out a way to create an elusive kind of particle that could potentially revolutionise quantum computing.

Details

- The claim pertains to particles called Majorana zero modes, whose unique properties could help build quantum computers that are much less fragile than they are today, making them computationally superior.

What does ‘Majorana’ mean?

- All subatomic particles that make up matter are called **fermions.** (More accurately, only fermions can make up matter.)
- In **1928, the British physicist Paul Dirac wanted to understand how quantum mechanics** would change if it accommodated the special theory of relativity as well. The result was the Dirac equation, which described the behaviour of subatomic particles that moved at near the speed of light.

- **Dirac noticed that the equation predicted the existence of an antiparticle for each particle**, such that if the two meet, they annihilate each other. Based on his prediction, scientists found the first antiparticle, the positron (or the anti-electron), in 1932. The discovery has been hailed as a good example of theory leading experiment.
- **In 1937, the Italian physicist Ettore Majorana** found that the Dirac equation also allowed particles that satisfied certain conditions to be their own antiparticles. In his honour, fermions that are their own antiparticles are called Majorana fermions.
- One subatomic particle that physicists think could be **Majorana fermions are neutrinos.**

About Quantum Computing

About	<ul style="list-style-type: none"> • Quantum computing is a sophisticated approach to making parallel calculations, using the physics that governs subatomic particles to replace the more simplistic transistors in today's computers.
Unit	<ul style="list-style-type: none"> • Quantum computers calculate using qubits, computing units that can be on, off or any value between, instead of the bits in traditional computers that are either on or off, one or zero. • The qubit's ability to live in the in-between state – called superposition – adds a powerful capability to the computing equation, making quantum computers superior for some kinds of math.
Working	<ul style="list-style-type: none"> • Instead of bits, quantum computers use qubits. Rather than just being on or off, qubits can also be in what's called 'superposition' – where they're both on and off at the same time, or somewhere on a spectrum between the two. • A qubit allows for uncertainty. • The other thing that qubits can do is called entanglement. In entanglement, two particles are linked together, even if they're physically separate.

Guillain-Barre: A Neurological Disorder

Context

- A surge in cases of Guillain-Barre Syndrome (GBS) in Peru has brought forward concerns over the links between the novel coronavirus (COVID-19) and the rare neurological disorder.

Details

- The syndrome was among the prolonged neurological issues, known as long COVID complications, reported around the world following the onset of the COVID-19 pandemic.
- Peru has declared a 90-day national health emergency as 182 cases have been reported nationwide through June 2023, along with four deaths.
- The country saw a large outbreak of GBS in 2019 as well. A study published in the biomedical library National Library of Medicine identified 683 suspected or confirmed GBS cases in the country from May 20-July 27, 2019.

About Guillain-Barresyndrome (GBS)

About	<ul style="list-style-type: none"> • It is a condition that affects the nerves outside the brain and spinal cord, called the peripheral nervous system. Sometimes, the body's immune system attacks these nerves by mistake, causing weakness, numbness, tingling, or pain in different parts of the body. • These can then expand to the rest of the body and eventually cause paralysis, which can last 6-12 months or longer.
Symptoms	<ul style="list-style-type: none"> • The syndrome can affect the nerves that control muscle movement as well as those that transmit pain, temperature and touch sensations.

	<ul style="list-style-type: none"> This can result in muscle weakness and loss of sensation in the legs and / or arms. While it is more common in adults and in males, people of all ages can be affected.
Causes	<ul style="list-style-type: none"> The syndrome usually occurs following a bacterial or viral infection or, on rarer occasions, following vaccinations. People who develop GBS do so several days or weeks after they have been sick with diarrhoea or a respiratory illness.
Treatment	<ul style="list-style-type: none"> There is no specific treatment for GBS, but some therapies can help reduce the damage to the nerves and speed up recovery. These include plasma exchange and immunoglobulin therapy.

Quality Control Orders by DPIIT

Context

- Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry has successfully notified two new **Quality Control Orders (QCOs)** on July 5, 2023.

Details

- These QCOs on 'Potable Water Bottles' and 'Flame-Producing Lighters' will come into effect six months from the date of notification. These QCOs aim to strengthen the quality ecosystem in India and enhance public health and safety of consumers.
- The QCO for '**Potable water bottles**' mandates **compulsory certification** under the appropriate IS Standard for the production and import of potable water bottles made of **copper, stainless steel, or aluminium**.

About the QCO

- The QCO for '**Flame-Producing Lighter**' mandates compulsory certification under IS Standards for '**Safety Specification for Lighters**', and '**Safety Specifications for Utility Lighters**', for the Flame lighters manufactured for domestic market or imported into India.
- A **lighter is a portable device** which creates a flame and can be used to ignite a variety of items, such as cigarettes, gas lighter, fireworks, candles or campfires.
- It **consists of a metal or plastic container filled** with a flammable liquid or compressed gas, a means of ignition to produce the flame,

and some provision for extinguishing the flame. **There are two types of lighters: Flame and Spark type.**

- To **support the domestic micro and small industries**, relaxations have been granted in terms of the timeline for implementing the QCO. **This aims to safeguard their interests while ensuring smooth implementation** and fostering an environment conducive to ease of doing business.
- DPIIT has taken concrete steps to establish a **comprehensive quality control regime in India**. One of the key measures undertaken by DPIIT is the development of mandatory QCOs with the aim to curb the import of sub-standard products, prevent unfair trade practices, and ensure the safety and well-being of consumers, as well as the environment.
- The **implementation of the QCO is envisaged** to improve manufacturing quality standards and enhance the brand value of '**Make in India**' products. **DPIIT is actively developing quality testing labs**, product manuals, and other essential components, fostering the growth of a robust quality ecosystem in India.
- These initiatives reflect the Government of India's unwavering commitment to developing world-class products of exceptional quality within the country, **aligning with the Prime Minister's vision of creating an "Aatmanirbhar Bharat" or self-reliant India.**

Chandrayaan-3

Context

- India's third mission to the moon took off. The mission aims to achieve what its predecessor could not – land softly on the lunar surface and explore it with a rover.

Details

- A successful soft landing will make India the fourth country, after the United States, Russia, and China, to achieve the feat. The position remains vacant after the missions from Israel and India in 2019 crash-landed and the spacecraft carrying a lander-rover from Japan and a rover from UAE failed in 2022.
- Chandrayaan-2 was India's most ambitious space mission to date. It consisted of an orbiter, a lander named Vikram, and a rover named Pragyan.
- The orbiter successfully entered the lunar orbit and is still functioning, but the lander and the rover crashed during the descent phase in September 2019. The cause of the failure was attributed to a software glitch that resulted in a loss of communication and control.

About Chandrayaan-3



Objective	<ul style="list-style-type: none"> The main objective of Chandrayaan-3 is to demonstrate India's capability to land softly on the moon and operate a rover on its surface. The lander and rover will carry several scientific instruments to study the lunar terrain, mineralogy, seismology, and thermal properties.
Components	<ul style="list-style-type: none"> It is a modified version of Chandrayaan-2, with some key differences. It does not have an orbiter, as it will use the existing one from Chandrayaan-2. It has a new lander and rover, with improved design and performance. It also has more fuel and thrusters to ensure a smoother landing. Propulsion modular.
Launch Vehicle	<ul style="list-style-type: none"> The mission will use the same launch vehicle, the GSLV Mk III, as Chandrayaan-2.
Communicate	<ul style="list-style-type: none"> It will then communicate with Earth via the existing orbiter from Chandrayaan-2 and take images 100 km from Moon's orbit. The orbiter has an estimated lifespan of seven years.

Fusobacterium Bacteria

Context

- A new study could help expand the range of treatment options for a condition that affects millions of women with chronic pain and infertility.

Details

- The experiment was conducted with a cohort of 155 women in Japan, of which 79 were diagnosed with endometriosis while 76 were

healthy. Researchers found a species of **Fusobacterium bacteria** in **64% of endometriosis patients**, while it was present in 7% of those who did not have the condition.

- To assess the direct effect of the bacteria on the disease, the scientists transplanted endometrial tissue inside the abdominal cavity of two sets of mice, one infected with a

bacterium of the genus *Fusobacterium* and another without the bacteria.

- They found that the bacteria triggered the growth of larger lesions of endometriosis in the former mice, relative to the latter.

About Endometriosis

- Endometriosis is a disease in which tissue similar to the lining of the uterus grows outside the uterus. It can cause severe pain in the pelvis and make it harder to get pregnant.
- Endometriosis can start at a person's first menstrual period and last until menopause.
- With endometriosis, tissue similar to the lining of the uterus grows outside the uterus. This leads to inflammation and scar tissue forming in the pelvic region and (rarely) elsewhere in the body.
- The cause of endometriosis is unknown. There is no known way to prevent endometriosis. There is no cure, but its symptoms can be treated with medicines or, in some cases, surgery.
- It causes a chronic inflammatory reaction that may result in the formation of scar tissue (adhesions, fibrosis) within the pelvis and other parts of the body.
- **Symptoms:** Endometriosis often causes severe pain in the pelvis, especially during menstrual periods. Some people also have pain during sex or when using the bathroom. Some people have trouble getting pregnant.
- **Causes:** Endometriosis is a complex disease that affects many women globally from the onset of their first period (menarche) through menopause, regardless of ethnic origin or social status.
- **Impact:** Endometriosis has significant social, public health and economic implications. It can decrease quality of life due to severe pain, fatigue, depression, anxiety and infertility.
- **Prevention:** At present, there is no known way to prevent endometriosis. Enhanced awareness, followed by early diagnosis and management may slow or halt the natural progression of the disease and reduce the long-term burden of its symptoms, including

possibly the risk of central nervous system pain sensitization. Currently there is no cure.

Risk of Coexistence of TB and Diabetes Mellitus

Context

- India has been experiencing the double burden of two debilitating and severe epidemics – type 2 diabetes (a.k.a. diabetes mellitus, DM) and tuberculosis (TB). The figures for both are staggering.

Details

- Currently, India has around 74.2 million people living with diabetes while TB affects 2.6 million Indians every year. Yet few know how deeply these diseases are interlinked.
- DM increases the risk of developing respiratory infections. DM is a major risk factor that increases the incidence and severity of TB.
- Also, DM and TB co-infections adversely affect TB treatment outcomes in a patient. The worry is that among people with TB, the prevalence of DM was found to be 25.3% while 24.5% were pre-diabetic, in a 2012 study in tuberculosis units in Chennai.

How DM and TB work together?

- DM not only increases the risk of TB, it also delays the sputum smear and culture conversion of an individual affected by both diseases.
- In other words, reducing the number of TB bacteria to below the threshold required to claim they have 'healed' will take longer than usual.
- DM impairs cell-mediated immunity; uncontrolled DM affects the cytokine response and alters the defences in the alveolar macrophages.
- The altered functions of small blood vessels in the lung (due to hyperglycaemia) along with poor nutritional status may facilitate the invasion and establishment of TB.
- As people with diabetes have already compromised immune function, the risk of TB

infection is high. They will also have a higher bacterial load.

- **The coexistence of TB and DM in patients may also modify TB symptoms**, radiological findings, treatment, final outcomes, and prognosis. Individuals with TB and DM are more likely to have cavitory lesions in lower lung fields.
- **2016 study revealed that the TB-DM group showed reduced lung functioning** after TB treatment completion compared to the TB non-DM group. There was a greater

improvement in radiographic scores among people with TB non-DM compared to DM.

- **DM also increases the likelihood of unfavourable TB treatment outcomes**, such as treatment failure, relapse/reinfection, and even death.
- So people with DM and TB suffer more severely and must fight harder to survive – illustrating the greater impact of the twin burden of DM and TB not just on patients but also on the healthcare system, their families, and their communities.

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Organic Matter on Mars

Context

- The United States National Aeronautics and Space Administration's (NASA) Perseverance rover has discovered evidence of organic compounds in a Martian crater, offering clues on the potential habitability of the planet.

Details

- **Organic compounds are carbon-based molecules.** Other elements, such as hydrogen, oxygen, nitrogen, phosphorus and sulphide, are often found in them.
- Earlier, **researchers had found a variety of organic chemicals** with a **Martian origin** in meteorites sent from Mars as well as in Gale Crater. While earlier missions offered insightful data, the most recent research adds new evidence that deepens our understanding of Mars.
- The results reveal that Mars has a more complex organic geochemical cycle than previously thought, implying the existence of multiple reservoirs of potential organic molecules on the planet.

About organic matter

- Organic matter can be formed by a **variety of biological and non-biological processes**. These possible Martian organics could have originated from geological processes or chemical reactions, which can also produce organic molecules.

- Organic compounds can be created by processes not related to life. They are the key building blocks of life on Earth, as they form the basis of proteins, nucleic acids, carbohydrates, lipids and other biomolecules.

About Perseverance rover

Mission for	<ul style="list-style-type: none"> Perseverance, nicknamed Percy, is a car-sized Mars rover designed to explore the crater Jezero on Mars as part of NASA's Mars 2020 mission.
Component	<ul style="list-style-type: none"> Perseverance has a similar design to its predecessor rover, Curiosity, from which it was moderately upgraded. It carries seven <u>primary payload instruments, nineteen cameras, and two microphones.</u> The rover also carried the mini-helicopter Ingenuity to Mars, an experimental aircraft and technology showcase that made the first powered flight on another planet on 19 April 2021.
Objectives	<ul style="list-style-type: none"> Looking for habitability: Identify past environments that were capable of supporting microbial life. Seeking bio-signatures: Seek signs of possible past microbial life in those habitable environments, particularly in specific rock types known to preserve signs over time. Caching samples: Collect core rock and regolith ("soil") samples and store them on the Martian surface. Preparing for humans: Test oxygen production from the Martian atmosphere.

Bird Flue

Context

- The recent surge in bird flu outbreaks among mammals could help the virus spread more easily among humans, United Nations agencies Food and Agriculture Organization (FAO), the World Health Organization (WHO) and World Organisation for Animal Health (WOAH).

Details

- A new H5N1 strain of bird flu explosively spread to new geographical regions** earlier this year, the agencies said. The strain, which was highly contagious to wild birds, infected and killed a variety of mammal species and raised fears of a pandemic among humans.
- Avian influenza viruses normally spread among birds**, but the increasing number of H5N1 avian influenza detections among mammals – which are biologically closer to humans than birds are – raises concern that the virus might adapt to infect humans more easily.
- Human bird flu cases are usually the result of direct or indirect exposure to infected live or dead poultry or contaminated environments.**
- About 10 countries have reported cases of avian flu outbreaks in both land and sea mammals since 2022, including in farmed mink in Spain, seals in the United States, and sea lions in Peru and Chile. Outbreaks have been reported in 26 species and H5N1 was recently detected in cats in Poland.**

About Bird Flue

Caused by	<ul style="list-style-type: none"> Avian influenza or bird flu refers to the disease caused by infection with avian (bird) influenza (flu) Type A viruses.
Transmission	<ul style="list-style-type: none"> Bird flu viruses do not normally infect humans. However, sporadic human infections with bird flu viruses have occurred. The links below offer more information about bird flu. There are lots of different strains of bird flu virus. Most of them don't infect

	<p>humans. But there are 4 strains that have caused concern in recent years:</p> <ul style="list-style-type: none"> ○ H5N1 (since 1997) ○ H7N9 (since 2013) ○ H5N6 (since 2014) ○ H5N8 (since 2016)
Global impact	<ul style="list-style-type: none"> • Avian influenza outbreaks can have heavy consequences for the poultry industry, the health of wild birds, farmer’s livelihoods as well as international trade.

Duchenne’s Muscular Dystrophy

Context

- A team of doctors from Tamil Nadu along with scientists from Japan have developed a disease-modifying treatment for Duchenne Muscular Dystrophy (DMD), a rare genetic disease, using a food additive – a beta-glucan produced by N-163 strain of a yeast *Aureobasidium pullulans*.

Details

- DMD is a rare genetic disease that affects only male children. There are approximately 5,000 patients in Japan and 80,000 in India.
- Muscles need lubricant. Dystrophin, an enzyme secreted in the muscles, helps in wear and tear and regeneration of muscles. Because of the genetic disorder, muscles cannot produce dystrophin.
- Boys born before 1970 had a median lifespan of around 18 years. After anti-inflammatory medications and steroids, the longevity increased. Disease modifying treatments have prolonged the lifespan but despite that, patients die when they are aged 28 to 30 years.
- Currently available treatments were gene therapy, Exon-skipping and disease modifying agents (anti-inflammatory medicines such as steroids).
- The six-month-long clinical study screened 27 children with DMD – 18 in treatment arm and nine in control arm. Along with regular treatment, the participants, all aged above three years, were given the beta-glucan in the form of a food supplement.

About Duchenne Muscular Dystrophy (DMD)

Caused by	<ul style="list-style-type: none"> • DMD is caused by a genetic disorder that prevents the muscles from producing dystrophin, an enzyme that acts as a lubricant and helps in muscle repair and regeneration. • DMD is one of four conditions known as dystrophinopathies.
Symptoms	<ul style="list-style-type: none"> • DMD symptom onset is in early childhood, usually between ages 2 and 3. The disease primarily affects boys, but in rare cases it can affect girls.
DMD carriers	<ul style="list-style-type: none"> • DMD carriers are females who have a normal dystrophin gene on one X chromosome and an abnormal dystrophin gene on the other X chromosome. Most carriers of DMD do not themselves have signs and symptoms of the disease, but a minority do.
Treatment	<ul style="list-style-type: none"> • The current treatments for DMD include <u>gene therapy, Exon-skipping and disease-modifying agents (such as steroids) that reduce inflammation and slow down the progression of the disease.</u> However, these treatments are not curative and have side effects.

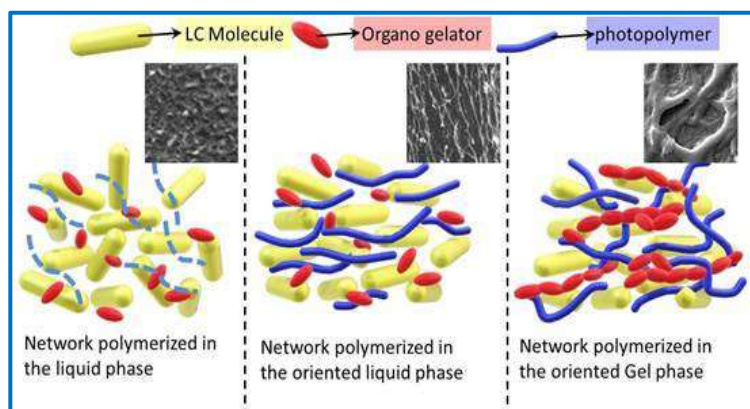
Switchable Smart Windows

Context

- A novel protocol for confinement of liquid crystals in an architecture called hierarchical double networks of polymers can give next-generation solutions for low-energy consuming on-demand switchable smart windows operating between low and high transmittance.

Details

- Interpenetrating polymer networks are soft matter systems that innovatively optimise different functionalities such as mechanical, optical, and electrical properties to provide novel solutions in engineering and biomedical applications.
- A specific class of these architectures, labelled hierarchical double networks, synergistically combining rigid and soft networks to realize thermal, electrical, and optical properties are currently attracting much attention.



- The research team of Dr. D S Shankar Rao, Dr. S Krishna Prasad, and Dr. Varshini G V, at the Centre for Nano and Soft Matter Science, Bengaluru have added a new dimension to this field by introducing double networks which are superimposed on liquid crystals.
- Schematic illustration of the scope of the network and the morphology of the system as imaged through an electron microscope**

About switchable smart windows

- Dynamic windows** have the potential to transform our homes, businesses, cars, and more, reducing heating and cooling costs or the need for blinds, researchers said.
- Smart windows** already being sold, such as those used on airlines, are made of materials, such as tungsten oxide, that change colour when charged with electricity.

About Interpenetrating Polymer Networks (IPNs)

- An Interpenetrating polymer network (IPN) is a polymer comprising two or more networks which are at least partially interlaced on a polymer scale but not covalently bonded to each other.
- The network cannot be separated unless chemical bonds are broken.
- The two or more networks can be envisioned to be entangled in such a way that they are concatenated and cannot be pulled apart, but not bonded to each other by any chemical bond.
- Simply mixing two or more polymers does not create an interpenetrating polymer network (polymer blend), nor does creating a polymer network out of more than one kind of monomers which are bonded to each other to form one network (heteropolymer or copolymer).
- There are semi-interpenetrating polymernetworks (SIPN) and pseudo-interpenetrating polymer networks.
- To prepare IPNs and SIPNs, the different components are formed simultaneously or sequentially.

Entamoeba Moshkovskii- A New Diarrhoea-Causing Parasite

Context

- A three-year surveillance study from March 2017 to February 2020 in Kolkata has found an amoeba pathogen that previously did not cause any amoebiasis (a form of diarrhoea) in humans has now become pathogenic.

Details

- Kolkata-based National Institute of Cholera and Enteric Diseases (ICMR-NICED) found that not only had the amoeba pathogen – **Entamoebamoshkovskii** – turned pathogenic, it was the leading cause of amoebic infections in humans; more than half of the amoebic infections were caused by this pathogen.
- The researchers studied the stool samples of diarrheal patients admitted in two hospitals in Kolkata.
- Of particular concern is the fact that infections **caused by E. histolytica**, which used to be the predominant amoeba pathogen that caused amoebiasis, were decreasing and the newly pathogenic **E. moshkovskii** was taking its place.
- The researchers identified a few mutations that signify an essential role of the new pathogenic parasite in adapting to the gut environment of humans or in acquiring other enteric pathogens.

About the Entamoebamoshkovskii

Belongs to	<ul style="list-style-type: none"> • Belongs to the same genus as E. histolytica but has distinct genetic and biochemical traits. Initially isolated from sewage in Moscow in 1941.
Symptoms	<ul style="list-style-type: none"> • Can cause symptoms such as <u>diarrhea, abdominal pain, fever, and dehydration</u>. Has the potential to damage the intestines, leading to ulcers, bleeding, or serious conditions like liver infections.
Transmission	<ul style="list-style-type: none"> • Infection can occur through the consumption of contaminated food or water. • Direct contact with feces can also result in the spread of the infection.
Treatment	<ul style="list-style-type: none"> • Similar appearance to Entamoebahistolytica under a microscope makes it difficult to differentiate them. • Specialized tests like PCR or DNA sequencing are required for accurate identification. • Treatment of E. moshkovskii infections can be challenging, as the standard drugs used for amoebic infections may not be effective.

Report on AIDS - by UNAIDS

Context

- A recent report titled "**The Path That Ends AIDS**" by the Joint United Nations Programme on HIV/AIDS (UNAIDS) sheds light on the progress made in combating reveals the ongoing challenges and progress in the global fight against Acquired Immunodeficiency Syndrome (AIDS) and human immunodeficiency virus (HIV)..

Key Findings of the report

- **Acquired Immunodeficiency Syndrome (AIDS)** claimed a life every minute in 2022, according to a new report by UNAIDS.
- **About 9.2 million people** living with **human immunodeficiency virus (HIV)** could not access HIV treatment worldwide in 2022. **Even some 2.1 million people** who received treatment were not virally suppressed, noted the report titled The Path That Ends AIDS.

- Data from the **Joint United Nations Programme on HIV/AIDS (UNAIDS)** showed that gains had been made, particularly in the absence of a vaccine. However, a lot remains to be achieved due to inequalities.
- Of the 39 million people living with HIV globally, 29.8 million are receiving life-saving treatment presently, the data revealed.
- From 2020-2022, an additional 1.6 million people received HIV treatment in each consecutive year. If this annual success can be maintained for the long term, the global target of 35 million people receiving HIV treatment by 2025 will be within reach.
- Gender discrimination was another barrier. Men living with HIV were still significantly less likely than women living with HIV to be on treatment in sub-Saharan Africa, the Caribbean, Eastern Europe, and Central Asia.
- While the number of AIDS-related deaths among children was reduced by 64 per cent in

2010-2022, the HIV pandemic still claimed the lives of approximately 84,000 children in 2022.

- While women and girls of all ages accounted for 63 per cent of all new HIV infections in sub-Saharan Africa, only about 42 per cent of districts with high HIV incidence in the region are currently covered with dedicated prevention programs.
- Moreover, 4,000 adolescent girls and young women acquired HIV every week in 2022. “Closing these gaps and making it easier for

sexually active girls and women to access female-friendly biomedical prevention tools, such as oral PrEP and the dapivirine vaginal ring, would greatly reduce their risks of acquiring HIV.

- In 2022, \$20.8 billion was available for HIV programmes in low- and middle-income countries – a 2.6 per cent drop from 2021. The amount is far short of the \$29.3 billion required by 2025. The funding substantially shot up in the early 2010s and has fallen back to 2013 levels, the UNAIDS data revealed.

About Joint United Nations Programme on HIV/AIDS (UNAIDS)

Established	<ul style="list-style-type: none"> • <u>UNAIDS stands for the Joint United Nations Programme on HIV/AIDS.</u> • <u>It is an organization established by the United Nations (UN) in 1994 to lead and coordinate the global response to the HIV/AIDS epidemic.</u>
Objectives	<ul style="list-style-type: none"> • UNAIDS provides global leadership and advocates for <u>political commitment and resources to address HIV/AIDS.</u> • <u>It mobilizes support from governments, civil society, and other stakeholders.</u> • It <u>promotes gender equality</u> and addresses issues such as stigma, discrimination, and gender-based violence.
Working	<ul style="list-style-type: none"> • <u>UNAIDS collects, analyzes, and disseminates data and information on the HIV/AIDS epidemic.</u> • <u>UNAIDS mobilizes and coordinates resources</u> from various sources such as governments, donors, and the private sector. These resources support HIV/AIDS programs and initiatives worldwide. • <u>UNAIDS advocates for the protection of human rights</u> in the context of HIV/AIDS. • UNAIDS promotes and supports efforts to ensure that all people have access to comprehensive HIV prevention, treatment, care, and support services. • <u>It works to remove barriers to accessing these services.</u>

Steel Slag Road Technology

Context

- Union Minister of State for Steel organized under the 'One Week One Lab' program of Council of Scientific & Industrial Research (CSIR)-Central Road Research Institute (CRRI) that the Steel Slag Road technology of CSIR-CRRI is playing an important role in realising the Prime Minister Sh. NarendraModi's mission of 'Waste to Wealth'.

Details

- The Union Minister informed that India is the second largest steel producing country in the world and about 19 million tonnes of steel

slag is generated in the country as a solid waste, which will increase to 60 million tonnes by the year 2030. (About 200 kg of steel slag is generated in one tonne of steel production).

- **Due to non-availability of efficient disposal methods of steel slag**, huge piles of steel slag have come up around the steel plants, which have become a major source of water, air and land pollution.
- **The 1st road made with steel slag road interpretation technology** in Surat, Gujarat, has become famous for its technological excellence at national and national level.

- **About one lakh tonnes of steel slag aggregate has been used in its construction**, under the technical guidance of CRRRI at the Hazira plant of ArcelorMittal Nippon Steel. No natural ballast of any kind has been used in the construction of this road.

About Steel Slag Road Technology

- The technology has been developed by the **Central Road Research Institute** under a research project in collaboration with the **Ministry of Steel, Government of India** and four major steel manufacturing companies of

the country, viz., ArcelorMittal Nippon Steel, JSW Steel, Tata Steel and Rashtriyalspat Nigam.

- This technology facilitates the **large-scale utilization of waste steel slag of steel plants** and has proved very useful in effective disposal of **about 19 million tonnes** of steel slag generated in the country.
- This technique has been successfully tested in road construction in four major states of the country including **Gujarat, Jharkhand, Maharashtra and Arunachal Pradesh.**

Martin-Bell Syndrome

Context

- On the occasion of World Fragile X Day, which raises awareness about the rare genetic illness – Fragile X or Martin-Bell syndrome – that causes intellectual disability and autism.

Details

- ShaliniKedia, founder and chairperson of Fragile X Society India, said lighting up India Gate in teal “is symbolic as the topic of intellectual disabilities has been kept in the dark for long”.
- Parents of children who suffer from Fragile X were also present at the event and raised concerns. Said Meena Sharma, “My 22-year-old son has Fragile X but he is competent in many tasks. Due to the taboo attached to intellectual disabilities, there aren’t any jobs available for him.”
- Union Minister of Tribal Affairs ArjunMunda, who was at the event, said, “I would like to encourage people to spread awareness... everyone has abilities, which is why this is a campaign we all believe in and appreciate.”

AboutFragile X Syndrome

About	<ul style="list-style-type: none"> • It is an inherited genetic disease passed down from parents to children that causes intellectual and developmental disabilities. It’s also known as Martin-Bell syndrome. • FXS is the most common hereditary cause of mental disability in boys. It affects 1 in 4,000 boys. It’s less common in girls, affecting about 1 in every 8,000. <u>Boys usually have more severe symptoms than girls.</u>
Symptoms	<ul style="list-style-type: none"> • FXS can cause learning <u>disabilities</u>, developmental delays, and social or behavioral <u>problems</u>. Disabilities vary in severity. • Boys with FXS usually have some level of intellectual disability. Girls may have some intellectual disability or learning disability, or both, but many with fragile X syndrome will have normal intelligence.
Causes	<ul style="list-style-type: none"> • FXS is caused by a defect in the FMR1 gene located on the X chromosome. The X chromosome is one of two types of sex chromosomes. • The other is the Y chromosome. Women have two X chromosomes while men have one X chromosome and one Y chromosome.
Treatment	<ul style="list-style-type: none"> • FXS cannot be cured. Treatment is aimed at helping people with the condition learn key language and social skills. • This may involve receiving extra help from teachers, therapists, family members, doctors, and coaches.

Chuna and Ocular Burns in Children

Context

- A new study has found that chuna is a major cause for ocular burns among children, along with household chemicals and fireworks.

Details

- Slaked lime is an alkali compound widely used as a binding agent, along with betel nut and other ingredients, to make paan in the Indian subcontinent.
- Loosely sold in plastic packets, the quicklime can puff out of the packet on to a child's eyes. The alkali then burns the ocular surface and can result in eye injury.
- Ocular burns due to household chemicals are wholly avoidable. They are a tragic cause of ocular morbidity, even vision loss, especially among children.

What is chuna and what are its risks?

- **Indian paan has slaked lime, or chuna** (sunnam in Telugu; sunna in Kannada; sunnaampu in Tamil), smeared onto a betel leaf and is chewed along with areca nut. Tobacco is also added to the paan and the alkali quickens its absorption.
- **Paan consumption**, especially in South and South East Asia.
- Chuna is often sold in loose and poorly sealed packets across the region.
- **An exploding packet of chuna can deliver** the alkali straight into a person's eye, with the chemical lodging itself inside the eyelid and coating the cornea, the outer transparent layer of the eye.
- Here, the alkali chemically burns through the delicate tissue, causing extensive damage.
- **The rim of the cornea, called the corneal limbus**, is home to specialised stem cells that replenish the cornea. Chemical burns can destroy the limbus, in turn compromising the cornea's ability to repair itself.
- **The risk of chemical injury to the eye is not limited to slaked lime.** Household cleaning agents like toilet cleaners and other acids, as well as fireworks and even super-glue in tubes, are all liable to cause ocular injury.

- **Chemical burns to the eye results in ocular burns** or, in worse cases, severe loss of vision. They may require extensive surgical intervention, including **stem-cell transplantation and corneal grafts**, and will need lifelong management.
- **Alkali burns** can have a poor prognosis and interventions often restore sight only to a limited extent.

Algorithm to Quantify Radio Frequency Interference

Context

- The development of the algorithm called STARFIRE by scientists at Raman Research Institute (RRI) is a significant advancement in the field of radio astronomy.

Details

- In order to study the early **Universe and its evolution**, **astronomers** tune their radio antennas within the **40 to 200 Mega Hertz (MHz) range** in search of the **21-cm hydrogen line**, believed to contain some of the unknown secrets about the cosmos.
- However, given their faint and weak strength, detecting these signals is extremely challenging.
- **In addition, the fast-advancing technologies and expanding** areas of human settlements have led to an increased number of sources emitting RFIs, many even constraining the efforts for recording astronomical observations on land.
- **A new algorithm developed by scientists** that is capable of estimating and mapping the unwanted Radio Frequency Interference (RFI) signals in space, can help design instruments that are capable of offering optimal operations in the presence of RFI and thereby, enriches the data obtained from the future space-based Astronomy missions.
- **Scientists at Raman Research Institute (RRI), an autonomous institute of the Department of Science and Technology**, have developed an algorithm called **STARFIRE** which can estimate the RFI emitted by FM radio stations, WiFi networks, mobile towers, radar,

satellites, and communication devices, and use this calculation for designing and fine-tuning the antennas and other instrument components of missions like **India's Probing Reionization of the Universe using Signal from Hydrogen (PRATUSH)**.

Significance

- **The significance of STARFIRE extends** to its potential applications in designing future space missions, such as India's Probing Reionization of the Universe using Signal from Hydrogen (PRATUSH).
- With the algorithm's help, mission planners can select suitable orbits and design antennas and instrument components that minimize the impact of RFI and enhance the sensitivity to desired cosmic signals.

- **STARFIRE's mathematical formulation allows for flexibility**, enabling users to customize the properties of antennas that transmit and receive RFI.
- **This feature is essential for incorporating astrophysical** radio signals from our galaxy and beyond, leading to more meaningful conclusions about the experiment's sensitivity.
- **STARFIRE's ability to analyze RFI effects at different altitudes**, including Low Earth Orbit, Medium Earth Orbit, and Geo-stationary orbit, provides valuable insights for optimizing space missions, especially those focusing on low-frequency cosmological experiments.

Bedaquiline

Context

- Johnson & Johnson (J&J)'s patent on bedaquiline expired on July 18, 2023, but the company has filed additional patents to extend its exclusivity until 2027 in many low- and middle-income countries where DR-TB is prevalent.

Details

- **Tuberculosis was the world's deadliest infectious disease**, as declared by the WHO, before COVID-19 swept the world. Each year, nearly half a million people develop drug-resistant TB and nearly 10.4 million people develop drug-sensitive TB.
- **One-third of the world's population** has latent TB, a version of the disease that can turn active as immunity falls. Nearly 2.8 million patients, the most in the world, live in India making it a national public health emergency.
- Globally, DR-TB is a major contributor to antimicrobial resistance and continues to be a public health threat.

About Bedaquiline

About	<ul style="list-style-type: none"> • It is an antibiotic drug used in the treatment of tuberculosis (TB), particularly in cases of multidrug-resistant tuberculosis (MDR-TB) and extensively drug-resistant tuberculosis (XDR-TB). • It is considered a groundbreaking medication in the fight against drug-resistant TB, which is a major global health concern.
Mechanism	<ul style="list-style-type: none"> • Bedaquiline belongs to a class of antibiotics known as diarylquinolines. • It works by inhibiting an enzyme called ATP synthase, which is essential for the production of energy in the bacterium Mycobacterium tuberculosis, the causative agent of TB. • By disrupting energy production, Bedaquiline effectively kills or inhibits the growth of the TB bacteria.
Targeted use	<ul style="list-style-type: none"> • Bedaquiline is primarily reserved for the treatment of drug-resistant forms of tuberculosis when other first-line and second-line TB drugs are not effective. • It is not a first-line drug for the standard treatment of drug-sensitive TB.

Treatment	<ul style="list-style-type: none"> • Bedaquiline is administered orally and is typically used in combination with other antibiotics to form a multidrug regimen. • The specific treatment plan depends on the type and severity of drug resistance in the patient's TB infection.
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Significance of World Hepatitis Day

Context

- World Hepatitis Day is observed every year on July 28 to raise awareness of viral hepatitis and its impact on global health.

Details

- The day aims to promote prevention, testing and treatment, and to show support for those affected by hepatitis.
- The distressing figures showing that someone dies from hepatitis or other associated illnesses every 30 seconds globally give rise to the necessity of this awareness campaign.
- A hidden killer that causes many fatalities each year is viral hepatitis. The goal of World Hepatitis Day is to increase public awareness of the issue and the steps that need to be taken to improve efforts at viral hepatitis prevention, screening, and control.

World Hepatitis Day 2023 theme

- **World Hepatitis Day aims to create awareness about viral hepatitis, with this year's theme being 'One life, one liver.'**

- Each year, the day centres around a specific theme to enhance understanding of the global hepatitis situation and drive positive action.
- Diverse events, including campaigns, seminars, and lectures, encourage worldwide participation to educate people about the disease and promote a healthier future.

History of World Hepatitis Day

- World Hepatitis Day, initially observed on May 19, was later moved to July 28 in 2010. The World Hepatitis Alliance, established in 2007, organized the **first community-driven World Hepatitis Day in 2008**.
- This decision came after the **World Health Assembly** decided to honour the birthday of Dr Baruch Samuel Blumberg, the American physician credited with discovering **Hepatitis B in the 1960s**.
- On July 28, World Hepatitis Day serves as an occasion to enhance national and international efforts against hepatitis, encouraging action and involvement from individuals, partners, and the public.

Hygroelectricity

Context

- Scientists achieve a remarkable milestone in renewable energy with hygroelectricity. Unravel the science behind this revolutionary concept and its promising potential for sustainable energy solutions.

Details

- In a groundbreaking development, researchers at Massachusetts Amherst University have achieved a significant breakthrough in the field of renewable energy by harnessing the power of hygroelectricity.
- This innovative technology allows for the generation of electricity from moist air, presenting a promising avenue for clean and sustainable energy solutions.

About the Hygroelectricity

Genesis	<ul style="list-style-type: none"> • The origins of the hygroelectricity concept can be traced back to the brilliant mind of renowned physicist Nikola Tesla. • Tesla was the first to propose the possibility of generating electricity from moist air, envisioning a future where the power of humidity could be harnessed to drive electrical devices.
Science behind it	<ul style="list-style-type: none"> • At the heart of this groundbreaking technology lies a small yet ingenious device comprising two electrodes and a thin layer of material infused with

	<p>nanopores.</p> <ul style="list-style-type: none"> • These nanopores, measuring less than 100 nanometers in diameter, facilitate the passage of water molecules from the upper chamber to the lower chamber of the device. • This phenomenon effectively transforms the device into a miniature battery, capable of generating electricity continuously. • Analogous to a man-made cloud, the device converts the moisture in the air into useful electricity, much like how natural clouds produce electric charges during storms, leading to lightning.
Challenges	<ul style="list-style-type: none"> • While the concept of generating electricity from air moisture is undoubtedly promising and alluring, it is not without its challenges. • Presently, the finger-nail-sized device can only generate electricity at a fraction of a volt. • However, researchers are actively working to enhance the efficiency and output of the technology through ongoing advancements and optimizations.
Versatility and Scalability	<ul style="list-style-type: none"> • One of the most remarkable features of hygroelectricity is its unparalleled versatility. • Unlike other renewable energy sources such as solar and wind, which are contingent on specific environmental conditions, moisture in the air remains ever-present, constituting a perpetual reservoir of energy. • Furthermore, this groundbreaking technology can be adapted to various materials, including wood and silicone, as long as they possess the necessary nanopores. • This inherent scalability augments the potential for widespread implementation across diverse industries.

7.9 SNIPPET



5G & BEYOND HACKATHON 2023

- Department of Telecommunications has been conducting Hackathons for the development of 5G products and solutions. This culminated in the development of 5G products/solutions in different technological verticals.
- The participants can develop 5G & beyond solutions from across multiple categories including Healthcare, Education & Governance, AgriTech & Livestock, Environment, Public Safety & Disaster Management Enterprise, Smart Cities & Infrastructure, Cyber Security, Banking, Finance & Insurance, Logistics & Transportation, Multimedia & Broadcast Satellite, among others.



SALVEX EXERCISE

- The 7th joint exercise SALVEX between Indian Navy and US Navy was held in Kochi from 26 June to 6 July 2023.
- The exercise focused on Salvage and Explosive Ordnance Disposal (EOD) operations, which are essential for ensuring maritime security and safety.
- The participating ships were INS Nireekshak and USNS Salvor, along with Specialist Diving and EOD teams from both navies.
- The exercise provided an opportunity for the Diving teams to exchange best practices and learn from each other's experiences in various aspects of EOD operations, such as mine clearance, wreck recovery and salvage.



ATACMS MISSILES

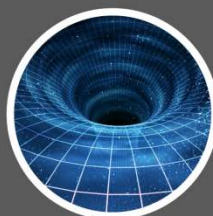
- Ukraine is seeking to acquire ATACMS missiles that could threaten Russia's vulnerable supply lines.
- ATACMS stands for Army Tactical Missile System, a conventional artillery weapon system that can launch long-range guided missiles.
- It is designed to give commanders the ability to strike deep into enemy territory with precision and speed.
- It is produced by Lockheed Martin, a US defence company. It can hit targets far beyond the reach of existing Army cannons, rockets and other missiles.
- The missile has a maximum range of 300 km.
- It has an improved guidance package with Global Positioning System (GPS).

CLUSTER MUNITIONS



- Cluster munitions are a type of explosive weapon that is designed to disperse multiple smaller submunitions (also known as bomblets or submunitions) over a wide area.
 - These submunitions are often designed to explode upon impact with the ground or a target, creating a lethal blast and fragmentation effect.
- The US has recently announced that it will provide Ukraine with cluster munitions, a controversial type of weapon that has been banned by more than 100 countries.
- Cluster munitions are designed to cover a large area with explosive submunitions, or bomblets, that can destroy multiple targets at once.
- They are often used against enemy troops, vehicles, or infrastructure. However, they also pose a serious threat to civilians, both during and after the conflict.
- The Convention on Cluster Munitions (CCM) is an international treaty that prohibits all use, transfer, production, and stockpiling of cluster munitions. It aims to address the humanitarian consequences of these weapons and to prevent their use in conflicts to protect civilians from harm.
- The US is one of the few countries that still produces and stockpiles cluster munitions, and has not signed the 2008 Convention on Cluster Munitions, which prohibits the use, transfer, and stockpiling of these weapons.
 - The US argues that cluster munitions have a legitimate military purpose and that it has taken steps to reduce the humanitarian harm they cause.

Must Read:
Cluster
Munition:



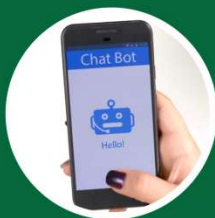
GRAVITY HOLE

- It is a term used to describe a phenomenon where a region of space-time exhibits extremely strong gravitational forces that nothing can escape from it, not even light.
- They are usually formed by the collapse of massive stars, but they can also be created artificially by advanced technologies.
- Gravity holes have a point of no return, called the event horizon, beyond which nothing can escape.
- Not even light can get out of a gravity hole once it crosses the event horizon. This is why they are invisible to our eyes and telescopes.



SCHEDULE M

- Schedule M is a section of the Drugs and Cosmetics Act of 1940 that outlines the 'Good Manufacturing Practices' (GMP) for pharmaceuticals in India.
- These are the standards that pharmaceutical manufacturers must adhere to to ensure the quality, safety and efficacy of their products.
- Recently, the Ministry of Health and Family Welfare conducted a quality control drive across the country and inspected 137 firms. As a result, 105 firms faced regulatory action for violating GMP norms.



LEXI: FIRST AI ASSISTANT OF INDIA

- Velocity has launched India's first chatbot integrated with OpenAI's ChatGPT, called Lexi.
- The integration of ChatGPT with Velocity Insights empowers eCommerce founders by providing them with AI-powered business insights in a conversational manner, freeing up time for critical business functions.
- Velocity Insights is India's largest eCommerce analytics platform trusted by over 3000 Indian eCommerce brands for making informed business decisions.

LEOPARD 2 BATTLE TANKS



- Italy is planning to buy German-made Leopard 2 Battle Tanks in response to the Russian invasion of Ukraine.
- It was developed in the 1970s and entered service in 1979 and has since become one of the most modern and advanced MBTs in the world.
- The tank is known for its impressive mobility, with a top speed of around 68 km/h (42 mph) on roads. Its operational range is about 500 km (311 miles), making it suitable for various types of missions.
- It is well-protected with composite armour, offering enhanced survivability on the battlefield. Its armour design protects against various threats, including anti-tank missiles and projectiles.
- The tank features a fully-digital fire-control system, enabling accurate and effective firing on the move, as well as engaging targets at significant distances with a high first-hit probability.
- It has been adopted by several countries worldwide due to its outstanding performance and capabilities. Apart from the German military, it is in service in more than a dozen European nations, including Canada, as well as other countries.

Must Read
Leopard 2
Battle Tanks:



MARKARIAN 421

- Markarian 421 is a supermassive black hole that is located about 400 million light-years away from Earth.
- It is one of the brightest sources of gamma rays and X-rays in the sky because it has a powerful jet of high-energy particles that is pointing directly towards Earth.

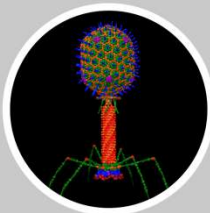
8TH INDIA-AUSTRALIA DEFENCE POLICY TALKS



- The 8th India-Australia Defence Policy Talks (DPT) took place in Canberra, Australia on July 24-25, reflecting the growing defence and security ties between the two countries.
- The DPT was an opportunity for both sides to review the progress of bilateral defence cooperation and to explore new avenues for enhancing and deepening defence engagements.
- The talks also focused on finding ways to strengthen collaboration in the co-development and co-production of defence equipment, according to a statement by India's Ministry of Defence (MoD).
- India and Australia have a Comprehensive Strategic Partnership since 2020, with defence being a key pillar of this partnership.
- The Quadrilateral Group - or the Quad - a four-nation grouping that includes the US, Japan, Australia and India, also provides the strategic framework for Indo-Australian security cooperation in the Indian Ocean Region (IOR).

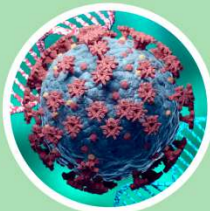
Must Read
AUSTRALIA
-INDIA
RELATIONS:





BACTERIOPHAGES

- Bacteriophages, or phages, are viruses that exclusively infect and replicate within bacterial cells.
- They were first discovered in the early 20th century by British bacteriologist Frederick Twort and French-Canadian microbiologist Félix d'Hérelle.
- Bacteriophages are found abundantly in various environments, such as soil, water, and the human body, wherever bacteria exist.
- Bacteriophages typically consist of genetic material, which can be either DNA or RNA, encased in a protein coat.
- Each Bacteriophages species has a narrow host range and can only infect specific types of bacteria.



PICOLINIC ACID

- Picolinic acid is known for its role in aiding the absorption of zinc and other trace elements from the gut.
- The IISc team stumbled upon picolinic acid while investigating endocytosis, a cellular process that viruses and bacteria often co-opt to enter host cells. This discovery led them to explore the compound's ability to slow down viral entry and its anti-viral potential.
- Picolinic acid found to have a remarkable ability to block enveloped viruses, which possess an extra outer membrane made of lipids derived from the host.



ROBERT OPPENHEIMER

- Oppenheimer was born in New York City in 1904 and displayed early academic talent. His family was wealthy and educated, and he had a privileged upbringing.
- He is known as the "Father of the Atomic Bomb" for his role in organising the Manhattan Project, the research and development effort that resulted in the first nuclear weapons.
- When World War II broke out, Oppenheimer's career took a dramatic shift. In 1942, he was named scientific head of the Manhattan Project, a top-secret US government endeavour to create the atomic weapon.
- Oppenheimer was a key figure in the successful development of the first nuclear bombs, leading a team of great scientists and engineers.



DONANEMAB FOR ALZHEIMER'S DISEASE

- Donanemab is a new drug for Alzheimer's disease, it is designed to bind to and clear away amyloid-beta plaques, which are clumps of the protein that form in the brain.
- The primary outcome was the change in a cognitive and functional score called the Integrated Alzheimer's Disease Rating Scale (iADRS), which ranges from 0 to 144, with higher scores indicating better performance.
- The results showed that donanemab significantly slowed the decline in iADRS scores. This means that donanemab reduced the rate of cognitive and functional decline.



INDIA'S FIRST CANNABIS MEDICINE PROJECT

- India is experiencing significant growth in research and development (R&D) in the field of medicine.
- The 'Cannabis Research Project' of CSIR-IIIM Jammu, which is the first of its kind in India, is one of numerous projects conducted in medical research.
- The Cannabis Research Project of CSIR-IIIM Jammu is a first of its kind in India and has a great potential to produce export quality medicine for neuropathies, cancer, and epilepsy.



FLUOROMIX

- The researchers took inspiration from how the human body makes bones and teeth: through calcium phosphate biomineralization.
- They ground fluorspar in a ball-mill with potassium phosphate.
- While fluorine is very reactive, calcium atoms prefer phosphorus even more, so the milling created calcium phosphate and another compound with fluorine atoms. They called the latter Fluoromix.
- When Fluoromix was reacted with organic compounds, it could create around 50 fluorochemicals with up to 98% yield.



RADIATION FROM BLACK HOLE

- Scientists have explored novel quantum effects on the radiation emitted from a black hole due to atoms freely falling into it.
- This investigation of atoms falling into a black hole could throw new light on the efforts of scientists towards unification of quantum mechanics which plays out at the smallest scales of matter and the general theory of relativity propounded by Einstein which is applicable at the largest cosmological scales.
- The two most successful scientific theories of the past century are the general theory of relativity and quantum theory.



OPILL - OVER THE COUNTER BIRTH CONTROL PILL

- Opill is a "mini-pill" that uses progestin, a synthetic form of the hormone progesterone, and does not contain estrogen.
- The typical combination birth control pill, the most commonly used form of oral contraception, uses both hormones to prevent pregnancy.
- Several similar "mini-pills" are also available with a prescription, but Opill is the only oral contraceptive that is approved to buy without a prescription.



HERBIG-HARO 46/47

- Herbig-Haro 46/47 is an important object to study because it is relatively young – only a few thousand years old. Stars take millions of years to form.
- Targets like this also give researchers insight into how stars gather mass over time, potentially allowing them to model how our own Sun, a low-mass star, formed.
- The two-sided orange lobes were created by earlier ejections from these stars.
- The stars' more recent ejections appear as blue, thread-like features, running along the angled diffraction spike that covers the orange lobes.

7.10 1 MAINS QUESTION AND 5 MCQS

Q1. Ayushman Bharat, the world's largest health insurance scheme, aims to provide universal health coverage to the poor and vulnerable in India. However, official data revealed that more than a third of the hospitals empanelled under the scheme are inactive, raising concerns about its effectiveness and accessibility. Discuss.

Answer:

The Ayushman Bharat PradhanMantri Jan ArogyaYojana (PM-JAY) is the world's largest health insurance scheme aimed at providing universal health coverage in India. However, official data has revealed a worrying trend of inactivity among the empanelled hospitals under the scheme. Out of the 27,000 hospitals empanelled since its launch in 2018, only 18,783 are currently active.

Significances

- **Financial Protection:** PM-JAY provides a crucial safety net to vulnerable sections of society by protecting them from catastrophic health expenditures that can push families into poverty.
- **Improved Access to Healthcare:** By providing cashless treatment at empanelled hospitals, PM-JAY enhances access to quality healthcare for millions of beneficiaries who may not have had access to it otherwise.
- **Reduced Out-of-Pocket Expenditure:** The scheme reduces the burden of out-of-pocket expenses for medical treatments, making healthcare more affordable for the poor.

Challenges

- **Inactivity of Empanelled Hospitals:** As mentioned earlier, a significant number of hospitals empanelled under PM-JAY are inactive, which poses a challenge in ensuring adequate healthcare access for beneficiaries.
- **Quality of Care:** While the scheme focuses on financial protection, ensuring the quality of care delivered at empanelled hospitals is essential to achieve positive health outcomes.
- **Information and Awareness:** Some eligible beneficiaries might not be aware of the scheme or how to access it, leading to underutilization of the benefits.

Way Forward

- **Addressing Hospital Inactivity:** The authorities should work with state health authorities (SHAs) to identify the reasons behind hospital inactivity and take measures to incentivize and engage hospitals in the scheme.
- **Quality Assurance:** Regular monitoring and evaluation of empanelled hospitals' performance are necessary to ensure quality care and patient satisfaction.

Q2. Consider the following statements:

1. The Giant Metrewave Radio Telescope (GMRT) is one of the largest and most sensitive low-frequency radio observatories in the world.
2. It is located in Ladakh.

Which of the above statements is/are correct?

- (A) 1 only
- (B) 2 only
- (C) Both 1 and 2
- (D) None of the above.

- A) Only one
- B) Only two
- C) Only three
- D) All the statements

Q4. Which of the following crops is most susceptible to mosaic virus

- A) Rice
- B) Wheat
- C) Tomato
- D) Potato

Q3. How many of these is/are the objectives of BHARAT 6G Alliance?

1. To create a roadmap for 6G research and innovation in India.
2. To collaborate with global partners and standardization bodies on 6G development.
3. To promote the adoption of 6G services and applications in various sectors.
4. To regulate the spectrum allocation and pricing for 6G operators.

Q5. Consider the following statements:

1. Cholederm is a wound healing material derived from the extracellular matrix of decellularised gall bladder of pig and tissue engineered as membrane forms of scaffold.
2. Class D device includes In vitro diagnostics (IVD) that detect or are exposed to life-threatening transmissible agents or transmissible agents and infectious diseases with a high risk of propagation.

Which of the statements given above is/are incorrect?

- (A) 1 only
- (B) 2 only
- (C) Both 1 and 2
- (D) None of the above.

Q6. Consider the following statements with respect to Fragile X syndrome:

1. Fragile X syndrome is a mutation of a gene called the Fragile X Messenger Ribonucleoprotein 1 (FMR1).

2. A 3. C 4. C 5. D 6. C

2. FMR1 usually makes a protein called FMRP that is needed for muscle development.
3. It impacts men more than women.
4. Autism spectrum disorder (ASD) occurs more frequently in people with FXS.

How many of the above statements are correct?

- A) Only one
- B) Only two
- C) Only three
- D) All four.

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8. CULTURE & HISTORY

8.1 HUL DIWAS

Context

- The Santal rebellion or 'Hul' – literally, revolution – began in 1855, two years before the the uprising of 1857, which is often referred to as “the first war for Indian independence”.

Details

- Prime Minister Narendra Modi tweeted about Hul Diwas on June 30, remembering the sacrifice of Adivasis in their fight against British colonial authorities.
- The Santal rebellion or 'Hul' – literally, revolution – began in 1855, two years before the the uprising of 1857, often referred to as “the first war for Indian independence”.**
- It was an “organised war against colonialism”** led by the Santals, standing against the myriad forms of oppression – economic and otherwise – **they were subjected to by the British and their collaborators.** Led by two brothers Sidhu and Kanhu, it saw the participation of as many as 32 caste and communities rallying behind them.

About Santhal Rebellion

Background	<ul style="list-style-type: none"> In late 18th century, the Santal people –migrated to Santhal Pargana (currently in districts of Dumka, Pakur, Godda, Sahibganj, Deoghar and parts of Jamtara) from the West Bengal (Birbhum and Manbhum). The main reason for migration was the 1770 famine in Bengal. British settled them in Damin-i-Koh region for the purpose of collecting tax and generating revenue. They were further exploited by money-lenders and the police. Today, the Santal community is the third largest tribal community in India, spread across Jharkhand-Bihar, Odisha and West Bengal.
Participants	<ul style="list-style-type: none"> The rebellion was led by two brothers Sidhu and Kanhu. Inspired from the brother, around 32 caste and communities joined this revolt and surprised the British.
Regions	<ul style="list-style-type: none"> Forested Damin-i-Koh region (skirts of hills). It lies in the present-day Jharkhand which is around the Rajmahal Hills of eastern Jharkhand's Sahibganj district.

About the Hul

- To control this uprising **British resorted to various brutal tactics -**
 - They invoked the **Martial Law and killed thousands of**
 - British also **burned down villages.**
 - They **hanged people on** various corners of the road.
- Around 32 communities** (tribals and non-tribals both) **participated** in revolt.
- Phulo-Jhano sisters** commanded an army of 1,000 women.
 - Main aim of this army was **to provide food supply, gathering intelligence** and to attack the East Indian camps during the night.
- During the rebellion **army of EIC was defeated twice.**
 - In Pirpainti
 - In Birbhum
- The rebellion was **suppressed by 1856. However,** according to Inder Kumar Choudhary, the **Santals** in Hazaribagh and Manbhum area **participated in the mutiny of 1857 too.**

British Narrative

- After the complaints and instances of exploitation, various british officers examined the situation however they considered mahajans the main cause behind revolt. They found -
 - No signs of over taxation (land rent) was found.
 - Justice for Santhals was inaccessible and far off.
 - Mahajans (money lending) were inflicting sufferings which needed to be addressed.

Prisoners' account after the Hul

- The book HUL DOCUMENTS records mentioned about the dream of a deity -
 - Deity appeared in front of Kanoo Sonthal and a Parwana (an order) to the Bada Sahib in Calcutta was sent afterwards.
 - The deity also asked Seedo Sonthal to kill british officieres, Pontet and the Darogah, and Mahajuns.

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8.2 SANGAM AGE

Context

- K. Amarnath Ramakrishna, who discovered Keeladi and led the first two seasons of excavations between 2014 and 2016, submitted his 982-page report to ASI Director General V. Vidyavathi recently.

Details

- The report has 12 chapters explaining the historical background and objectives of the excavation. Based on the results of stratigraphy of the cultural deposits found in the first two phases, the period of the Sangam era archaeological site has been placed between 8th century BCE to 3rd century CE.

About Sangam Age

Findings of the report:

- Sangam age was believed to be between **300 BCE to 300 CE**. The new report repositions the Sangam age between **800 BCE and 300 CE**. Even this period of history has been **classified into three periods**.
- The pre-early historic period between **800 BCE to 500 BCE**, mature early history between 500 BCE to the end of 1st century BCE and post early history from 1st century BCE to 300 CE.
- The fertile nature of the area and cattle rearing played a crucial role in its evolution

- paving the way for excess production of rice and sea trading of the inhabitants.
- There is a separate chapter on the 23 samples that underwent **Accelerator Mass Spectrometry (AMS)** dating at the Beta Analytical Lab in Florida, U.S..
 - It also includes findings by other universities and studies of floral and faunal remains from the site to arrive at the period. About 5,800 artefacts were unearthed at **Keeladi** during the first two phases of excavation.
 - **In 2017, the Tamil Nadu State Department of Archaeology** took over the excavations and thousands of artefacts continue to be unearthed at the site confirming the rich urban life of the ancient Tamils.
 - **In 2019, the TNSDA, in a report, stated that the cultural deposits unearthed during (fourth phase) excavations** could be safely dated to a period between 6th century BCE and 1st century BCE. One of the six samples collected at a depth of 353 cm, sent for carbon dating in the U.S., dated back to 580 BCE.
 - **The findings in the TNSDA report placed Keeladi artefacts** about 300 years earlier than previously believed - 3rd century BCE. Now, the ASI report, which studied **only 2% of the site**, has further pushed the Sangam age to 800 BCE.

Background

- Sangam Age broadly refers to the **Ancient History of the Tamilakam**, region south of the Krishna River. The sources for this age are largely in the literary realm, though archaeological evidences too sprout up over time.
- **Kharavelas Hatigumpha inscription, dated to c. 155 BCE** provides the earliest epigraphic evidence alluding to a confederacy of Tamil states- **Tramiradesasanghatanam**, which was 113 years old at the time, and had long been a source of danger. However, this is only a formative source, as the existence of such a confederacy isn't attested by literary evidence.

Tamilakam

- Tamilakam is broadly considered to be the land between the Tirupati hills and the southern most tip of the peninsula. In the pre-historic period, this region was associated with megaliths.

The five-fold division of Tamilakam society on the basis of physical features are as follows:

- **Kurunji-** Hilly region (Occupation: hunting; Deity: Lord Murugan)
- **Mullai-** Pastoral land. (Chief occupation: Cattle-rearing; Deity: Lord Vishnu)
- **Maradam-** agricultural plains (Occupation: Agriculture; Deity: Lord Indran)
- **Neydal-** coastal region (Occupation: fishing and salt manufacturing; Deity: Lord Varuna)
- **Paalai-** desert region (Occupation: robbery; Deity: Lord Kurruvai)

Sangam Literature

- Sangam literature is the **oldest literature to have been composed** in the Tamilakam. The word Sangam refers to college, and the commentary of **Iraiyanaar Agapporul** (c. AD 750) alludes to three Sangams that lasted at long intervals over 9900 years.
- These were at then **Madurai, Kapalapuram and Madurai** respectively. There is **no material evidence or otherwise to justify this timeline**, and historians treat the first two Sangams as fantastical rather than factual.
- Thus, it is consensually understood that most of the extant Tamil Sangam literature was composed in Madurai. The Sangam corpus broadly comprises of poems, epics, grammar and Tirrukural.
- Broadly, **Sangam literature consists of poems, grammar, epics and Tirrukural- all broadly being composed between 200 BCE and 1200 AD.**

Early Sangam Literature

- The literature of this period was comprised of the following types of works:
 - Ettuttokai (Eight Anthologies)
 - Pattuppattu (The Ten Long Poems)
 - Tolkappiyam(A Grammar Treatise)

- The Ettuttokaier the Eight Anthologies of collected poetry are:
 - Kuruntokai
 - Narrinai
 - Akananuru
 - Ainkurunuru
 - Kalittokai
 - Purananuru
 - Patirrupattu
 - Paripatal
 - The theme of the first five anthologies (Kuruntokai, Narrinai, Akananuru, Ainkurunuru and Kalittokai) of the Ettuttokaier the Eight Anthologies of collected poetry is love/ akam.
- **Ettutogai is made up of eight works: Aingurunooru, Narrinai, Aganaooru, Purananooru, Kuruntogai, Kalittogai, Paripadal, and Padirrupattu (Eight Anthologies).**
- **Pattuppattu consists of ten works: Thirumurugarrupadai, Porunarrupadai, Sirupanarrupadai, Perumanarrupadai, Mullaippattu, Nedunalvadai, Maduraikkanji, Kurinjippattu, Pattinappalai, and Malaipadukadam (Ten Idylls).**
- **Pathinenkilkanakku contains eighteen books on ethics and morals.** The most famous of these books is Tirukkural, authored by Thiruvalluvar, a brilliant Tamil poet and philosopher.
- **Silappathikaram was written by Elango Adigal, and Manimegalai was written by Sittalai Sattanar.** They also provide valuable information about Sangam politics and society.

Important Sangam Literature

- **Tolkappiyam, penned by Tolkappiyar, is the first Tamil literary work.** It is largely a study of the Tamil language, but it also includes information about the political and socio-economic conditions of the time.

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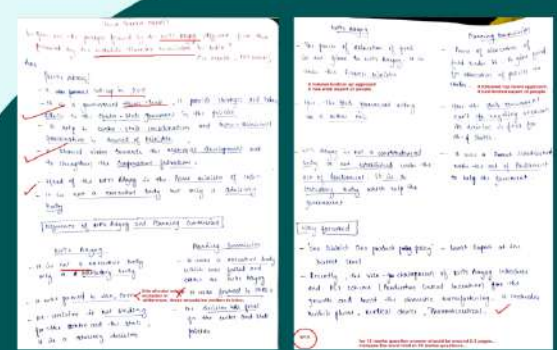
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8.3 SHORT ARTICLES

World's Biggest Maritime Museum Complex
[Context](#)

- Union Minister of Ports, Shipping and Waterways, Shri Sarbananda Sonowal reviewed the project process of National

Maritime Heritage Complex, Lothal in Gandhinagar, Gujarat.

Details:

- An MoU was signed during the meeting with Ministry of Defence (Indian Navy & Coast Guard) towards development of a Naval gallery: **"The Journey of Indian Navy & Coast Guard"** inside NMHC complex.
- NMHC will act as a centre for learning and understanding India's diverse maritime history and is being built in such a way that the common man of India can easily understand its history'.
- Shri Sonowal also conveyed gratitude to the Government of Gujarat for continuously supporting the project development.
- **The NMHC will take us a step ahead towards Amritkal and MIV 2030.** This will establish India in the global front and educate individuals about the rich heritage of our Maritime sector'.

About National Maritime Heritage Complex:

- NMHC is being developed as a **first of its kind in the country dedicated** to the legacy of Maritime Heritage of India, it will not only showcase **India's rich and diverse maritime glory** but will also highlight the robust maritime history and vibrant coastal tradition of our country at one place that would uplift the image of India's Maritime Heritage in the international forum.
- **It is to be noted that, the Ministry of Ports, Shipping and Waterways** as part of its commitment to the development of the Port Sector in the country has **identified 74 projects worth Rs 57,000 crore under the Sagarmala programme in Gujarat.**
- Out of these, 15 projects worth Rs 9,000 crore have been completed; 33 projects worth more than Rs 25,000 crore are under implementation and 26 projects worth Rs 22,700 crore are under development.
- Central line ministries, major ports, state maritime board and other state agencies are jointly implementing these projects.

Alluri Sitarama Raju

Context

- The President of India, SmtDroupadiMurmu graced and addressed the closing ceremony of the 125th Birth Anniversary of Alluri Sitarama Raju at Hyderabad today (July 4, 2023).

Details:

- Speaking on the occasion, the President said that Alluri Sitarama Raju's struggle against injustice and exploitation is a proud chapter of the Indian freedom struggle. She said that all the people, especially the younger generation, should be aware of his patriotism and courage.

About:

- **Alluri Sitarama Raju was a legendary freedom fighter** who rallied the tribes of the Eastern Ghats to rise in revolt against British rule.
- **The Rampa rebellion**, which he led with unparalleled courage and bravery, raged from August 1922 to May 1924 and is known as one of the most intense uprisings to have challenged the writ of colonial power in the subcontinent.
- **He is remembered for mounting daring raids to seize arms and ammunition from police stations** in the **Rampachodavaram, Addateegala, Devipatnam and Rajavommangi** areas of the tribal backwoods in what is now the northern part of Andhra Pradesh.
- **Alluri is revered not just in Andhra Pradesh** but also in Telangana, Odisha and Karnataka.
- He believed in armed struggle and sacrificed his life for the liberation of the tribals.
- **He opposed the Madras Forest Act, 1882** (the region was then part of the erstwhile Madras Presidency), which prohibited the tribes from indulging in podu (shift cultivation) and usurped their right to collect minor forest produce.

Swami Vivekanand

Context

- Swami Vivekanand, born on 12th January 1863, was the principal follower of the spiritual guru 'Ramakrishna Paramahansa'. He

had a keen interest in spirituality and religion since his early childhood.

Details

- The spiritual pioneer founded the **Ramakrishna Mission and Ramakrishna Math**, which provided the core teachings of spirituality worldwide and because of his brave yet humble words, he was given the title of '**A wonder of oratorical powers**'.
- **The Indian philosopher and yogi played a significant role in the Hindu reform movement in India and introduced the Indian darsanas, 'Vedanta and Yoga' to the western world.**

About:

- **Disciple of:** Ramakrishna Paramhansa
- **Founder of:** Ramakrishna Mission (1897), Ramakrishna Math, Vedanta Society of New York
- **Philosophy:** Advaita Vedanta
- **Literary works:** Raja Yoga (1896), Karma Yoga (1896), Bhakti Yoga (1896), Jnana Yoga, My Master (1901), Lectures from Colombo to Almora (1897)
 - He was responsible for the revival of Hindu spiritualism and established Hinduism as a revered religion on world stage.
- His message of universal brotherhood and self-awakening remains relevant especially in the current backdrop of widespread political turmoil around the world.
- **The Ramakrishna Mission** undertook various forms of social service like establishing and running schools, colleges and hospitals, propagation of practical tenets of Vedanta through conferences, seminars and workshops, and initiating relief and rehabilitation work across the country.

Karma Yoga, Bhakti Yoga, Raja Yoga:

- **Karma Yoga:** Swami Vivekananda, emphasizing the importance of work, said that God can be attained through work.
- **Bhakti Yoga:** Bhakti Yoga teaches that love is a vital element of all human beings. It teaches how to love bereft of any ulterior motives.

About Lambani craft:

- **Raja Yoga:** Raja Yoga opens up the psychological way to union with God. This Yoga teaches that in order to acquire knowledge, we'd have to use a method called concentration.
- **Faith in oneself:** He emphasizes that the ideal of faith in ourselves is of the greatest help to us as whatever "you think, that you will be. If you think yourselves weak, weak you will be; if you think yourselves strong, strong you will be."

Lambani Craft of Karnataka

Context

- The delegates at G-20 meet are being taken on an excursion to heritage sites such as the Vijaya Vittala Temple, the Royal Enclosure and the YeduruBasavanna complex of the Hampi group of monuments, a UNESCO world heritage site.

Details:

- It was an effort/initiative to popularize Lambani art, craft and culture.
- This initiative is also expected to encourage the participation of Nari Shakti in such cultural activities.
- SandurLambani Embroidery is recognized with a Geographical Indication tag in 2010.

Lambanis

- **These are nomadic tribes that are spread across India.** Regarding the origins of the Lambani community, there are many theories, some are -
 - They are considered to be the descendants of the **Romanis of Europe.** Came from the Ghor province of Afghanistan and then settled in Rajasthan, Gujarat and then migrated down south.
- These tribal communities of Banjara or Lambani mainly reside in -**Sanduru, Bellary and Bijapur in Karnataka, andHyderabad in Andhra Pradesh.**

Why significant?	<ul style="list-style-type: none"> • Also known as Banjara embroidery, it is an intricate embroidery art done on a piece of cloth. • This art is mainly practiced by the community of Lambanis.
Processes of the Art	<ul style="list-style-type: none"> • Firstly Basic tools and materials are collected – for eg – Fabric, needles, thread, accessories etc. • Then there is selection of patterns, types and shapes of stitches, color combinations • Accessories like beads, mirror are added in the later stage. • Finally it is ironed to give the cloth piece a desired look.
Colours used	<ul style="list-style-type: none"> • Most commonly used colors are red, yellow and blue.
Features	<ul style="list-style-type: none"> • Done on a loosely woven piece of cloth. • Around 14 types of stitches with various geometric shapes like - <u>squares, circles, triangles, diagonal lines etc.</u> • Parallel lines of multi color threads. • Patchwork. • Mirror work, Beads, Metal buttons, Ghungroo etc. • Quilting. • Applique, an ornamental needlework. • Overlaying

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Thiru Kumaraswami Kamaraj

Context

- Recently, the Prime Minister of India paid tribute to Thiru Kumaraswami Kamaraj on his Jayanti (15 July 1903 – 2 October 1975), acknowledging his significant contributions to India's development.

About:

- Thiru Kamaraj is a popular figure not only in Tamil Nadu but also across India. Thiru

Kumaraswami Kamaraj popularly known as K. Kamaraj was born on 15 July 1903 in Tamil Nadu then Madras. He was a great visionary, human being and development practitioner.

- He was a sixth-grade dropout, but he was the **first to contribute to the expansion of free education** in the Tamil Nadu during his three consecutive terms as Chief Minister.
- After independence, Kamaraj was the third **Chief Minister of Madras State (Tamil Nadu)**

- and served from 1954 to 1963 and a Member of Parliament, **Lok Sabha during 1952–1954 and 1969–1975.**
- **He was known for his simplicity and integrity.** He played a major role in developing the infrastructure of the Madras state present Tamil Nadu and worked to improve the quality of life of the need and the underprivileged classes.
 - He was not born with a silver spoon and had to struggle in his life initial years.
 - **Like Netaji Subhas Chandra Bose, the Jallianwala Bagh massacre** was the turning point in his life. Netaji Subhas left mid-way of his ICS training and joined in the freedom movement. Same was the case of Thiru Kamaraj; he decided to fight for national freedom and to bring an end to foreign rule.
 - As Chief Minister his **contributions to agriculture, education and industrial development** are enormous. He was not a theoretical economist but was a real and practical economist and a great visionary.
 - During his regime, new schools were opened, so that poor students of rural areas can attend their nearest school. He introduced free school uniforms to weed out caste, creed and class distinctions.
 - It is pertinent to mention that during the British rule the education rate was only 7 per cent in then Madras but after Kamaraj's reforms it reached 37 per cent.
 - During his period, the number of working days in schools was increased from 180 to 200 as unnecessary holidays were reduced.

Namda Art

Context

- Union Minister of State for Skill Development and Entrepreneurship and Electronics and IT, Shri Rajeev Chandrasekhar today flagged off the first batch of Namda Art products for export to the United Kingdom (UK).

Details:

- The Namda craft of Kashmir is being successfully revived under a **Skill India's Pilot Project** as part of the **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**, with nearly 2,200 candidates from across six districts of the state, receiving training in the dying art form.
- The **project sets a great example of the public-private partnership (PPP) model** in the field of skill development, as it is being implemented in collaboration with local industry partners.
- **Under this initiative, nearly 2,200 candidates** have been trained in the art of Namda craft, representing a significant milestone in preserving this traditional craft and empowering the local weavers and artisans.
- **The project has successfully trained individuals across six districts** of Kashmir, namely Srinagar, Baramulla, Ganderbal, Bandipora, Budgam, and Anantnag.

About Namda Art:

Why significant?	<ul style="list-style-type: none"> • It is traditional Kraft of Kashmir which involves making a rug which is primarily made of pure sheep wool.
Techniques used	<ul style="list-style-type: none"> • It is different from regular rug as instead of using normal weaving process, felting technique is used. Hence no weaving is involved in this process.
Background	<ul style="list-style-type: none"> • Namda means a layer above a regular rug made of old blankets. • This art is believed to be invented in 11th century by Nomadic tribes of the Central Asian steppes.
In India	<ul style="list-style-type: none"> • In India the use of this art started from the reign of Mughal emperor Akbar. • It is under process to get a GI tag certification.

Mangal Pandey

Context

- Chief Minister Shivraj Singh Chouhan paid tribute to Amar Shaheed Mangal Pandey on his birth anniversary.

Details

- Mangal Pandey was a brave Indian soldier whose attack on British officers on March 29, 1857, was the first major incident of what came to be known as the Indian Mutiny.
- Born on July 19, 1827, in the village of Nagwa, in Ballia district, Uttar Pradesh, he played a significant role in the Indian rebellion against British colonial rule, also known as the First War of Independence.

About

- Pandey, a sepoy, had rebelled against his British officers in 1857, triggering a wave of uprising in what came to be regarded by many as India's first war of Independence before the colonial rulers managed to quell it.
- He was from a high-caste Brahman landowning family that professed strong Hindu beliefs.
- He joined the army of the British East India Company in 1849 and he was made a soldier (sepoy) in the 6th Company of the 34th Bengal Native Infantry, which included a large number of Brahmans.
- He revolted against the East India Company for introducing cartridges that were greased with animal fat as it hurt the religious sentiments of the soldiers.
- In India, Pandey has been remembered as a freedom fighter against British rule. A commemorative postage stamp with his image on it was issued by the Indian government in 1984.
- In addition, a movie and stage play that depicted his life both appeared in 2005.

Tankai Method

Context

- In a remarkable initiative to revive and preserve the 2000-year-old technique of shipbuilding known as the 'stitched shipbuilding method', the Ministry of Culture

and the Indian Navy have entered into a Memorandum of Understanding (MoU).

Details

- The Indian Navy will oversee the implementation and execution of the entire project. As custodians of maritime security and experts in the field, the Indian Navy's involvement ensures seamless project management and adherence to the highest standards of safety and precision.
- Their invaluable experience and technical knowledge will play a pivotal role in the successful revival of the ancient stitching method and the construction of the stitched ship.
- The stitched ship holds significant cultural value in India, given its historical importance and the preservation of traditional craftsmanship.
- Throughout history, India has had a strong maritime tradition, and the use of stitched ships played a vital role in trade, cultural exchange, and exploration.

About Tankai Method

Aim

- It is aimed to understand the interaction of ancient India with other part of the world in terms of trade, cultural, knowledge, technology exchanges.
- This agreement is aimed to glorify and revive the ancient maritime memory.

Processes

- The stitched ship is made by stitching wooden planks
- These ships are more durable as nails are not used.
- Also these ships are caused less damage due to shoals and sandbars.
- From thousands of years they contributed to trade, cultural exchange, and exploration.

Significance

- The art holds significant cultural value and is slowly fading.
- For preservation of cultural heritage and knowledge for future generations.
- It has historical importance and the centuries old traditional craftsmanship regarding India's

ancient seafaring traditions needs to be preserved.

- It will showcase the exceptional craftsmanship of traditional shipwrights.
- A sense of pride is supposed to be instilled in India's rich maritime heritage.
- It will also seek to strengthen relationships with littoral countries of Indian Ocean by promoting cultural memories.

Reason for disappearance

- Arrival of European ships in India changed the techniques of shipbuilding.
- Traditional arts were discouraged by Europeans, particularly British, in General.
- Availability of more sophisticated techniques of shipbuilding.
- Neglect of Indian government towards Tankai. However this art is still practiced in a few coastal regions of India, mainly for small local fishing boats.

Bal Gangadhar Tilak

Context

- The Prime Minister, Shri Narendra Modi has paid tributes to Lokmanya Tilak on his Jayanti and said that the story of his courage, struggle and dedication in the freedom movement will always inspire the countrymen.

About:

Childhood & Early Life

- Keshav Gangadhar Tilak was born on July 22, 1856 in a middle class Chitpavan Brahmin family in Ratnagiri, a small coastal town in south-western Maharashtra.

Political career

Indian National Congress

- Gangadhar Tilak joined the **Indian National Congress in 1890**. He soon started vocalizing his strong opposition to the moderate views of the party on self-rule. He maintained that simple **constitutional agitation** in itself was futile against the British. This subsequently made him stand against the prominent Congress leader, **Gopal Krishna Gokhale**. He wanted an armed revolt to broom-away the British.

Imprisonment

- During 1896, an epidemic of **bubonic plague broke out in Pune and the adjacent regions** and the British employed extremely rigorous measures to contain it. Under directives from **Commissioner W. C. Rand**, the police and the army invaded private residences, violated personal sanctity of individuals, burned personal possessions and prevented individuals to move in and out of the city.

Tilak and All India Home Rule League

- Tilak returned to India in **1915 when the political situation** was fast changing under the shadow of the World War I. There was unprecedented celebration after Tilak was released.
- He then returned to politics with a mellowed down outlook. Deciding to re-unite with his fellow nationalists, Tilak founded the **All India Home Rule League in 1916** with **Joseph Baptista, Annie Besant and Muhammad Ali Jinnah**.
 - By April 1916, the league had 1400 members that increased to 32,000 by 1917.
- **He rejoined the Indian National Congress but could not bring about reconciliation** between the two opposite-minded factions.

Newspapers

- Towards his nationalistic goals, Bal Gangadhar Tilak published two newspapers - '**Mahratta**' (English) and '**Kesari**' (Marathi).
- Both the newspapers stressed on making the Indians aware of the glorious past and encouraged the masses to be self-reliant. In other words, the newspaper actively propagated the cause of national freedom.

Social Reforms

- After completing his education, Tilak spurned the **lucrative offers of government service** and decided to devote himself to the larger cause of national awakening. He was a great reformer and throughout his life he advocated the cause of women education and women empowerment.

Death

- Tilak was so disappointed by the brutal incident of **Jalianwala Bagh massacre** that his

health started declining. Despite his illness, Tilak issued a call to the Indians not to stop the movement no matter what happened. He was raring to lead the movement but his

King Mihir Bhoj

Context

- The controversy around the lineage of Mihir Bhoj has surfaced earlier too, in Bihar and Uttar Pradesh, with both Gurjars and Rajputs claiming he belonged to their community.

Details

- The Gurjar community in Haryana's Kaithal had planned to unveil a statue of Mihir Bhoj, calling him a Gurjar Pratihar Samrat (king). The Rajput community members objected to this. The local administration then intervened and held a series of meetings between the members of both communities, to no avail.
- The situation worsened on July 19 when the police lathi-charged the Rajputs who had gathered in Kaithal to oppose the Gurjars' move.
- On July 20, even as protests from the Rajputs continued, Gurjar community leaders unveiled the statue. Upset, as many as 35 leaders offered to quit the BJP.
- BJP's Kaithal MLA, Lila Ram Gujjar, said, "There is solid proof that Mihir Bhoj was a Gurjar Samrat. He had ruled India when Iraq, Iran, Afghanistan and Burma were also part of the country. The Rajput community members can't tamper with history to prove their point.

About Mihir Bhoj

- **Mihir Bhoj (c. 836-885 CE) was a successful and ambitious ruler of ninth century India.** "At that time, the Gurjara-Pratiharas were ruling over a vast empire, from Kashmir to Gujarat. Mihir Bhoj successfully conquered areas of Deccan and Malwa too."
- During the **ninth century, the major political struggle was for control over Kannauj** as it was considered that whoever conquered Kannauj would be emperor of the country.

health did not permit. Tilak suffered from diabetes and had become very weak by this time. **In mid-July 1920, his condition worsened and on August 1, he passed away.** Hence, the country witnessed a tripartite struggle among three big powers of the times –the Gurjara-Pratihara, the Rashtrakutas of Deccan and the Palas of Bengal.

- **In that struggle, Mihir Bhoj was, by and large, the most successful.** He conquered areas of Gujarat and Malwa from the Gujarat-Rashtrakutas. Similarly, the king launched a **campaign towards Bengal and conquered territories of Gorakhpur** from the Palas of Bengal too.
- Gurjar Pratiharas, the group to which Mihir Bhoj belonged, are often considered both **Rajputs and Gurjars**. So there is really no conflict between the two identities.
- **Gurjars were a nomadic tribe in ancient India**, initially spreading in Rajasthan and Gujarat regions. And it is believed that Mihir Bhoj belonged to this tribe.
- However, it is also believed that he claimed Kshatriya status for himself. The **Pratihara branch of the dynasty** was linked to Rajputs. It was considered that only a **Kshatriya (warrior)** could become a king. In ancient India, all kings claimed Kshatriya status.

Chandrashekhar Azad

Context

- Prime Minister Narendra Modi on Saturday paid his tribute to freedom fighter Chandrashekhar Azad on his birth anniversary. Calling him the "great son of Maa Bharati", Modi said such "stalwarts epitomise courage and patriotism".

Details:

- Mangal Pandey was a brave Indian soldier whose attack on British officers on March 29, 1857, was the first major incident of what came to be known as the Indian Mutiny.
- Born on July 19, 1827, in the village of Nagwa, in Ballia district, Uttar Pradesh, he played a significant role in the Indian rebellion

against British colonial rule, also known as the First War of Independence.

About:

- Chandra Shekhar Azad was an Indian revolutionary who reorganised the Hindustan Republican Association (HRA) under its new name of **Hindustan Socialist Republican Association (HSRA)**.

Early Life and Ideology

- Born on July 23, 1906, in Bhavra, Madhya Pradesh, India.
- Witnessed the Jallianwala Bagh massacre of 1919, which deeply influenced his commitment to India's freedom struggle.
- Embraced the ideology of armed resistance and rejected non-violent approaches like those advocated by Mahatma Gandhi.
- Political Ideology:** Liberalism, Socialism, and Anarchism.
- In **December 1921**, **Mahatma Gandhi** launched the **non-cooperation** movement.

Azad took part in the movement and he was arrested by the British. When Azad was produced before a judge, he gave his name as "**Azad**" which means "**free**" in Urdu.

- He was involved in **Kakori Train Robbery of 1925**, the shooting of **J. P. Saunders at Lahore in 1928** to avenge the killing of Lala Lajpat Rai, and attempt to blow up the Viceroy of India's train in 1929.

Legacy and Inspiration

- Continues to inspire generations of Indians with his courage and determination.
- Symbol of selfless devotion to the motherland and unwavering commitment to the cause of freedom.
- His commitment to armed struggle left an indelible mark on India's history.
- He used to fondly recite a **Hindustani couplet**, his only poetic composition: **'Dushman ki goliyon ka hum saamna karenge. Azad hi rahein hain, azad hi rahenge'**

Safdarjung Tomb

Context

- The Archaeological Survey of India (ASI) is set to finish conservation and restoration work on the central dome of Safdarjung Tomb by the end of the month.

Details


- Currently, scaffolding has been installed around the dome, and gaps are being filled in sections. In addition to the repairs, the marble is being spruced up and cleaned.
- Since the 18th-century tomb's dome is made of white marble, the raw materials for the project came from Makrana and Dholpur in Rajasthan. "Conservation entails preserving the structure's original characteristics.
- Safdarjung tomb required routine repairs. Because work is being done on the dome, we had to stop for a while due to rain in the past week. We hope to finish any remaining work by the end of the month.

About Safdarjung Tomb

About	<ul style="list-style-type: none"> Safdarjung Tomb, located in New Delhi, India, is a splendid mausoleum constructed in the 18th century. It serves as the final resting place of Safdarjung, a prominent statesman and Nawab of Oudh, who was also the Prime Minister of the Mughal Empire under Muhammad Shah. The tomb stands as a fine example of Mughal architecture and is a significant historical monument in the capital city.
Features	<ul style="list-style-type: none"> The tomb exhibits a fusion of Mughal and Persian architectural styles, inspired by the grandeur of Humayun's Tomb and Taj Mahal. The structure is built with red and buff sandstone, giving it an imposing appearance. It features a large central dome surrounded by four smaller domes, creating an

Legacy

- elegant and harmonious architectural composition.
- The intricate **marble inlay work and decorative carvings** on the walls and ceilings showcase the artistic brilliance of Mughal craftsmanship.
- The Safdarjung Tomb stands as a testament to the architectural brilliance of the Mughal era and serves as an **important historical landmark in Delhi**.
- It has influenced subsequent **Mughal and Indo-Islamic architectural styles**, inspiring other structures built during the later periods.
- Today, the tomb and its garden complex are **well-preserved heritage sites**, attracting visitors and history enthusiasts from all over the world.



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8.4 SNIPPETS



PEN PINTER PRIZE 2023

- British children's writer and performance poet Michael Rosen has been awarded the prestigious PEN Pinter Prize 2023.
- Launched in 2009 by English PEN, the annual PEN Pinter Prize literary awards given in the honour of the late Nobel Literature Prize-winning English playwright Harold Pinter.
- This award is open for writers from the UK, Ireland or the Commonwealth for upholding freedom of expression, even it means to risk their own safety, in their works.
- It reflects a fierce intellectual determination to define the real truth of our lives and our societies.



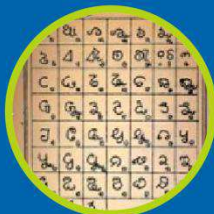
GURU PURNIMA

- Guru Purnima is also referred as Ashadha Purnima. As per the Indian lunar calendar it is celebrated on the full moon day of the Ashadha month.
- On this day, it is believed that after attaining Enlightenment, Gautam Budha gave first teaching to first five ascetic disciples (pancavargiya) at 'Deer Park', in Sarnath, near Varanasi.
- This day marks the rainy season, July to October, retreat for Monks and Nuns where they remain in a single place doing intensive meditation.



GUTTI KOYA TRIBE

- It is a tribal community which is spread in the states of Andhra Pradesh, Telangana, Chhattisgarh, and Odisha.
- Their livelihood sources are animal husbandry and minor forest produce.
- They appoint only males to the position of physician, priest and village leader.
- Earlier this tribe was in news when some people of this tribe killed a forest range officer in Telangana.



KUI LANGUAGE

- Kui language, a vernacular tribal language, is one of them.
- It is also referred to as Kandh, Khondi, Kanda, Kodu, Kuinga
- It is a South-Eastern Dravidian language mainly spoken by the Kandhas or Kondhs.
- Closely related to the Gondi and Kuvi languages, Kui language is written in the Odia script.
- The language has approximately 1 million speakers, 9,41,488 to be precise, as per census of India.



KER PUJA

- Ker, meaning austerity, is an annual festival of Tripura held after 2 weeks of Kharchi Puja.
- In the Kokborok, a local tribal language, Ker means boundary or specific area.
- It is held in the honour of the guardian deity of Vastu, Ker Devata.

8.5 1 MAINS QUESTION AND 5 MCQS

MAINS QUESTION

Q1. Bal Gangadhar Tilak played a vital role in energizing the masses in the struggle for the Independence of India. Discuss.

Answer:

- Bal Gangadhar Tilak was born on 23 July 1856 in Ratnagiri, Maharashtra, India, to a Marathi Hindu Chitpavan Brahmin family. His father, Gangadhar Tilak, was a school teacher and Sanskrit scholar. Tilak married Tapibai (later known as Satyabhamabai) at the age of sixteen.

His contribution in the Freedom Struggle:

- Tilak was a strong proponent of Rashtriyatva, which can be translated as Nationalism.
- He firmly believed in the idea of a united India where Indians would have control over their own destiny.

- He joined the Indian National Congress in 1890 and became a part of the extremist faction within the party. This faction advocated for more assertive and radical measures in the struggle for independence, often differing from the moderate approach of the Congress leadership at that time.
- One of Tilak's most famous slogans was "Swarajya is my birthright and I shall have it!". This phrase became a rallying cry for the Indian independence movement, emphasizing Tilak's unwavering commitment to the idea of self-rule for India and the assertion of Indian rights.

Freedom Movement

- In response to the Partition of Bengal implemented by Lord Curzon in 1905, which was seen as a British strategy to divide and weaken the Indian nationalist movement, Tilak played a significant role in promoting the Swadeshi Movement.
- The Swadeshi Movement encouraged Indians to boycott foreign goods and promote indigenous products, fostering a spirit of self-reliance and unity among the Indian masses.
- Tilak reunited with his fellow nationalists and rejoined the Indian National Congress during the Lucknow Pact in 1916, bridging the divide between the extremist and moderate factions within the party.
- In the same year, he co-founded the All India Home Rule League along with G. S. Khaparde and Annie Besant. The league aimed to seek self-rule for India and played a crucial role in mobilizing public support for the freedom movement.
- Bal Gangadhar Tilak's contributions to the Indian independence movement earned him the title "Lokmanya" (accepted by the people as their leader). He is remembered as a fearless and dedicated freedom fighter who inspired millions of Indians to fight for their rights and independence. Tilak's legacy continues to be celebrated through various commemorations, films, and public institutions dedicated to him.

PRELIMS MCQ

Q2. Which of the following statements about the Safdarjung Tomb is/are correct?

1. Safdarjung Tomb was constructed in the 17th century during the reign of Emperor Shah Jahan.
2. The tomb is located in New Delhi and serves as the final resting place of Safdarjung, the Prime Minister of the Mughal Empire.
3. The architectural style of the tomb is predominantly influenced by Persian and European designs.
4. The tomb is surrounded by a char bagh-style garden, representing paradise as per Islamic beliefs.

Select the correct options using the code given below:

- A) Only Statement 1 and Statement 2 are correct.
- B) Only Statement 2 and Statement 3 are correct.
- C) Only Statement 2 and Statement 4 are correct.
- D) Only Statement 3 and Statement 4 are correct.

Q3. Consider the following statements:

1. Statement-I: Tankai' method aimed to understand the interaction of ancient India with other part of the world in terms of trade, cultural, knowledge, technology exchanges.
2. Statement-II: Arrival of European ships in India changed the techniques of shipbuilding.

Which one of the following is correct in respect of the above statements?

- A. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- B. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- C. Statement-I is correct but Statement-II is incorrect
- D. Statement-I is incorrect but Statement-II is correct

Q4. Consider the following statements about Lambani Embroidery:

1. Sandur Lambani Embroidery of Karnataka was provided GI Tag in 2010.
2. This art can contribute to promoting and protecting the rich plant diversity of the region.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Q5. Consider the following statements about PEN Pinter Prize:

1. This award is provided to the writers across world to uphold freedom of expression.
2. It is one of the highest awards of the world in the field of journalism.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer

2. C
3. B
4. C
5. D
6. C

Q6. Consider the following statements about Ashadha Purnima:

1. This day is also celebrated as Asanha Bucha in Thailand.
2. Gautam Budha gave first teaching to pancavargiya on this day.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

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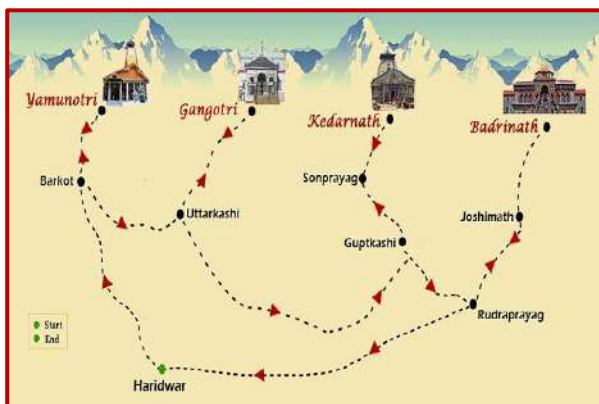
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9. GEOGRAPHY & DISASTER MANAGEMENT

9.1 SAFETY CONCERNS AND MANAGEMENT IN CHAR DHAM YATRA

Context

- The initial 65 days of the annual Char Dham Yatra season in Uttarakhand saw the deaths of 149 pilgrims.
- Most of the deaths were caused by prolonged ailments among pilgrims, **who could not bear the harsh weather conditions and tough terrain.** Some of the pilgrims also died **due to accidents on their way to temples.**



What is Char Dham Yatra?

- Chardham is one of the most prominent Hindu religious pilgrimage spots in Uttarakhand.
- The pilgrimage involves the tour of the four holy sites – **Yamunotri, Gangotri, Kedarnath and Badrinath.**
- The pilgrim sparks off his journey from Yamunotri and moves towards Gangotri and then passes through Kedarnath and ends the pilgrimage at Badrinath.

Safety concerns in Char Dham Yatra

High Altitudes and Rocky Terrain

- The four holy pilgrimage centres on the Char Dham Yatra in Uttarakhand are situated at **high altitudes in the Himalayan region.**
- The high Himalayas and the **rocky terrain can lead to mountain sickness.**

Changed conditions

- Those visiting are affected by **sudden low temperatures, low humidity, increased**

ultraviolet radiation, low air pressure, and low oxygen levels.

Mountain Sickness

- While Kedarnath is the highest at around 11,700 ft, Gangotri is the lowest at around 10,200 ft. The **extreme heights, elevated treks, and changing weather conditions cause high chances of mountain sickness.**
- The massive rush of devotees on the 16 km trek causes a lot of exertion. The Kedarnath trek is considered **one of the riskiest in India.**

Narrow lanes

- The **lanes are narrow** and sometimes, passing horses hurt people.
- The shortcuts have high elevation and take a heavy toll on the body.

Oxygen levels and temperatures

- In the last 8-10 km, the **oxygen level and the temperature drop suddenly.** If the body isn't prepared for it, it could be fatal.

Air composition

- The air we breathe comprises different molecules, with nitrogen (78 per cent) and oxygen (21 per cent) in the largest quantity. This composition of air remains consistent at the ground level. However, with an increase in altitude, **the partial pressure of oxygen, or number of oxygen molecules in a given volume of air, changes.**
- At high altitudes, the oxygen molecules are further apart because of less air pressure that pushes them closer. This means, **there are fewer oxygen molecules in the same amount of air we intake.**

Hypothermia

- Many pilgrims do not come with proper clothing as they **are not aware of the extreme cold conditions prevailing in the high altitudes.**
- Many of those who died on the way to Kedarnath **die of hypothermia** which is caused by extremely cold conditions.

Medical History

- The weak immunity of pilgrims who have a **Covid history is another reason for the high number of casualties.**

How does it all affect the body?

- When exposed to low oxygen, our body responds and we start trying to breathe in more air in an attempt to increase oxygen uptake. However, there is still less oxygen throughout the circulatory system, and a **lesser amount of oxygen reaches our muscles.**
- Due to low humidity, within the first few hours of altitude exposure, **water loss also increases, resulting in dehydration.**
- After some time, **our bodies begin to adjust to the low-oxygen level, and haemoglobin levels increase** along with the ratio of blood vessels to muscle mass.
- According to Indian Medical Association (IMA), the effect of lower oxygen and higher altitude varies according to age, and the symptoms vary from person to person. **For older people and people with comorbidities, the effects are serious.**
- The **degeneration of coronary arteries**, which supply blood to the heart muscles, starts after 25 years of age.
- For the elderly, the risk is more because the **tolerance to stress is low and blockage in the arteries is more.**
- If the person is diabetic, **the person might die due to lactic acidosis.**
- Most of the deaths are due to **cardiovascular respiratory arrest.** These are caused mainly when the **electrical system of the heart malfunctions.**
- This malfunction causes **an abnormal heart rhythm such as ventricular tachycardia or ventricular fibrillation.** Some cardiac arrests are also caused by the **extreme slowing of the heart's rhythm.**
- A sudden change in temperature adds to the problems due to the **shrinkage of coronary vessels.** This **reduces the blood supply in the body.** In such a condition, when we do physical activity, **it further affects the body.** There is another misconception, that it is

easier for athletic people. People who regularly go to the gym need more oxygen for daily metabolism. If a person has hyperthyroidism and is super slow, the person will compensate easily,

Why Char Dham Yatra is witnessing an alarming hike in the death count?

- With the **Uttarakhand government doing away with mandatory medical tests,** many pilgrims who may not have been fully fit for undertaking the arduous journey also took to the Yatra, resulting in deaths.
- The government has put in place medical checkpoints for health checks of the pilgrims, but **the facilities currently provided by the state government are not adequate enough to handle the growing influx of travellers.**
- While the Uttarakhand tourism website has a travel advisory page with do's and don'ts for travellers and emergency contact numbers, **it falls short of providing accurate information on the facilities and amenities in place along the travel route.**
- Since 2014, there has been **no additional allocation of funds for the Chardhamyatra.**
- **Budgeting constraints and poorly managed facilities** make this site dangerous for people who embark on the journey without preparation.
- The government has **no working mechanism in place to limit the number of pilgrims.**

Way Ahead and need of the hour

- **Setting up better medical and infrastructural facilities** ahead of the yatra.
- There must be **oxygen checkpoints.**
- The area is accident-prone and the **roads must be fixed.**
- Ambulances, and water facilities.
- As most of the pilgrims are not used to such high altitudes, **they should be given a break in their journey at lower heights to help them acclimatise themselves** to the kind of weather they are going to confront in higher altitudes.
- The Government **must regulate the number of people who go on these pilgrimages** & must make 1 or 2 halts along the route mandatory.

- If not two or more halts, at least a single halt must be made compulsory for all travellers.
- The government should set up 600 to 700 metres as the maximum height for travel during a single day. Right now, there are no such regulations. This is one of the major contributory factors to the rising instances of deaths during the Chardham Yatra.
- The elderly people who go to such yantras sometimes are not fit enough to explore these difficult terrains. They must at least get trained to increase their fitness to optimum levels six months before the trip. Aerobic training can help them. If they have weight-related issues, even that must be addressed during the six months.
- If they have heart ailments or other underlying medical conditions, they must consult a doctor before embarking on such a journey.
- People should carry pulse oximeters.
- Oxygen cylinders must be available at various points, and the pilgrims should have a clear knowledge of where exactly help is available.
- The government should also set up numerous medical camps on the route, and these camps must have medical experts and emergency medical facilities.

Closing Remarks

- Some simple steps can help prevent such high-altitude illness and death.
- The number of deaths will continue to increase on the pilgrimage route if the authorities do not step in to put in place a concrete plan of action to safeguard the lives of the pilgrims who embark on these arduous elevated routes to reach the four holy shrines.

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9.2 COALITION FOR DISASTER RESILIENT INFRASTRUCTURE (CDRI)

Context

- The Union Cabinet has given its approval for ratification of the Headquarters Agreement (HQA) between the Government of India (GoI) and Coalition for Disaster Resilient Infrastructure (CDRI) signed on 22nd August 2022.
- Ratification of the signed Headquarters Agreement between GoI and CDRI will facilitate grant of exemptions, immunities and privileges as contemplated under Section- 3 of the United Nations

(Privileges & Immunities) Act, 1947 will provide CDRI an independent and international legal persona so that it can carry out its functions internationally, more efficiently.

Details

<p>What is the CDRI?</p>	<ul style="list-style-type: none"> CDRI is a multi-stakeholder global partnership of national governments, UN agencies and programs, multilateral development banks and financing mechanisms, the private sector, and academic and knowledge institutions.
<p>Mandate</p>	<ul style="list-style-type: none"> It addresses the challenges of building resilience into infrastructure systems and the development associated with it.
<p>Aim and Objective</p>	<ul style="list-style-type: none"> It aims to promote the resilience of infrastructure systems to climate and disaster risks. It seeks to rapidly expand the development and retrofit of resilient infrastructure to respond to the Sustainable Development Goals' imperatives of expanding universal access to basic services, enabling prosperity and decent work.  <p>The infographic shows four strategic priorities for CDRI: 01. TECHNICAL SUPPORT AND CAPACITY-BUILDING (Disaster response and recovery support; innovation, institutional and community capacity-building); 02. RESEARCH AND KNOWLEDGE MANAGEMENT (Collaborative research; global flagship reports; global database of infrastructure & sector resilience); 03. ADVOCACY AND PARTNERSHIPS (Global events and initiatives; marketplace of knowledge; financing and implementation agencies; dissemination of knowledge products); and the CDRI logo.</p>
<p>Functions</p>	<ul style="list-style-type: none"> The Coalition <u>functions as an inclusive multi-stakeholder platform</u> led and managed by national governments, where knowledge is generated and exchanged on different aspects of disaster resilience of infrastructure. It brings together a multitude of stakeholders to create a mechanism to assist countries to upgrade their capacities, systems, standards, regulations, and practices with regard to infrastructure development in accordance with their risk context and economic needs.
<p>What is the need for the CDRI?</p>	<ul style="list-style-type: none"> Infrastructure systems are key drivers of economic growth. And a large part of this infrastructure will inevitably be exposed to a range of natural hazards. The <u>Sendai Framework for Disaster Risk Reduction (SFDRR)</u> highlights the role of improved disaster resilience of infrastructure as a cornerstone for sustainable development. The SFDRR includes four specific targets related to loss reduction: <ol style="list-style-type: none"> Reduce Global Disaster Mortality; Reduce the number of affected people; Reduce direct disaster economic loss; Reduce disaster damage to critical infrastructure Target (4) on infrastructure is an important prerequisite to achieving the other loss reduction targets set out in the framework. Thus, there is a <u>clear case for ensuring that all future infrastructure systems are resilient</u> in the face of disasters in order to protect our investments.
<p>Launch of</p>	<ul style="list-style-type: none"> The Prime Minister of India launched CDRI during his speech <u>at the UN Climate</u>

CDRI	Action Summit on 23 September 2019.
Members	<ul style="list-style-type: none"> • 39 members, consisting of 31 national governments and eight organizations, are CDRI members.
Member Organizations	<ul style="list-style-type: none"> • The World Bank Group, The Asian Development Bank, The United Nations Development Programme (UNDP), The United Nations Office for Disaster Risk Reduction (UNDRR), The Private Sector Alliance for Disaster Resilient Societies (ARISE) and Coalition for Climate Resilient Investment (CCRI) are supporting partners.
Nature of Policies	<ul style="list-style-type: none"> • Policies, standards, and other outputs of CDRI are not be binding on its members.
Expectation from members after joining CDRI	<ul style="list-style-type: none"> • The CDRI will benefit from the member countries' expertise and experience in building disaster and climate resilience into their infrastructure systems. In particular, their experience and expertise on assessing disaster and climate risk to infrastructure projects as well as their experience in developing standards and regulations to make infrastructure resilient would be valuable. • Such experience sharing will contribute to collaborative research projects or address the specific needs of other members of the Coalition. All such experience sharing would be entirely voluntary. Beyond their technical expertise, member countries' would support to help enlarge this conversation with other countries and expand the partnership.
Role for the private sector in the Coalition	<ul style="list-style-type: none"> • Given that the private sector is increasingly a major player in infrastructure development around the world, the coalition will serve as a platform for the private sector organizations to share experience, expertise and good practices on resilient infrastructure design, development and operation.
How is CDRI funded?	<ul style="list-style-type: none"> • A large share of the estimated fund requirements to cover the core costs over the first five years has been invested by India. • There are no obligations on the part of members to make financial contributions to CDRI. However, at any point members of the CDRI may make voluntary financial or in-kind contributions to the CDRI.
Secretariat of CDRI	<ul style="list-style-type: none"> • The CDRI Secretariat is based in New Delhi, India.
How does the CDRI understand "infrastructure" and "disasters" in its context?	<ul style="list-style-type: none"> • The term "infrastructure" is meant to include major physical infrastructure (energy, telecommunication, roads, railways, airports, etc.), social infrastructure (schools, hospitals, etc.), and ecological infrastructure (natural waterways, waste management, etc.). In its initial phase, the CDRI will prioritize sectors where it can have the greatest multiplier effect. • The scope of "disasters" includes those emanating from natural hazards as well as man-made hazards.
Diplomatic Significance	<ul style="list-style-type: none"> • The CDRI is the second major coalition launched by India outside of the UN, the first being the International Solar Alliance. • Both of them are seen as India's attempts to obtain a global leadership role in climate change matters, and are termed as part of India's stronger branding. • India and Japan, with their joint experience in disaster management, can use the CDRI to provide a safer alternative to China's Belt and Road Initiative (BRI).
CDRI's IRIS	<ul style="list-style-type: none"> • CDRI has also launched Infrastructure for Resilient Island States (IRIS). IRIS was jointly launched at the World Leaders Summit at COP26 in Glasgow, UK, by the prime ministers of India, UK, Australia, Fiji, Jamaica and Mauritius.

- IRIS is a dedicated initiative that **aims to support Small Island Developing States (SIDS)** in achieving sustainable development through a systematic approach to resilient, sustainable, and inclusive infrastructure.

9.3 YAMUNA RIVER

Context

- Yamuna water level **breaches 60-year record**. The river was flowing at 208.13 meters, which is the highest recorded level since 1963. The chief minister seeks the Centre's help. There was **no facility to stop water at the Hathnikund Barrage**.

Reasons

- The rise in Yamuna level can be **attributed to rainfall in its catchment areas like Himachal Pradesh, Uttarakhand, Haryana, and Punjab** since heavy rain lashed north India on July 8-9.

Impact

- The rise in the water level of the Yamuna has **caused flooding in various regions of Delhi**, affecting a large number of people and disrupting transportation, communication and water supply.
- **Water supply in Delhi has been impacted** with the Delhi government deciding to cut down supply by 25% due to the closure of three water treatment plants.

Steps being taken

- The water from Hathnikund barrage in Haryana, upstream of Delhi is released **into the Yamuna at a limited speed**.
- The Delhi government is in the process of **evacuating close to 41,000 people living close to the river**.
- **National Disaster Response Force (NDRF) teams** have been deployed in the affected areas and that assistance is being extended to all affected persons.
- Govt is exercising caution and is **continuously monitoring the situation**.
- **Adequate healthcare services, nourishment, water, extra shelters, and sanitation arrangements** have been put in place in the camps for the flood victims. Rugs and mattresses have also been arranged for the comfort of the individuals in these camps.

Yamuna river	<ul style="list-style-type: none"> • Yamunotri, which is north of Haridwar in the Himalayan Mountains, is the source of the Yamuna. • The river Yamuna, a major tributary of river Ganges, originates from the Yamunotri glacier near Banderpoonch peaks in the Mussourie range of the lower Himalayas at an elevation of about 6387 meters above mean sea level in district Uttarkashi (Uttanchal). • In its first 170 km stretch, the tributaries Rishi Ganga Kunta, Hanuman Ganga, Tons and Girij join the main river.
Confluence	<ul style="list-style-type: none"> • The Yamuna after receiving water through other important tributaries joins the river Ganga and the underground Saraswati at Prayag (Allahabad) after traversing about 950 Km.
Sanctuaries in the river	<ul style="list-style-type: none"> • In the upper reaches of the Tons, river is situated the GobindPashuVihar Sanctuary, a high-altitude preserve. • It is home to many high-altitude bird species like snow cock, snow partridge and the Monal pheasant.

Important places in the bank of Yamuna	<ul style="list-style-type: none"> • DakPathar in Uttranchal; Sikh religious place of Poanta Sahib; On the right side of the Yamuna basin lies sprawled, the hill station of Mussoorie; Yamuna Nagar district of Haryana state, where the river water is again diverted into Western Yamuna canal and Eastern Yamuna canal for irrigation; Delhi; Agra; Panipat; etc
Distinguished Brrages of River Yamuna	<ul style="list-style-type: none"> • Tajewala Barrage • Tajewala Barrage • Wazirabad Barrage • Okhla Barrage
Catchments	<ul style="list-style-type: none"> • The tributaries of Yamuna account for 70.9% of the catchment area; the balance of 29.1% area directly drains into the Yamuna River or is occupied by smaller streams. Further, the catchment area of Yamuna amount to 40.2% of the area of the Ganga Basin and 10.7% of the land area of India. • The catchments of the Yamuna river system cover parts of Uttar Pradesh, Uttarakhand, Himachal Pradesh, Haryana, Rajasthan, Madhya Pradesh & Delhi states.
Tributaries of River Yamuna	<ul style="list-style-type: none"> • The important tributaries of the Yamuna River are Tons, Chambal, Hindon, Betwa and Ken. • Other small tributaries of the Yamuna River include the Giri, Sind, Uttangan, Sengar and Rind. • The main Yamuna and Tons are fed by glaciers, viz., the Bandar Punch Glacier and its branches and originate from the Great Himalayan range. • The Tons is the longest tributary of the Yamuna River and its flows through Garhwal, the western part of the Himalayan state of Uttaranchal.

Issue of pollution in Yamuna River

- **Polluted drains:** The **three biggest drains** contributing to the Yamuna pollution are Najafgarh, Supplementary and Shahdara drains. There are clogging of these drains and no frequent cleaning of these drains are done.
- **Inadequate sewage treatment Facilities:** Delhi's sewage treatment facilities are inadequate, aside from being incapable of the task due to the use of outmoded technology. The water coming out of the sewage treatment units is often of poor quality. It is usually unfit even for bathing.
- **Discharge of sewage waters:** The sewage treatment plants of Delhi are major contributors of the Pollutants being discharged in the river. Large volumes of sewerage waters are discharged in the river causing pollution.
- **Dumping of Industrial effluents:** Pollutants discharge from different types of industry is also a major issue. Location of the large

number of industries in the riverbank causes large scale pollution in the river.

- **Agricultural runoff:** Agriculture activities along the banks of the river in Delhi contribute to river pollution. Catchment areas like Haryana and neighboring states practice intensive agriculture with large usage of fertilizers. Runoff of nutrients causes significant river pollution.
- **Agri-wastes and pesticides:** Moreover, Agricultural wastes and pesticides discharged from the Haryana agricultural fields which also contribute to the pollution.
- **Accumulation of pollutants:** The volume of water in Yamuna is generally low. The low volume of water flow in the river causes the pollutants to accumulate and raise the pollution level.

Polluted stretches of Yamuna

- The Yamuna enters Delhi near Palla and travels about 48km through the city.
- The 22km stretch between **Wazirabad to Okhla is the most polluted** where 2% of the

overall river length contributes to 70% of total pollution in the river. Dumping of **raw sewage, untreated industrial pollutants and solid waste** are the key causes of pollution in the river.

Government Initiatives in Yamuna River

Yamuna Action Plan

- The Yamuna Action Plan is a bilateral project between the Governments of **India and Japan**, introduced in 1993.
- It is one of the largest river restoration projects in India. The Government of Japan, via the **Japan Bank for International Cooperation (JBIC)**, has provided financial aid to carry out the project.
- It is being executed by the **National River Conservation Directorate**, the Ministry of Environment and Forests, and the Government of India.
- **Phase I, which began in 1993**, marked its end in 2003, even though it was expected to be completed by 2000.

Yamuna Action Plan Phase II

- The Yamuna Action Plan Project Phase II, **begun in 2003**, is regarded as the core project under the **National River Conservation Plan** of the Government of India.
- The project addresses the reduction of severe pollution of the River Yamuna by raising sewage treatment capacity, caused by rapid population growth, industrialization and urbanization in the towns of the river basin, which includes Delhi, the capital of India.
- Building **new sewage treatment plants and expanding the capacity of old ones** and laying and rehabilitating sewers will be done to enhance the treatment capacity, particularly in Delhi and Agra.

Delhi Government's Six-Point Action Plan to Clean Yamuna by February 2025

- The first action point is increasing the city's sewage treatment capacity and improving the quality of treatment.
- The second action point is **in-situ cleaning of the city's major drains**.

- The third action point would be to **properly treat industrial waste** and take action against units that do not adhere to the set norms.
- The fourth focus point will be **community toilets built in different slum clusters** and jhuggis of Delhi.
- The fifth action point will be to **increase household sewage connections** in the city.
- The sixth point will be the **de-silting and rehabilitation of the city's entire existing sewer network**.

Hathnikund barrage

- The Hathnikund is a concrete barrage located on the **Yamuna River in Yamuna Nagar district** of Haryana state, India.
- It was constructed between **October 1996 and June 1999 for irrigation**.
- It replaced the **Tajewala Barrage 3 km downstream** which was constructed in 1873 and is now out of service.
- The barrage diverts water into the **Western and Eastern Yamuna Canals**.
- The small reservoir created by the barrage also serves as a wetland for 31 species of waterbirds.

Way ahead

- **Ecological flow:** A minimum water flow known as ecological flow needs to be ensured at all cost in Yamuna. **More water due to e-flow dilutes the pollutants**, thereby reducing the relative pollution load. As per the study by National Mission on Clean Ganga (NMCG), a flow of 23 cusecs is needed in the lean season for this.
- **Zero untreated discharge:** There is need for the enhanced collaborations and cooperation among the riparian states of Yamuna to ensure Zero untreated discharge into the Yamuna.
- **Revise water sharing agreements:** The **1994 water-sharing agreement** between Uttarakhand, HP, UP, Haryana is due for revision in 2025. The review could open up an opportunity to divert more water towards the Delhi stretch of Yamuna.
- **Upgradation, innovation and modernisation:** Outdated technologies in existing water

treatment plants need to be upgraded and modernized urgently. More investment in R&D to develop better technologies should be ensured.

- **Water recycling and reuse:** The treated sewage should not go back into the river but be recycled for non-domestic use. To ensure

that, adequate sewage treatment plants need to be put in place.

- **Mission mode approach:** The experts are of the view that the Yamuna can be cleaned only if the government takes it in a mission mode approach. Thus, mission mode approach for cleaning Yamuna should be looked forward.

9.4 EROSION IN SUNDERBANS

Context

- Barges ferrying fly ash from India to Bangladesh that regularly travel through the Sunderbans are impacting the river banks and eroding the island, West Bengal disaster management minister Javed Khan has alleged.

How are barges responsible for the erosion in Sundarbans area ?

- A major part of the route of these barges, from points close to Kolkata where they collect fly ash via **Namkhana and Gosaba**, now travel close to the inhabited island as the deep channels are located there.
- **The tidal effects are generally highest at a depth of 0.5m**, which opens up the possibility of the peak tidal waves and barge-generated ones adding to each other.
- These barges and larger ships **affect the banks and trigger erosion.**
- For example, **Ghoramara island in the western Sunderbans is sinking.** When the barges travel from the western side of Ghoramara, the region gets eroded; however, since the barges are travelling from the north and eastern sides of the island, these sides are now getting eroded
- The barges often don't have an Indian pilot in Indian waters, though that is mandatory. This leads to navigational problems and the barges tend to come closer to the banks, leading to erosion.

Why may barges not be responsible for the erosion in Sundarbans area?

- Earlier, the barges used to travel through channels closer to the core forest. But complaints that they were damaging the

pristine mangroves and wildlife habitat, particularly through the release of toxic effluents, led to a change of route.

- On average about **40 barges travel through the Sunderbans daily**, carrying mainly fly ash from India to Bangladesh. We have no evidence to suggest that the waves generated by these barges affect the banks or cause erosion.
- The waves created by barges **affect the water level to a depth of 0.5m** at the most; this is further minimised as the waves approach the bank.
- As erosion normally occurs at a **depth of three to four metres**; the waves created by the barges have no role in bank erosion; those usually ply about 200m away from the bank.
- The regular **tidal waves and fluctuations, as well as strong winds**, damage the banks. If barge movement was responsible, there would not be erosion of river banks close to where there is no barge movement; but we find erosion in many such places.

Threats to Sundarbans

Vulnerability to climate change

- Lying in the low coastal zone makes the Sundarbans more vulnerable to the effects of the changing climatic conditions such as floods, cyclones, relative sea-level rise, and coastline erosion. Such drastic changes in climatic conditions are also leading to frequently occurring cyclonic storms.

Loss of critical habitat for biodiversity

- The frequent floods, cyclones, relative sea-level rise, and coastline erosion has led to the loss of critical habitat for biodiversity, both fauna and flora. Most parts of the wetlands

have now surpassed their water-salinity thresholds, degrading the fragile ecosystem and affecting the flora and fauna.

Submergence of Islands

- Studies suggest that climate change is leading to increased salinity and higher tidal surges, and permanent submergence of land mass.
- It has been found that the relative mean sea level in **Sagar Island (in the Sundarbans)** and adjoining areas of the **Bay of Bengal is rising at the rate of 12 mm per year, as compared to the global average of 2 mm per year.** The projected loss of area for 12 of the most vulnerable sea-facing islands by 2020 is between 3 per cent and 32 per cent.

Unsustainable exploitation of natural resources

- The Sundarbans are home to a large human population which is riddled with poverty. There are approximately **1100 villages in the Sundarbans region, of which 62 are situated on the fringes of the forest.**
- A majority of the population here depends on fuelwood for thermal energy, as biomass in the villages is inadequate to meet their energy demands. They are heavily dependent on forest resources such as crab, as their source of livelihood. This biotic pressure and unsustainable exploitation of forest resources lead to the degradation of the natural habitat, resulting in the loss of biodiversity.

Human-wildlife conflict and antagonism towards wildlife conservation initiatives

- The human population in the Sundarbans is heavily dependent on biodiversity resources for their livelihood. Due to their proximity to the mangrove forests, they are exposed to a unique set of biotic hazards, ranging from snakebites to tiger attacks. Incidents of wildlife straying into the villages are also on the rise.
- **Records show that between 1985 and 2008, 789 persons were attacked by tigers,** out of which 666 succumbed to their injuries, and a total of 279 incidents of tiger-straying cases occurred in the fringe villages. This level of conflict leads to antagonism towards wildlife conservation initiatives.

Conservation initiatives

- The Sundarban Tiger Reserve has an area of 2585 sq km and is **divided into the Core and the Buffer zone.**
- The **Core zone** consists of the **Sundarban National Park** having an area of 1330.12 sq km; considering the ecological importance of this area it has been designated by UNESCO as a natural World Heritage Site in 1987.
- The area outside the core zone is designated as the **buffer zone** and consists of the Sajnekhali Wildlife Sanctuary with an area of 362.33 sq. km. Recently the core areas have been notified as the Critical Tiger Habitat having an inviolate area of 1699.62 sq. km. It is also among the three Global Biosphere Reserves in the country.
- **Sunderban Tiger Reserve is one of the initial nine Tiger Reserves** constituted at the time of inception of the Project Tiger scheme in the year 1973.
- On January 30, 2019, the Indian Sundarban was accorded the status of '**Wetland of International Importance**' under the Ramsar Convention.
- The fourth cycle of the country-wide **Management Effectiveness Evaluation** has indicated that the site is free of human settlements in the core and buffer region; that it has adequate funds allocated; and there is strong coordination between the Border Security Force and the Forest Department to conduct joint patrolling and mobile check posts along the international border.
- In 2020, New Delhi allocated **₹ 300 crore of the ₹ 1,156 crore Integrated Coastal Zone Management project** to be spent in West Bengal, most of it on Indian Sundarbans.

Way ahead

- There is a need for effective **cross-border management** in both countries at national, state and local levels.
- **Community-driven projects** to reduce unsustainable livelihood practices that cause environmental degradation are imperative. Both nations can use their grass-roots

- institutions to ensure policies are practically implemented and effective.
- There is a need for establishing **institutional linkages** to facilitate sharing of knowledge, information and capacity-building programmes.
- We need to set up a **joint committee of climate and biodiversity** experts to harness local knowledge on innovative cropping methods in inter-tidal areas and real-time changes in climate.
- A **joint relocation and emergency evacuation programme** can be started for sudden climate disasters such as cyclones or flooding.
- **Micro-credit programmes** such as microloans for livelihoods and microinsurance for environmental disaster cover should be provided. It is also necessary to involve directly the governments of bordering states in this effort.

<p>About Sundarbans</p>	<ul style="list-style-type: none"> • The Sundarbans is a cluster of low-lying islands in the Bay of Bengal, spread across India and Bangladesh, famous for its unique mangrove forests. This active delta region is among the largest in the world, measuring about 40,000 sq km. • It is a precious mangrove forest of 10,000 sq. km, 60% of which is in Bangladesh and the rest in India. • The Sundarbans forest is about 10,000 sq km across India and Bangladesh, of which 40% lies in India, and is home to many rare and globally threatened wildlife species such as the estuarine crocodile (<i>Crocodilus porosus</i>), royal Bengal tiger (<i>Panthera tigris</i>), Water monitor lizard (<i>Varanus salvator</i>), Gangetic dolphin (<i>Platanista gangetica</i>), and olive ridley turtle (<i>Lepidochelys olivacea</i>). • The forest in India is divided into the Sundarbans Tiger Reserve and 24 Parganas (South) Forest Division. • Together with the forest, Bangladesh is the only mangrove forest in the world where Royal Bengal tigers are found.
<p>Major flora and fauna</p>	<p>Sundari trees</p> <ul style="list-style-type: none"> • Heritiera foetida a species of mangrove tree in the family Malvaceae. Its common names include sunder, sundri, jekanzoo and pinlekanazo. • It is the dominant mangrove tree species of the Sundarbans of Bangladesh and India and comprises about 70% of the trees in the area. • The International Union for Conservation of Nature has assessed it as being "endangered". <p>The fishing cat</p> <ul style="list-style-type: none"> • The fishing cat (<i>Prionailurus viverrinus</i>) is a medium-sized wild cat of South and Southeast Asia. • Since 2016, it has been listed as Vulnerable on the IUCN Red List. • The fishing cat lives foremost in the vicinity of wetlands, along rivers, streams, oxbow lakes, swamps, and mangroves. • The fishing cat is the state animal of West Bengal. <p>Royal Bengal Tigers</p> <ul style="list-style-type: none"> • They inhabit the lowlands and are frequently seen in grasslands, swamps, and mangroves. The Bengal mangrove ecosystem is a rich habitat for royal Tigers and they have adapted by being fervent swimmers. • Until 1972, the Lion was the national animal of India. • The Royal Bengal Tiger was conferred as the national animal on November 18, 1972. • According to the IUCN Red List, the tiger is listed as an endangered animal.

- To conserve them, the Indian Government launched Project Tiger in 1973.

Conclusion

- Lying in the low coastal zone makes the Sundarbans more **vulnerable to floods, earthquakes, cyclones, sea-level rise and coastline erosion.**
- With immediate collaboration and strict implementation of government initiatives, the further retreat of the Sundarbans can be halted.

9.5 HIMACHAL FLOODS

Context

- Flash floods during this year's monsoon season have caused unprecedented damage to both lives and assets in Himachal Pradesh leading to a death toll crossing 150, and the estimated **total loss amounts to ₹10,000 crore.**

Causes of flood

- **Short monsoon:** Data from the National Disaster Management Authority (NDMA) states that one of the reasons for flood situations occurring so frequently is that **nearly 75 per cent of the total Indian rainfall is concentrated over a short monsoon season of four months (June to September).** As a result, the rivers witness a heavy discharge during these months.
- **Lack of percolation:** They can occur in urban areas located near small rivers since hard surfaces such as roads and concrete do not allow the water to absorb into the ground.
- **Anthropogenic causes:** Landslides can also be caused by human activities, such as excavation, cutting of hills and trees, excessive infrastructure development, and overgrazing by cattle.
- **River overflow:** Rivers may overflow the banks causing floods. This may happen when there is more water upstream than usual. As it **flows downstream to the adjacent low-lying areas** there is a burst and water gets into the land.
- **Dam wreckage:** Dams are man-made structures designed to hold water flowing down for **irrigation or power projects.** The power in the water is used to turn propellers

to generate electricity. Sometimes, too much water held up in the dam can cause it to break and cause overflow in the area. Excess water can also be intentionally released from the dam to prevent it from breaking and that can also cause floods.

Himachal Pradesh specific causes

- **Fault lines in Himalayas:** Because Himachal is a young mountain, it is inherently vulnerable to natural disasters such as cloudbursts, landslides, flash floods, glacial lake outbursts and earthquakes. Its geology is ridden with numerous fault lines.
- **Excessive rains:** High monsoon rains in the area of the Shiwalik and lower and mid-Himalayan ranges cause extensive floods during rainy seasons.
- **Cloudbursts and GLOFs:** In the upper reaches of the Beas and Satluj valley, the main problems are flash floods due to excessive cloudbursts and the presence of glacial lakes.
- **Bank erosion:** There is significant bank erosion in the upper reaches of the Beas and Satluj valley because of the steep slopes of rivers.
- **Increased river volume:** Heavy downpour causes an increase in river volume and high river flows due to heavy rains causes floods.
- **Blockade of river channels:** Often the flash caused by temporary blockade of the river channels has also been observed. As a result of breaches in embankments and damage to various utilities such as irrigation/flood control schemes and houses are also observed.

How far can the floods in Himachal Pradesh be attributed to anthropogenic causes?

- The human-induced assault such as **unregulated, unsafe and unplanned infrastructure development** along local rivers.
- There is the development of a large number of **hydropower projects** built in the fragile zone without proper checks and balances flouting EIA rules.
- **Illegal riverbed mining** is very unsustainable, destructive and rampant in the region. This has affected riverbeds and made them prone to flooding.
- In a decade or so **tourism in the state has gone up by up to 400%**. This is accompanied by rampant tourism-related developmental projects.

What are flash floods and how are they different from floods in general?

Definition

- Flash floods are **excessive or continuous rainfall occurring in a much shorter span of time**, and are highly localised leading to stagnation of water and causing flooding. The US's meteorological agency, the National Weather Service, says flash floods are caused when rainfall creates flooding in less than 6 hours.

Causes

- **The outburst of dams:** It adds that flash floods can also be caused by factors apart from rainfall, like when water goes beyond the levels of a dam.
- **Cloudbursts:** In India, flash floods are often associated with cloudbursts – sudden, intense rainfall in a short period. **Himalayan states** further face the challenge of overflowing glacial lakes, and their numbers have been increasing in the last few years.
- **Topography:** Flash flooding commonly happens more where rivers are narrow and steep, so they flow more quickly.
- **Cyclones and oceanic depressions:** Depression and cyclonic storms in the coastal areas of Orissa, West Bengal, Andhra Pradesh, and others also cause flash floods.

Prospects

- Flash floods may in the future, **begin to take place after wildfires** that have been taking place more frequently. This is because wildfires destroy forests and other vegetation, which in turn weakens the soil and makes it less permeable for water to seep through.
- If heavy rains occur on **land damaged by a fire, the water** does not get absorbed by the land surface as effectively as it once did.

Reports on vulnerabilities of Himalayas

- A 2010 report by the Union Ministry of Environment and Forests identified the Himalayan region as one of the four most vulnerable areas to disaster. This region covers 16% of India's total geographical area, **spread over 12 states**. Almost two-thirds of this region is designated forests, but "with few exceptions, most of this forest has been cut,"
- The **IPCC (Intergovernmental Panel on Climate Change) VI report** has clearly stated that the Himalayas and coastal regions of India will be the hardest hit by climate change.

How common are flash floods and floods in India?

- According to government data from a **project by the Assam State Disaster Management Authority, India is the worst flood-affected country in the world**, after Bangladesh, and accounts for one-fifth of the global death count due to floods.
- Flash floods have been commonly witnessed in cities like Chennai and Mumbai.

Way ahead

- **Change rules for small HPs:** Hydropower projects **below 25 MW do not require an Environment Impact Assessment (EIA)**,

monitoring or public consultation process although it is well known that they can have very significant adverse impacts on the local communities and the environment. Projects below 25 MW must also be brought under EIA.

- **Comprehensive EIA process:** We have an inadequate cumulative impact assessment process, and therefore there is no way to analyze the disaster vulnerabilities, carrying capacity and climate change implications for any of the river basins. The EIA process must be made comprehensive.
- **Early warning:** There should be adequate early warning systems in all vulnerable places to ensure minimum casualties and early action from the government.
- **Study rivers:** There is a need to initiate cumulative impact assessment and carry out capacity studies in all river basins.
- **Regulate riverfronts:** Demarcate the path of all rivers, declare no construction zones

around them and prepare time-bound plans for the relocation of buildings at risk along with future regulation.

- **Disaster management department:** There is a need to create an active disaster management department that has a key role in all development decision-making.
- **Environmental governance:** A credible environmental governance and compliance system along with robust systems for warning, forecasting, monitoring and information dissemination, etc, should be put in place.

Conclusion

- These lessons from Himachal are **equally applicable to all Himalayan states of India and neighbouring Himalayan countries**. The disaster can be taken as a rather costly and tragic wake-up call. There is a need to assess the vulnerability of infrastructure and people in the changing climate.

9.6 SHORT ARTICLE

Scheme for Expansion and Modernization of Fire Services in the States

Context

- The Union Ministry of Home Affairs has launched a “Scheme for Expansion and Modernization of Fire Services in the States”.

The Scheme

About

- The Scheme has been launched from the earmarked allocation of **Preparedness and Capacity Building Funding Window under the National Disaster Response Fund (NDRF)** for strengthening fire services in the States.

Origin

- The Scheme **finds its origin from the recommendation of the Fifteenth Finance Commission (XV-FC)** which allows an allocation of 12.5 percent of each of the National Disaster Response Fund (NDRF) and State Disaster Response Fund (SDRF) [10% of the total corpus of the National Disaster Risk Management Fund (NDRMF) and the State

Disaster Risk Management Fund (SDRMF)] for the Funding Window of Preparedness and Capacity Building.

Funding

- An amount of Rs. 500 crore, out of the total outlay, has been kept for incentivizing the States on the basis of their legal and infrastructure-based reforms.

Objective

- Objective of the scheme is to **expand and modernize Fire Services in the States** with a view that activities for strengthening of fire services at the State-level through preparedness and capacity-building component of the NDRF will be ensured.

Fund disbursement

- For seeking funds for the projects/proposals under the Scheme, the **concerned State Governments shall have to contribute 25%** (except for the North-Eastern and Himalayan

(NEH) States which shall contribute 10%) of total cost of such projects from their

budgetary resources.

Groundwater Springs of Norway

Context

- Climate change has exposed a new source of methane in the **Arctic: Groundwater Springs**-- study published in the journal Nature Geoscience stated.

Groundwater Springs

- A spring is a natural **exit point at which groundwater emerges out of the aquifer and flows onto the top of the Earth's crust** (pedosphere) to become surface water. It is a **component of the hydrosphere**, as well as a part of the water cycle.
- Springs are driven out onto the surface by various **natural forces, such as gravity and hydrostatic pressure**.

Groundwater springs of Norway

- As global warming drives glaciers to retreat, **methane-rich groundwater springs are punching through the surface in the Arctic**, the study published in the journal Nature Geoscience stated.
- In Svalbard, **a Norwegian archipelago in the Arctic**, groundwater springs **could be emitting more than 2,000 tonnes of methane annually**. This figure, **equals 10 per cent of the methane emissions from Norway's annual oil and gas energy industry**.
- Since Svalbard is warming faster than the rest of the Arctic, potential methane release could happen at a larger scale across this region.
- These springs are not part of the global methane budget. The global methane budget estimates the amount of methane released through sources and captured through sinks.
- Using satellite images, researchers from Europe and Canada spotted groundwater

springs **exposed by 78 retreating glaciers in Svalbard**.

- The water in all but one site had high levels of dissolved methane, which escapes into the atmosphere. Further, these springs emit this greenhouse gas year-round, the researchers noted.

Concern

- If global warming continues unchecked, **methane released from glacial groundwater springs will become more extensive**.
- High methane concentrations near shale rocks suggested a geologic or thermogenic (heat) source of gas, which moves upwards through fractures in the rocks and gathers under the glacier. A lot more methane gas could be trapped under glaciers, waiting to escape.

Way Forward

- We urgently need to **establish the risk of a sudden increase in methane leakage** because glaciers will only continue to retreat while we struggle to curb climate change.
- An **improved understanding of possible pan-Arctic methane** release from groundwater springs is necessary. This will **help assess the importance of such emissions and their potential global climate impact**. This is particularly relevant in regions where glaciers are capping large reservoirs of geologic methane, such as parts of Arctic Canada and the Russian Arctic, **where further melting of the cryosphere could lead to considerable seeps of this potent greenhouse gas**.

The Global South

Context

- The **unwillingness of many leading countries in Africa, Asia and Latin America to stand with NATO** over the war in Ukraine has

brought to the fore once again the term "Global South."

The Global South

- The Global South refers to various countries around the world that are sometimes

described as ‘developing’, ‘less developed’ or ‘underdeveloped’.

- Many of these countries, although by no means all, are in the Southern Hemisphere, largely in Africa, Asia and Latin America.
- In general, **they are poorer, have higher levels of income inequality and suffer lower life expectancy and harsher living conditions than countries in the “Global North”**, which are, richer nations that are located mostly in North America and Europe, with some additions in Oceania and elsewhere.

Importance of global south

- Since the turn of the 21st century, a **“shift in wealth,”** as the World Bank has referred to it, from the North Atlantic to Asia Pacific has been taking place. For stance, there are now more billionaires in Beijing than in New York City.
- By 2030 it is projected that three of the **four largest economies will be from the Global**

Shelf Cloud

Context

- Massive ‘shelf cloud’ formation spotted in Haridwar.

What are shelf clouds?

- Shelf clouds are a type of Arcus cloud characterized by a low-lying, horizontal formation.
- Arcus cloud is a **low, horizontal cloud formation**, usually appearing as an accessory cloud to a cumulonimbus.
- They appear as a wedge-shaped structure beneath the main cloud base and typically form on the leading edge of a storm.
- Resembling a shelf hanging from the sky, a ‘shelf cloud’ is a wide, low cloud that appears before a big storm. Shelf clouds can be scary, **but they usually don’t cause tornadoes or extremely dangerous weather on their own.** They often appear ahead of powerful thunderstorms with heavy rain, strong winds, and occasionally hail or tornadoes.

Shelf Cloud versus a Wall Cloud

South, with the order being China, India, the U.S. and Indonesia.

- **The GDP in terms of purchasing power** of the Global South-dominated BRICS nations, which are Brazil, Russia, India, China and South Africa, surpasses that of the Global North’s G-7 club.
- A 2011 study by the Asian Development Bank found that **3 billion Asians (so 56.6% of the estimated 5.3 billion total inhabitants of Asia by 2050) could enjoy living standards similar to those in Europe today**, and the region could account for over half of the global output by the middle of this century.
- Countries in the Global South are increasingly asserting themselves on the global scene, be it **China’s brokering of Iran and Saudi Arabia’s rapprochement or Brazil’s attempt to push a peace plan to end the war in Ukraine.**

- Shelf clouds are often **associated with squall lines, and many times they are reported as wall clouds, funnel clouds, or rotation.**
- The main threat with any squall line is severe damaging winds associated with the shelf cloud, although brief spin-up tornadoes can occur.
- A shelf cloud will **usually be associated with a solid line of storms.** The wind will come first with rain following behind it. It may appear to rotate on a horizontal axis.
- Wall clouds **will rotate on a vertical axis, sometimes strongly.** The wall cloud is much smaller and more compact than a shelf cloud and is usually under a rain free cloud base.
- They are **not in contact with the ground** and will rotate strongly.
- Scud clouds are often mistakenly called wall clouds or funnel clouds. In reality, these **are just rising clouds due to increased low-level relative humidity.** They will not rotate and will rise slowly.

Types of clouds

- According to their height, expanse, density and opaqueness or transparency clouds can be categorised into four types : (i) cirrus; (ii) cumulus; (iii) stratus; (iv) nimbus.

Cirrus Clouds

- These clouds are formed at high altitudes between 8,000 to 12,000m. They are usually thin and detached clouds and have a feathery appearance. They always appear white.

Cumulus Clouds

- Cumulus clouds appear like **cotton wool** and they are formed at a height between 4,000 - 7,000 m. They exist in patches and can be seen scattered here and there in the sky. They also have a flat base.

Stratus Clouds

- their name implies, these are layered clouds covering large portions of the sky.
- These clouds are generally formed either due to loss of heat or the mixing of air masses with different temperatures.

Nimbus Clouds

- Nimbus clouds are black or dark grey. They are formed at middle levels or very near to the surface of the earth.
- These are very dense and opaque to the rays of the sun.
- Sometimes, these clouds are so low that they appear to touch the ground.

Anthropocene

Context

- The Anthropocene Working Group proposes Crawford Lake near Toronto as a designated geological repository of evidence, **marking the transition into the human era.**

About The Anthropocene

- Anthropocene, the term given to a new geological epoch defined by the profound impact of human activities on the Earth's systems, finally has a starting date: 1950.
- Anthropocene, the new era, was christened by **Nobel laureate Paul Crutzen in 2000** and started just after World War II.
- The unique reference point for the Anthropocene as proposed by The Anthropocene Working Group is Crawford Lake near Toronto in Canada's Ontario Province.

Evidence

- The reason for the year and the locale being selected stems from the fact that it shows traces of the radioactive element, **Plutonium.**
- Around the year 1950, there was a notable increase in the **concentration of plutonium particles.** This significant change serves as a clear indication of human impact and, consequently, provides evidence of the Anthropocene era.
- The unprecedented increase in **industrial and socioeconomic activity** of the Great Acceleration around the mid-twentieth century has caused alterations to the Earth System on a scale that terminated ~11,700 years of largely stable Holocene conditions and marks the beginning of a new Earth epoch.

What is the geological time scale?

- The geological time scale is based on the geological rock record, which includes erosion, mountain building and other geological events. Over hundreds to thousands of millions of years, continents, oceans and mountain ranges have moved vast distances both vertically and horizontally.

How is geological time measured?

- **Stratigraphy:** The earliest geological time scales simply used the order of rocks laid down in a sedimentary rock sequence (stratum) with the oldest at the bottom.
- **Fossils:** A more powerful tool was the fossilized remains of ancient animals and plants within the rock strata. After **Charles Darwin's publication of Origin of Species (Darwin himself was also a geologist)** in 1859, geologists realised that particular fossils were restricted to particular layers of rock. This built up the first generalized geological time scale.

- **Stratigraphic correlations:** Fossil assemblages 'fingerprint' formations, even though some species may range through several different formations. This feature allowed **William Smith** (an engineer and surveyor who worked in the coal mines of England in the late 1700s) to order the fossils he started to collect in south-eastern England in 1793. By matching similar fossils in different regions throughout the world, correlations were built up over many years.
- Radioactive dating method: When radioactive isotopes were developed in the early 1900s, the stratigraphic correlations became less important as igneous and metamorphic rocks could be dated for the first time.

Geological time scale today

- Divisions in the geological time scales still use fossil evidence and mark major changes in the dominance of particular life forms.
- For example, the Devonian Period is known as the '**Age of Fishes**', as fish began to flourish at this stage.
- However, the end of the Devonian was marked by the predominance of a different **life form, plants, which in turn denotes the beginning of the Carboniferous Period**. The different periods can be further subdivided (e.g. Early Cambrian, Middle Cambrian and Late Cambrian).
- This is the latest version of the time scale, as revised and published in 2012.

ERA	PERIOD	EPOCH	AGE*	MAJOR EVENTS
CENOZOIC	Quaternary	Holocene	0.01	Earliest <i>Homo sapiens</i>
		Pleistocene	1.8	
	Tertiary	Pliocene	5.3	Earliest hominids
		Miocene	23.8	Dominance of mammals
		Oligocene	33.7	
		Eocene	55	
		Paleocene	65	
MESOZOIC	Cretaceous		65	Widespread extinctions
	Jurassic		145	First flowering plants
	Triassic		200	Dinosaurs dominant
PALEOZOIC	Permian		251	Widespread extinctions
			299	
	Carboniferous		359	First reptiles
	Devonian		417	
	Silurian		443	Fishes dominant
	Ordovician		490	First fishes
	Cambrian		542	
PRECAMBRIAN			542	Appearance of fossils
			3000	Soft-bodied animals
			4600	Origin of the earth

Fig: Geological time scale of earth

Phosphine Gas in the Clouds of Venus

Context

- Scientists have **detected phosphine gas in the clouds of Venus**, sparking debate about the possibility of life on the planet. The initial study couldn't be replicated, but new findings suggest phosphine at deeper levels.

Why does phosphine represent the possibility of life on the planet?

- Phosphine on Earth is developed by bacteria that **live in very low-oxygen environments**. In contrast, Phosphine has been found deep in the clouds of Venus.

- Phosphine is a molecule **associated with biological activity on Earth**.
- The clouds are the most intriguing part and there is a remote possibility of some form of life existing there.

Contradictory views

- While the presence of phosphine could indicate a **possible biosignature**, it could also be caused by other processes that are not yet fully understood.
- We can make phosphine by lobbying phosphorus-bearing rocks up into the high

atmosphere and eroding them with water and acids to obtain phosphine gas.

About Phosphene

- Phosphine is a **colourless, flammable**, highly toxic compound with the chemical formula PH_3 , classed as a **pnictogen hydride**.
- Pure phosphine is **odourless**, but technical grade samples have a highly unpleasant odour like rotting fish, due to the presence of substituted phosphine and diphosphate.

Uses

- Phosphine is used in the **semiconductor industry** to introduce phosphorus into silicon crystals.
- It is also used as a fumigant, a polymerization initiator.
- It is also used as an intermediate for the preparation of several flame retardants.

Venus

- Venus is the **second planet** from the Sun.
- It is a rocky planet with the densest atmosphere of all the rocky bodies in the Solar System, and the only one with a mass

Kaas Plateau

Context

- A new study of the sediments from a seasonal lake in the **Kaas Plateau in the Satara district of Maharashtra has indicated a major shift in the Indian Summer Monsoons** towards dry and stressed conditions with low rainfall during the Early-Mid-Holocene, around 8664 years BP.

About the study

- Agharkar Research Institute (ARI), Pune, an **autonomous institute of the Department of Science and Technology** along with the National Centre for Earth Sciences, Thiruvananthapuram studied the sediments of a seasonal lake to understand and decipher the past climate of the Kaas Plateau.
- A sediment profile **dating back to 8000 years** was analyzed (by available carbon dates-AMS) to decode the climatic signatures.

Outcomes of the study

Existence of an Ancient Lake named the 'Flower Wonder' :

and size that is close to that of its orbital neighbour Earth.

- It appears in Earth's sky always close to the Sun, as either a **"morning star" or an "evening star"**.
- While this is also true for Mercury, Venus appears much more prominently, since it is the third brightest object in Earth's sky after the Moon and the Sun, appearing brighter than any other star-like classical planet or any fixed star.

Atmosphere of Venus

- Venus has a **weakly induced magnetosphere**.
- It has an especially thick carbon dioxide atmosphere, which creates, together with its global sulfuric acid cloud cover, an extreme greenhouse effect.
- This extreme greenhouse effect results at the surface in a mean temperature of 737 K (464 °C; 867 °F) and a crushing pressure of 92 times that of Earth's at sea level, turning the air into a supercritical fluid.

- The 'Flower Wonder' might likely have existed for a longer duration, up to March-April, during the early-mid-Holocene, when the monsoon rainfall (more than 100 rainy days) was undoubtedly better than today.

Modifications of lake

- The signatures of **diatoms, mites, thecamoebians, and sediment** characteristics provided better resolutions regarding the hydrological processes and modification of the seasonal lake.

Freshwater accumulation

- The research indicated that the seasonal lake, the 'Flower Wonder', favoured **freshwater accumulation almost for 8000 years** before the present (BP) and probably dried sometimes after 2000 years BP.

Shifts in monsoon during the Early-Mid-Holocene

- During the early to mid-Holocene, around 8664 years ago, pollen, as well as diatom data, indicated a change in the climate from

freshwater to drier conditions with low rainfall.

- However, there was a significant rise in the number of diatoms in between, suggesting a major shift in the Indian summer Monsoon activity during that time, possibly resulting in intermittent humid periods amidst the dry spells.

Weakened southwest Monsoon during the late Holocene and Intensified S-W monsoon during the Early Holocene

- The observations of the scientists showed a decrease in rainfall and a weakened southwest Monsoon during the late Holocene (around 2827 years BP). However, the southwest Monsoon intensified during the Early Holocene, approximately 8000 years ago, and the northeast monsoon relatively weakened around 2000 years ago.

Lake eutrophication


- However, during the recent past (around the last 1000 years), pollen, as well as the presence of a high number of planktonic and pollution-tolerant diatom taxa indicated lake eutrophication, possibly due to human impact and cattle/livestock farming in the catchment.

Kaas Plateau

- Kaas Plateau, nestled in the Western Ghats is about 140 km from Pune, was included in the UNESCO World Natural Heritage Site in 2012.
- It is known as **KaasPathar** in Marathi.
- Its name was derived from the **Kaasa tree**, botanically known as **Elaeocarpus glandulosus (rudraksha family)**.
- Designated as a biodiversity hotspot, the Kaas Plateau comes to life with various seasonal flowers forming a floral carpet over the entire lateritic crust during August and September.

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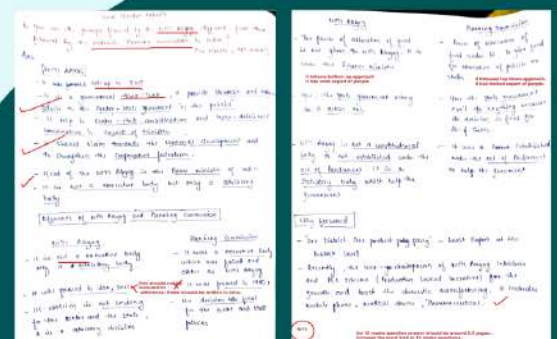
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Gomati River's Perennial Status

Context

- A three-year-old government order (GO) issued by the irrigation department of the Uttar Pradesh government declaring the **Gomti as a “non-perennial river”** has drawn flak from water experts and river rights activists. The GO has surfaced recently but was issued on September 3, 2020.

About the order

- The government order was issued regarding the **floodplain zoning for 12 rivers**, including Gomti.

- The old GO on defining the floodplain of various rivers was brought to public notice as the work on the **green corridor project in Lucknow** which aims to link the western and eastern parts of the city is underway.
- **50 meters from both banks will be declared as no construction.** The demarcation of the floodplain will be made a suitable location by planting a row of suitable plants through the forest department.
- The order says that it's a non-perennial river, **e-flow (environmental flow) cannot be maintained** throughout the year and no surplus water is available to augment the flow.
- The order also declared a 50 metres area from both banks of the river as a no-construction zone.

Issues of declaring a river as Non-Perennial

- **Diversion of environmental concerns:** The declaration of the river as a seasonal one takes away from its importance of protection from pollution, exploitation and encroachment.
- **Against the status quo:** "A river that provides the daily water supply to the state capital. The 960-km-long river also supplies around 450 million litres per day of water to Lucknow throughout the year. Declaring it a 'non-perennial' despite it being a source of large volumes of water goes against the spirit of the river.
- **Loss of its importance:** Gomti has a very wide floodplain and the river swells up during monsoons and brings abundant water to the Ganga. The river is the lifeline for the people of the area where it flows. The no-perennial status of the river might lead to the loss of its importance.
- **Damage to river water ecosystem:** Since the order maintains that no e-flow can be ensured. Lack of environmental flow in the river leads to damage to the river water ecosystem.
- **Promotes rampant development in floodplains:** Many development projects are likely coming up in UP that are planned around the floodplain areas in the state. The authorities are thus seeking available orders to define the floodplains and this GO has resurfaced.

Gomti River

- Gomti is a tributary of Ganga river and an alluvial river of the Ganga Plain.
- It **originates near Mainkot, from Gomat Taala Lake** also known as Fulhar Jheel in Madhotanda.
- This source is located around 30 kilometres from Pilibhit town in UP.
- The river flows through Sitapur, Lucknow, Barabanki, Sultanpur and Jaunpur before meeting the Ganga at Kaithi, Ghazipur district.
- It empties into the Ganga near Saidpur.

Lightning

- The Union Government has said that **Lightning is not a natural disaster.**

Center's argument

- The Union government is not in favor of declaring lightning a natural disaster **as deaths caused by it can be avoided through education and awareness.**
- India is among the only five countries in the world with an **early warning system for lightning and the forecast is available** from five days to up to 3 hours.

Why should lightning be declared a natural disaster?

- **High number of casualties:** According to the National Crime Records Bureau (NCRB), in

the year 2021, as many as 2,880 people died due to lightning. The deaths comprised 40% of all accidental deaths caused by "forces of nature". While 2,862 people died in 2020, the number stood at 2,876 in 2019.

- **Increasing deaths due to lightning:** There has been an increase in the proportion of such deaths compared to the total accidental deaths caused by events related to nature. For instance, in 2003, deaths due to lightning comprised just 0.2% of the total deaths caused by forces of nature.
- **High burden in Bihar:** As many as 107 have died after being struck by lightning till July 6 this year in Bihar only. In the past five years,

more than 1,500 people have lost their lives in Bihar. On June 25, 2020, more than 100 people died in a single day after they were struck by lightning.

Lightning prone states

- According to a presentation made by the Director-General, of the India Meteorological Department (IMD) at the National Platform for Disaster Risk Reduction Conference (NPDRR), the frequency of lightning was

SagarNidhi

Detail

- Scientists from Bangladesh and Mauritius embarked onboard India's research vessel SagarNidhi to participate in a joint ocean expedition.
- The event took place under the framework of the Colombo Security Conclave (CSC) between the nations of the Indian Ocean Region.
- The cruise is conducted by Indian National Centre for Ocean Information Services (INCOIS) under the Ministry of Earth Sciences.
- The scientists will collaboratively research ocean data to predict and manage changes in the marine environment and variations in ocean parameters.
- ORV SagarNidhi is an ice-strengthened multidisciplinary vessel operated by the

Ubinas Volcano

- Peru's Ubinas volcano, active again after four dormant years, blew its top twice, forcing an announcement of an **emergency in the south of the nation.**
- Ubinas is an active stratovolcano in the Moquegua Region of southern Peru, approximately 60 kilometres east of the city of Arequipa.
- The Ubinas volcano is part of a group of seven volcanoes in southern Peru located within a volcanic zone that extends from southern Peru to northern Chile.
- The affected area is situated within the "Ring of Fire."

maximum in northeast States and in West Bengal, Sikkim, Jharkhand, Odisha and Bihar but the number of deaths is higher in central Indian States of Madhya Pradesh, Maharashtra, Chhattisgarh and Odisha.

What happens if a phenomenon is declared a natural disaster?

- The victims will be entitled to compensation from the State Disaster Response Fund (SDRF) once this is notified.

National Institute of Ocean Technology, India. It was constructed at Fincantieri, Italy.

- The 104-metre-long vessel has fully automatic diesel-electric propulsion equipped with dynamic positioning system, azimuth thrusters, and a winch to hoist 60 tonnes from a depth of 6,000 metres.
- The vessel is capable of carrying out geo-scientific, meteorological and oceanographic research, and is designed with blue-water capability with ranges of up to 10,000 nautical miles (19,000 km) for voyages lasting up to 45 days.
- Held at the National Security Advisor (NSA)-level, the CSC, which **brings together India, Sri Lanka, Maldives, and Mauritius**, along with **Bangladesh and the Seychelles** as observers. It is now the most active security-focused group operating in the Indian Ocean region.

- The Ring of Fire, also referred to as the **Circum-Pacific Belt**, is a path along the Pacific Ocean characterized by active volcanoes and frequent earthquakes. Its length is approximately 40,000 kilometers (24,900 miles). It traces boundaries between several tectonic plates—including the Pacific, Juan de Fuca, Cocos, Indian-Australian, Nazca, North American, and Philippine Plates.
- **Seventy-five percent of Earth's volcanoes—more than 450 volcanoes—are located along the Ring of Fire.** Ninety percent of Earth's earthquakes occur along its path, including the planet's most violent and dramatic seismic

events.

Alaska Peninsula

- A powerful 7.2-magnitude earthquake struck the **Alaska Peninsula region**.
- Alaska Peninsula, a stretch of land extending southwest from mainland Alaska, U.S.
- It spreads for 500 miles (800 km) **between the Pacific Ocean (southeast) and Bristol Bay**, an arm of the Bering Sea.
- The volcanic Aleutian Range runs along its entire length; the majestic Pavlof Volcano,

near the peninsula's southwestern edge, rises to more than 8,260 feet (2,518 metres) and is the most active volcano in the Aleutian volcanic arc.

- A peninsula is a landform that extends from a mainland and is surrounded by water on most, but not all of its borders. A peninsula is also sometimes defined as a piece of land bordered by water on three of its sides.

World's Biggest Permafrost Crater

- **The Batagaika crater**, the world's largest one kilometre-long permafrost crater, is expanding at a baffling rate due to the thawing of the permafrost, exacerbated by global warming.
- The crater is located in the **Sakha Republic of Russia**.
- In the 1960s, after deforestation led to the melting of the underground **permafrost**, it caused the land to sink forming a crater, what is locally called **'the cave-in' or 'mega-slump.'**
- The Batagaika crater in Russia has now become a very **glaring symbol of the impacts of global warming** due to its rapid expansion.
- Permafrost is any ground that **remains completely frozen at 32°F (0°C) or colder for at least two years straight**.
- Permafrost is most common in regions with high mountains and in Earth's higher latitudes, near the North and South Poles.

World Drowning Prevention Day

- The boat named Titan, with five passengers, was lost, thousands of feet below the North Atlantic's surface, while it was attempting to take tourists to the Titanic's final resting place on the ocean floor.



- In 2023, the **76th World Health Assembly** adopted its first-ever resolution on drowning prevention.
- From this year onwards World Drowning Prevention Day will be observed on **25 July each year**.
- To mark this year's World Drowning Prevention Day, WHO will continue to focus on **raising awareness of drowning as a public health issue**, reminding people that anyone can drown, but no one should.
- WHO is raising awareness of the **six evidence-based, low-cost drowning prevention interventions**. These include:

Dhala Crater

- New study suggests a rare **Ureilite meteorite formed India's Dhala impact crater**, offering insights into the early solar system and

potential impact on Earth's water and life development.

- Dhala crater is situated in **Madhya Pradesh**

region in Shivpuri.

- It has been confirmed by scientists to be Asia's largest and the world's seventh-largest impact crater.
- In a recent discovery, a collaborative team of scientists from Allahabad University and the University of Bern, Switzerland, revealed that the Dhala crater resulted from the collision of an exceptionally rare and ancient meteorite, known as Ureilite, **roughly 2500-1700 million years ago.**

Sahyadri Plateau

- In the first experiment of its kind, scientists upturned some **7,000 loose rocks** to find how creatures from ants to snakes respond to land-use changes in rocky habitats.
- The Sahyadri plateau is located in the **western region of India.**
- They are parallel to the Arabian Sea and on the leeward side of western ghats.
- It stretches from Gujarat in the north to Karnataka in the south.
- Its average elevation is around 1,000 meters.
- A plateau is an extensive area of **flat upland**

- 'Ureilites' belong to a scarce class of primitive meteorites, Comprising mostly olivine and pyroxene silicate rocks.
- Ureilites also contain less than 10% of carbon (either in the form of diamond or graphite), metal sulphides, and a few fine-grained silicates.
- India currently has three meteor impact craters: **Ramgarh in Rajasthan, Lonar in Maharashtra, and Dhala in Madhya Pradesh.**

usually bounded by an escarpment (i.e., steep slope) on all sides but sometimes enclosed by mountains.

- The essential criteria for plateaus are low relative relief and some altitude.
- The Western Ghats in Maharashtra are locally known as the Sahyadri ranges.
- **Kalsubai** is the highest peak in **Maharashtra.**
- Kaas Plateau which is known as the Valley of Flowers in Maharashtra is located in the Sahyadri range of Western Ghats.

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9.7 1 MAINS QUESTION AND 5 MCQS

Q1. Highlighting the underlying causes of the Himachal floods of 2023, discuss the extent to which the flood can be attributed to anthropogenic causes. Critically analyse. (15 marks, 250 words)

Introduction

- Flash floods during this year's monsoon season have caused unprecedented damage to both lives and assets in Himachal Pradesh leading to a high death toll and the estimated **total loss amounts to ₹10,000 crore.**

Himachal Pradesh specific causes

- Fault lines in Himalayas:** Because Himachal is a young mountain, it is inherently vulnerable to natural disasters such as cloudbursts, landslides, flash floods, glacial lake outbursts and earthquakes. Its geology is ridden with numerous fault lines.
- Excessive rains:** High monsoon rains in the area of the Shiwalik and lower and mid-Himalayan ranges cause extensive floods during rainy seasons.
- Cloudbursts and GLOFs:** In the upper reaches of the Beas and Satluj valley, the main problems are flash floods due to excessive cloudbursts and the presence of glacial lakes.
- Bank erosion:** There is significant bank erosion in the upper reaches of the Beas and Satluj valley because of the steep slopes of rivers.
- Increased river volume:** Heavy downpour causes an increase in river volume and high river flows due to heavy rains causes floods.
- Blockade of river channels:** Often the flash caused by temporary blockade of the river channels has also been observed. As a result of breaches in embankments and damage to various utilities such as irrigation/flood control schemes and houses are also observed.

How far can the floods in Himachal Pradesh be attributed to anthropogenic causes?

- The human-induced assault such as **unregulated, unsafe and unplanned infrastructure development** along local rivers.
- There is the development of a large number of **hydropower projects** built in the fragile zone without proper checks and balances flouting EIA rules.
- Illegal **riverbed mining** is very unsustainable, destructive and rampant in the region. This has affected riverbeds and made them prone to flooding.
- In a decade or so **tourism in the state has gone up by up to 400%**. This is accompanied by rampant tourism-related developmental projects.

Way ahead

- Change rules for small HPs:** Hydropower projects **below 25 MW do not require an Environment Impact Assessment (EIA)**, monitoring or public consultation process although it is well known that they can have very significant adverse impacts on the local communities and the environment. Projects below 25 MW must also be brought under EIA.
- Comprehensive EIA process:** We have an inadequate cumulative impact assessment process, and therefore there is no way to analyze the disaster vulnerabilities, carrying capacity and climate change implications for any of the river basins. The EIA process must be made comprehensive.
- Early warning:** There should be adequate early warning systems in all vulnerable places to ensure minimum casualties and early action from the government.

- **Study rivers:** There is a need to Initiate cumulative impact assessment and carry out capacity studies in all river basins.
- **Regulate riverfronts:** Demarcate the path of all rivers, declare no construction zones around them and prepare time-bound plans for the relocation of buildings at risk along with future regulation.
- **Disaster management department:** There is a need to create an active disaster management department that has a key role in all development decision-making.
- **Environmental governance:** A credible environmental governance and compliance system along with robust systems for warning, forecasting, monitoring and information dissemination, etc, should be put in place.

Conclusion

- These lessons from Himachal are **equally applicable to all Himalayan states of India and neighbouring Himalayan countries.** The disaster can be taken as a rather costly and tragic wake-up call. There is a need to assess the vulnerability of infrastructure and people in the changing climate.

Q2. Consider the following statements:

1. Flash floods are excessive or continuous rainfall occurring in a much longer span of time.
2. The outburst of dams can not cause flash floods.
3. Cloudbursts is one of the major cause of flash floods in Himalayan region.

Which of the above statements are correct?

- A. 1 and 2 only
- B. 3 only
- C. 2 only
- D. None are correct

Q3. Consider the following statements:

1. Dhala impact crater is located in Maharashtra.
2. India has only two impact craters.

Which of the above statements are correct?

- A. 1 only
- B. 2 only
- C. Both
- D. None

Q4. Consider the following statements:

1. Sahyadri plateau stretches from Gujarat in the north to Karnataka in the south.
2. Kalsubai is the highest peak in Maharashtra.

Which of the above statements are correct?

ANSWER

2. B 3. D 4. C 5. C 6. A

- A. 1 only
- B. 2 only
- C. Both
- D. None

Q5. Consider the following statements:

1. The Batagaika crater, the world's largest one kilometre-long permafrost crater.
2. The crater is located in the Sakha Republic of Russia.
3. It is a permafrost crater.

Which of the above statements are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. All three
- D. None

Q6. Consider the following statements about World Drowning Prevention Day

1. World Drowning Prevention Day will be observed on **1st July each year.**
2. It was adopted by the World health assembly.

Which of the above statements are correct?

- A. 1 only
- B. 2 only
- C. Both
- D. None

10. PLACES IN NEWS

10.1 IN INDIA

PANGONG TSO LAKE

About

- Pangong Tso is an endorheic saline lake spanning eastern Ladakh and West Tibet.
- It has a land-locked basin separated from the Indus River basin by a small elevated ridge.
- It is 134 km long and divided into five sublakes, called Pangong Tso, Tso Nyak, Rum Tso (twin lakes) and Nyak Tso.
- The lake, a glacial melt, has mountain spurs of the Chang Chenmo range jutting down, referred to as fingers.



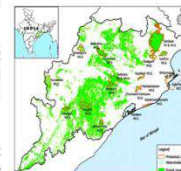
SIMILIPAL TIGER RESERVE

About

- Similipal, which derives its name from 'Simul'(Silk Cotton) tree, is a national park and a Tiger Reserve situated in the northern part of Orissa's Mayurbhanj district.
- The tiger reserve is spread over 2750 sq km and has some beautiful waterfalls like Joranda and Barehipani.
- The park is surrounded by high plateaus and hills, the highest peak being the twin peaks of Khairiburu and Meghashini.

Flora and fauna

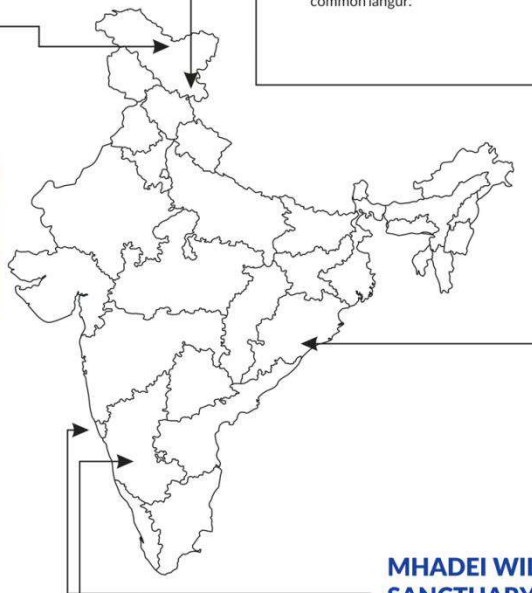
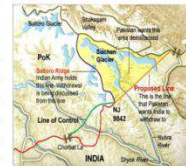
- The vegetation is a mix of different forest types and habitats, with Northern tropical moist deciduous dominating some semi-evergreen patches.
- Sal is the dominant tree species here.
- The park is known for the tiger, elephant and hill mynah. It holds the highest tiger population in the state of Orissa.
- Apart from the tiger, the major mammals are leopard, sambar, barking deer, gaur, jungle cat, wild boar, four-horned antelope, giant squirrel and common langur.



SIACHEN GLACIER

About

- Location: The Siachen Glacier is a glacier located in the eastern Karakoram range in the Himalayas just northeast of the point NJ9842 where the Line of Control between India and Pakistan ends.
- The Siachen Glacier lies immediately south of the great drainage divide that separates the Eurasian Plate from the Indian subcontinent in the extensively glaciated portion of the Karakoram sometimes called the "Third Pole".
- The glacier lies between the Salto Ridge immediately to the west and the main Karakoram range to the east.
- Length: At 76 km (47 mi) long, it is the longest glacier in the Karakoram and second-longest in the world's non-polar areas.
- Major passes: The major passes on this ridge are, from north to south, Sia La, Bilafond, and Gyong La.



MHADEI WILDLIFE SANCTUARY

About

- Mhadei Wildlife Sanctuary is located in the Western Ghats of India, covering parts of the states of Goa, Karnataka, and Maharashtra.
- It was declared a wildlife sanctuary in 1999 to protect the biodiversity and ecological integrity of the region.
- Spread over an area of approximately 208.5 square kilometers, Mhadei WLS is known for its rich biodiversity and unique ecosystems.
- The sanctuary is situated in the Sahyadri mountain range, a UNESCO World Heritage Site, making it ecologically significant.
- The sanctuary is home to a diverse range of plant species, including rare medicinal plants and endemic flora.
- It harbors a variety of wildlife, including mammals like Indian gaur (bison), sambar deer, barking deer, leopards, and wild boars.



MUKURTHI NATIONAL PARK

About

- The park was notified on 7th November 1990 and initially was known as Nilgiri Tahr National Park.
- This park is a part of Nilgiri Bio Reserve, first Bio Reserve of India and is situated on western side of Nilgiris Plateau.
- It has an area of 78.46 sq. km with Silent Valley National Park and Mudumalai National Park lying on its borders.
- It belongs to the Biogeographic zone of Western Ghats.
- Mainly Shola grasslands and shrublands at a high altitude.
- Endemic plant species like Alchemilla indica and Hedyotis verticillaris.
- Apart from Nilgiri Tahr, this park is also home to endangered species like the Royal Bengal Tiger and the Asian Elephant.



10.2 IN WORLD

PUERTO RICO AND LA PLATA

About

- The La Plata River is the longest river in Puerto Rico. It is located in the north coast of the island.
- It flows from south to north, and drains into the Atlantic Ocean about 11 miles (18 km) west of San Juan. The mouth of the river is a resort area with white sandy beaches.
- La Plata has a length of approximately 74 kilometres (46 mi) with its origin in the municipality of Guayama, Puerto Rico, at an altitude of approximately 2,625 feet (800 meters) above sea level.
- It crosses the municipalities of Guayama, Cayey, Comerio, Naranjito, Toa Alta, Toa Baja, and Dorado forming two lakes in its path: Carite Lake and La Plata Lake.

JENIN

About

- The city serves as the administrative center of the Jenin Governorate of the State of Palestine and is a major center for the surrounding towns.
- The city came under Israeli occupation in 1967, and was put under the administration of the Palestinian National Authority as Area A of the West Bank in 1993.
- In 2007, Jenin had a population of approximately 40,000 people, whilst the Jenin refugee camp had a population of 10,000, housing Palestinians who fled or were expelled from their homes during the 1948 Palestine War.

TAM PÀ LING CAVE, LAOS

About

- Tam Pa Ling Cave is situated in Huà Pan Province, Laos, approximately 260 km NNE of Vientiane, with an elevation of 1,170 m above sea level.
- The cave is part of the Annamite Mountains, which straddle the Laos-Vietnam border.
- Tam Pa Ling Cave is situated at the top of Pa Hang Mountain.
- The cave has a single, south-facing opening and descends 65 m to its main gallery. The main gallery measures 30 m from north to south and 40 m from east to west.

ORKNEY ISLANDS

About

- Orkney is an archipelago located off the northeast coast of Scotland.
- It consists of approximately 70 islands, with the largest ones being Mainland, Hoy, Rousay, and South Ronaldsay.
- The islands are situated in the North Atlantic Ocean, separated from the Scottish mainland by the Pentland Firth.
- Orkney has a rich and diverse history, with evidence of human occupation dating back over 5,000 years.

SOLOMON ISLANDS

About

- Solomon Islands is an island nation that lies east of Papua New Guinea and northwest of Vanuatu.
- The country's islands lie between latitudes 5° and 13°S.
- It consists of six major islands and over 900 smaller islands.
- Its capital, Honiara, is located on the largest island, Guadalcanal.
- The Solomon Islands archipelago, includes Choiseul, the Shortland Islands, the New Georgia Islands, Santa Isabel, the Russell Islands, the Florida Islands etc.
- The islands' ocean-equatorial climate is extremely humid throughout the year.

PANAMA

About

- Panama is a transcontinental country spanning Central America and the northern part of South America.
- The country was part of the Spanish Colonization.
- It is bordered by Costa Rica to the west, Colombia to the southeast, the Caribbean Sea to the north, and the Pacific Ocean to the south.
- Its capital and largest city is Panama City, whose metropolitan area is home to nearly half the country's over 4 million inhabitants.

CAYMAN ISLANDS

About

- The Cayman Islands are a British Overseas Territory located in the western Caribbean Sea.
- The territory comprises three main islands: Grand Cayman, Cayman Brac, and Little Cayman.
- The Cayman Islands are a self-governing territory under the sovereignty of the United Kingdom.
- The Cayman Islands are known for their rich biodiversity and marine life.
- Efforts are made to protect coral reefs, wildlife, and natural habitats through conservation initiatives.

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 Bosphorus 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.

NIGER

About

- Niger is a minor oilseed crop that is grown predominantly under rainfed conditions.
- Native to Ethiopia, Eritrea and Malawi, niger seeds are also grown in India.
- Niger seeds resemble sunflower seeds in shape, but are smaller in size and black.
- It bears a fairly thick, adherent seed coat and can be stored for up to a year without deterioration. Niger seed contains proteins, oil and soluble sugars.
- Commercial Niger seed is grown in Africa, India and other areas of southeast Asia, and the seed is imported around the world as a popular type of birdseed.

BALTIC SEA

About

- The Baltic Sea is an arm of the Atlantic Ocean situated in Northern Europe.
- It is a shelf sea and marginal sea of the Atlantic with limited water exchange between the two, making it an inland sea.
- The Baltic Sea is one of the largest brackish inland seas by area.
- The Gulf of Finland connects the Baltic Sea with Saint Petersburg.
- The Gulf of Riga is located between Estonia and Latvia.
- The Baltic Sea is connected by artificial waterways to the White Sea via the White Sea-Baltic Canal and to the German Bight of the North Sea via the Kiel Canal.