



CSB IAS ACADEMY

The road map to Mussoorie..`

Current

FEBRUARY (1-15) 2024

Affairs



#Gajendra Palace, Near Sub Registrar Office,
Gandhi Nagar, Hyderabad - 500 080. Email: csbiasacademy@gmail.com
Cell : 9966436875, 8374232308

INDEX

Culture and Heritage	-	03
Indian Polity, Policy and		
Internal Security	-	08
International Relations	-	24
Economy	-	37
Environment	-	61
Science and Technology	-	78
Social Issues	-	94
Miscellaneous issues	-	102

CULTURE AND HERITAGE

1. Auroville Exposure Tour

Context:

Students under the **Ek Bharat Shrestha Bharat (EBSB)** programme visited Auroville town to learn about the working of four key units.

About Auroville town

- **Location**– Mostly in the state of Tamil Nadu, India, with some parts in the Union Territory of Pondicherry in India. Auroville is a universal township in the making for a population of up to 50,000 people from around the world.
- **Founder**– It was founded in 1968 by **Mirra Alfassa** (known as “the Mother”) and designed by architect Roger Ange.
- Auroville has its origins in the **French language, “Aurore” meaning dawn and “Ville” meaning village/city.** Additionally, it is named after **Sri Aurobindo**.

Objective

- To realise human unity – in diversity.
- To ensure sustainable living and addressing the future cultural, environmental, social and spiritual needs of mankind.

About Sri Aurobindo

He was born in Calcutta on 15th August 1872. He was a **yogi, seer, philosopher, poet, and Indian nationalist.**

Philosophy

- Aurobindo’s life philosophy is a synthesis of idealism, realism, naturalism and pragmatism. According to him, Jnana (knowledge), Bhakti (devotion) and Karma (work ethics) can lead man to the divine path. His philosophy is also known as **integral yoga**.

Important Literary Works:

- 1) An English newspaper called **Bande Mataram** (in 1905).
- 2) **Bhagavad Gita and Its Message**
- 3) **The Future Evolution of Man**
- 4) **Rebirth and Karma**

NOTE- Ek Bharat Shrestha Bharat (EBSB) programm– On Sardar Vallabhbhai Patel’s 140th birthday, the Prime Minister announced the “**Ek Bharat Shreshtha Bharat**” initiative to enhance the connection between people of various cultures living in different Indian states and union territories to encourage greater mutual understanding.

UPSC Prelims point: Auroville

2. Subika painting

Context:

Invaluable art forms of Manipur are on the brink of extinction due to neglect.

About Subika painting

Aspect	Details
---------------	----------------

Type

It is an early visual art form of Manipur.

Community

It is a style of painting which is linked to the Meitei community’s cultural history.

Manuscript

It is surviving through its six manuscripts – **Subika, Subika Achouba, Subika Laishaba, Subika Choudit, Subika Cheithil and Thengrakhel Subika.**

Origin

The royal chronicle, **Cheitharol Kumbaba**, doesn’t mention a specific founder. However, experts estimate the

use of Subika paintings since the 18th or 19th century.

Key points

- 1) It is a composition of cultural motifs made by pre-existing features and other influences encouraged by cultural world-views of the community.
- 2) The illustrations of Subika Laishaba have visual language from the elements such as lines, shapes, forms, colours, and patterns.
- 3) These visual images become Meitei's cultural motif, and structure to create visual effects as well as express cultural significance.
- 4) The visual images are painted on handmade paper.
- 5) The materials of manuscripts are prepared indigenously, either handmade paper or barks of trees.

UPSC Prelims point: Subika painting

3. Maa Kamakhya Divya Lok Pariyojana

Context:

The PM has recently laid the foundation stone for Maa Kamakhya Divya Lok Pariyojana to enhance access and amenities for pilgrims visiting the Kamakhya temple.

Maa Kamakhya Divya Lok Pariyojana:

- **Objective**-To enhance the pilgrimage experience and boosting tourism in Assam.
 - **Features:**
- 1) It is part of the Prime Minister's Development Initiative for North Eastern Region (PMDevINE) scheme. This corridor draws inspiration from the Kashi-Vishwanath Temple Corridor in Varanasi.
 - 2) It will restore six major hidden temples within the Kamakhya complex.

About Kamakhya temple



Context-wikipedia

- **Location**-Nilachal Hills, Guwahati.
 - **Religious significance**- It is one of the 51 shaktipeethas. Kamakhya is considered the goddess of fertility.
 - **Architectural features:**
- 1) The temple's architectural shape is a combination of the traditional nagara and saracenic styles. This hybrid architecture is sometimes called the Nilachal type, named after the hill where it's located.
 - 2) The temple has a distinctive beehive-like shikhara (dome). The dome is adorned with sculptured panels and images of various Hindu deities.
 - **Festival**-Kamakhya Temple hosts the Ambubachi Mela. This is an annual festival celebrating the menstruation of the goddess.

UPSC Prelims point: Kamakhya Temple

4. Grammy Awards

Context:

The fusion band, Shakti, bagged the Global Music Album Winner at the Grammy Awards.

About Grammy Awards

Aspect	Details
About	The Grammy Award is a prestigious accolade presented annually by the Recording Academy to honour

The Grammy Award is a prestigious accolade presented annually by the Recording Academy to honour

outstanding achievements in the music industry.

History

The Grammy Awards were first established in 1959 to honour artistic and technical excellence across various music genres. The name "Grammy" is derived from "gramophone," reflecting the original trophy's design resembling a gramophone.

Categories

- 1) It includes a wide range of categories covering such as pop, rock, rap, country, classical, jazz, and many more.
- 2) The "General Field" are four awards that are not restricted by genre.
- 3) They are Album of the Year, Record of the Year, Song of the Year, Best New Artist, and genre-specific awards.

Nomination and selection process

- 1) The nomination process involves submissions by record companies, artists, and other industry professionals.
- 2) The Recording Academy members then vote to determine the final nominees.
- 3) Winners are selected by voting members of The Recording Academy, consisting of music professionals across various fields.

Some interesting facts.

- 1) There are 15 Indians who have won Grammy Awards such as A.R. Rahman, Zakir Hussain etc.
- 2) Grammy Awards has introduced 3 new categories to recognise African Music, pop dance, and alternative jazz.

Ceremony

It is held annually in Los Angeles, California, typically in January or February.

UPSC Prelims point: Grammy awards

5. 390-Year-Old Deepastambham (Lamp Post)

Context:

Recently, archaeologists discovered a 390-year-old Deepastambham (lamp post) on the banks of the River Krishna in Nalgonda district, Telangana. This discovery sheds new light on trade ties in the region during early medieval times.

About the Deepastambham (lamp post)



Context-The Hindu

- According to the inscription found on the lamp post, the pillar can be dated back to June 1635.
- The inscription, comprising a fusion of Telugu and Tamil languages which suggests that the pillar was dedicated to Kasi Viswanatha.
- The impressive height of the pillar hints at its possible role as a lighthouse, aiding ships along the riverine trade route in the early medieval era.

The history of the Nalgonda region:

- During the construction of the lamp post, the region was governed by the Qutb Shahi dynasty.
- European travelers like the French diamond trader Tavernier, who visited

the Hyderabad kingdom has also made note of these land trade routes.

About Krishna river



Context- ResearchGate

- It is the third-longest river in India, after the Ganges and Godavari.
- It is the fourth-largest in India in terms of water inflows and river basin area after the Ganges, Indus, and Godavari.
- Its Basin extends over Andhra Pradesh, Maharashtra and Karnataka.
- Left Bank tributaries** - Bhima, Dindi, Peddavagu, Musi, Paleru, Munneru.
- Right Bank tributaries** - Kudali (Niranjna) Venna, Koyna, Panchganga, Dudhaganga, Ghataprabha, Malaprabha and Tungabhadra (largest tributary).

6. Ajanta and Ellora Caves

Context:

The Ministry of Tourism has recently included the UNESCO World Heritage sites of Ajanta and Ellora caves in its Swadesh Darshan Scheme II.

About Ajanta and Ellora Caves

Area of difference	Ajanta caves	Ellora caves
Location	Ajanta caves are located in the Sahyadri ranges (Western Ghats). These are a series of rock-cut caves on Waghora river near Aurangabad in Maharashtra.	It is located nearly 100 Kms away from Ajanta caves in the Sahyadri range of Maharashtra.
Number of caves	There are a total of 29 buddhist caves in Ajanta of which 4 were used as Chaitya or prayer halls while 25 were used as Viharas or residential caves..	Ellora caves are a group of 100 caves at the site of which 34 caves are open to the public. 17 caves out of these 34 are themed around Hinduism, 12 caves depict the themes of Buddhist and 5 caves are of Jain faith.
Major religion	Ajanta Caves are mostly Buddhist sites.	Ellora has a better mix of Hindu, Jain, and Buddhist structures.
Time period of construction	The caves were developed in the period between 200 B.C. to 650 A.D.	They date to the period between the 6th and 11th Centuries AD.
Status	UNESCO World Heritage sites	UNESCO World Heritage sites

About Swadesh darshan scheme

- Year of Launching**-2015
- Concerned ministry**-Ministry of Tourism, Government of India
- Objective**-To develop sustainable and responsible tourism destinations in the country.
- Type of scheme**-It is 100% centrally funded scheme.

Provision of scheme-

- The Ministry of Tourism provides financial assistance to State governments, Union Territory Administrations, or Central Agencies for development of tourism infrastructure in the country.
- State Government/UT Administration have to operate and maintain the projects sanctioned under the Swadesh Darshan Scheme.
- It has 15 themes for the development of theme-based tourist circuits throughout India.
- NOTE**-Some other important schemes related to tourism
- PRASHAD Scheme
- Utsav Portal
- DekhoApnaDesh Initiative.

UPSC Prelims point: Ajanta and Ellora Caves

7. Kokborok language

Context:

The Tripura Board of Secondary Education (TBSE) has announced that both Roman and Bengali scripts will be allowed for Kokborok exams.

About Kokborok Language

- Description**- Kokborok is the language spoken by the Borok people belonging to the State of Tripura. The term kok means "verbal", and borok means "people" or "human".
- Family**-It is a Sino-Tibetan language and can be traced back to at least the 1st century AD when the historical record

of Tripuri kings started to be written down in a book called the Rajratnakar.

- **Official status**-It is one of the state languages of Tripura, along with Bengali. It was notified on January 19, 1979.
- **Read more**-Official language in Constitution of India.

UPSC Prelims point: Kokborok language

8. Dhokra Shilpkala Sculpture

Context:

Chhattisgarh's Ocher Studio is helping the artisans to preserve India's 4,000-year-old craft- Dhokra Shilpkala.

About Dhokra Shilpkala Sculpture



Context-Gaon connection

Aspect

Detail

Description The word "Dhokra" is believed to be derived from the Dhokra Damar tribes, the traditional metal smiths of Central India.

Origin

The origins can be traced back to the tribal communities residing in the regions of Chhattisgarh, Jharkhand, West Bengal, and Odisha.

Technique

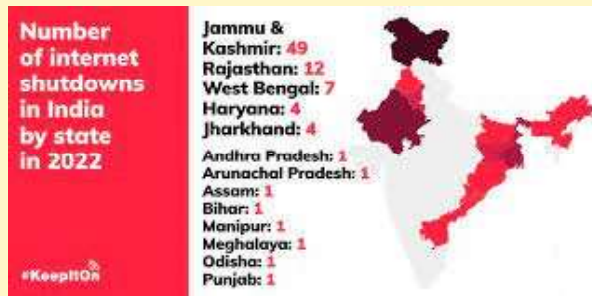
It uses the lost-wax technique, or cire perdue, for metal casting.

INDIAN POLITY, POLICY AND INTERNAL SECURITY

1. The great Indian Internet shutdown: how access to the world wide web is curtailed”.

Context:

The article discusses how the Indian government frequently shuts down the internet, which violates a Supreme Court ruling and negatively impacts the economy and public trust.



Anuradha Bhasin judgment:

- **Recognition of Internet as a Fundamental Right:** The Anuradha Bhasin judgment, in January 2020 by the Supreme Court of India, declared that access to the Internet is a fundamental right under the Indian Constitution.
- **Context of the Judgment:** This decision came from the case Anuradha Bhasin vs Union of India, which was in response to internet restrictions in Jammu and Kashmir.
- **Conditions for Internet Restrictions:** The Court ruled that any government restriction on internet access must be temporary, lawful, necessary, and proportionate.
- **Review of Restrictions:** The ruling emphasized that government orders to restrict internet access are subject to judicial review.
- **Expectation of Limited Suspensions:** The judgment was expected to limit internet suspensions to extreme cases

involving public emergencies or safety threats.

The Parliament in relation to internet suspensions in India:

- **Amendment to Telecom Suspension Rules in 2020:** The Indian Parliament amended the Telecom Suspension Rules, 2017, following the Supreme Court’s judgment. This amendment limited Internet suspension orders to a maximum of 15 days. The amendment did not mandate the publication of suspension orders, nor did it include the Supreme Court’s direction for periodic review of these orders.
- **Non-Statutory Recognition of Court Rulings:** The government has not given statutory recognition to the Supreme Court’s directives in the Anuradha Bhasin judgment, leading to a lack of awareness and compliance among officials.

The issue with internet suspensions in India:

- **Violation of Supreme Court Ruling:** Despite the Anuradha Bhasin judgment declaring internet access a fundamental right, India frequently imposes internet shutdowns.
- **Lack of Transparency in Suspension Orders:** The government often fails to publish the reasons for internet shutdowns, undermining legal processes and public trust.
- **Challenges in Legal Redressal:** Without publicly available suspension orders, it’s difficult for citizens to challenge shutdowns in court.
- **Non-Compliance Across India:** Compliance with the Anuradha Bhasin

judgment is low nationwide, not just in Jammu and Kashmir.

The impacts of internet suspensions in India:

- **Economic Losses:** In 2020, India suffered a \$2.8 billion economic loss due to 129 internet suspensions.
- **Effect on Individuals:** Around 10.3 million people were affected by these shutdowns.
- **Disruption in Daily Life:** Internet suspensions hinder access to information, healthcare, education, and livelihood opportunities.
- **Psychological and Social Impact:** They cause psychological stress and hinder social and journalistic activities.
- **Exacerbates Inequality:** The majority of users rely on mobile data (97.02% as per 2019 TRAI report), so suspensions disproportionately affect those without broadband access.
- **Undermines Democracy:** Internet shutdowns are often used to suppress democratic exercises like protests, limiting freedom of expression and access to information.

Way forward

- **The way forward** includes more faithful compliance with the Supreme Court's guidelines by the executive government. This adherence is essential for maintaining transparency in issuing and publishing suspension orders, which is crucial for upholding fundamental rights.
- Such steps will also contribute to reducing economic losses and shedding India's tag as the "internet shutdown capital" of the world, thereby fulfilling the potential of Digital India.

Mains point: The key points and implications of the Anuradha Bhasin judgment and the actions taken by the Indian Parliament in relation to internet suspensions in India.

2. Accused cannot seek default bail on ground that investigation is pending against others SC"

Context:

The Supreme Court in Wadhawani brothers multi-crore bank loan scam case, held that an accused can not seek default bail on the grounds that the probe is pending against other co-accused. In cases where there are multiple accused, the default bail can only be sought by an individual if the investigation/probe is pending against that particular individual.



About Default Bail:

- Default bail is also known as statutory bail. It is a type of bail which is given to an accused detained in custody, when the police fails to complete the investigation and file the charge sheet within the time frame mentioned under the law.
- The time frame for completing the investigation of offences under the IPC, and for filing of the charge sheet, varies depending on the gravity of the offence.
- **For Example-** An offence punishable with imprisonment up to 10 years, the investigation must be completed within 60 days of arrest. For offence where imprisonment is more than 10 years, the investigation must be completed within 90 days of arrest.
- Exception to this rule-special laws like the Narcotic Drugs and Psychotropic Substances Act where the time period for investigation may be different, such as 180 days.

The Code of Criminal Procedure (CrPC) provides for three kinds of bail:-

Section 438- Anticipatory Bail

Section 439 - Regular bail

Section 167(2) - Default/statutory bail.

Different types of bail:

Regular Bail- This is granted to accused individuals who are already in legal custody or jail. It allows the individual to be released from custody by giving a bond, either with or without sureties, under section 437 and section 439 of the CrPC.

Interim Bail- This is bail which is provided for a short period of time. It is provided to the accused person before the actual bail hearing or anticipatory bail.

Anticipatory Bail- This is defined under section 438 of CrPC. It is to be granted to those individuals who are apprehending arrest.

Medical Bail- Granted to individuals based on medical grounds, such as life-threatening disease.

Important judgements regarding bail:

Ritu Chhabaria judgment- The Supreme court held that **“the right of default bail under Section 167(2) of the Criminal Procedure Code (CrPC) is not merely a statutory right, but a fundamental right that flows from Article 21 of the Constitution”**.

Jasbir Singh vs National Investigating Agency (2023) judgement- The Supreme Court held that an accused has no right to ask for default bail by claiming that the charge sheet is incomplete (although it is filed on time) for lack of sanction under Section 167(2) of the Code of Criminal Procedure.

Prelims point:About Default Bail:

3. Pradhan Mantri Suryodaya Yojana.

Context:

In the Interim Budget 2024, the Finance Minister announced that one crore households will receive up to 300 units of free electricity monthly through rooftop solarization. This announcement is part of the Pradhan Mantri Suryodaya Yojana.



Pradhan Mantri Suryodaya Yojana:

Aspect

Details

About

1. This scheme was recently announced on the auspicious occasion of the consecration of the Ram Mandir in Ayodhya by the PM Modi.
2. It aims to install rooftop solar panels on one crore households.
3. Under this initiative, one crore households will receive up to 300 units of free electricity monthly.

Nodal agency Rural Electrification Corporation (REC)

The Significance of this Scheme:

- It is an attempt to achieve the goal of 40 GW rooftop solar capacity by March 2026.
- The scheme will help households to save between Rs 15,000 and Rs 18,000 annually. It will also enable them to sell any surplus electricity to distribution companies (DISCOMs) as part of the net metering policy.
- The net-metering policy permits rooftop solar power users to feed their excess power back into the grid, thereby reducing their electricity expenses.

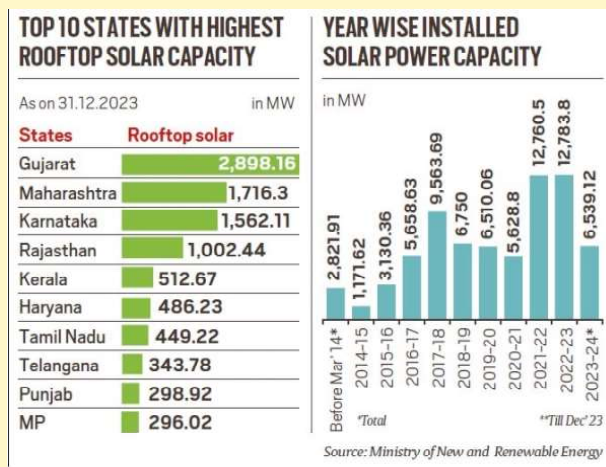
Note- The mechanism of Net Metering was started in India in 2009. The Ministry of New and Renewable Energy (MNRE) overseeing its implementation.

The other major announcements have been made for the energy sector in Budget 2024:

A 'viability gap funding' (VGF) will be provided for harnessing offshore wind energy potential for an initial capacity of one gigawatt. These are wind farms located in the sea.

Note- The government aims to install 500 GW of renewable energy by 2030. As part of this initiative, the government aims to achieve a 10 GW offshore wind capacity by 2030. Presently, India's onshore wind energy capacity amounts to 44 GW.

The India's current solar capacity:



Source- Indian Express

According to the Ministry of New and Renewable Energy's website, solar power installed capacity in India has reached around 73.31 GW as of December 2023.

A recent report from the think tank Council on Energy, Environment and Water (CEEW) CEEW reveals that residential rooftop solar installations make up only 20% of the total, with the majority occurring in the commercial and industrial sectors.

Note- India aims to achieve 50% of its electric power capacity from non-fossil

fuel sources by 2030, as outlined in its updated Nationally Determined Contribution (NDC) to the UNFCCC.

Prelims point: Pradhan Mantri Suryodaya Yojana

4. Expert Explains: The crime of piracy, and how maritime forces respond to it.

Context:

The article discusses the causes, solutions and challenges of dealing with ocean piracy.

Background:

Recently, the Indian Navy prevented 2 piracy attempts off the Somali coast, including the rescue of 19 Pakistanis.

In recent years, the west coast of Africa, Gulf of Aden, Horn of Africa, Bangladesh, and the Strait of Malacca have seen piracy attacks.

These Areas Particularly Affected:

Poorly policed: The coastal countries have weak maritime forces, or none.

Concentration of shipping traffic: They are either choke points in shipping routes where ships are forced to converge or slow down by geography, or anchorages where ships remain stationary for days before entering port.

Poor governance or turmoil: This leads to unemployment, poverty and consequently, crime.

International waters: This makes them fall within the maritime jurisdiction of several countries. This leads to legal complexities and difficulties in coordination.



Somali Piracy Threat. Source: ResearchGate.

The Consequences of Piracy:

- Causes panic in maritime business and leads to the establishment of high-risk areas.
- Increase in maritime insurance premiums.
- Affects the safety of ships and seafarers.
- Disrupts global supply chains.

The Crime of Piracy be Tackled:

- **Long-Term:** A long-term solution lies in rooting out misgovernance and unemployment in nations ashore, which feed maritime criminal activities.
- **Short-Term:** The situation at sea has to be contained and stabilised by the world's maritime forces.

The Indian Navy Played in Tackling the Problem:

- Indian Navy's anti-piracy patrol started in 2008. It has foiled several attempts by pirates at hijacking merchant ships.
- The boundaries of the high-risk area that covered much of the Arabian Sea during the height of **Somali piracy (2009-12)** were pushed back westward primarily due to the efforts of the Indian Navy.
- The Indian Navy has been practising Maritime Intervention Operations (MIO) for decades, and has developed extremely high expertise in this niche area of naval operations.

Maritime Forces Execute Anti-Piracy Operations:

- First, they maintain a visible presence that aims to deter pirates from carrying out attacks.
- Their ships and aircraft undertake surveillance of the high-risk area, identify suspect vessels, and report them for further investigation. This is supported by information fusion centres.
- They warn passing ships about suspect vessels and announce escort schedules (so that ships can join convoys).

They proactively or reactively intervene to manage a developing situation, foil a piracy attempt, or rescue a hijacked vessel while trying to ensure minimum casualties and damage.

The Challenges with Handling Captive Pirates:

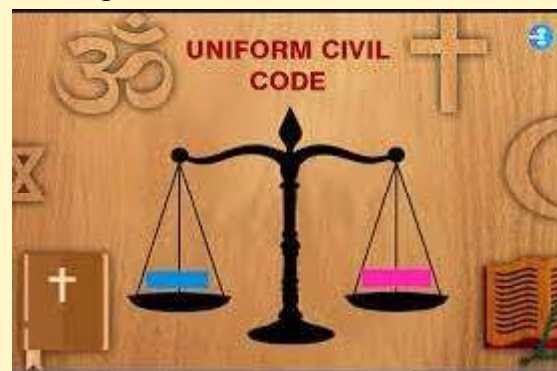
- **Inadequate National Laws:** They are often inadequate to deal with apprehended pirates.
- Lack of effective international legal mechanism for their trial and disposal.
- **Jurisdictional Issues:** The many nationalities, countries, maritime zones, flag states, etc. involved raise complex jurisdictional issues.

Mains point: The causes for piracy in the Indian Ocean? Suggest solutions to tackle the growing menace.

5. On Uttarakhand's uniform civil code.

Context:

Uttarakhand's Uniform Civil Code Current Status, The article discusses the Uniform Civil Code (UCC) in India, focusing on Uttarakhand's plan to adopt it. It's debated for potentially impacting religious freedom and minorities.



The Uniform Civil Code (UCC):

- The UCC is a proposition to replace the personal laws, which are based on the scriptures and customs of different religious communities in India, with a common set of laws governing every citizen.

Happening in Uttarakhand Regarding The UCC:

- Uttarakhand's government is likely to pass the **Uniform Civil Code (UCC) Bill** in its ongoing session.
- A state-appointed panel, led by **Justice Ranjana Prakash Desai**, drafted the UCC, submitting the final report on February 2. The State Cabinet has approved this report.
- Specific changes include equal property share for Muslim women, revoking practices like polygamy and iddat, and maintaining current marriage age requirements.

The Issues of Adopting The UCC in Uttarakhand:

- Concerns from Tribal Communities:** Tribal groups, making up 2.9% of Uttarakhand's population, have not agreed to the UCC. The Van Gujjar tribe, particularly, is worried about the impact on their customs.
- Impact on Religious Freedom:** Critics fear the UCC could infringe upon religious freedoms and minority rights.
- Threat to Cultural Diversity:** There are concerns that UCC might dilute India's rich religious and cultural diversity.
- National Debate and Precedence:** The state's approach may set a precedent for other Indian states.

The Different Views on Implementing The UCC Nationwide:

- Judicial View on UCC:** The Supreme Court, in the Shah Bano Begum case (1985), highlighted the unfulfilled mandate of Article 44 regarding UCC.
- In Sarla Mudgal versus Union of India (1995),** the Court again mentioned the UCC, stressing the complexity due to multiple personal laws.
- The John Vallamattom case in 2003** saw the Court reiterating its stance on the need for a UCC.
- Despite these observations,** the Supreme Court has refrained from

issuing directives to the government, noting law-making is Parliament's domain, as seen in the 2021-2022 petition dismissals.

On Uttarakhand's UCC Committee: The Court referred to Article 162, highlighting the state's executive power to deal with matters within its legislative competence. It stated that forming a committee under Entry 5 of the Concurrent List, which covers personal law matters like marriage, divorce, and adoption, is within the state's authority and not unconstitutional.

Law Commission's View: 21st Law Commission (2018): Concluded that implementing a Uniform Civil Code (UCC) across India was neither necessary nor desirable at that time. Emphasized the importance of respecting India's cultural diversity and suggested reforming discriminatory practices within existing personal laws instead of a uniform code.

22nd Law Commission (2021): Showed a different approach by starting to gather public and stakeholder opinions on UCC. This shift indicates a renewed interest in exploring the feasibility and implications of implementing a UCC nationwide.

Mains point: The primary concerns and criticisms raised by various groups and political parties regarding the implementation of the Uniform Civil Code (UCC) in Uttarakhand.

6. The Public Examinations Bill 2024.

Context:

Union minister Jitendra Singh introduced the Public Examinations (Prevention of Unfair Means) Bill, 2024 in the Lok Sabha.



The Public Examinations (Prevention of Unfair Means) Bill, 2024:

- **Background**– Many States were not able to declare results of their public examinations on time. This happened due to negative impact of unfair practices.
- **Objective**– To bring greater transparency, fairness and credibility to the public examination systems.
- **Applicability**– The bill is applicable to central recruitment and entrance exams conducted by Union Public Service Commission (UPSC), Staff Selection Commission (SSC), Railway Recruitment Boards (RRBs), National Testing Agency (NTA) and Institute of Banking Personnel Selection (IBPS).
- **Prescribed punishment**– For cheating–minimum of 3 to 5 years of imprisonment.
For organised crimes of cheating, punishment will be 5 to 10 years of imprisonment and a minimum fine of Rs 1 crore.
- **High level National Technical Committee on Public Examinations**– The bill seeks to set up a high level committee to develop protocol for developing foolproof IT security system for online and technology based exams.
- **Note**– The proposed bill protects candidates from its provisions.

Prelims point: The Public Examinations (Prevention of Unfair Means) Bill, 2024

7. Understanding the delimitation exercise.

Context:

The article discusses how constituencies for India's Lok Sabha and state assemblies are drawn based on population. It explains the process of delimitation, which is adjusting the number and boundaries of these constituencies.

The article also explores various approaches to this process, including international practices, and suggests a balanced solution that respects both democratic and federal principles.



The delimitation:

- Delimitation is the act or process of fixing limits or boundaries of territorial constituencies in a country to reflect the changes in population.

The challenges with the revised delimitation exercise:

- **Impact of Census Postponement:** Normally, delimitation based on the 2031 Census would occur, as it would be the first Census after 2026. However, the postponement of the 2021 Census and the approaching year 2026 have accelerated discussions on the upcoming delimitation exercise.
- **Disparities in Population Growth:** In the federal system, which advocates for equal state representation, states like Kerala and Tamil Nadu, which have effectively controlled population growth, might lose seats to rapidly growing states like Uttar Pradesh and

Bihar. This disparity risks creating feelings of unfairness and disenchantment among the effectively managed states, potentially leading to an imbalance in representation.

Debated Options: There are two key options under discussion. One is to keep the Lok Sabha seats at 543 and reallocate them based on new population data. The other is to increase the seats to 848, ensuring proportional representation for all states. However, the first option may favor more populous states, while the second could result in a too-large Lok Sabha without fully resolving underrepresentation issues for less populous states.

The international practices:

In the United States, the House of Representatives has maintained a fixed number of 435 seats since 1913. The distribution of these seats across states is adjusted after each Census using the 'method of equal proportions'. This ensures balanced representation despite population changes. For instance, following the 2020 Census, 37 states experienced no change in their seat allocation, Texas gained two seats, while five other states gained one seat each, and seven states lost one seat.

In the European Union, the EU Parliament, with 720 members, employs '**degressive proportionality**' for seat allocation among its 27 member countries. This method ensures a more equitable representation relative to the population size of each country. For example, Denmark, with a population of around 6 million, has 15 seats, whereas Germany, with a significantly larger population of 83 million, holds 96 seats, demonstrating the varying population-to-seat ratios.

Way forward:

Maintain Lok Sabha Seats: Keep the number of Lok Sabha seats capped at 543 to prevent disruptions in current

state representations and uphold federal principles.

Adjust State Assembly Seats: Increase the number of seats in state assemblies according to current population trends, but without altering the number of Rajya Sabha seats.

Empower Local Bodies: Strengthen local governance by significantly enhancing the powers and financial resources of panchayats and municipalities, fostering democracy at the grassroots level.

Mains point: The potential options for addressing disparities in population growth and ensuring fair representation in India's Lok Sabha, considering the challenges and international practices in seat allocation.

8. The new process for picking Election Commissioners, what led to it.

Context:

The article discusses the issues with the earlier process of appointing Election Commissioners and the Supreme Court's ruling regarding this. It also highlights issues with the current method of appointment. Current Process for Choosing Election Commissioners..

Background:

The new Election Commissioner will be picked through a consultative process being adopted for the first time after a Supreme Court verdict and a new law.

The Issues with The Earlier Process of Appointing Election Commissioners:

The power to make appointments rested exclusively with the Executive (the Union government).

Article 324(2) specifies the President's role in appointing Election Commissioners, with the caveat that this appointment is subject to any law passed by Parliament. However, governments had not enacted such a law.

- Thus, the current appointment system was opaque and raised doubts about the institution's independence.

The Supreme Court's Ruling Regarding This:

- The Court observed that it was evident that the founding fathers of the Constitution did not want the Executive to have exclusive authority in appointing Election Commission members.
- It ruled that **"the appointment shall be made on the advice of a Committee consisting of the PM, the Leader of the Opposition of the Lok Sabha (or the leader of the largest opposition Party in the Lok Sabha in terms of numerical strength), and the CJI."**
- However, the Court was careful to specify that these norms were "subject to any law to be made by Parliament".

Other Recommendations in This Regard:

- Dinesh Goswami committee:** It had recommended that the President consult the CJI and the Leader of the Opposition, or the leader of the largest Opposition group, for appointing the Chief Election Commissioner. For the other two Election Commissioners, the consultation was to involve the CJI, the Leader of the Opposition, and the Chief Election Commissioner.
- Law Commission's 255th report:** It suggested that a 3-member collegium or selection committee, comprising the PM, the Leader of the Opposition or the leader of the largest Opposition party in the Lok Sabha, and the CJI should be consulted.

The Current Procedure because of The SC Judgment:

- The Centre introduced a Bill in Parliament last year which establishes a committee comprising the Prime Minister, the Leader of Opposition in the Lok Sabha, and a Cabinet Minister nominated by the PM.

- The selection will be made from 5 names shortlisted by a screening panel headed by the Law Minister and comprising 2 Union secretaries.

The Issues Remain Plague The New Appointment Process:

- The appointment process raises concerns regarding its potential to undermine the reforms sought by the Court. For instance, the proposed committee's composition effectively sidelines the Leader of Opposition, who could be consistently outvoted by the PM and the union minister.

Mains point: The issues with the current procedure of appointing Election Commissioners in India.

- "Rajya Sabha passes Bill to amend Water Act, decriminalize minor pollution-linked crimes.**

Context:

Water (Prevention and Control of Pollution) Amendment Bill 2024, was recently passed by the Parliament. This bill effectively decriminalizes almost all penal provisions except sections 25 and 26 in the earlier 1974 Water (Prevention and Control of Pollution) Act.

- Section 25 pertains to the mandatory requirement of obtaining consent to operate from state pollution boards, while section 26 deals with the discharge of sewage or trade effluents.

Water (Prevention and Control of Pollution) Amendment Bill 2024:



Source-News On AIR

- **To amend-** The Water (Prevention and Control of Pollution) Act 1974.
- **Applicability-** Initially, its application will be limited to Himachal Pradesh, Rajasthan, and the union territories. Other states have the option to pass resolutions to extend its applicability within their jurisdictions.
- **Key provisions of the bill:**
 - **Industrial Establishment Consent Exemptions:-** According to Section 25 of the 1974 Act, approval from the SPCB was needed before setting up any outlet expected to release sewage or trade effluent into water bodies, sewers, or land. However, the proposed bill provides certain Industrial Establishment Consent exemptions-
 - a. The proposed Bill allows the Central government, in consultation with the CPCB, to exempt specific industrial plants from this requirement.
 - b. The central government may issue guidelines for granting, refusing, or revoking consent granted by the SPCB.
 - **Additional penal provision under section 25 of the Act-** The bill retains the penal provision under Section 25 of the original Act. The establishment and operation of an industry without obtaining SPCB consent will still be punishable with imprisonment up to six years and fine.

It also introduces an additional penalty between Rs 10,000 and Rs 15 lakh for tampering with monitoring devices used to determine the setting up of any industry or treatment plant.
 - **Selection of Chairman of State Pollution Control Board-** Under the 1974 Act, the state government nominated the chairman of a State Pollution Control Board (SPCB). However, according to the amendment Bill now, central government will

determine the nomination process and the terms of service for the chairman of SPCB.

Offences related to polluting matter:

- a. Change of imprisonment to fines in pollution offence- Under the 1974 Act, the offenders of discharge of polluting matter faced imprisonment between one and a half to six years. The 2024 amendment Bill replaces imprisonment with penalties ranging from Rs 10,000 to Rs 15 lakh.
- b. Imprisonment in case of failure to pay fines- Failure to pay penalties may lead to imprisonment up to three years or a fine double the penalty amount.

Adjudicating officer to determine penalties:

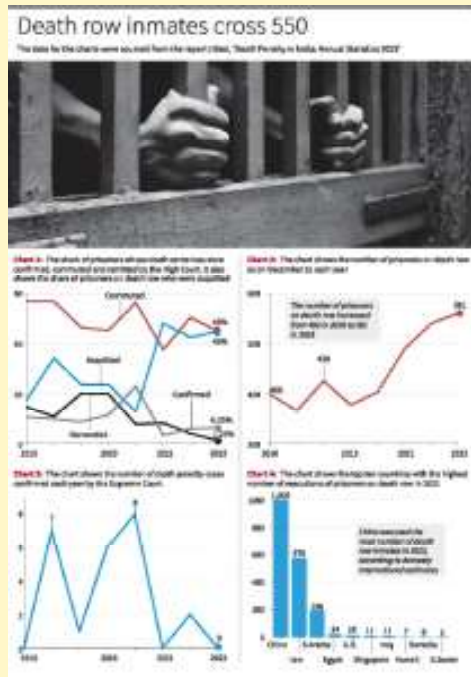
- a. The 2024 amendment Bill allows the central government to appoint adjudication officers to decide penalties under the Act.
- b. Appeals against their orders can be made to the National Green Tribunal, with a deposit of 10% of the penalty.
- c. Penalties collected will go to the Environment Protection Fund established under the Environment (Protection) Act, 1986.

Mains point:Water (Prevention and Control of Pollution) Amendment Bill 2024

10. 2023 saw the most prisoners on death row in nearly 2 decades.

Context:

The article discusses the findings of the 'Death Penalty in India: Annual Statistics 2023' report.



Source: The Hindu.

The status of death sentences in India:

According to the 'Death Penalty in India: Annual Statistics 2023' report:

- In 2023, the High Courts confirmed the death sentences of 1% of prisoners whose cases were up for decision. This is the lowest confirmation rate since 2000.
- The death sentences of 45% of prisoners were commuted (sentence reduced to a lesser sentence). An equal share of prisoners were acquitted. The remaining 6% were remanded to trial courts.
- There were 561 prisoners on death row by the end of December 2023. This is the highest number in nearly two decades, and the 2nd-highest since 2000.
- Note:** Death row is a term for a place in a prison that houses inmates awaiting execution after being sentenced to death.
- The majority of death penalty cases in trial courts in 2023 involved crimes related to sexual offences (more than 50% were for crimes involving homicidal rapes).

The issues:

- Sentencing Despite Absence of Information of the Accused:** The trial courts imposed death sentences in 87% of cases in the absence of any information relating to the accused.
- This is against the Supreme Court's mandate in Manoj v. State of Madhya Pradesh (2022),** which requires trial courts to proactively elicit material on the mitigating circumstances of the accused, including psychiatric evaluations, while sentencing them in death penalty cases.
- Cases of Negligence in investigation and trials:** In 2023, the Supreme Court acquitted six death row prisoners while criticising the negligence.

The way forward:

- Incorporating Changes in Criminal laws:** The passing of the Bharatiya Nyaya Sanhita, 2023, will increase the number of offences punishable by death to 18 from 12 under the Indian Penal Code, 1860. The impact of these changes on the administration of the death penalty should be taken into account.
- Incorporating International Practices:** For instance, Ghana abolished the death penalty for ordinary crimes. These international developments should be considered.

Mains point: The 'Death Penalty in India: Annual Statistics 2023' report.

11. National Judicial Academy.

Context:

The Supreme Court recently emphasized the lawyers to undergo compulsory training at the National Judicial Academy like the judges. The court advocated for mandatory training for all advocates.

- Justices Bela M. Trivedi and Pankaj Mithal** made the statement while considering the bail plea of Souvik Bhattacharya, the son of Trinamool

Congress (TMC) MLA Manik Bhattacharya. He was arrested in connection with the West Bengal teachers recruitment “scam”.

National Judicial Academy (NJA):



Source- National Judicial Academy (NJA)

Aspect	Details
About	It is an independent society, operates under the guidance of the Supreme Court of India.
Location	Its 63-acre campus is situated on the outskirts of Bhopal, with a registered office in Delhi.
Established in	1993 under the Societies Registration Act, 1860.
Mandate Enhancing	The Administration of Justice through Judicial Education, Research, and Policy Development.
Funding	It is fully funded by the Government of India.
Functions	It arranges training sessions to assist judges in their adjudicative responsibilities and in managing court administrative tasks.
Chairman	The Chief Justice of India (CJI) serves as the Chairman of the General Body, Governing Council, Executive

Committee, and Academic Council of NJA.

Management

1. The Director of NJA is its main executive officer and is appointed by the Chairman, the Honorable Chief Justice of India.
2. NJA academic staff positions include the Director, one Additional Director (Research), three Professors, six Assistant Professors, six Research Fellows, and six Law Associates.

Prelims point: National Judicial Academy (NJA):

12. Launched on International Day For Girls and Women in Science, will SWATI break old habits?

Context:

The article discusses efforts to reduce gender gaps in Indian science. It mentions the launch of SWATI on February 11, a portal aiming to list every woman in Indian science. It also highlights past initiatives and policies to support women in STEM fields. SWATI Portal to address gender imbalance in Indian Science

India's Past Efforts to Address Gender Imbalance in Indian Science:

- **2004 INSA Report:** The Indian National Science Academy's report was a pioneering effort, being the first government-supported document to discuss the gender gap in STEM fields. It highlighted discrimination based on gender and caste in the workplace.
- **2008 Initiatives:**
 - **Lilavati's Daughters:** The Indian Academy of Sciences (IASc) released this compendium to showcase the achievements of women scientists.
 - **National Conference:** Organized by a Department of Science and Technology task force, it included over a thousand women scientists. Significant promises

were made by then Science Minister Kapil Sibal, including flexible working hours, in-house creches, and research grants for women scientists. However, the committee for implementing these measures was not successful.

2010 IASc Report: This report, by a team of sociologists and scientists, focused on why women scientists leave academia. It revealed that while men mostly blamed family and sociocultural factors, women pointed to a lack of opportunities and organizational barriers.

Recent Progressive Policies: The Gender Advancement for Transforming Institutions (GATI) charter and the draft Science, Technology and Innovation Policy (STIP) 2020 have adopted more inclusive and progressive language. These policies consider factors like caste, transgender identity, and gender-neutral parental leave, showing an evolution in approach.

SWATI Portal Launch in 2024: SWATI, launched on February 11, 2024, is a portal aimed at listing all women in science in India. It was first announced in 2021 but only recently became active.

The Significance of SWATI Portal:

Comprehensive Database: SWATI aims to list every woman in Indian science, creating a unique and extensive database.

Inclusivity: It includes all non-male genders, recognizing diversity in the scientific community.

Breaking Barriers: By not limiting to those with PhDs, SWATI acknowledges various capacities in which women contribute to science.

Increased Visibility: The portal can enhance visibility and representation of women in STEM fields.

Step Towards Equality: SWATI represents a significant effort towards addressing the gender gap in Indian

science, promoting more equitable participation.

Way forward:

For a better future, India needs to fully implement existing promises like flexible work hours and support for women in science. It's crucial to involve women in creating policies and recognize broader issues like caste and transgender identity, as in recent policies. The SWATI portal should be used effectively to support and connect all women in science.

Mains point: India's efforts to address gender imbalance in its scientific community.

13. A global alliance to bridge the gender equity gap.

Context:

This article discusses India's efforts in promoting gender equity and equality. It highlights India's initiatives, like the Alliance for Global Good, to advance women's roles in society and economy globally. The Alliance for Global Good.



The status of gender equity and equality in India:

Progress in Workforce Participation: The female labor force participation rate increased from 23.3% to 37%.

Education Advancements: There's a 28% increase in female higher education enrollment over 10 years, with women making up 43% of STEM students.

Rural Women's Involvement: Over nine crore women participate in 83 lakh

self-help groups, enhancing rural socio-economic conditions.

The initiatives in promoting gender equity and equality:

Initiatives in India

- **New Delhi Leaders' Declaration:** Adopted under India's G-20 presidency, it focuses on inclusive socio-economic empowerment.
- **Women's Reservation Bill:** Passed to reserve one-third of seats in Parliament and State Assemblies for women.
- **Gender Budgeting:** Allocation of \$27 billion in 2023-24 for gender-focused initiatives.

Global Initiatives

- **Alliance for Global Good - Gender Equity and Equality:** Launched at the World Economic Forum, it aims to develop scalable and practical solutions for women-led development in key sectors such as ed-tech, medical capacity building, health interventions, learning and skill development, agrotech, women enterprise development, and unlocking capital for gender outcomes.
- **The Alliance is guided by the Ministry of Women and Child Development,** Government of India, and supported by the CII Centre for Women Leadership and the Bill and Melinda Gates Foundation, with the World Economic Forum as a network partner.
- **India's Proven Leadership:** Recognized as the "pharmacy of the world," India's leadership in medical and digital sectors underpins the Alliance's objectives.
- **We-Lead Lounge at Davos:** A platform for global leaders to discuss and drive inclusive development.

RWay forward

- To advance gender equity and equality, continued global collaboration through initiatives like the Alliance for Global Good is essential. Building on India's

progress in education, workforce participation, and digital innovation, the focus should be on sharing best practices and fostering inclusive growth in various sectors worldwide.

Mains point: The initiatives and progress India has made in promoting gender equity and equality, including its involvement in global initiatives such as the Alliance for Global Good.

14. Fiscal federalism.

Context:

The article discusses the issues with fiscal federalism in India and suggests a way forward for the same.

Background:

- The governments of some states in South India have objected to their share of taxes and the Union government's implementation of fiscal federalism.



The issues of fiscal federalism in India:

- **Disparity in Revenue Shares:** There are growing disparities between what is paid by states into the exchequer and what is received by some states. This is the complaint of southern states that they are taxed too much compared to poorer and more populous states.
- **Rising Cesses and Surcharges:** In recent years, the sharp growth of cesses and duties (which are not part of the divisible pool of taxes), has led to an expansion of the resources available to the Union at the expense of those of the states.

Conditional Transfers: The Union government also attaches conditions to transfers on account of developmental schemes.

The way forward:

Political Solutions: It must be addressed through skillful coalition building among the governments.

Reduction of Borrowing Constraints on States: The Union government should revisit the borrowing constraints placed on state investment funds, as suggested by Kerala.

Reduction in Cesses and Surcharges: The Union government should reduce the degree to which it uses cesses and duties to expand its share of tax collections.

Minimise the discretionary aspect of transfers to states: Some of these transfers can be made automatic. For other transfers, clear and non-discriminatory methods should be followed.

According to the author, the larger problem of the issues with fiscal federalism can be addressed only through political give and take. Given India's developmental needs, it is important that relations between the Centre and states are cordial.

Mains point: The issues with fiscal federalism in India.

15. SC says jail, not bail, is the rule under the UAPA: How courts have been granting bail in UAPA cases"

Context:

The article discusses how the Supreme Court, on February 7, denied bail to Gurwinder Singh, involved in a Khalistan module case, under the strict UAPA law. It explains that the usual principle of 'bail being the rule and jail the exception' does not apply under UAPA.



The different judicial interpretations regarding UAPA:

Zahoor Ahmed Shah Watali v NIA (2019): The Supreme Court ruled that courts should not deeply analyze evidence for bail under UAPA, but rather accept it at face value.

Delhi High Court's Ruling (2021): Granted bail to three student activists, Asif Iqbal Tanha, Devangana Kalita, and Natasha Narwal, focusing on specific charges required by the police rather than broad accusations.

Bombay High Court's Decision on Anand Teltumbde: Granted bail citing no direct link in the evidence to the crime, showing a nuanced interpretation of the evidence required under UAPA.

Union of India vs KA Najeeb (February 2021): The Supreme Court allowed bail under UAPA when the accused had been incarcerated for a significant period, acknowledging the need for balancing UAPA's strictness with the right to a speedy trial.

Vernon Gonsalves v State of Maharashtra (July 2023): Suggested a need for surface-level analysis of evidence's probative value at the bail stage, showing a shift from the Watali ruling.

The impacts of rulings on the UAPA law about granting bail:

Strict Bail Criteria: Under Section 43D (5) of the UAPA, bail is not to be granted

if the court, based on the police report and case diary, finds reasonable grounds to believe the accusations are prima facie true.

- . **Role of Public Prosecutor:** The section mandates that the Public Prosecutor must be heard before any decision on bail is made.
- . **Shifted Burden of Proof:** Unlike ordinary criminal law, this section shifts the burden onto the accused to demonstrate that the accusations are not prima facie true, which is a significant deviation from the general principle of 'innocent until proven guilty'.
- . **Restrictive Application:** The law, through this section, narrows down the scope for bail, especially in cases involving offences under Chapters IV and VI of the UAPA, making it

exceptionally challenging for the accused to secure bail.

Way forward

- . The way forward should involve a larger bench of the Supreme Court resolving the contradictions between rulings of same strength judge benches, like those in Watali and Gonsalves. This would establish a clearer, more consistent legal framework for interpreting UAPA's bail provisions, balancing national security with the accused's rights.

Mains point: The key aspects of the UAPA law regarding granting bail, and what are the different judicial interpretations regarding bail under UAPA?

INTERNATIONAL RELATIONS

1. C Raja Mohan writes: In closer ties with the Gulf, a significant win for Indian diplomacy.

Context:

The article discusses the achievements of India's diplomacy in the Gulf. It also mentions the factors behind the transformation of India-Gulf relations. On Strengthening of India's Ties with the Gulf



Background:

The Prime Minister is on a visit to the United Arab Emirates and Qatar.

The achievements of India's diplomacy in the Gulf:

- **Inauguration of the BAPS temple in Abu Dhabi:** A large Hindu temple would be built in the deeply Islamic and conservative Arabian peninsula with full state support.
- Release of 8 Indian ex-naval personnel by Qatar.

The factors behind the transformation of India-Gulf relations:

- **Diplomatic Effort:** For a long time, the Middle East did not figure in the political priorities of Indian diplomacy. However, since 2014, PM has travelled 15 times to the Middle East. Developing a personal connection with the emirs was also undertaken.

Political Efforts: Earlier India showed little interest in Arab political and economic life. That has changed through the setting up of the I2U2 group in 2022 and the India-Middle East-Europe Economic Corridor.

Dropping the Religious Lens in Diplomacy: Earlier, there was an overestimation of the religious factor binding the Gulf and Pakistan, and an underestimation of the depth of goodwill in Arabia for India and the desire for greater cooperation. This approach has been discarded.

Strategic Economic Cooperation: India's focus in the past was on oil purchases, labour exports, and hard currency remittances. The potential of the Gulf to accelerate India's economic growth has now started receiving attention. This has opened unlimited possibilities for long-term economic partnerships with India.

Defence Collaboration: The Gulf countries are trying to diversify their defence partnerships amid the shifting regional geopolitics and are looking to India to act as a regional security provider. The scale and scope of India's military exchanges with the Gulf have grown.

Mains point: India-Gulf relations have been strengthening over the years.

2. Biden administration formally notifies U.S. Congress of possible 31 MQ-9B UAV sale to India.

Context:

Recently, the U.S. Congress was officially informed of the potential sale of 31 MQ-9B high-altitude long-endurance armed Unmanned Aerial

Vehicles (UAVs) to India, valued at approximately \$3.99 billion.



MQ-9B Reaper drones:

About

MQ-9B is a High Altitude Long Endurance (HALE) Unmanned Aerial vehicle(UAV).

Developed by

US based General Atomics Aeronautical Systems.

Variants

1. The MQ-9B has two variants – Sky Guardian and Sea Guardian.
2. The Indian Navy has been operating the MQ-9B Sea Guardian since 2020.

Features

1. It can operate at over 40,000 feet.
2. It also has a maximum endurance of 40 hours, making it useful for long-hour surveillance.
3. It can support land, maritime surveillance, anti-submarine warfare, anti-surface warfare, strike, electronic warfare and expeditionary roles.
4. It is equipped with advanced features such as automatic take-off and landing, detect and avoid system, anti-spoofing GPS, and encrypted communication links.

Note- The deal also includes 170 AGM-114R Hellfire missiles, 16 M36E9 Hellfire captive air training missiles, 310 GBU-39B/B laser Small Diameter Bombs (SDB), and 08 GBU-39B/B LSDB guided test vehicles with live fuzes, among other items.

The benefits of acquiring MQ-9B Reaper drones by India:

- **Lower Operational Costs**– It offers 80% of a manned maritime patrol aircraft's capability at just 20% of its hourly cost, making it highly economical for navies.
- **Enhance surveillance capability**– For the Army and Air Force, it offers continuous surveillance extending far beyond borders. This includes monitoring Chinese military buildup and troop movements along the Line of Actual Control (LAC) and deep into enemy territory.
- **Integration with existing platforms**– It also seamlessly integrates with other U.S.-origin platforms that India operates such as the P-8Is, AH-64 Apache attack helicopters and MH-60R multi-role helicopters.

Prelims point:MQ-9B Reaper drones

3. **India increasing allocation for Maldives, 1 400 crore revised to 1 770.9 crore.**

Context:

In the interim budget of 2024, Maldives received a significant portion of the annual allocation for the Ministry of External Affairs. The annual allocation is done under the foreign aid program.

The India's foreign aid Program:

- India's foreign aid program began in the 1950s through the Colombo Plan. Under this, aid is provided by the Indian government to other governments.
- India has established the '**Indian Agency for Partnership in Development**' under the Ministry of External Affairs to distribute aid to recipient nations.

The aid distributed to various countries in the Interim Budget 2024:

Countries/ Projects	Revised 2023-24 (in Crore)	2024-25 (in crore)	(in Remarks) Remarks
Bhutan	2,398.97	2068	
Nepal	650	700	
Maldives	770.9	600	The allocation for Maldives in 2023-24 was Rs. 400 crore. It increases to Rs. 770.9 crore in the revised estimate 2023-24.
Afghanistan	220	200	
Chabahar in Iran	100	100	

Note- The government has decreased its total allocation of foreign aid for the upcoming fiscal by 10 percent. India has earmarked Rs 4883.56 crore for foreign assistance in 2024-25, down from Rs 5426.78 crore allocated in 2023-24.

Mains point: The India's foreign aid Program

4. Unending woes: India must incentivize fishermen to give up bottom trawling.

Context:

India Sri Lanka Fishermen Issue an Unending woes, The article discusses the frequent arrests of Tamil Nadu and Puducherry fishermen by the Sri Lankan Navy. These fishermen are accused of illegally entering Sri Lankan waters, affecting local livelihoods, and using harmful fishing methods.



The Reasons for The Arrest of Indian Fishermen by Sri Lanka:

- **Crossing Borders:** Indian fishermen often enter Sri Lankan waters, leading to their arrest. For example, 69 fishermen have been arrested this year for such violations.
- **Destructive Fishing Practices:** They are accused of using bottom trawling, which is banned in Sri Lanka since July 2017. This method is harmful to marine life and the livelihood of Sri Lankan fishermen.
- **Geographical Constraints:** Under the Tamil Nadu Marine Fishing Regulation Act 1983, Indian fishermen can operate only beyond three nautical miles from their coast. The proximity of the International Maritime Boundary Line, just nine nautical miles away, leads to frequent unintentional crossings.

The Implications of The Arrest of Indian Fishermen by Sri Lanka:

- **Increased Tensions:** The arrests contribute to ongoing tensions between India and Sri Lanka, affecting diplomatic relations.
- **Humanitarian Concerns:** The fishermen face long detentions, with some remaining in custody for months. This raises humanitarian issues.
- **Financial Losses:** The confiscation of expensive fishing equipment, like nets and boats, leads to significant financial hardships. In 2024, 10 boats were seized.
- **Impact on Diplomatic Relations:** Despite high-level diplomatic interventions, including agreements for periodic meetings and working groups, the issue remains unresolved, indicating strained relations between India and Sri Lanka.

Way forward:

- **Promote Alternative Fishing Methods:** As India has promised to end bottom trawling and incentivize deep-sea fishing under the Blue Revolution

Scheme, more efforts are needed to ensure this transition.

Respect Maritime Boundaries: Educate and equip fishermen to avoid crossing into Sri Lankan waters, considering the close proximity of the International Maritime Boundary Line.

Regularize Diplomatic Talks: Implement the agreed-upon bi-annual meetings between the Ministers of Fisheries and ensure the Joint Working Group on Fisheries meets every three months as planned.

Address Humanitarian Concerns: As emphasized by India's Prime Minister, treat the issue as a humanitarian concern, focusing on the well-being of the fishermen and their families.

Mains point: The reasons for the frequent arrests of Indian fishermen by the Sri Lankan Navy and the implications of these arrests

5. Issue with WTO's Dispute Settlement Mechanism (DSM).

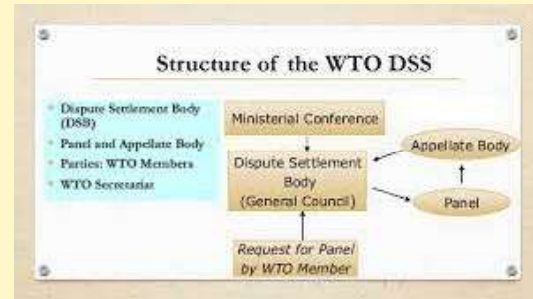
Context:

Issue with WTO's Dispute Settlement Mechanism (DSM), The article discusses the issues with WTO's dispute settlement mechanism (DSM) and the possible options available in front of developing countries.

WTO's Dispute Settlement Mechanism (DSM):

WTO's DSM comprises a binding two-tiered process with a panel and an appellate body (AB).

The AB hears appeals from the decisions rendered by WTO panels and is a permanent judicial body of 7 independent members with compulsory jurisdiction over all WTO members.



The Issues with WTO's DSM:

- Since the end of 2019, this mechanism stands non-functional because the US, which lost several critical disputes before it, has blocked the appointment of new members.
- This has made the WTO toothless. Countries are avoiding complying with the WTO panel rulings.
- At the 12th WTO ministerial meeting, countries resolved to create a fully functioning DSM by 2024. India and several developing countries have rightly demanded the body's restoration.

The Options Available with The Developing Countries:

- Since the US is unlikely to change its stance, developing countries have three options to maintain a two-tiered DSM at the WTO:
- Join the European Union-led multi-party Interim Appeal Arbitration Arrangement (MPIA):** It formalises the mechanism for arbitration already available under the WTO to provide the appellate review for panel reports.
- An AB with Diluted Powers:** US may consider an AB with limited powers (such as stating that AB rulings will not have a persuasive value). However, a diluted AB will be antithetical to the role that WTO law expects the DSM to play.
- Voluntary Compliance to the AB:** In this scenario, countries will have the option to opt out of AB's compulsory jurisdiction. A country opting out cannot participate in an appellate

process either as a complainant or as a respondent.

The Way Forward for India:

- India and other developing countries should continue striving for the restoration of the AB in the form it existed till 2019. However, if this doesn't happen, India should prefer an AB for only willing countries, as per the author.

Mains point: WTO's dispute settlement mechanism (DSM).

6. Ukraine war, Gaza conflict and Middle East strikes: It's time businesses prepare for political risk.

Context:

Impact of Global Geopolitics on Business, The article discusses the political risks for businesses due to the developments happening in international geopolitics.

Background:

- The world is going through a period of political uncertainty. More than 50% of the world's population is living in countries that will go to elections in 2024. 70 countries have already or will hold polls this year.
- According to the author, businesses should incorporate scenario planning into their risk management processes for tackling political uncertainty and risks.

The Developments Happening in International Geopolitics:

- Conflicts in the Middle East:** US and UK are bombing the Iran-backed, Yemeni Houthis, as they were disrupting international trade through the Red Sea. This has led to rising freight costs and causing supply chain delays.
- Ukraine Conflict:** The Ukraine war is now in its second year.
- US-China Cold War:** There is a possibility of the "Cold War" between

the US and China reigniting after the election of the separatist leader Lai Ching-Te as President of Taiwan.

Way forward:

- Detailed Conversations:** Handling political risk through a detailed conversation on its impact should be undertaken. If a risk is not managed and/or mitigated, it can lead to companies shutting down.
- Engage Political Risk Consultants:** These include former civil servants, politicians, and academics. However, as per the author, it is not sufficient.
- Scenario Planning:** It involves studying trends and the translation of these reflections into quantifiable metrics (data).
For instance, the World Bank recently prepared three scenarios regarding the future trajectory of oil prices based on levels of supply disruption. For these scenarios, the Bank has provided an oil price range rather than a single line forecast.
- For businesses, there is no one solution to managing political risks. However, scenario planning offers a methodological process for better preparing corporate leaders to respond to them.

Mains point: How should businesses tackle the political risks arising due to the developments happening in international geopolitics?

7. Bilateral agreements: India must align its treaties with best global practices.

Context:

The article discusses India's challenges in negotiating bilateral investment treaties (BITs). These treaties protect investor rights, but India has struggled due to its strict investment rules.

India's model Bilateral Investment Treaties (BITs):

- **Bilateral Investment Treaties (BITs)** are agreements between two countries that protect the rights of investors from each country. They set rules for investments and handle disputes.

India's model BITs are characterized by:

- **Stricter Rules:** They emphasize protecting India's sovereign interests.
- **Local Remedies Requirement:** Foreign investors must use local legal remedies for at least five years before seeking international arbitration.
- **Exclusion of Taxation Measures:** Any taxation measures imposed by India are excluded from the BITs.
- **Absence of MFN Clause:** The Most Favored Nation (MFN) clause is not included, which typically ensures equal treatment among investors.
- **Response to Past Rulings:** This approach followed unfavorable rulings in cases like Vodafone, Cairn, and Devas, where India faced significant damages.

A New Model

- Government wants to renew bilateral investment agreements with **47 nations**
- It has reached out to these countries

WHY

- India has been dragged for international arbitration by many investors
- Treaties will be updated in keeping with new economic situation

HOW

- Treaties that complete ten years will be allowed to lapse
- These treaties will be negotiated as per the model treaty approved
- The model treaty will be template for all future treaties
- Recently signed treaties will be revised later

HOW WILL IT HELP

- ▶ Foreign investors to exhaust local judicial remedies before seeking arbitration
- ▶ Tax issues will be kept out of bilateral investment treaties

India facing with BITs:

- **Difficulty in Signing New Treaties:** After cancelling 77 of 84 BITs, India has only signed four new ones in nine years. Of the four agreements – with Brazil, Kyrgyzstan, Taiwan, and Belarus – the first two are not yet in force.
- **Investor Deterrence:** The strict Model BIT framework discourages foreign investors.
- **Legal Vulnerability:** Existing BITs with sunset clauses expose India to legal

actions for 10-15 years after treaty lapses.

- **Impact on Indian Investors Abroad:** Lack of BITs affects companies like Tata, hindering their overseas investments, such as the \$5 billion electric car battery factory in the UK.
- **Slow Judicial Process:** The Indian legal system's pace complicates BIT negotiations and hampers investor confidence.

Way forward:

- To improve its BIT strategy, India should adopt a more flexible approach, learning from global best practices. This includes revising the Model BIT to balance sovereign interests and investor rights and developing an international arbitration center to boost investor confidence and attract more foreign investment.

Mains point: The key features of India's model Bilateral Investment Treaties (BITs) and their implications for foreign investors and India's sovereign interests.

8. Keep MSME and gender issues apart from WTO rules.

Context:

The article discusses the need to keep MSME and gender-related issues outside WTO rules. Keep MSME and Gender Issues Apart from WTO Rules

Background:

- The 13th Ministerial Conference of the World Trade Organization (WTO) to be held this month will discuss how the WTO can become more relevant for micro, small and medium enterprises (MSMEs) and businesses run by women.
- Informal working groups on both MSMEs and gender were launched at the 11th ministerial in 2017.

India's Stand:

India has stayed out of both groups because:

- **Beyond WTO's Jurisdiction:** These issues are not part of the WTO's mandate (non-trade nature of those two subjects).
- **Distracts from Important Issues:** WTO members should instead focus on unfinished matters that impact food security and trade in services and goods.

A Focus on MSME's and Gender Needed:

- According to UNCTAD, international trade has only resulted in a **"world of unchecked monopoly power, financial speculation, booms and busts, and rising inequality."**
- International trade should ensure benefits for all sections of society within each trading country, not just large corporations.

Way forward:

India's 2023 Foreign Trade Policy had three features in this regard:

- a district export action plan in each district of India to identify and incentivize products for export;
- the promotion of e-commerce through 'Dak Ghar Niryat Kendras' to enable artisans, weavers, craftsmen and MSMEs in the hinterland and land-locked regions to reach international markets;
- trade facilitation for MSMEs, including lower charges for various schemes, preferential customs treatment and quick dispute resolution.

Global Initiatives:

- **Global Trade Helpdesk launched by ITC, UNCTAD and WTO**— an online platform that simplifies market research—is a useful resource for MSMEs.
- WTO's Technical Assistance Plan for 2018-19 incorporated a module on trade and gender, whose objective was to focus on trade policy to raise awareness

and enhance the aptitude of policymakers to incorporate gender considerations.

- G20 New Delhi Declaration focused on the need to address access to information for MSMEs, advancing financial inclusion and implementing gender-responsive policies to enable inclusive integration in international trade.

The Challenges:

- **One-size-fits all response may not work:** The reason is: What is an MSME differs from country-to-country. Hence, preferential treatment for an MSME in India cannot be extended to an MSME as per the definition of another country seeking Indian market access.
- **Global rules may not work in a domestic setting:** Addressing gender imbalances in access to economic opportunities, such as preferential access to credit, is an issue that needs to be addressed within a country. The global rules of trade have little role here.

The Way Forward:

- Sharing of experiences and best practices could be helpful.
- The WTO can also consider workshops and virtual platforms for sharing information.
- Issues affecting MSMEs and women in trade should be best addressed by each country within the context of its economic realities and legal frameworks.

Mains point: The issues related to MSMEs and gender-related issues be kept outside WTO rules.

9. **The Healthy Indian Project (THIP) Joins WHO's vaccine safety net"**

Context:

The Healthy Indian Project (THIP), a health information platform in India, has recently been included as a member

of the World Health Organization's Vaccine Safety Net (VSN).

"The Healthy Indian Project":



Source-WHO

- **About-** It is a health information and fact-checking platform in India.
- **Objective-** To enhance health literacy among Indians by delivering credible and evidence-based content in multiple Indian languages.
- **Website language-** It is available in 5 Indian languages namely English, Hindi, Bengali, Punjabi and Gujarati.
- **VSN membership-** Since 2023.
- **Website's sponsorship policy-** This is privately funded by its directors. The company is not affiliated to any political institution.

Significance of The Healthy Indian Project:

- Through fact-checking, it will dispel misinformation surrounding vaccines.
- THIP Care, the platform's app, will simplify individualized health and vaccine record-keeping for citizens of India.
- THIP BOT also known as RAKSHA is a popular chatbot built to empower citizens to cross-check any misinformation regarding vaccine.
- This contributes to the ongoing effort to combat vaccine hesitancy and promote widespread vaccine acceptance across the country.
- This user-friendly application assists in maintaining digital profiles for parents and children. It also serves as a valuable resource for addressing vaccination-related queries.

About Vaccine Safety Net:

- **Origin-** Various non-governmental organizations, **United Nations Children's Fund (UNICEF) and WHO** came together in 2003 to start the Vaccine Safety Net Project (VSN).
- **Established by-** World Health Organization. This is a global network of websites.
- **Objective-** To provide scientifically based information on vaccine safety in various languages.
- **Membership-** It has 110 websites from 45 countries. They provide vaccine safety information in 43 languages.

Mains point: Significance of The Healthy Indian Project

10. Ram Madhav writes: India, making waves in the Indian Ocean.

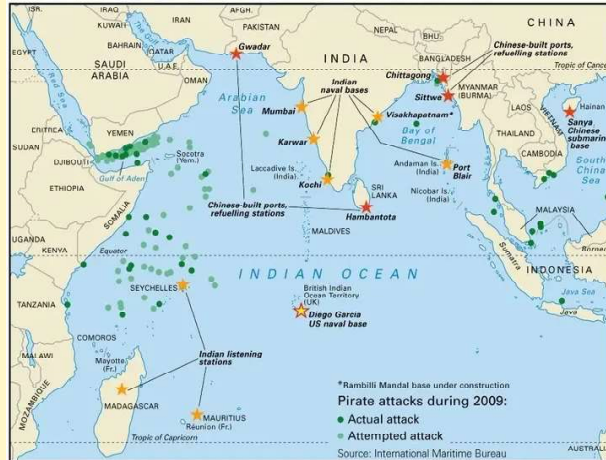
Context:

The article discusses the historical importance of the Indian Ocean for India. It also highlights why focusing on the Indian Ocean is important for India in current times. Importance of Indian Ocean for India UPSC

The Reason for The Large Historical Contribution of India to Global Economy:

- India had been the largest economy in the world in the first millennium with a share of almost 33% of the world's GDP. According to the author, this was not due to its population size (as claimed by some experts), but because of the control of Indian rulers over the oceans at that time.
- They had developed powerful merchant and military navies and established trade with the Arabs in the West and into South China Sea territories, crossing the Malayan Peninsula in the East.

GREAT POWER COMPETITION IN THE INDIAN OCEAN



The Historical References with Regard to The Importance of The Ocean:

- **Sea-Trading Communities and Kingdoms:** Sea traders of south India like Manigramam Chettis and Nanadesis, and Kings like the Andhras, Pallavas and Cholas were prominent players.
- **Maritime Administration:** Kautilya's Arthashastra talks about the functions of officers like port commissioners and harbour masters.
- **Separate Shipping Department:** The Board of Shipping was one of the six important departments of the Mauryan empire.

Decline in India's Dominance of The Seas:

- According to the author, a lack of attention to the seas led to an eventual decline of India's dominance of the seas.
- **British Era:** The British didn't develop a strong blue-water presence during their rule over India. The Royal Indian Navy was small for a country of India's size.
- **Post-Independence Era:** The lack of attention to the seas continued, with the governments giving greater priority to land-based warfare. India declined in areas like shipbuilding and naval vessels.

For instance, Indian Navy has less than 200 combat vessels (US has 400 and China has 500).

The Indian Ocean Important for India:

- The Indian Ocean is the world's 3rd-largest ocean. Its maritime trade routes manage almost 70% of the world's container traffic.

Importance for India:

- **Trade Route:** 80% of India's external trade and 90% of the energy trade happens through it.
- **Prominence of the Indo-Pacific in Geopolitics:** The global power axis has shifted away from the Pacific-Atlantic to the Indo-Pacific in India's neighbourhood now.
- **Civilisational Importance:** It carried India's cultural and civilisational imprint across its shores and created a vast sphere of India's civilisational influence.

The Recent Steps have been Taken by The Government in This Regard:

- **7th Indian Ocean Conference:** It seeks to address non-traditional challenges common to nations of the region, such as climate change, ocean levels, natural disasters and supply chain disruptions.

Mains point: The Indian Ocean important for India.

11. The Decline of America's Leadership Context:

The article discusses the changing global influence of the United States. It mentions internal challenges, such as political division and declining global dominance, alongside the rise of other powers like China and Russia. It suggests India should balance its relationship with the U.S. while acknowledging these changes. The Decline of America's Leadership

The Factors Impacting America's Global Power:

- . **Political Division and Dysfunction:** The U.S. is described as the most divided industrial democracy, struggling with political polarization and a challenged democracy.
- . **Economic Challenges:** China's economy surpasses the U.S. in purchasing power parity. America faces issues like rising national debt, now at \$32 trillion, and challenges in education and public health.
- . **Military Overreach:** The U.S.'s credibility is affected by military actions in Afghanistan and Iraq, and its presence in about 750 military bases worldwide.
- . **Internal and External Policy Shifts:** The U.S. withdrew from key international commitments like the Trans-Pacific Partnership, reflecting a shift in its approach to global engagement and a focus on domestic issues.
- . **Technological Competition:** America is falling behind in areas like Artificial Intelligence, with China and the European Union leading the way.

China and Russia Challenging America's International System:

- . America's Influence Post-WWII
- . After WWII, the U.S. shaped a rules-based international system, which was also power-based.
- . This system, although centered on rules, was not entirely global and often saw the U.S. exempting itself, especially in matters of internal affairs of other countries.
- . **American military interventions**, like in Afghanistan and Iraq, and its extensive network of military bases (about 750 in 80 countries) are examples of its power-based approach within the rules-based system it helped establish.

Challenges by China and Russia:

- . **Economic Rivalry:** China's rapid economic growth has led to it surpassing the U.S. in terms of purchasing power parity. This shift challenges America's traditional economic hegemony.
- . **Authoritarian Regime Expansion:** Both China and Russia are aggressively promoting their authoritarian models. They are countering Western democratic values through strategic trade relationships and diplomatic pressures.
- . **Reshaping International Norms:** They are actively working to reshape the international system to be more favorable to authoritarian regimes, challenging the U.S.-led order established post-WWII.
- . **Technological and Infrastructural Dominance:** China's significant advancements in high technology and its global infrastructure financing initiatives, such as the Belt and Road Initiative, present a direct challenge to U.S. influence.
- . **Influence through Soft Power:** Utilizing tools like the Confucius Institutes and digital platforms, China is extending its cultural and ideological influence, which competes with traditional American soft power.

India's Approach be:

- . **Balanced Engagement:** India should maintain a balanced and advantageous relationship with the U.S., acknowledging America's strengths and global position.
- . **Recognize Changing Dynamics:** Acknowledge the changing dynamics in U.S. power, especially considering its internal challenges and declining global influence.
- . **Diversify Partnerships:** While engaging with the U.S., India should also consider diversifying its international partnerships, keeping in view the rising

influence of other global powers like China and Russia.

Mains point: The factors impacting America's global power.

12. A privileged strategic partnership, without a gulf.

Context:

Prime Minister Narendra Modi will pay visit to the United Arab Emirates (UAE) from February 13-14, 2024, to inaugurate a temple in Abu Dhabi.

The status of India-U.A. E relations:

The upcoming visit will be the Prime minister's seventh visit to the UAE since 2015 and the third in the last eight months. Further, UAE President was felicitated in a road show when he was in Gandhinagar in January this year as the chief guest of the 10th Vibrant Gujarat Summit.

In this short duration. India's relationship with UAE has evolved into becoming one of the most prominent bilateral relationships for New Delhi.



The Areas of cooperation between India-U.A.E. relationship:

- **Strategic cooperation-a)** India is a part of a number of important groupings such as the I2U2 or the West Asian Quad comprising India, Israel, the United States and the UAE.
- a) The UAE is also part of the **India-Middle East-Europe Economic Corridor (IMEEC)** infrastructure project that was signed during the G-20 summit in Delhi. This is aimed to counter China's Belt and road initiative in the region.

• **Energy cooperation-** The UAE is only nation from the gulf region which has strategic oil reserves stored in India. An agreement was signed by Indian Strategic Petroleum Reserves Ltd (ISPRL) and the Abu Dhabi National Oil Company to invest in the strategic crude oil storage facility in Mangaluru.

• **Economic cooperation** a) The UAE is India's third-largest trading partner and India's second-largest export destination. The bilateral trade between the two countries grew to \$85 billion in 2022-23.

- b) The UAE is also the fourth-largest overall investor in India.
- c) The India-UAE Comprehensive Economic Partnership Agreement aims to increase trade in services to \$115 billion in five years.
- d) The Indian government has also approved the signing and ratification of a bilateral investment treaty with the UAE.

• **Technical cooperation-** India and U.A.E. have a robust financial technology cooperation. For example- a) The RuPay card, a key component of India's Digital Public Infrastructure (DPI), is accepted in the UAE.

- a) From July 2023, the rupee was accepted for transactions at Dubai's airports.
- b) India and the UAE have operationalized a rupee-dirham settlement system where the Indian Oil Corporation made a rupee payment to the Abu Dhabi National Oil Company for crude oil imports.

• **Climate change cooperation-** PM Modi attended the COP 28 climate summit held in Dubai. To address the issue of finance, India and the UAE co-launched the Global Green Credit Initiative.

The areas of divergence between India and U.A.E.:

- There are challenges like unclear regulations, labour laws and transpa-

rency faced by Indian businesses' in U.A.E.

The UAE and Iran have territorial disputes between them. Any escalation in this will affect India's trade and energy security.

The UAE is home to a large number of Indians. There are so many blue-collar workers and manual laborers as well. They face many issues such as terrible working and living conditions, and discrimination in treatment vis-a-vis other workers.

Conclusion—India and UAE display great convergence and mutual respect at all levels. There are certain divergences, but those exist even among the best of friendly nations.

Mains point:the robust bilateral relationship between India and U.A.E

13. India could help shape a whole new global consensus.

Context:

The article discusses the events shaping global geopolitics and the role India can play in evolving a new global consensus.

World leaders had expected an economic order shaped by hyper-globalization – a world where conflicts would become marginal thanks to increased economic interconnectedness, global identities, and where global institutions would effectively mediate inter-state challenges.

But today's world is being shaped differently by the forces of geopolitics in various ways.

The events shaping global geopolitics today:

- . Ukraine war
- . Israel-Hamas conflict
- . Threats to sea-lanes that are critical for global trade.
- . China challenge
- . Strategic ties between the West and China are destabilized.

Pandemic and its aftermath: It has alerted nations to the need for self-reliance in critical sectors and minimal exposure to supply chains overseas.

Disenchantment with globalisation: Energy prices have gone up, with hopes of a global economic recovery again doubtful.

Rising Prominence of the Global South: It is the Global South that is likely to drive global growth in the coming years, with India being one of the top performers.

It is, therefore, imperative for the developing world to have this reality better reflected in the agenda of platforms such as the World Economic Forum.

India better placed to provide leadership:

India's Rising Stature: India is in a geopolitical and geo-economic sweet spot. The developed world looking inwards, and China's aggressiveness has led to a leadership vacuum that needs to be filled.

Significant Presence at Davos Summit: India's significant presence at Davos this year underlined India's willingness to project its growing economic heft, innovation and tech.

Trust-based Relations: India's ability to craft trust-based partnerships with multiple players at the same time is a sign of its self-confidence and the trust of others to bet on India at a time of geopolitical turmoil.

From climate and energy transitions to the regulation of artificial intelligence, the role of the Global South and nations such as India should be critical. India should evolve a new consensus that could challenge the old Davos Consensus.

Mains point:The events shaping global geopolitics today.

14. Seven Indians who faced death row in Qatar return home.

Context:

The article discusses the returning of the Indian Navy personnel earlier sentenced to death in Qatar. Qatar Releases Indian Navy personnel who faced death row.



Background:

- Recently, the eight Indian Navy veterans who had been in Qatari custody since August 30, 2022 were released.
- Earlier, the men were given the death penalty by a lower court in Qatar on October 26, 2023. Subsequently, a court of appeals in Doha struck down the death penalty on December 28.

The significance of this event:

- To bring citizens back home while ensuring that the growing economic and strategic ties between India and Qatar are not derailed in the process, is a good achievement of India's foreign policy.
- The episode shows how deep and broad bilateral ties have become.

India's foreign policy:

- Improving Relations with Gulf Countries:** India has moved on from its earlier stance of viewing the Middle East only through the prism of Pakistan or Israel-Palestine. This has resulted in strengthening of India's bilateral relations in the Gulf.
- Energy Cooperation:** Qatar is a major supplier of energy to India. The two

countries have signed a \$78 billion LNG deal that extended an existing agreement on supply of liquified natural gas till 2048.

Indian Diaspora and Remittances: At least 8 lakh Indian workers are employed in the Gulf country which continues to be a major source of foreign remittances to the Indian economy.

The challenges:

- Points of Contention with Qatar:** These include the anti-India propaganda from Qatar-based media outlets and support for religious radicals in India.
- Prisoners in Gulf Countries:** Both the United Arab Emirates and Qatar hold around 3,000 Indian prisoners in their prisons and the prisons in the Gulf region hold more than half of the total Indian prisoners in foreign jails.
- According to the author, India's PM should address these issues when he meets Qatar Emir later this week.

Mains point: The episode of the returning of the Indian Navy personnel from Qatar show in terms of India's foreign policy.

ECONOMY

1. Ignoring an agricultural sector in distress

Context:

Agricultural sector in India

This article discusses how the government's financial plans and budget for 2024-25 seem more focused on showing the government in a positive light, rather than addressing the ongoing problems in agriculture.

Some special provisions for the agricultural sector in the Budget for 2025

Growth in Agriculture GDP:

Agriculture GDP in 2023-24 showed a modest growth of 1.8%, a decrease from 4% in the previous year.

Budget Allocations for Agriculture Departments:

- The Department of Agriculture and Farmers Welfare saw a slight increase of 0.6%.
- The Department of Agricultural Research and Education received Rs 99.4 billion, a marginal increase of 0.7% over the previous year.
- Ministry of Fisheries, Animal Husbandry, and Dairying: Experienced a significant budget increase of 27%.

Overall Budget Support for Agri-food Sector:

Includes PM-KISAN, credit subsidy, and PM-Fasal Bhima Yojana, totaling Rs 5.52 trillion for FY25, slightly less than Rs 5.8 trillion in FY24.

Food and Fertilizer Subsidies:

- Food subsidy reduced to Rs 2.05 trillion in FY25, a drop of 3.3% from FY24.
- Fertilizer subsidies decreased from Rs 1.89 trillion in FY24 to Rs 1.64 trillion in FY25.

Official data shows about the agricultural sector in India

Decline in Agricultural Prices:

Official data indicates a significant decline in agricultural prices, causing a reduction in farmers' incomes. The sectoral deflator in agriculture decreased from 9.4 in 2013-14 to 3.7 in 2023-24.

Slowed Growth of MSP:

The growth of Minimum Support Prices (MSP) for major crops slowed down considerably, from an 8-9% annual increase between 2003-04 and 2012-13 to about 5% between 2013-14 and 2023-24.

Drop in Farmers' Incomes:

Despite a promise to double farmers' real incomes from 2015 to 2022, incomes from cultivation actually fell by about 1.4% between 2012-13 and 2018-19.

Rising Rural Unemployment:

Rural unemployment rates increased, with a notable rise from 2011-12 to 2018-19, and remained higher in 2022-23 compared to 2011-12.

Stagnation of Rural Wages:

Real wages in rural India have not increased since 2016-17 and even decreased after 2020-21.

Lack of Capital Investment:

Capital investment in agriculture and allied sectors didn't increase. Much of the long-term bank credit meant for agriculture was diverted to corporates and agri-business firms as short-term loans.

Issues with the government's report on the agricultural sector in India

Selective Data Presentation:

The government's report emphasizes the increase in agricultural production

but neglects the overall decline in growth rates. For example, growth rates dropped from 3.1% annually (2003-04 to 2010-11) to 2.7% (2011-12 to 2022-23).

Ignoring Yield Decline:

The report omits the significant fall in yield growth rates, from 3.3% per year to 1.6% per year in the same periods

Budget Cuts in Agriculture:

The 2024-25 budget plans to reduce spending in crucial agricultural areas, such as fertilizer subsidies (from Rs. 1.9 lakh crore to Rs. 1.6 lakh crore) and rural infrastructure projects.

No Clear Strategy for Growth:

The report and the budget lack a comprehensive plan to revive agricultural growth, with no significant measures to address the ongoing decline.

Unchanged Support Despite Inflation:

The PM-Kisan scheme's allocations remain the same as in 2019, not accounting for inflation, which reduces the real value of cash transfers to farmers.

Should be done

Rationalize Food Subsidy:

Implement rationalization of the food subsidy system, similar to the strategy used by former PM Atal Bihari Vajpayee in the Targeted Public Distribution System (TPDS). This could save around Rs 50,000 crore.

Redirect Subsidy Savings:

Use the funds saved from food subsidy rationalization for enhancing agricultural research and development, particularly in areas like micro-irrigation.

Reform Fertilizer Subsidies:

Shift from subsidizing the price of urea to direct cash transfers to farmers. This approach is expected to save Rs 30,000-40,000 crore, which can be reinvested in agricultural development programs like PM-KISAN.

Focus on Sustainable Agriculture:

Allocate the saved funds towards sustainable agriculture practices, which is crucial for ensuring food security under the challenges of climate change.

Mains Point: Agricultural sector in India

2. A turning point for investment treaties

Context:

The article discusses the importance of foreign investments and the issues with Bilateral Investment Treaties (BITs).

Finance Minister (FM) set out the government's official stance on "encouraging sustained foreign investment" and for this, "negotiating bilateral investment treaties".

Bilateral Investment Treaties (BITs) contain safeguards for foreign investors and act as a catalyst in attracting FDI. It was asserted that such treaties would be revised according to the changing bargaining power of India.

Foreign investment needed for

- Growth of the country requires adequate financial resources.
- Opens the doors to developed countries to participate in India's growth story.
- Investments also support sunrise sectors, such as renewable energy, green energy, and AI.

Status of FDI

- Since the economic reforms in 1990s, FDI inflows have shown an upward trend, increasing from \$129 million in 1991 to \$71 billion in 2022-23, which shows a jump of 550 times.
- According to the 2022 UNCTAD World Investment Report, India received the 3rd-highest FDI inflows into greenfield (new) projects.
- The last five years saw the highest FDI inflow in the year 2021- 22 at \$85 billion.

Issue with Bilateral Investment Treaties (BITs)

- Unfavourable international arbitration awards against India forced the government to terminate all BITs with other countries, starting from 2011.
- India received its first adverse award from an international arbitration tribunal in the case of White Industries under the India–Australia BIT.
- This judgment led to various similar claims raised against the government, asserting the investor's rights under other BITs.

Government's reaction

- The government, in 2016, decided to terminate almost all BITs with trade partners as it saw these awards as a challenge to its sovereign right to legislate taxation-related provisions.
- After this development, India initiated the process of renegotiating the BITs in line with its revised BIT model of 2015.

Should be done

While renegotiating the BITs, the government must create an atmosphere of trust for foreign investors and clearly demarcate the investors' rights.

If India succeeds in renegotiating robust and effective BITs, it will bring in investments and create a multiplier effect.

Mains Point: importance of foreign investments and the issues with Bilateral Investment Treaties

3. Strategic thinking in public finance

Context:

Issues with India's Public Finance

The article discusses the issues with India's public finance and highlights steps that should be taken to tackle these challenges.

Issues with India's public finance

Interest Payments:

About 40% of revenue receipts now go to interest payments.

Highly Leveraged:

Over leverage (which demands debt servicing) and operational leverage (commitments to pay wages and pensions) limit the fiscal space for government spending.

Note: Whenever a company or an individual business is termed as over leveraged, it means that the debt on them is more than the equity

Sources of Borrowing:

The bulk of the borrowing of the Indian state comes from financial firms (insurance companies, pensions, and banks) which are forced to buy government bonds. This is called "a financial repression" system.

Primary Deficit

The primary deficit focuses on the difference between government revenues and spending, excluding interest payments. If there is a primary surplus, the debt/GDP ratio will decline.

Should be done

- 1) Voluntary Sources of Borrowing: Forcible resource mobilisation should be curtailed. This will help build a cadre of private voluntary lenders. This becomes the foundation for enhanced borrowing when faced with a crisis.
- 2) Maintain Primary Surplus: This would create the fiscal space to occasionally run primary deficits, in response to events like a war, a global financial crisis, or a global pandemic. This will open access to vast resources for the country when faced with a crisis and create a healthy environment for high growth.

Mains Point: Issues with India's Public Finance

4. A case of capex under the 'macroscope'

Context:

Capex in the Indian Economy

The article discusses India's economic recovery after COVID-19, focusing on increased government spending on infrastructure (capex) and investments. It mentions a rise in exports, improvements in domestic investments, and specific budget allocations for infrastructure, defense, and green energy projects.

Current status of capex in the Indian Economy

Investment Ratio Improvement:

India ranks fourth in the G-20 for investment ratio improvement post-COVID-19, following Mexico, Italy, and South Africa.

Investment Ratio Increase:

India's investment ratio improved to 29.8% of GDP in 2023-24 from 27.3% in 2020-21.

Public Sector Enterprises (PSEs):

PSEs are spending less, with a 10% contraction in capex in 2024.

Reduced Gross G-Sec Borrowing:

With a decrease to Rs. 14.13 trillion, the lowest in three years, it's expected to improve the private sector's access to funds at potentially lower interest rates.

Special provisions for capex in the Budget for 2025

Record Capex Allocation:

The 2025 budget sets a high capex of 11.11 trillion, the highest in two decades, focusing on infrastructure and economic development.

Railway Projects:

A significant portion of the budget is dedicated to railway infrastructure, including the development of three major rail corridors for better logistics and connectivity. Additionally, 40,000 rail bogies will be upgraded to Vande Bharat standards.

Defense Sector Boost:

Defense capex is allocated Rs.1.72 trillion, underlining the emphasis on self-reliance (Atmanirbhar Bharat) in defense. This includes new schemes for deep-tech technologies.

Loans and Advances:

The budget plans for loans and advances to jump to Rs. 1.71 trillion in 2025, supporting state-level capex initiatives, especially in infrastructure.

Housing Expansion:

The budget expands the PM Awas Yojana (Grameen), aiming to add two crore houses over five years, boosting the affordable housing sector and rural infrastructure.

Green Energy Push:

Promoting green energy, the budget includes providing one crore households with 300 units of free electricity per month through rooftop solarisation, fostering solar asset creation in rural areas.

Fiscal Consolidation:

The fiscal deficit target is set at 5.1% of GDP in the FY25 Interim Budget, lower than the expected 5.3%-5.4%, balancing the reduced PSE capex and signifying fiscal discipline.

Challenges faced by capex in the Indian Economy

PSE Capex Slowdown:

The PSE capex budget for 2024 was slashed from Rs. 4.88 trillion to Rs.3.26 trillion, leading to a contraction of 10% in spending. This decrease marks a challenge for India's overall capex growth, as the PSE capex to GDP ratio is projected to drop to 1.0% in 2025, the lowest in recent years.

Way forward

The way forward for India involves leveraging its increased capex allocation, particularly in infrastructure and defense, to stimulate economic growth. Continued investment in

housing and green energy initiatives is crucial. Addressing the slowdown in Public Sector Enterprises' spending and maintaining fiscal discipline, as evidenced by the lower-than-expected fiscal deficit target, are key to sustaining long-term economic health and development.

Mains Point: Capex in the Indian Economy

5. India increasing allocation for Maldives, Rs. 400 crore revised to Rs. 770.9 crore

Context:

Interim Budget 2024: India's aid distributed to various countries

In the interim budget of 2024, Maldives received a significant portion of the annual allocation for the Ministry of External Affairs. The annual allocation is done under the foreign aid program.

India's foreign aid Program

- 1) India's foreign aid program began in the 1950s through the Colombo Plan. Under this, aid is provided by the Indian government to other governments.
- 2) India has established the 'Indian Agency for Partnership in Development' under the Ministry of External Affairs to distribute aid to recipient nations.

India's aid distributed to various countries in the Interim Budget 2024

Countries/ Projects	Revised		Remarks
	2023-24 (in Crore)	2024-25 (in crore)	
Bhutan	2,398.97	2068	
Nepal	650	700	
Maldives	770.9	600	The allocation for Maldives in 2023-24 was Rs. 400 crore. It increases to Rs. 770.9 crore in the revised

estimate
2023-24.

Afghanistan	220	200
Chabahar	100	100

in Iran

Note- The government has decreased its total allocation of foreign aid for the upcoming fiscal by 10 percent. India has earmarked Rs 4883.56 crore for foreign assistance in 2024-25, down from Rs 5426.78 crore allocated in 2023-24.

Prelims Point: India's aid distributed to various countries.

6. Trust is key: Paytm bank's repeated compliance issues pose big questions

Context:

Restrictions on Paytm Payments Bank
Restrictions On Paytm Payments Bank, The article discusses how the Reserve Bank of India (RBI) created payments banks to reach unbanked people. It mentions Paytm Payments Bank's repeated compliance issues and the RBI's strict regulations for banks to ensure their reliability and protect the economy.

About Payments Banks

There are two kinds of banking licenses that are granted by Reserve Bank of India -Universal bank license and differentiated bank license. Payment Banks comes under a differentiated bank license since it cannot offer all the services that a commercial bank offers.

Definition

It is like any other bank. However, it operates on a smaller scale without involving any credit risk. It was set up based on the recommendations of the Nachiket Mor Committee.

Objective:

To advance financial inclusion by offering banking and financial services to the unbanked and underbanked areas.

Status

It is registered as a public limited company under the Companies Act 2013 and licensed under Section 22 of the Banking Regulation Act 1949.

Salient Features of Payment Bank

- 1) They are differentiated, and not universal banks.
- 2) These operate on a smaller scale.
- 3) The minimum paid-up equity capital for payments banks shall be Rs. 100 crores.
- 4) The minimum initial contribution of the promoter to the Payment Bank to the paid-up equity capital shall be at least 40% for the first five years from the commencement of its business.

Banking Operation that Can Be Performed:

- 1) It can take deposits up to Rs. 2,00,000. It can accept demand deposits in the form of savings and current accounts.
- 2) The money received as deposits can be invested in secure government securities only in the form of Statutory Liquidity Ratio (SLR).
- 3) It can offer remittance services, mobile payments/transfers/purchases, and other banking services like ATM/debit cards, net banking, and third-party fund transfers.
- 4) It can become a banking correspondent (BC) of another bank for credit and other services.

Restricted Activities

- 1) It can not issue loans and credit cards.
- 2) It can not accept time deposits or NRI deposits.
- 3) It can not set up subsidiaries to undertake non-banking financial activities.

Following actions taken by RBI against Paytm Payments Bank

The Reserve Bank of India (RBI) has imposed restrictions on Paytm Payments Bank Ltd (PPBL) effective

after February 29, 2024. These restrictions include:

- 1) Barring PPBL from accepting new deposits or top-ups in customer accounts, wallets, or FASTags.
- 2) Stopping the bank from offering certain services like fund transfers and UPI facilities.
- 3) Directing the termination of Nodal Accounts linked to One97 Communications and Paytm Payments Services Ltd.

About Latest Restriction on Paytm Payments Bank

- 1) They can not take fresh deposits and credit transactions across its services after 29 February.
- 2) They will not be allowed credit transactions, including via wallets.
- 3) Other banking services like fund transfers (irrespective of name and nature of services like AEPS, IMPS, etc.), will not be allowed after February 29.

RBI take these actions due to

The RBI took these actions against Paytm Payments Bank due to ongoing non-compliance and supervisory concerns. Audit reports revealed persistent issues, necessitating strict supervisory action. These concerns raised doubts about the operational integrity of the bank, leading to the imposition of restrictions.

Implications of actions taken by the RBI against Paytm Payments Bank**Disruption of Services:**

The RBI's directive halts Paytm Payments Bank's basic banking functions, affecting transactions through UPI, IMPS, and Aadhaar-enabled payments.

Impact on Reputation:

The repeated compliance problems of Paytm Payments Bank have led to actions by the Reserve Bank of India. Such recurring issues and regulatory interventions can significantly damage

the bank's reputation. It will undermine public trust and confidence in the banking services. This could have broader implications for its credibility and customer loyalty.

Effect on Related Businesses:

Paytm is involved in more than banking. Problems in the payment bank can negatively influence its other digital payment services, as well.

Should be done

Enhance Compliance:

Paytm Payments Bank needs to strictly follow RBI's rules to avoid future issues, learning from past mistakes in 2022 and January.

Regular 'Fit and Proper' Assessments:

Continuously evaluate the bank to ensure it meets the RBI's 'fit and proper' standards for credibility and integrity.

Protect Other Businesses:

Given its involvement in digital payments, Paytm must ensure that the bank's compliance issues do not harm its other services.

Mains Point: Restrictions on Paytm Payments Bank

Prelims Point: Payments Bank

7. Exposing India's financial markets to the vultures

Context:

Significance and Challenges of International Government Bonds

Significance and Challenges of International Government Bonds, In September 2023, J.P. Morgan announced the inclusion of Indian local currency government bonds in its GBI-EM index from June 2024, a significant step for India's financial market. Following this, Bloomberg Index Services in January 2024 proposed adding India's FAR bonds to its index. Now, the focus shifts to FTSE Russell, which has kept India on its watchlist for a potential upgrade, highlighting the

anticipation of reforms in India's government bond market by global investors.

Indian government has taken initiatives to incorporate government bonds into global indices

Introduction of the Fully Accessible Route (FAR) in 2020:

This allowed foreign investors to invest in a segment of government bonds without constraints.

Engagement with Global Index Providers:

India's discussions with major index providers like J.P. Morgan and Bloomberg have been pivotal. J.P. Morgan announced the inclusion of Indian bonds in its index in September 2023, followed by Bloomberg in January 2024.

Report by RBI's Inter-Departmental Group in 2022:

This outlined the strategy for integrating Indian LCGBs into global indices and the internationalization of the rupee.

Negotiations on Policy Challenges:

India has been addressing issues such as capital gains taxes and local settlement to make its bonds more attractive to international investors.

Significance of incorporating government bonds into global indices

Attracting Foreign Investment:

Incorporating Indian government bonds into global indices opens the door for significant foreign investment in India's bond market.

Reducing Borrowing Costs:

This move can lower the cost of borrowing for India. The influx of foreign funds into Local Currency Government Bonds (LCGBs) tends to reduce domestic interest rates.

Facilitating Financing:

It aids in financing India's fiscal and current account deficits by attracting

institutional investors with long-term investment horizons.

Internationalizing the Rupee:

It's a step towards making the Indian rupee a globally recognized and used currency, as shown by RBI's initiative to integrate LCGBs into global indices.

Mitigating "Original Sin" Problem:

By borrowing in local currency, India mitigates the risk associated with borrowing in foreign currencies, which has historically led to financial crises in emerging economies.

Note: Original sin, a concept coined in 1998, refers to the inability of a country to borrow foreign debt in its own currency. This leads to currency mismatches on the balance sheet, especially in developing countries. It affects a country's exchange rate, increases debt costs during economic downturns, and lowers credit ratings, impacting capital flow stability and output volatility.

Issues associated with incorporating government bonds into global indices

Loss of Financial Autonomy:

Including bonds in global indices can reduce a country's control over its long-term interest rates, making it more susceptible to global financial changes.

Increased Market Volatility:

This integration exposes the market to greater volatility, as seen in the aftermath of events like the 2008 Lehman crisis and the 2013 US Federal Reserve policy shift.

Risk of Rapid Capital Outflow:

In times of crisis or uncertainty, foreign investors may quickly withdraw, destabilizing the market. Examples include Malaysia in 2014-15 and Türkiye after 2018, where rapid exits of foreign investors led to currency devaluation and reserve losses.

Exchange Rate Risk:

Local currency bonds carry the risk of currency depreciation, which can lead to increased costs for servicing debt and potential economic instability.

Way forward

To progress, India must balance attracting foreign investment through bond market inclusion with managing potential financial risks. Learning from Malaysia and Türkiye's experiences, India should maintain financial stability while advancing the internationalization of the rupee, as outlined by the RBI's 2022 report.

Mains Point: International Government Bonds

Prelims Point: International Government Bonds

8. Finance Bill 2024: Know Proposed manner of Distribution of Credit by Input Service Distributor under GST

Context:

Input Service Distributor in GST

An amendment has been proposed under Finance Bill 2024 for mandatory Input Service Distributor registration of an office, which receives invoices for common input services.

About Input Service Distributor

- 1) It is a taxpayer that receives invoices for services used by its branches. It distributes the tax paid, known as the Input Tax Credit (ITC), to such branches on a proportional basis by issuing ISD invoices.
- 2) The branches can have different GSTINs, but must have the same PAN as that of ISD.

Significance of Input Service Distributor

- 1) It will ensure that the ITC is properly distributed amongst the various branches of the business
- 2) It will be beneficial to business having a large share of common expenditures

where billing/payment is done from a centralised location.

- It will be beneficial for businesses having multiple branches operating within India.

ISD does not applied

- ISD mechanism is meant only for distributing credit on common invoices pertaining to input services.
- It is not applicable when input or capital goods are involved.

Prelims Point: Input Service Distributor in GST

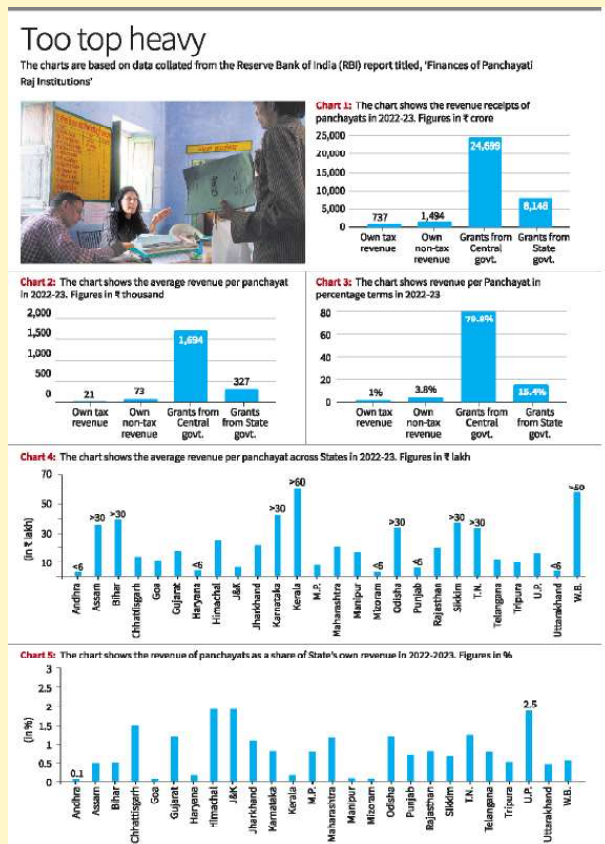
9. Panchayats earn only 1% of their revenue through taxes

Context:

RBI report on Panchayati Raj Institutions (PRIs)

According to a report by the Reserve Bank of India (RBI) on the finances of Panchayati Raj Institutions for 2022-23, local taxes and fees contributed only 1.1 percent to Panchayats' total revenue.

Key findings of the report



- Decline in Panchayat average revenue - According to the report, the average revenue per Panchayat (including taxes, non-taxes, and grants) stood at 21.2 lakh in 2020-21, increased to 23.2 lakh in 2021-22, and then slightly declined to 21.23 lakh in 2022-23.

- Panchayat own revenue sources:
 - During the study period, the Panchayats' own revenues (Local taxes and fees) accounted for merely 1.1 percent of their total revenue.
 - Non-tax revenue, primarily from Panchayati Raj programmes and interest earnings, constituted 3.3 per cent of the total revenue receipts.

- Grant reliance:
 - Panchayats rely heavily on property taxes, fees, fines, and grants, with approximately 95% of their revenue coming from grants provided by higher levels of government.
 - Specifically, 80% of the revenue was from Central government grants; only 15% was from State government grants.

- Low Expenditure:
 - The average Panchayat expenditure dropped from 17.3 lakh in 2020-21 to 12.5 lakh in 2022-23, mainly due to higher spending during the pandemic.

- Goa, Karnataka, Odisha, Sikkim, Kerala, and Tamil Nadu recorded the highest average Panchayat expenditures.
- The revenue expenditure of panchayats accounts for less than 0.6% of the gross state domestic product across all states.

RBI study noted that panchayats earn only 1% of their income through taxes,

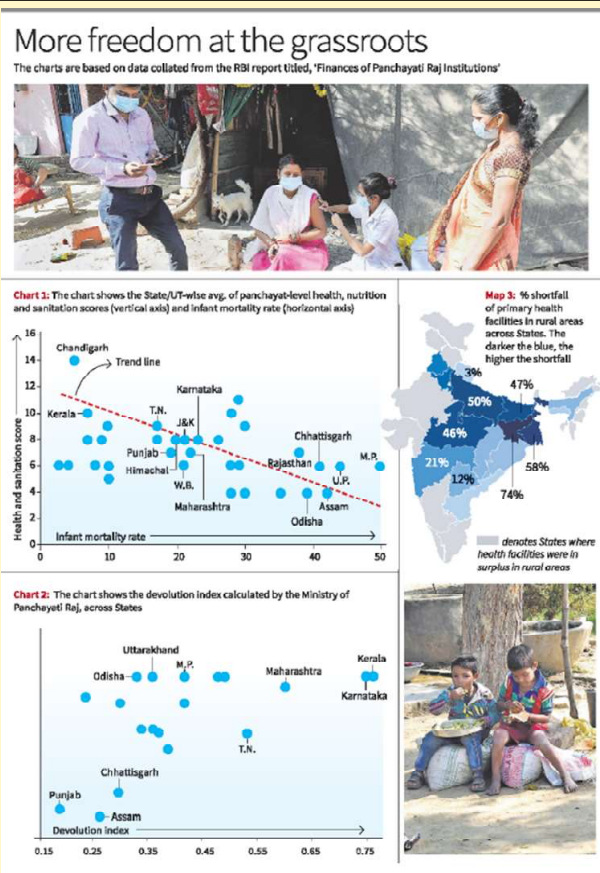
with the rest being sourced from Central and State grants.

The report noted that Panchayats having more functional and financial autonomy perform well on health, nutrition and sanitation.

Chart 1 shows this relationship, that is, the higher the score on health, nutrition, and sanitation parameters, the lower the IMR (Infant mortality rate). For example-Kerala has a high score and low IMR.

RBI uses devolution index prepared by MoPRs (ministry of Panchayat Raj) to check whether these better-performing States also have greater autonomy at the panchayat level.(Chart-2). For example-Tamil Nadu has high devolution score and low IMR.

Chart 1 and 2 when read together shows that panchayats having higher devolution of power fare well in health outcomes in rural areas.



source of Finance for PRIs

- 1) Grants from the Central Finance Commission (tax devolution) and other grants provided by the Central Government.
- 2) Revenue collected by the State government on behalf of local bodies (State Finance Commissions Transfer), including tolls, taxes, duties, and fees, as well as grants-in-aid.
- 3) As per Article 243-H, PRIs are empowered to levy, collect, and distribute taxes, duties, tolls, and fees.

NOTE - The devolution index rates a State based on three parameters: -

- 1) The transfer of subjects such as drinking water, rural housing, family welfare, and women and child development under the control of panchayats.
- 2) The transfer of functionaries, that is, how many positions were filled by panchayats on their own.

- 3) The transfer of finances, that is, power of panchayats to raise its own funds and autonomy in decision-making.

Mains Point: RBI report on Panchayati Raj Institutions

Prelims Point: RBI report on Panchayati Raj Institutions

10. The Severe Erosion of Fiscal Federalism

Context:

Kerala's Protest Against Net Borrowing Ceiling (NBC)-

The article discusses Kerala's protest against the Indian Central Government's Net Borrowing Ceiling (NBC), which limits the state's borrowing capacity. This restriction impacts Kerala's ability to fund pensions and welfare schemes, leading to claims that it violates the Constitution, prompting legal challenges. Kerala's Protest Against Net Borrowing Ceiling (NBC)- The Severe Erosion of Fiscal Federalism

The Net Borrowing Ceiling (NBC)

The Net Borrowing Ceiling (NBC) restricts state borrowings from various sources, such as the open market. To determine this ceiling, the Central Government subtracts state liabilities, including those from public accounts.

Additionally, borrowings by state-owned enterprises, where the principal and/or interest are serviced out of the Budget, or through assignment of taxes or cess or any other State revenue, are also deducted from the NBC.

Arguments of The Central Government and Kerala for NBC

Central Government's Arguments for NBC:

- Relies on Article 293(3) of the Constitution, requiring state consent for loans with outstanding central loans.
- Justifies NBC to ensure fiscal discipline and transparency, as recommended by the 15th Finance Commission Report.

- Includes state enterprise debts in NBC to prevent off-budget transactions and hidden liabilities.

Kerala's Arguments Against NBC:

- Contends that including state enterprise debts, like those of KIIFB, in NBC is constitutionally suspect.
- Notes that the 15th Finance Commission Report does not specifically recommend including state enterprise debts in NBC.
- Highlights Article 266(2) to argue that public account transactions are under state jurisdiction, questioning their inclusion in NBC calculations.
- Emphasizes the Kerala Fiscal Responsibility Act, 2003, arguing that it already ensures fiscal discipline, questioning the need for central intervention.
- References Article 202 of the Constitution and Entry 43 of the State List, asserting state control over its public debt and financial affairs, challenging the central imposition of NBC.

The Implications of NBC

Restricts State Borrowing:

The NBC constrains states' borrowing capacity, impacting their financial independence.

Impacts Infrastructure:

Kerala's inclusion of KIIFB debts under NBC limits funding for critical infrastructure projects.

Affects Essential Services:

NBC's borrowing restrictions challenge states' ability to fund pensions and welfare schemes.

Fiscal Federalism Concerns:

Kerala perceives NBC as an example of 'annihilative federalism', undermining state autonomy and altering India's federal balance.

Legal Disputes:

Kerala's Supreme Court challenge against NBC underscores constitutional

tensions regarding fiscal authority between the Centre and states

Way forward

A balanced approach is essential, where fiscal discipline and state autonomy are both respected. Reassessing the scope of NBC, in line with the 15th Finance Commission's recommendations, becomes crucial. This ensures states like Kerala can effectively manage their finances, uphold constitutional norms, and maintain the spirit of cooperative federalism.

Prelims Point: Net Borrowing Ceiling (NBC)

Mains Point: Net Borrowing Ceiling (NBC)

11. Wages of inequality: The income-growth gap

Context:

Need to Increase Government Expenditure – Wages of inequality
The article discusses the trends regarding budgetary expenditure. It also highlights the issues with the current fiscal policy framework of lowering expenditure (in order to lower debt-to-GDP ratio) being followed by the government.

Trends regarding budgetary expenditure

Lower Growth in Total Budgetary Expenditure:

In nominal terms, budgeted total expenditure grew by 6.1% over last year. This increase is the lowest in two decades.

Rise in Capital expenditure:

It increased by 16.9% (though less than the increase last year) to Rs 11.1 lakh crore.

Decline in Revenue expenditure:

It has declined by 0.8%.

Thus, according to the author, it is overall a fiscally conservative budget. It also continues to shift the composition of expenditure towards capex as has been the trend in the last few years.

Objectives of the present fiscal policy framework

- 1) Reducing the level of debt-to-GDP: The rationale for debt reduction follows from the FRBM review committee recommendations (debt-GDP ratio of the Centre at 40%, currently at 58%).
- 2) Mitigating the Impact of Expenditure reduction: Here, the government has tried to shift the composition of expenditure away from revenue towards capital expenditure. This is because it has a greater impact on output (multiplier value).

Debt-to-GDP ratio depend on

The debt-to-GDP ratio of any period depends on two distinct factors.

- 1) Gap between GDP Growth rate (g) and Interest rate on Borrowings (r): The greater g is with respect to r, the lower would be the ratio.
- 2) Primary deficit-GDP ratio: The lower the primary deficit-GDP ratio, the lower would be the debt ratio.

Note: Primary deficit is the difference between a government's fiscal deficit and the interest paid on the previous year's borrowings.

Primary deficit-GDP ratio can be reduced

- 1) Increasing the tax-GDP ratio.
- 2) Reducing the expenditure-GDP ratio.

Since the tax-GDP ratio has remained almost the same, the burden of this has fallen on the second option. In other words, the target of lowering the debt-to-GDP ratio essentially means to set a limit on the expenditure growth rate.

Issues with this fiscal policy framework

- 1) Arbitrary level of debt-to-GDP ratio target: Debt stability can be achieved even at the present level of debt-to-GDP ratio by registering a growth rate greater than the interest rate.
- 2) Insufficient to address Developmental Challenges: In particular, generating employment in productive modern

sectors is hindered by lowering expenditure.

Employment situation in the Indian economy

- 1) Reversal of Trends in Structural Employment Shifts: Usually, the proportion of workers engaged in self-employment (agriculture, petty retail and traditional services) shrinks and the share of wage workers in the modern sector (manufacturing and modern services) rises. However, the share of regular wage workers in the total workforce declined and then stagnated at 21%. Additionally:
 - a) Self-employed workforce is growing at a much faster rate compared to salaried workforce.
 - b) Women, in particular, have entered the workforce in large numbers, mostly into self-employment.
- 2) Labour Earnings have Stagnated: In real terms, regular wages and self-employment earnings have grown at just under 1% since 2017. This indicates a worsening of the income distribution as well as lack of improvements in welfare.

According to the author, addressing this will require government expenditure to rise.

Prelims Point: Primary deficit-GDP ratio, Debt-to-GDP ratio

Mains Point: Need to Increase Government Expenditure

12. Mobile PLI: Only the long-game matters

Context:

PLI Scheme to Manufacture India's Mobile Phone Industry

This article discusses the growth of India's mobile phone industry due to government policies like tax cuts and incentives. It covers the industry's challenges, dependence on imports, and possible future scenarios, including

developing local manufacturing and becoming a global player. PLI Scheme to Manufacture India's Mobile Phone Industry

Current state of India's mobile phone industry

- India's mobile phone sector has grown significantly, with exports nearly doubling from \$7.2 billion in 2022 to \$14 billion in 2023.
- One in four phones produced in India is now exported.
- The government's reduction of import tariffs on certain mobile phone components from 15% to 10% aims to further bolster this growth.

Government policies have impacted India's mobile phone industry

Three key government decisions have boosted the industry:

- 1) A 20% import tax on mobile phones to reduce imports.
- 2) Lower import taxes on components, ranging from 0-10%, created tax arbitrage, attracting manufacturers to produce locally.
- 3) The introduction of the Production Linked Incentive (PLI) scheme, offering 4-6% cash incentives based on incremental production, further stimulated the industry.

Challenges in India's mobile phone industry

High Production but Low Investment:

The industry has produced mobile phones valued at Rs. 4.12 trillion with a relatively low investment of only Rs. 7,400 crore. This indicates that for every rupee invested, Rs. 55 is generated in production, suggesting a focus on assembly rather than comprehensive manufacturing.

Reliance on Incentives:

There's a concern about the industry's reliance on government incentives like the PLI scheme. Many manufacturers might reduce or stop production once these incentives are withdrawn,

indicating a lack of long-term sustainability.

Dependency on Imported Components:

The industry heavily depends on importing high-end components, which is a significant vulnerability.

Past Instances of Disruption:

Examples like Nokia, which faced major tax disputes and labor issues leading to the closure of its plant, show the potential for regulatory and labor challenges within the industry.

The Potential Growth Scenarios of India's Mobile Phone Industry

Continuation of Current Trends:

India might keep extending incentives like the PLI scheme and further reduce import duties. But this would uphold high production and export figures but wouldn't greatly advance manufacturing depth or technological prowess.

Potential Disruption:

There's a risk that major mobile phone companies could cease their operations in India if they find more attractive incentives elsewhere. A crucial factor that could disrupt the industry is the potential compliance with a World Trade Organization (WTO) ruling that may require India to reduce its mobile phone tariffs from 20% to zero, challenging the existing tax benefits that have been boosting local manufacturing. Additionally, India's heavy reliance on China for essential mobile phone components could be a significant vulnerability.

Development of a Local Component Ecosystem:

The most sustainable growth scenario involves following Nokia's example to foster a local ecosystem for component manufacturing. By incentivizing companies to produce key components locally, India could reduce import reliance and aim to become a global supplier in specific high-value areas,

thereby achieving a more robust and self-sufficient industry.

Mains Point: Mobile PLI

13. Manufacturing sector saw employment, profits improve despite pandemic blows: Survey

Context:

Annual Survey of Industries

MoSPI has recently released the results of Annual Survey of Industries (ASI) for the reference periods April 2020 to March 2021.

About Annual Survey of Industries (ASI)

- Introduction-It is the primary source of industrial statistics in the country.
- Statutory provision-From ASI 2010-11 onwards, the survey is being conducted annually under the statutory provisions of the Collection of Statistics (COS) Act, 2008.
- Conducted by- Central Statistics Office (CSO) Industrial Statistics (IS) wing under Ministry of Statistics and Programme Implementation.

Scope and coverage

- a. The ASI extends to the entire country.
- b. It covers all factories registered under Sections 2(m)(i) and 2(m)(ii) of the Factories Act, 1948.
- c. The survey also covers Bidi and cigar manufacturing establishments registered under the Bidi and Cigar Workers (Conditions of Employment) Act 1966.
- d. All electricity undertakings engaged in generation, transmission and distribution of electricity, not registered with the Central Electricity Authority (CEA) are also covered under ASI.
- e. Units with 100 or more employees registered in the Business Register of Establishments (BRE) prepared and maintained by the State Governments.
- f. It does not cover unorganised or unregistered or informal sector enterprises.

Key finding of recent survey

ANNUAL SURVEY OF INDUSTRIES 2020-21 & 2021-22				
	2019-20	2020-21	2021-22	CAGR For 2021-22
Number Of Factories	2,46,504	2,50,454	2,49,987	0.7
Number Of Workers	1,30,58,156	1,25,94,563	1,36,09,931	2.1
Number Of Employees	1,65,68,526	1,60,25,118	1,71,51,172	1.7
FINANCIALS				
Wages To Workers	2,28,90,520	2,22,61,548	2,64,55,930	7.5
Total Emoluments	4,91,72,897	4,83,89,031	5,60,82,801	6.8
Net Fixed Capital Formation	1,43,61,795	32,25,819	30,42,540	-54.0
Gross Fixed Capital Formation	4,16,71,537	3,13,61,805	3,30,07,225	-11.0
Profits	4,69,47,269	6,14,05,752	9,50,71,368	42.3
<small>Value figures in ₹ lakh</small>				
<small>Source: MoSPI</small>				

- 1) Gross Value Added grew by 8.8% in current prices in the year 2020-21 and by 26.6% in the year 2021-22 over the respective previous years
- 2) Industrial output grew by more than 35% in 2021-22 over the previous year
- 3) Total estimated employment in the sector showed a robust growth of 7.0 % in 2021-22 over the previous year.
- 4) Tamil Nadu, Karnataka, and Uttar Pradesh were among the top five states contributing significantly to manufacturing GVA and employment in both years.

Mains Point: Annual Survey of Industries

Prelims Point: Annual Survey of Industries

14. SAMARTH Centres providing assistance to the MSMEs to train the workforce and make them aware about Industry 4.0 technologies

Context:

SAMARTH Centres providing assistance to the MSMEs

The Minister of State for Heavy Industries has recently informed the Lok Sabha about SAMARTH Centres.

About SAMARTH Centres

Established-

The Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH) centres are set up under the Scheme for “Enhancement of Competitiveness in the Indian Capital Goods Sector”.

Objective-

To provide assistance to the MSMEs to train the workforce and make them aware about Industry 4.0 technologies.

Methods of training-

These centres have been using the following methods-

- 1) Organizing Seminars/ Workshops and knowledge sharing events on Industry 4.0.
- 2) Training industries to create awareness about Industry 4.0.
- 3) Providing consultancy (in areas such as IOT Hardware, Software development, data analytics)
- 4) Incubation support to start-ups including MSMEs.

About the Enhancement of Competitiveness in the Indian Capital Goods Sector scheme

Launched by-

Ministry of Heavy Industries

Objective-

To address the technological obsolescence, limited access to quality industrial infrastructure and common facilities.

Components of the Scheme-

- 1) Identification of Technologies through Technology Innovation Portals
- 2) Setting up of four New Advanced Centres of Excellence and augmentation of Existing Centres of Excellence
- 3) Promotion of skilling in Capital Goods Sector-creation of Qualification packages for skill levels 6 and above.
- 4) Setting up of four Common Engineering Facility Centres (CEFCs) and augmentation of existing CEFCs
- 5) Augmentation of Existing Testing and Certification Centres

- 6) Setting up of ten Industry Accelerators for Technology Development

NOTE- SAMARTH PORTAL- It is a purpose-built platform for Universities and HEIs to deploy a digital framework of good governance.

SAMARTH SCHEME-

It is a demand driven and placement-oriented umbrella skilling programme of Ministry of Textiles.



Prelims Point: SAMARTH Centres, SAMARTH SCHEME

15. India is well on its way to becoming Viksit Bharat

Context:

The Positive Signs for Indian Economy
The article discusses the monetary and fiscal policies that point to a phase of steady growth and moderate inflation in the future for India.

According to the author, monetary and fiscal policies have put in place conditions for a phase of steady growth and moderate inflation. The Interim Budget has focused on infrastructure development, innovation and connectivity which will lead towards a Viksit Bharat.

India's economic projections as per the Monetary Policy Committee (MPC)

- 1) The forecast for GDP growth in 2024-25 has been kept at 7%.
- 2) The projection for Headline inflation has been reduced to 4.5%.
The development and regulatory policy changes announced by the MPC

1) Information Sharing:

RBI has extended the requirement of the Key Fact Statement (which includes information on interest rates and the financial commitment associated with a loan) to cover all retail and MSME loans and advances. This will empower customers to make informed decisions about their borrowing.

2) Technology Initiative for Payment Authentication:

A "Framework for authentication of digital payment transactions" will be explored. Along with this, enhancing the robustness of the Aadhaar Enabled Payment System (AePS) will be undertaken. These initiatives will help in preventing digital frauds.

3) Adoption of CBDC:

Changes proposed in the Central Bank Digital Currency could help people onboard into the CBDC architecture.

The positive signs for the Indian economy

Rise in Capital Expenditure:

As per the interim budget, the overall allocation for capital expenditure is equivalent to 5.6% of GDP and implies a growth of around 13%.

Lower Primary Deficit:

It is expected to lower by 80 basis points to 1.5% of the GDP in FY25. In FY21 the primary deficit was more than 5% of the GDP.

Debt Reduction:

Public debt as a percentage of the GDP has also reduced and is expected to decline by 90 basis points in FY25 from its level of 58.1% in FY24.

Reduction in Fiscal Deficit:

If growth and inflation move along expected lines, the fiscal deficit will be lower than the 5.1% target.

The positive signs for the Rural economy

Infrastructure Development:

Significant improvements in physical (road/rail) infrastructure is ensuring

seamless last mile connectivity. The integration of cities, urban centres and satellite nodes with far flung rural areas will have to be accounted for in calculating rural demand.

Rising Rural Wages:

Median wages of rural labourers during FY14-FY23 (November) have shown a rising trend.

Lakhpati Didi Initiative:

The target of increasing the lakhpati didi numbers through the 8.3 million plus self-help groups in the recent budget is also a positive sign for the rural economy.

Mains Point: economic projections as per the Monetary Policy Committee (MPC)

16. A services-led export strategy holds appeal only up to a point

Context:

Issues with Services-led Export Strategy
The article discusses the issues with services-led export strategy. It also highlights steps that should be undertaken in order to augment India's manufacturing sector exports.

India's economic growth has been led by robust consumption, with net exports acting as a drag. The share of private consumption to GDP growth has been at 55.6%, while that of net exports has been at -9.8% for the past 2 decades ending 2023-24.

In this context, a suggestion is made that India should focus primarily on high value-added services rather than low-value-added manufacturing exports to boost its exports.

Sector-wise performance of India's economy

Rise in Share of Manufacturing:

In the last decade, the share of manufacturing in India's real GDP moved up from 17.3% to 17.7%. India's manufacturing exports comprise 34% of total goods and services exports.

Decline in Share of Agriculture:

The share of the agriculture sector declined from 16.5% to 14.4%.

Rise in Share of Services:

The services sector rose from 51.1% to 54.6%. India's service exports comprise 42% of total goods and services exports.

Issues with a service-led export strategy

According to the author, service exports can't be an engine of growth due to the following reasons:

Deepen the Formal-Informal Divide:

India's labour market has a large informal component. Increasing service exports will harm the low-skilled workers at the lower end of the manufacturing value chain and thereby deepen the divide.

Mass Employment Generation:

Manufacturing sector employment in India is 11.7% of total employment. This is lower than in developing countries like Vietnam (21.4%) and China (28.7%). Thus, manufacturing-sector growth is required to generate mass employment. Thus, according to the author, Indian policy can't afford to focus on service exports at the cost of our current employment-oriented manufacturing thrust.

Way forward for India regarding manufacturing sector exports

Take Advantage of Comparative Advantage:

India enjoys a comparative advantage in the case of textiles and clothing, consumer goods, chemicals, footwear, ores and metals.

Favourable Policymaking:

Policies such as 'Make in India' initiative, Production Linked Incentive scheme, Stand-up India, Startup India, National Logistics policy, PM MITRA, FAME India, etc. can transform the manufacturing sector.

Focus on Labour-Intensive Sectors:

The share of low-skill manufacturing exports (leather, textiles, etc.) in overall exports is declining. This should be increased.

Focusing on Services subsectors:

Wholesale and retail trade, and transportation and storage sectors contribute the most to value added in manufacturing exports. Those components of service exports should be focused upon, so that manufacturing exports also benefit.

Mains Point: Issues with Services-led Export Strategy**Prelims Point: Sector-wise performance of India's economy****17. Cabinet approves Rs 6,000-crore fishery scheme****Context:**

PM Matsya Kisan Samridhi Sahyojna
The Central government has recently approved the "Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY).

About Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY)

The PM-MKSSY is a central sector sub-scheme under the Pradhan Mantri Matsya Sampada for formalisation of the fisheries sector.

Objective

- 1) Gradual formalisation of the unorganized fisheries sector through self registration of fishers, fish farmers
- 2) Facilitating access to institutional financing, fisheries sector micro and small enterprises.
- 3) Providing one-time incentive to beneficiaries for purchasing aquaculture insurance.

Duration

Period of next four 4 years from FY 2023-24 to FY 2026-27 in all States/ Union Territories.

Funding Total outlay- Rs.6,000 crore-

- 50% i.e. Rs.3,000 crore will be provided by public finance including the World Bank and the AFD external financing, and rest 50% i.e. Rs.3,000 crore will be provided by private sector/beneficiaries.
- Intended beneficiaries Fishers, Fish (Aquaculture) Farmers, Fish workers, Fish Vendors or such other person directly engaged in fisheries value chain.
- Micro and Small enterprises, SHGs, Fish Farmers Producer Organizations (FFPOs) and Startups in fisheries sector.
- Digital platform National Fisheries Digital Platform will be created to provide 40 lakh small and micro-enterprises work-based identities.

Major components

- 1) Formalisation of fisheries sector
- 2) Facilitating adoption of aquaculture insurance
- 3) Adoption and expansion of fish and fishery product safety and quality assurance systems
- 4) Project management, monitoring and reporting.

Significance

- 1) It will create 1.7 lakh new jobs, with a special emphasis on employing 75,000 women.
- 2) It will improve value chain efficiency and ensuring safe, quality fish by supporting 55,000 targeted micro and small enterprises.
- 3) It will ensure environment friendly fisheries sector.
- 4) It will Facilitate Ease of Doing Business and transparency.

Prelims Point: PM Matsya Kisan Samridhi Sahyojna

18. Avoiding the Middle-Income Trap

Context:

Reasons for countries getting stuck in the Middle-Income Trap

The article discusses the reasons for countries getting stuck in the Middle-Income Trap. It also highlights the characteristics of High-Income countries and India's status on those parameters. Avoiding the Middle-Income Trap

The Future Projections for India's Income Levels

- In 2018, the government set a target of achieving a gross domestic product (GDP) of \$5 trillion by 2025. This mark looks likely to be crossed by 2027.
- In per capita terms, a \$5 trillion GDP means \$3,600- 3,700 per capita, which is categorised as "lower-middle income" by the World Bank (between \$1,136 and \$4,465). "Upper-middle income" is \$4,466- \$13,845, and anything above is considered "high income".
- India should become an upper-middle income country by around 2030. However, many nations get stuck within that income band for decades, and some never become high-income.

The Reasons for Countries getting Trapped in Upper-Middle Income Level

Base effect:

This leads to a mathematical slowdown due to a larger base (reference).

Slower Productivity Gains:

Growth also tends to slow since productivity gains become more difficult.

Demographic Factors:

By the time countries hit the high end of upper-middle income, population growth is low, and the workforce is older and smaller.

The Characteristics of High-Income Countries and India's Status on Those Parameters

Characteristics of High-Income Countries India's situation

Highly educated populations and educational systems, which help improve productivity Most of the workforce has less than 10 years of schooling.

Good laws and law enforcement, which leads to a safe physical and legal environment. India has a continuous undercurrent of violence. For instance, Kashmir, Manipur, Chhattisgarh. This can lead to internet shutdowns, which cripple the digital economy

Easily understood, moderate tax codes, applied fairly by honest officials India has complicated tax and commercial codes, and corruption is also a prevailing issue.

Reasonably good social security provisions India has some welfare outreach but low spends on healthcare. Almost all high-income countries are high-end democracies. India is classified as "Partially Free" and its democracy rankings have deteriorated.

Freely convertible currencies

Due to tight currency controls, we don't have a freely convertible rupee.

The Way Forward for India

Improving Female Labour Force Participation:

India is seeing lower population growth rates. However, India has very low female labour force participation. Hence, it can expand the workforce by inducing more women to work.

Changing the Business Environment:

A huge legislative and administrative effort to change the business environment of India will be required.

Improving Democracy Rankings:

Pushing India back up to a "free" status in democracy rankings would also be required.

Mains Point: Middle-Income Trap

19. Several startups get RBI approval to operate as payment aggregators

Context:

Payment aggregator approval by RBI
Two fintech startups Decentro and Juspay have received final authorisation from the RBI for payment aggregator (PA) licences.

About Payment aggregator

They are companies that facilitate online payments by acting as intermediaries between the customer and the merchant.

Function

- 1) They typically provide a range of payment options to customers, including credit and debit cards, bank transfers, and e-wallets.
- 2) Payment aggregators collect and process payment information, ensuring that transactions are secure and reliable.
- 3) Businesses can avoid the need to set up and manage their own payment processing systems, which can be complex and expensive.

Features

Multiple Payment Options:

Payment aggregators offer a range of payment options to customers, making it easier for them to pay for goods and services.

Secure Payment Processing:

Payment aggregators use advanced security measures to ensure that transactions are safe and secure.

Fraud Detection and Prevention:

Payment aggregators use algorithms and machine learning to detect and prevent fraud, reducing the risk of chargebacks and other payment disputes.

Payment Tracking and Reporting:

Payment aggregators provide detailed reports on payment transactions, making it easier for businesses to manage their finances and reconcile their accounts.

Types

- 1) Bank Payment Aggregators
- 2) Third-Party Payment Aggregators

RBI criteria

- 1) Non-bank payment aggregators need to have a net worth of ¹ 15 crore by 15th March 2021 and a net worth of ¹ 25 crore by 31st March 2023.
- 2) It must also be compliant with global payment security standards.

Mains Point: Payment Aggregators.

Prelims Point: Payment Aggregators

20. Quality Council of India and Open Network for Digital Commerce launch DigiReady Certification Portal to empower MSMEs and small retailers

Context:

DigiReady Certification Portal for MSME

The Quality Council of India (QCI) and ONDC have recently announced the launch of the DigiReady Certification (DRC) portal.

About DigiReady Certification

Launched by-

The Quality Council of India (QCI) and the Open Network for Digital Commerce (ONDC)

Objective-

To assess and certify digital readiness of Micro, Small, and Medium Enterprises (MSME) entities.

Eligible entities-

This portal is open for self-assessment to all Micro, Small and Medium Enterprises (MSMEs) and small retailers.

Features of portal-

- 1) MSMEs can evaluate their preparedness to seamlessly onboard as sellers on the ONDC platform.
- 2) This portal will ensure that MSMEs and small retailers can integrate seamlessly into existing digitized workflows.
- 3) The certification process evaluates various aspects of digital readiness.

This includes the presence of necessary documentation for online operations, proficiency in using software and technology etc.

Significance of DigiReady Certification portal

- 1) It will empower MSMEs and make e-commerce more inclusive and accessible.
- 2) It will amplify MSMEs potential to thrive in the digital economy.
- 3) It will expand their digital capabilities and business potential.

About Quality Council of India

Established

It was established in 1997 jointly by the Department for Promotion of Industry & Internal Trade (DPIIT), the Ministry of Commerce & Industry, and the Indian industry.

Nature of body-

It is registered as a non-profit organization under the Societies Registration Act XXI of 1860.

Mode of operation-

It is operated through the constituent Boards of QCI, primarily the National Accreditation Board for Certification Bodies (NABCB), and the National Accreditation Board for Testing & Calibration Laboratories (NABL).

Composition-

It is governed by a Council of 38 members with equal representations of government, industry and consumers.

Chairman of the body-

The Chairman of QCI is appointed by the Prime Minister on the recommendation of the industry to the government.

NOTE-Open Network for Digital Commerce (ONDC)-It is an open-source network set up to enable buyers and sellers to transact with each other irrespective of the e-commerce platform on which either of them are registered.

Prelims point: DigiReady Certification, Quality Council of India (QCI) , Open Network for Digital Commerce (ONDC)

21. Are you middle class? A scheme may tell you soon

Context:

Middle-class housing scheme

Recently Finance minister has announced a Middle-class housing scheme for the middle class as part of 'Housing for all' policy.

Middle class housing scheme

1. Its announcement was made in the recent budget for FY 25.
2. The government will start a program to assist middle-class individuals living in rented houses, slums, chawls, and unauthorized colonies to purchase or construct their own homes.
3. While it is part of the 'housing for all' policy, it's not an extension of Pradhan Mantri Awas Yojana (PMAY).
4. Its a new scheme where the government will define income levels, location, and accommodation types to identify beneficiaries.

Note- There is no defined criteria for the identification of the middle class in India yet.

Pradhan Mantri Awas Yojana (PMAY)

It is a housing scheme launched by the Government of India with the aim of providing affordable housing for all by the year 2022.

Components-

It has two components:

- i. Pradhan Mantri Awas Yojana (Urban) (PMAY-U) for the urban poor and
- ii. Pradhan Mantri Awas Yojana (Gramin) (PMAY-G) for the rural poor.

Nodal Ministry-

Pradhan Mantri Awas Yojana (Urban) (PMAY-U) administered by Ministry of Housing and Urban Affairs while

Pradhan Mantri Awaas Yojana (Gramin) (PMAY-G) administered by Ministry of Rural Development.

Mains Point: Middle-class housing scheme

22. Deeper reforms - PLI alone will not bring in investment

Context:

Issues with PLI Scheme in the Textiles Sector

The article discusses the issues with the PLI in the Textiles Sector and the underlying reasons behind them.

Background:

The government has designed several Production-Linked Incentive (PLI) schemes for a subset of sectors that the government believes are relevant for India's development and economic security.

However, the growth of private investment in some of the sectors – including textiles, IT hardware, and specialty steel – has been slower than anticipated.

Issues with the PLI in the Textiles Sector

- The textiles sector has a huge impact on job creation and livelihoods. However, the PLI scheme hasn't led to a takeoff in this sector.
- Over Rs. 10,000 crores has been set aside for this programme, which is focused on man-made fibre and garments. Only a small fraction of that money has been disbursed till now.

Some countries have done well on textiles and garments exports due to

- Solid infrastructure.
- Reliable trade policy with low tariffs on inputs.
- An employable workforce.
- Investor-friendly regulations.

India's stand on these parameters

The government has worked hard on building infrastructure and, to an extent, on easing regulations. However, the

following areas still need to be addressed:

- Trade policy has been noticeably unpredictable.
 - Workforce development has not happened as desired.
 - Lack of judicial or administrative reform that provides business with confidence that regulations will be fairly enforced.
- This has led to few takers for the money on offer under the PLI Scheme.

Should be done

Engaging with Stakeholders:

The government should engage actively with the concerns of potential investors in each of these underperforming sectors.

Need for Reforms:

It should be realized that the problem is not the exact parameters of the PLI scheme but the lack of deeper reform in these sectors.

According to the author, there is a need for creating business-friendly conditions for labor-intensive export growth.

Mains Point: Issues with PLI Scheme in the Textiles Sector

23. RBI plans tokenization of assets, bonds under wholesale CBDC pilot

Context:

Tokenization of assets and government bonds

The Reserve Bank of India (RBI) plans to explore the tokenization of assets and government bonds as part of its wholesale Central Bank Digital Currency (CBDC) pilot project.

About Tokenization of assets

Definition-

It is the process whereby ownership rights of an asset are represented as digital tokens and stored on a blockchain.

Tokens can act like digital certificates of ownership that can represent almost any object of value such as physical, digital, fungible, and non-fungible assets.

Mechanism of tokenised asset

It involves several step such as-

- 1) Defining the token type (fungible or non-fungible)
- 2) Selecting the blockchain to issue the tokens on
- 3) Selecting a third-party auditor to verify off-chain assets, issuing the assets.

Significance of tokenised asset

Liquidity-

An asset can be represented as millions or even billions of tokens, creating fractional ownership. This can be listed on a variety of widely-available and accessible exchanges

Accessibility-

It allows a smaller investor to invest in riskier assets with relatively low capital.

Transparency-

It allows for the open tracking and auditing of all records due to the fundamentally public nature of many blockchains.

Prelims Point: Tokenization of assets and government bonds

24. Prabhaav: SIDBI unveils the CRISIL study on impact of Fund of Funds on startup ecosystem

Context:

Prabhaav Report on performance of Fund of Funds for Start-ups (FFS)

The Small Industries Development Bank of India (SIDBI) has recently released the CRISIL study report named "Prabhaav". It assesses the impact of the Fund of Funds for Start-ups (FFS).

About Prabhaav Report

It is a report released by CRISIL to assess the impact of the Fund of Funds for Start-ups (FFS). Fund of Funds for

Start-ups (FFS) is a key initiative under the Start-up India Action Plan

Dimensions included in assessment

- 1) Flow of capital
- 2) Inclusiveness and diversity in coverage of startups
- 3) Innovative solution
- 4) Deepening of startups funding ecosystem in the hinterland of country

Key findings of the report

- 1) The report reveals that 129 startups beyond Tier-1 cities have received investment worth Rs1,590 crore.
- 2) Fund of Funds for Startups (FFS) scheme has enabled investments to the tune of around 4x of the amount drawn with Rs 17,534 crore invested in 938 startups.
- 3) There was increase in support to women led startups as well as women led fund managers.
- 4) 18 startups have become unicorn.
- 5) The scheme has also supported startups in emerging sectors such as deep tech, agri-tech, health tech, and financial services.

About Fund of Funds Scheme

The Fund of Funds for Startups (FFS) Scheme was approved and established in 2016 with a corpus of Rs 10,000 crore.

Funding to start-ups-

The Scheme does not directly invest in startups. It provides capital to SEBI-registered AIFs (alternate investment funds) known as daughter funds. These AIFs invest money in growing Indian startups through equity and equity-linked instruments.

Fund operated by-

Small Industries Development Bank of India (SIDBI) through selection of suitable daughter funds and overseeing the disbursement of committed capital.

Mandate-

AIFs (alternate investment funds) supported under FFS are required to

invest at least 2 times of the amount committed under FFS in startups.

NOTE- SIDBI-

- 1) It was established under an Act of Parliament in 1990.
- 2) It is responsible for administering the Small Industries Development Fund and National Equity Fund.

Prelims Point: Prabhaav Report, Fund of Funds.

25. India faces WTO pressure on farm subsidies amid protests for minimum support price

Context:

India's farm subsidies under WTO Scrutiny

Recently, The Cairns Group has claimed that India's public stockholding (PSH) program is heavily subsidized.

They argue that India's farm support distorts global food prices and undermines food security in other countries. This increases pressure on India to comply with World Trade Organisation (WTO) regulations regarding farm subsidies.

WTO regulations regarding farm subsidies say

Objective-

The WTO regulations on farm subsidies aims to ensure fair competition and prevent trade distortion globally.

- a. These regulations impose limits on the types and levels of subsidies that member countries can provide to their agricultural sectors.

Levels of subsidies:

Green Box	Amber Box	Blue Box
1. It includes subsidies that do not significantly distort trade.	1. These are the subsidies that distort international trade by promoting excessive production.	1. These subsidies are similar to amber box subsidies, but they aim to restrict production.
2. They are not specific to particular products and are generally allowed by the WTO	2. Examples include, input subsidies such as subsidies on seeds, fertilizers, Minimum Support Price (MSP) etc.	2. Currently, only a few countries like Norway and Iceland utilize these subsidies
3. Examples include funding for research, environmental protection, and direct income support for farmers facing difficulties like crop loss or other disasters.	3. WTO limits this subsidy by capping it at 5% for developed countries & 10% for developing countries.	3. The WTO does not impose any limits on these subsidies.

Cairns group

About-

It is a coalition of agricultural exporting countries that advocate for agricultural trade liberalization.

Established-

It was established in 1986 and is named after Cairns, Australia, where the first meeting took place.

Member Countries-

The group consists of 19 member countries, primarily from the Asia-Pacific region and Latin America, including Australia, Canada, Brazil, and Thailand, among others.

Objective-

The Cairns Group aims to promote fair and open agricultural trade by advocating for the reduction of trade barriers, subsidies, and protectionist measures that distort global agricultural markets.

Prelims Point: Green Box, Amber Box, Blue Box, Cairns group

ENVIRONMENT

1. **“Shri Bhupender Yadav says India increases its tally of Ramsar sites (Wetlands of International Importance) to 80 by adding Five more wetlands to the list on the eve of World Wetlands Day 2024 (2nd February)**

Context:

Newly added Ramsar sites

India has increased its tally of Ramsar sites (Wetlands of International Importance) to 80 from existing 75 by designating five more wetlands as Ramsar sites.

About Ramsar site

- 1) Ramsar Sites, also known as Wetlands of International Importance, are designated areas under the Ramsar Convention on Wetlands.
- 2) The Ramsar Convention is an international treaty established in 1971 in Ramsar, Iran.
- 3) There are over 2,400 Ramsar Sites covering 2.5 million sq km on the territories of 171 Ramsar Contracting Parties across the world.
- 4) The world’s first site was the Cobourg Peninsula in Australia, designated in 1974.
- 5) The countries with the most Ramsar Sites are the United Kingdom with 175 and Mexico with 142.

Objective

To promote the conservation and sustainable use of wetlands, recognizing their ecological importance.

Latest addition to Ramsar sites in India

- 1) Karaivetti Bird Sanctuary, Tamil Nadu
- 2) Magadi Kere Conservation Reserve, Karnataka
- 3) Longwood Shola Reserve Forest, Tamil Nadu

- 4) Ankasamudra Bird Conservation Reserve, Karnataka
- 5) Aghanashini Estuary, Karnataka

Features of recently added Ramsar site

- 1) Karaivetti Bird Sanctuary-It is centred around a large freshwater lake. This lake is the focal point of the sanctuary and serves as a crucial habitat for a variety of bird species, both resident and migratory. It supports 1% population of Black-headed iblis and oriental Darter.

- 2) Magadi Kere Conservation Reserve-The bar-headed goose is one of the birds which migrate to Magadi wetlands.

Longwood Shola Reserve Forest-it derives its name from the Tamil word, “Solai”, which means a ‘tropical rain forest’.

It maintains the hydrological regime of the region, by capturing rainwater through marshes and then releasing it via streams.

It is home to the threatened Nilgiri marten and other rare fauna and flora.

- 3) Ankasamudra Bird Conservation Reserve-It is the only place in Karnatka where Great Indian Bustard can be seen.
- 4) Aghanashini Estuary- It is formed at the confluence of Aghanashini River with the Arabian sea.

The brackish water of the Estuary provides diverse ecosystem services including flood and erosion risk mitigation, biodiversity conservation and livelihood support.

States having largest number of Ramsar sites

- 1) Tamilnadu-16
- 2) Uttar Pradesh-10
- 3) Odisha-6
- 4) Punjab-6

Prelims Point: Newly added Ramsar sites

2. China Identifies Tagging Station of Migratory Bird 'Heron' Found In Manipur

Context:

Black-crowned Night Heron

A juvenile black-crowned night heron, which landed recently at a local pond in Imphal and died later, was banded at the Weishan Bird Banding Station in China's Beijing.

About Black-crowned Night Heron

They are small herons with rather squat, thick proportions. They have thick necks, large, flat heads, and heavy, pointed bills.

Habitat

They inhabit a variety of wetland habitats, such as swamps, streams, rivers, marshes, mud flats, and the edges of lakes

Population distribution

It is found across North America, as well as locally in Central America and the Caribbean.

Characteristics

Body size

- 1) It has short neck and legs.
- 2) It has a black crown, a gray body, and bright, red eyes.
- 3) It weighs between 727 and, 1014 grams, has a wingspan of 115 to 118 centimetres, and is 58 to 66 centimetres in length
- 4) Females and males look alike, but females are a little smaller.

Behavior

They spend their days perched on tree limbs or concealed among foliage and branches. They forage in the evening and at night, in water, on mudflats, and on land.

It is a migrating species.

Diet-Its diet consists mainly of fish, leeches, earthworms, aquatic and terrestrial insects.

Conservation status

IUCN-Least concern

Wildlife Protection Act-Schedule 2



Prelims Point: Black-crowned Night Heron

3. An unprecedented 1,000 manatees are gathering in Florida this week - but why?

Context:

Manatees solitary animals

Manatees are typically solitary animals. However, they have gathered in record-breaking numbers at a Florida state park.

About Manatees

Manatees are large aquatic mammals. They belong to a group of animals called Sirenia. This group also contains dugongs.

Types

There are three species, or types, of manatee: -

- 1) The Amazonian manatee lives in the Amazon River and in fresh water in South America. This species is only found in freshwater.
- 2) The African manatee lives in tropical West Africa.
- 3) The Caribbean manatee is found in Florida and the West Indies.

Characteristics

- 1) Size-Adult manatees may reach a length of 15 feet (4.6 meters) and a weight of 1,660 kilograms. Females tend to be larger and heavier than males.

- 2) Diet-They are herbivores. They spend up to eight hours a day grazing and can consume 4 to 9 percent of their body weight in aquatic vegetation daily.
- 3) Behavior – They are generally solitary animals.
 - In order to breathe, they must swim to the water's surface for air.
 - Dugongs and manatees are very similar in appearance and behavior, but there is one key difference:-Manatees have paddle-shaped tails, and dugongs have fluked tails, giving it a whale-like appearance.
- 4) Lifespan: 50 to 60 years.

Conservation status

IUCN-All 3 species are vulnerable.

Threats

- 1) Habitat destruction.
- 2) Their curious nature seldom leads to violent collisions with propeller driven ships and boats.
- 3) Red tides are major threats to the manatee. Red tide is the discolouration of sea surface due to algal blooms.
- 4) They are entangled in fishing gear, water control structures such as floodgates, navigation locks, etc.

NOTE- Dugong-They are also called the sea cow. They are the herbivorous mammal. It is classified as 'Vulnerable' under the IUCN Red List.



Prelims Point: Manatees

4. Dusted Apollo, a rare high-altitude butterfly, sighted for first time in Himachal's Chamba

Context:

A rare high-altitude butterfly Dusted Apollo Butterfly

Dusted Apollo Butterfly a Brief, A rare high-altitude butterfly called the Dusted Apollo (*Parnassius stenosemus*) was seen and photographed for the first time in Himachal Pradesh. It was sighted and photographed by two forest guards during a trek to Manimahesh Lake in Chamba.

Dusted Apollo Butterfly (*Parnassius stenosemus*)

About

1. It is a butterfly species found in high-altitude regions, especially in mountainous regions of Ladakh.
2. It belongs to the family Papilionidae.
3. It was discovered in the year 1890.

Range of distribution

It is found from Ladakh to West Nepal, flying at altitudes between 3,500 to 4,800 meters in the inner Himalayas.

Characteristics

- 1) It is known for its distinctive wing patterns and coloration.
- 2) It closely resembles the Ladakh Banded Apollo (*Parnassius stoliczkanus*), but its distinguishing feature lies in the discal band on the upper forewing.
- 3) In the Dusted Apollo, the band is complete and extends from the costa to vein one, while in the Ladakh Banded Apollo, it is incomplete and extends only up to vein four.
- 4) The dark marginal band on the hind wings of the Dusted Apollo is narrower compared to the broader band found in the Ladakh Banded Apollo

Note- Regal Apollo (*Parnassius charltonius*) was also photographed at Manimahesh lake.

- a. It is protected under Schedule II of the Wildlife Protection Act, 1972.

About Ladakh Banded Apollo (*Parnassius stoliczkanus*)

- 1) It is a rare butterfly found in high-altitude regions of Central Asia.
- 2) It is a member of the genus *Parnassius* of the swallowtail family, *Papilionidae*.

The Apollo Species of Butterflies

- 1) Apollos are highly valued butterflies in commercial trade and command high prices within the poaching industry.
- 2) Himachal Pradesh has recorded 11 Apollo species, with five of them designated as Scheduled species.
- 3) Most of the Apollo butterflies are endangered and urgently require conservation and protection measures.

About Manimahesh Lake

1. It is a high-altitude lake, located near the Manimahesh Kailash Peak in the Himalayas' Pir Panjal Range. It is situated within the Bharmour subdivision of Chamba district of Himachal Pradesh, India.
2. The religious importance of this lake is comparable to that of Lake Manasarovar in Tibet.

Prelims Point: Dusted Apollo Butterfly, Manimahesh Lake

5. **100 'Lantana elephants' in Bengaluru shine light on man-animal conflict as month-long exhibition kicks off**

Context:

Lantana camara flowering plant species Recently, at an exhibition in Bengaluru, sculptures crafted from lantana camara drew significant attention.

Lantana Camara (*Lantana*)

- 1) It is a flowering plant species belonging to the verbena family. It is native to the American tropics.
- 2) Due to its capability to adapt to shifting climates, lantana can withstand high temperatures and moisture levels.

- 3) However it is among the world's ten worst invasive species and is of great concern in India.

- 4) It was introduced to India as ornamental shrubs during the colonial period but it rapidly became invasive, spreading across various ecosystems.

- 5) The shrub can easily spread across the forest floor, climb trees as a creeper, and entangle with other native plants.

- 6) The Nilgiri Biosphere Reserve in the Western Ghats is heavily impacted by the invasion of *Lantana camara*, making it one of the largest affected areas.

Prelims Point: Lantana camara flowering plant.

6. **Researchers: Wheat blast could reduce production by 13 %**

Context:

Wheat Blast disease

Researchers have estimated that a wheat blast disease that may spread in the future could reduce global wheat production by 13% by 2050.

About Wheat blast

It is a fungal disease that affects wheat production in tropical and subtropical regions.

Caused by

Magnaporthe oryzae pathotype *Triticum* (MoT). It was identified in Brazil in 1985. The fungus infects wild and cultivated grasses, most notably rice and wheat.

Transmission

It spreads through infected seeds, crop residues, and spores that can travel long distances in the air.

Favourable condition

It thrives in warm and humid conditions.

Effects

- 1) It causes progressive bleaching of the heads, lower yields, and poor seed quality.

- 2) Stems and leaves are discoloured, with dark brown, eye-shaped lesions on leaves.
- 3) Sometimes dark grey spores can be seen.
- 4) It can shrivel and deform the grain in less than a week from the first symptoms.

About Wheat

It is the main cereal crop in India. It is the second most important cereal crop in India after rice.

Type-

It is a Rabi Crop which is sown in October-December and harvested during April-June.

Ideal temperature: Between $23\pm 3^{\circ}\text{C}$

Rainfall: 50 cm to 100 cm rainfall.

Soil Type:

Soils with a clay loam or loam texture, good structure and moderate water holding capacity are ideal for wheat cultivation.

Major wheat growing states in India:

Uttar Pradesh, Punjab, Haryana, Madhya Pradesh, Rajasthan, Bihar and Gujarat.

Note-

- 1) Asia's first outbreak of this pathogenic wheat blast was reported in Bangladesh in 2016.
- 2) China is the world's largest producer of wheat. India is the second-largest producer of wheat.

Prelims Point: Wheat Blast disease

7. Black-necked Crane

Context:

Black-necked Crane

As per the survey conducted by the Wildlife Institute of India in 2016-2017 in Ladakh region, the population size of black necked crane is around 66-69 individuals.

About Black-necked Crane

The black-necked crane is a medium-sized crane in Asia that breeds on the Tibetan Plateau and remote parts of India and Bhutan.

Both the sexes are almost of the same size, but male is slightly bigger than female.

Population distribution

The high altitude wetlands of the Tibetan plateau, Sichuan (China), and eastern Ladakh (India) are the main breeding ground of the species. However, the birds spend winter at lower altitudes.

It is also found in Arunachal Pradesh's valleys- Sangti valley, Zemithang and Chug valley.

Conservation status

IUCN Red List- Near Threatened (NT)

CITES- Appendix I

Indian Wildlife (Protection) Act, 1972- Schedule I

Threats

- 1) Damage to the eggs and chicks, caused by feral dogs.
- 2) Increasing grazing pressure on the limited pastures near the wetlands.
- 3) Loss of habitat due to development projects on the wetlands.

Conservation efforts

- 1) Notified Protected areas- The important habitats of Black-necked Crane have been notified as a Protected Areas. For ex- Changthang Sanctuary, Ladakh.
- 2) Designated Wetlands- The Tso Kar Wetlands Complex, an important foraging and breeding ground for Black-necked Crane has been designated as a Ramsar Site.
- 3) Financial assistance- The Central Government provides financial assistance to State/Union Territory Governments under the Centrally Sponsored Scheme of 'Development of Wildlife Habitats'.

Religious significance

The bird is revered by Monpas (a major Buddhist ethnic group of Arunachal Pradesh) as an embodiment of the sixth Dalai Lama.

Prelims Point: Black-necked Crane**8. Invasive thrips caused 80% damage to chilli crops, Rajya Sabha told****Context:**

Thrips Parvispinus invasive pest species

Thrips Parvispinus, an invasive pest species, might have replaced the native chilli thrips known as scirtothrips dorsalis in Telangana and Andhra Pradesh.

About Thrips Parvispinus**Nature**

It is an invasive pest species.

Origin

This thrips originates from Southeast Asia and was first found in Florida in 2020. It is a polyphagous pest that causes damage to vegetable, ornamental, and fruit crops.

Spread

The last two decades have witnessed a drastic extension in the geographic distribution. It is now found in France, Greece, Hawaii, Mauritius, Reunion, Spain, Tanzania and the Netherlands, besides India.

In India

This species was first reported on Papaya from Bengaluru in 2015.

Infestation

Adults mainly colonize on flowers and underside of leaves whereas larvae suck sap from under surface.

Impact

Infestation causes heavy flower drop and thereby reduces fruit production. Its infestation increases during heavy rainfall of North East monsoon. This has

caused 40-80% damage to chilli crop in Andhra Pradesh and Telangana.

Preventive measures

- 1) Promotion of cultural practices like deep summer ploughing.
- 2) Intercropping, clean cultivation and balanced use of fertilisers.
- 3) Integrated Pest Management (IPM) strategies for pest control.

NOTE- Thrips- These are important group of sucking pests which cause significant economic losses in several horticultural crops.

Prelims Point: Thrips Parvispinus invasive pest species**9. Madagascar: Giant tortoises have returned 600 years after they were wiped out****Context:**

Aldabra giant tortoise reintroduction project

The Aldabra giant tortoise reintroduction project was started in 2018 to reintroduce Aldabra giant tortoises in Madagascar's natural habitats. The project is heading towards success as it has led to thousands of these mega-herbivores (Aldabra giant tortoises) repopulating the island for the first time in 600 years.

About Aldabra giant tortoise

1. It is the world's second-largest land tortoise species, after the Galapagos giant tortoise.
2. These tortoise have descended from ancestors of Aldabrachelys abrupa, one of two giant tortoises that lived in Madagascar for 15 million years.

Lifespan

It has a lifespan of about 100 years.

Population Distribution

These are endemic to the Aldabra Atoll in the Seychelles, an archipelago in the western Indian Ocean, approximately

930 miles east of Africa and northeast of Madagascar.

Habitat

1. These tortoises live on land and inhabit diverse environments such as scrub forests, mangrove swamps, and coastal dunes and beaches.
2. Grasslands named “platin” harbour the largest populations of tortoises.

Conservation Status

IUCN- Vulnerable
CITES- Appendix II

Physical Characteristics

1. They are dark gray to black with a strongly domed, thick shell.
2. Aldabra tortoises show sexual dimorphism, meaning males and females have different appearances.
3. Males are much bigger than females and have longer, thicker tails.

Significance

1. They are vital in keeping the ecological balance in a habitat mosaic (a place where different habitats exist side by side).
2. They consume fruits from different trees. These then spread the seeds through their dung, aiding in megafauna-dependent germination. This facilitates the growth of forests, woodlands, shrublands, and grasslands.

About Aldabra Atoll

1. Aldabra is the world’s second-largest coral atoll, located southeast of Africa.
2. It belongs to the Aldabra Group of islands in the Indian Ocean, which are part of the Outer Islands of the Seychelles.
3. It is inscribed on the UNESCO World Heritage List in 1982.

Note- An atoll is a ring-shaped coral formation surrounding a lagoon, usually formed from the rim of a submerged extinct volcano. They’re often found in warm, tropical oceans

Prelims Point: Aldabra Atoll, Aldabra giant tortoise

10. Equity concerns in banning fossil fuel extraction

Context:

Phasing out fossil fuels equitably

The article discusses the challenges and debates surrounding the reduction of fossil fuel use to combat climate change. It highlights the different capacities and needs of various countries in transitioning away from fossil fuels, considering economic and legal aspects. Phasing out fossil fuels equitably – Equity concerns in banning fossil fuel extraction

The Current State of Climate Change Litigation and Fossil Fuel Policies

Inadequate Response to Climate Change:

Governments and corporations have not effectively tackled climate change, leading to increased climate change litigation worldwide.

Momentum is also growing in favor of a Fossil Fuel Non-Proliferation Treaty.

Coal Elimination Proposal:

An academic proposal recommends ending coal mining and burning by 2030. This aligns with the Production Gap Report, highlighting a discrepancy between current fossil fuel production plans (produce 110% more fossil fuels by 2030) and the Paris Agreement’s goal to limit warming to 1.5° Celsius.

Recent Climate Conferences’ Stance:

COP26 in Glasgow (2021) and COP28 in Dubai (2023) focused on reducing coal use and transitioning to net-zero emissions by 2050.

The Challenges in Phasing out Fossil Fuels Equitably

Economic Dependence on Fossil Fuels:

Countries like Azerbaijan, Congo, Iraq, Nigeria, Oman, and Timor Leste heavily rely on fossil fuel revenues, making it

challenging to phase out without impacting their economies.

Diversification of Economy:

Wealthier nations such as Canada, the USA, and the UK have more diversified economies and higher per capita incomes, facilitating easier transition from fossil fuels.

Employment Concerns:

In countries with a significant number of jobs tied to the fossil fuel sector, like India, phasing out fossil fuels could lead to major employment challenges.

Aligning with Climate Change Principles:

The challenge lies in integrating the Fossil Fuel Non-Proliferation Treaty with the principles of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) and Nationally Determined Contributions (NDC) of the climate change regime. This involves balancing global objectives with individual countries' unique circumstances and capacities.

International Law Say About Fossil Fuel Use

Rights to Natural Resources:

International law allows states to use their natural resources for economic development.

Obligation to Prevent Harm:

There's a caveat that states must not cause significant harm to other states, especially in the context of trans-boundary natural resources.

Environmental Impact Assessments (EIA):

The International Court of Justice (ICJ) in the Pulp Mills Case (2010) declared conducting trans-boundary EIAs as part of customary international law.

Global Commons Uncertainty:

The application of these laws to global issues like fossil fuel extraction and its impact on global warming is less clear.

Human Rights Considerations:

Western scholars argue for the need to conduct EIAs for fossil fuel extraction's

impact on global warming and its human rights consequences on local and indigenous populations.

India's Situation in The Fossil Fuel Transition

Heavy Reliance on Fossil Fuels:

India predominantly depends on fossil fuels for energy, with a significant part of its power sector rooted in coal.

Employment Impact:

Nearly 3.6 million people across 159 districts are employed directly or indirectly in the coal mining and power sector.

COP26 Stance:

India advocated for "phasing down" rather than "phasing out" coal, indicating a preference for a gradual transition.

Subsidy Scrutiny:

India's subsidies on kerosene oil have been criticized for inconsistency with the Paris Agreement, highlighting the complexities in balancing economic needs with environmental commitments.

Mains Point: Phasing out fossil fuels

11. Tripura's Sepahijala Wildlife Sanctuary gets new batch of animals including two tigers

Context:

Sepahijala Wildlife Sanctuary

The Sepahijala Wildlife Sanctuary of Tripura recently welcomed two Royal Bengal tigers, two leopards and four golden pigeons.

About Sepahijala Wildlife Sanctuary

Location

It is located around 25 km from Agartala, Tripura.

Established

It came into existence in 1972.

Vegetation

It has moist deciduous forest

Lakes

It has two natural lakes, namely Abasarik and Amrit Sagar.

Flora

The sanctuary has around 456 plant species; many kinds of bamboo and a variety of grasses and medicinal plants also grow in the sanctuary

Fauna

It is the habitat of different species of primates like Rhesus macaque, Pigtailed macaque, Capped langur, Spectacled monkey, Slow loris and several other wild animals like Leopard, Clouded leopard, Jungle fowl, Civets, Barking, Deer, Wild pig, etc.

Important fact

Clouded Leopard National Park, established in 2007, is a part of this wildlife sanctuary.

About Clouded Leopard

- 1) It is a wild cat inhabiting dense forests of the Himalayas through mainland Southeast Asia into South China
- 2) The clouded leopard is categorised into two species: the mainland clouded leopard distributed from central Nepal to peninsular Malaysia, and the Sunda clouded leopard (*Neofelis diardi*) native to Borneo and Sumatra
- 3) It also has rotating rear ankles that enable it to climb down head first from trees, unlike the other felines
- 4) It is the State animal of Meghalaya.
- 5) It is classified as Vulnerable under the IUCN Red List.
- 6) It is placed under Schedule 1st of the Wildlife (protection) act of 1972.
- 7) Some important wildlife sanctuaries in Tripura- Trishna Wildlife Sanctuary, Rowa Wildlife Sanctuary, Gomati Wildlife Sanctuary etc.

Prelims Point: Sepahijala Wildlife Sanctuary**12. Rajya Sabha passes Bill to amend Water Act, decriminalize minor pollution-linked crimes****Context:**

Water (Prevention and Control of Pollution) Amendment Bill 2024

Water (Prevention and Control of Pollution) Amendment Bill 2024, was recently passed by the Parliament. This bill effectively decriminalizes almost all penal provisions except sections 25 and 26 in the earlier 1974 Water (Prevention and Control of Pollution) Act.

Section 25 pertains to the mandatory requirement of obtaining consent to operate from state pollution boards, while section 26 deals with the discharge of sewage or trade effluents.

Water (prevention and control of pollution) amendment bill, 2024

1. To amend- The Water (Prevention and Control of Pollution) Act 1974.
2. Applicability- Initially, its application will be limited to Himachal Pradesh, Rajasthan, and the union territories. Other states have the option to pass resolutions to extend its applicability within their jurisdictions.

Key provisions of the bill:

1. Industrial Establishment Consent Exemptions: -
According to Section 25 of the 1974 Act, approval from the SPCB was needed before setting up any outlet expected to release sewage or trade effluent into water bodies, sewers, or land. However, the proposed bill provides certain Industrial Establishment Consent exemptions-
 - i. The proposed Bill allows the Central government, in consultation with the CPCB, to exempt specific industrial plants from this requirement.
 - ii. The central government may issue guidelines for granting, refusing, or

- revoking consent granted by the SPCB.
2. Additional penal provision under section 25 of the Act-
The bill retains the penal provision under Section 25 of the original Act. The establishment and operation of an industry without obtaining SPCB consent will still be punishable with imprisonment up to six years and fine. It also introduces an additional penalty between Rs 10,000 and Rs 15 lakh for tampering with monitoring devices used to determine the setting up of any industry or treatment plant.
 3. Selection of Chairman of State Pollution Control Board-
Under the 1974 Act, the state government nominated the chairman of a State Pollution Control Board (SPCB). However, according to the amendment Bill now, central government will determine the nomination process and the terms of service for the chairman of SPCB.
 4. Offences related to polluting matter:
 - i. Change of imprisonment to fines in pollution offence- Under the 1974 Act, the offenders of discharge of polluting matter faced imprisonment between one and a half to six years. The 2024 amendment Bill replaces imprisonment with penalties ranging from Rs 10,000 to Rs 15 lakh.
 - ii. Imprisonment in case of failure to pay fines- Failure to pay penalties may lead to imprisonment up to three years or a fine double the penalty amount.
 5. Adjudicating officer to determine penalties:
 - i. The 2024 amendment Bill allows the central government to appoint adjudication officers to decide penalties under the Act.

- ii. Appeals against their orders can be made to the National Green Tribunal, with a deposit of 10% of the penalty.
- iii. Penalties collected will go to the Environment Protection Fund established under the Environment (Protection) Act, 1986.

Mains Point: Water (Prevention and Control of Pollution) Amendment Bill 2024

13. Over 600 rescued turtles released in Gomti river

Context:

Rescued Turtles Released in Gomti River

Over 600 turtles seized from smugglers were released into the Gomti river in forest area of Malihabad near Chandrika Devi Temple.

About Gomati River

Origin

It is an alluvial river that originates from the Gomat Taal, or Fulhaar Jheel from Pilibhit in Uttar Pradesh.

Mouth

It joins river Ganga near Varanasi.

Drainage

The total drainage area of the river is 30,437 sq. km.

Tributaries

Kathina, Bhainsi, Sarayan, Gon, Reth, Sai, Pili, and Kalyani.

Major cities

There are various cities that are situated on the banks of the River Gomti, such as Sultanpur, Lucknow, Jaunpur, and Lakhimpur Kheri.

Nature

It is a perennial river. It has a sluggish flow throughout the year, except during the monsoon season

Prelims Point: Gomti river

14. Discovery of new nematode species that could protect crops without pesticides

Context:

New Nematode Species *Steinernema adamsi*

Scientists have found a new species of nematode, *Steinernema adamsi*, that can help in the battle against crop pests.

About Nematodes

Introduction

Nematodes are roundworms and their size can vary from a tiny 0.2 millimetre to a few metres. They are among the most abundant animals on Earth.

Forms

They occur as parasites in animals and plants or as free-living forms in soil, fresh water, marine environments.

Features

Nematodes are bilaterally symmetrical, elongate, and usually tapered at both ends

Distribution of population

They have been reported from every continent on earth and occur in deserts, swamps, the oceans, the tropics and Antarctica. They can be found even in unusual places like vinegar, beer malts, and water-filled cracks deep within Earth's crust.

Diseases

They can cause a variety of diseases (such as filariasis, ascariasis, and trichinosis) and parasitize many crop plants and domesticated animals.

Significance of Nematodes

- 1) These nematodes play a crucial role in the environment as they are responsible for production of about 19% of ammonia of the soil.
- 2) They are also important bioindicators of soil ecosystem health.

They feed on bacteria, fungi, or other microscopic creatures. Thus, they are a major component of soil and sediment ecosystems.

About *Steinernema adamsi*

Introduction

This new species is a member of a family of nematodes called *Steinernema*. It were first discovered in the 1920s.

Characteristics

It is an entomopathogenic nematode that crawls inside an insect. It defecates highly pathogenic bacteria into its blood. It then combines with that bacterium to kill the insect host.

Significance

- 1) *Steinernema* are not harmful to humans or other mammals.
- 2) They can help in battle against crop pest because it can infect and kill insect pests.

NOTE-Entomopathogenic-It means "causing disease to insects."

Prelims Point: New Nematode Species

15. Himalayan black bears in Dachigam National Park get a special winter diet for Winter 2024

Context:

Dachigam National Park

At Dachigam National Park in Jammu and Kashmir, a special diet has been provided to Himalayan Black Bears to support them during their natural hibernation period. Because of heavy snowfall and cold weather, the bears had trouble finding their usual food.

About Dachigam National Park

Location

1. It is located 22 kms from Srinagar in Jammu and Kashmir at altitudes ranging from 5500 feet to 14,000 feet.
2. It covers an area of 141 sq km (square kilometers).

Origin and History

1. Its name, meaning 'ten villages', possibly commemorates the relocation of ten villages for its creation.
2. Initially, its establishment aimed to guarantee the provision of clean drinking water to Srinagar city.

National Park Status

Designated as a protected area since 1910, it attained the status of a national park in 1981.

Special Feature

The park is renowned for being the habitat of the critically endangered Hangul, also known as the Kashmir stag.

Vegetation

Himalayan moist temperate forest: sub-alpine forest and alpine forest type

Flora

Wild cherry, apple, pear, peach, plum, apricot, chestnut, willow, walnut, oak, pine, birch, poplar, chinar, and elm trees.

Fauna

1. Besides the Hangul, Dachigam boasts populations of musk deer, leopard, Himalayan Grey Langur, leopard cat, Himalayan Black Bear, yellow-throated marten, and various other species.
2. The area is home to raptors like the Eurasian eagle owl, Lammergeier, Eurasian griffon, and white-rumped vulture.

About Himalayan Black bear (*Ursus thibetanus laniger*)

1. It is a subspecies of the Asian black bear.
2. It is known for its role as a primary seed disperser which helps in maintaining ecosystem balance.

Nature:

- i. It is typically nocturnal and elusive.
- ii. In the northwestern Himalayas, it hibernates during winter, while in the eastern Himalayas, it remains active throughout the year.

Conservation status IUCN:

Vulnerable

Prelims Point: Dachigam National Park**16. How climate change is accelerating the 'decades-long demise' of the Aral Sea****Context:****Aral Sea Shrinking**

Recently, NASA's Earth Observatory shared an in-depth analysis of the factors contributing to the disappearance of the Aral Sea.

Factors responsible for disappearance of Aral Sea

1. As per the space agency's findings, in 1960, the Soviet Union initiated a significant water diversion project by redirecting the Syr Darya and Amu Darya rivers for irrigation purposes. Note- The Aral Sea formed from water flowing from the Syr Darya and the Amu Darya rivers, which relied on glacial melt.
2. While the project caused the desert region surrounding the sea to flourish, it had a catastrophic effect on the Aral Sea. The waterbody began to dry up gradually and is now close to completely disappearing.

About Aral Sea

1. Borders- It marks the border between Kazakhstan to the north and Uzbekistan to the south.
2. Served fourth Largest Inland Water Body- It was once served as a vast saltwater lake in Central Asia and ranked as the world's fourth largest inland water body.
3. Sea remains-The remaining fragments of the sea lie in the climatically harsh core of Central Asia, situated east of the Caspian Sea.
4. Emergence-The Aral Sea depression emerged towards the conclusion of the Neogene Period, spanning from approximately 23 to 2.6 million years ago.
5. Drainage- It encompasses drainage from Uzbekistan and parts of Kazakhstan, Tajikistan, Afghanistan, Turkmenistan, Iran, and Kyrgyzstan.

6. Climate- It is known for its harsh climate with hot summers, cold winters, and temperature changes throughout the day.

Prelims Point: Aral Sea

17. Sensors made from 'frozen smoke' can detect toxic formaldehyde in homes and offices

Context:

Frozen smoke (Aerogels)

Researchers have recently created a sensor using "frozen smoke" that uses artificial intelligence to detect formaldehyde in real-time, even at concentrations as low as eight parts per billion. It can exceed the sensitivity of many indoor air quality sensors.

Frozen smoke

1. It is technically known as aerogel and is an exceptional material. It's praised as a miracle material.
2. It was first developed in the 1930s.
3. Properties:
 - i. Aerogel has low density, high thermal resistance, and a very porous structure.
 - ii. Aerogel has the texture of a fine, dry sponge but feels significantly lighter. In fact, it holds the title as the world's lightest solid.
 - iii. When gently pressed, aerogel regains its original shape, but pressing harder creates a dimple. However, excessive pressure can cause aerogel to shatter into tiny pieces like glass.
 - iv. They are mostly made of air and can eliminate contaminants.

Formaldehyde

1. Formaldehyde is a colorless, strong-smelling gas used in various industries for manufacturing building materials and household products.
2. It is a volatile organic compound (VOC) that can be emitted by certain materials

like pressed wood products, wallpapers, paints, and synthetic fabrics

Prelims Point: Formaldehyde, Frozen smoke

18. How alligators in North Carolina's Ocean Isle Beach defy winter chill

Context:

Brumation in Reptiles

This article discusses the phenomenon of brumation in reptiles, which aids in their survival mechanisms during harsh winter conditions.

Brumation

Definition

It is a state of dormancy observed in reptiles, similar to hibernation in mammals. It typically occurs during colder months when temperatures drop and food becomes scarce.

Purpose

This condition enables reptiles to conserve energy by substantially reducing their metabolism, thus allowing them to endure extended periods without food.

Brumation period habitat

In the brumation phase, reptiles frequently seek refuge in locations such as underground burrows or rock crevices, where temperatures remain relatively stable.

Reptiles exhibit brumation

Researchers have observed this behavior across various reptilian species, including box and painted turtles, snakes, and lizards.

Brumation duration

Brumation duration varies among reptile species and can last for weeks or months, depending on factors like temperature and location.

Significance

It assists reptiles in surviving cold temperatures and food scarcity by conserving resources until warmer conditions return. It enables improved

feeding and reproduction opportunities.

Differences between hibernation, estivation, and brumation

Aspect

	Hibernation	Estivation
Brumation		

Definition

It is a winter dormancy state in warm-blooded mammals characterized by reduced metabolism and lowered body temperature in response to cold and scarce food. Estivation, or aestivation, is summer dormancy prompted by high temperatures and dry conditions. It is winter dormancy state observed in cold-blooded reptiles and amphibians, particularly in temperate regions, in response to cold temperatures.

Examples

Bears, bats, and certain rodents. Animals like amphibians, reptiles, and invertebrates, including snails and earthworms. snakes, turtles, and lizards.

Prelims Point: Hibernation, estivation, and brumation

19. Bor seeks Rs. 1 crore for tourism development at Hingni, Bangdapur

Context:

Bor Tiger Reserve
The Bor Tiger Reserve (BTR) has recently sought Rs 1 crore for various works to start wildlife safaris in the Bangdapur and Hingni forest ranges.

About Bor Tiger Reserve

Introduction

It is a wildlife sanctuary which was declared a tiger reserve in July 2014.

Location

It is located in the Wardha District of Maharashtra.

Area

The reserve covers an area of 138.12 sq.km, which includes the drainage basin of the Bor Dam.

Vegetation

It has Dry Deciduous Forest.

Flora

Teak, tendu, bamboo, tarot, and gokhru are some of the abundant species.

Fauna

Apart from tigers, the reserve is home to several other mammals like leopards, sloth bears, sambar deer, Indian bison (gaur), chital, wild boars, and more

Contiguous national parks

Towards the North-east – Pench Tiger Reserve

Towards the east

Nagzira Navegaon Tiger Reserve,

Toward south-east

Tadoba Andhari Tiger Reserve

Towards west

Melghat Tiger Reserve ;

Towards north west

Satpura Tiger Reserve

Some important facts

- It is the smallest tiger reserve in India by area.
- The Bor Tiger Reserve is traversed by the Bor River, which plays a significant role in the ecology and biodiversity of the reserve.
- The Bor Tiger Reserve is strategically located between the Pench Tiger Reserve and the Tadoba-Andhari Tiger Reserve in the Nagpur and Chandrapur districts of Maharashtra. This region acts as a crucial tiger corridor connecting these two tiger reserves

Prelims Point: Bor Tiger Reserve

20. Why fashion industry's 'recycling' methods are not saving the planet

Context:

Issues with textile recycling

The article highlights the discrepancy between fashion brands' claims of using recycled materials for environmental benefits and the reality that these practices are not as effective or sustainable as portrayed. It discusses the challenges in recycling textiles, particularly polyester, and how most recycled materials come from plastic bottles, not old clothes, leading to continued environmental issues.

Current status of textile recycling

- According to the European Commission, less than 1% of fabric used to produce clothing is recycled into new clothing.
- 93% of all recycled textiles today comes from plastic bottles, not from old clothes.
- According to the European Commission, less than 1% of fabric used to produce clothing is recycled into new clothing.
- Nearly half of European textile waste ends up in African second-hand markets or landfills.

Difficulties in recycling Polyester cloth waste

Recycling Process Complexity:

Recycling polyester cloth is complex. Clothes with more than two types of fibers are currently unrecyclable.

Limited Recyclability:

Recycled polyester can't be recycled again, unlike a plastic bottle which can be recycled multiple times.

Contamination with Other Materials:

Polyester often gets mixed with materials like elastane or Lycra, making recycling difficult, due to sorting challenges.

Impacts of this scenario

High Dependence on Plastic Bottles:

The recycling of textiles, primarily from plastic bottles (not old clothes). It doesn't significantly reduce reliance on virgin polyester made from fossil fuels.

Environmental Pollution:

Polyester's entire lifecycle, from manufacture to recycling, pollutes water, air, and soil, contributing significantly to environmental degradation.

Waste Management Issues:

In Europe, a large portion of textile waste (nearly 78%) is either dumped or incinerated, leading to increased landfill use and pollution.

Global Impact of Waste Export:

A significant amount of Europe's textile waste is exported to African and Asian countries, often ending up in open landfills or second-hand markets, impacting local environments and communities.

Way forward

- To advance textile recycling, the industry should focus on developing technologies that enable the recycling of mixed-fiber garments and improve the quality of recycled cotton.
- Brands could shift towards more sustainable materials and reduce reliance on polyester.
- Additionally, addressing the transportation and sorting processes to lower the carbon footprint and finding better uses for recycled textiles would be beneficial.

Mains Point: Issues with textile recycling.

21. Andhra Pradesh government bans fishing within 5 km radius of Hope Island to check death of Olive Ridley turtles

Context:

Olive Ridley Turtle and Other Sea turtles

The Andhra Pradesh government has recently imposed a month-long ban on fishing to prevent death of Olive Ridley turtles off Kakinada coast.

About the Olive Ridley Turtle

1. The Olive ridley turtles are the smallest and most abundant of all sea turtles found in the world.
2. They are best known for their unique mass nesting called Arribada, where thousands of females come together on the same beach to lay eggs.

Habitat

They are found in warm waters of the Pacific, Atlantic and Indian oceans.

IUCN status

Vulnerable

Indian Wildlife (Protection) Act

Schedule I

About other sea turtles in India

1) Leatherback turtle

It is the largest of the seven sea turtle species.

Habitat

It is found in all oceans except the Arctic and the Antarctic.

IUCN Status

Vulnerable

Indian Wildlife (Protection) Act

Schedule I.

2) Loggerhead turtle

Habitat- It is found in the Atlantic, Pacific, and Indian Oceans, as well as the Mediterranean Sea.

IUCN Status- Vulnerable

Indian Wildlife (Protection) Act- Schedule I.

3) Hawksbill turtle

They have a wide range, found predominantly in tropical reefs of the Indian, Pacific, and Atlantic Oceans.

Habitat- They are primarily found in tropical coral reefs.

IUCN status- Critically Endangered

Indian Wildlife (Protection) Act- Schedule I

4) Green turtle

It is the only herbivore among the different species of sea turtles.

Habitat- They are found mainly in tropical and subtropical waters.

IUCN status- Endangered

Indian Wildlife (Protection) Act- Schedule I

Prelims Point: Olive Ridley Turtle and Other Sea turtles.

22. CMS COP14: Expect listing of new species, action plans for conservation at Samarkand summit

Context:

Convention on the Conservation of Migratory Species of Wild Animals

The Fourteenth Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (COP14) is being hosted by the Government of Uzbekistan, in Samarkand from 12-17 February 2024.

About Convention on the Conservation of Migratory Species of Wild Animals

Origin

It was signed in Bonn, Germany, on 23 June 1979

Description

It is also known as the Bonn Convention. This is an environmental treaty under the aegis of the United Nations Environment Programme.

Objective

To provide a global platform for the conservation and sustainable use of migratory animals and their habitats.

Governance

The Conference of Parties (COP) is the decision-making organ of this convention

Is it legally binding?

Activities by CMS Parties may range from legally binding treaties (called Agreements) to less formal instruments, such as Memoranda of Understanding.

Type of appendices

Appendix I lists endangered migratory species and includes prohibitions regarding the take of these species.

Appendix II lists species that have an 'unfavourable conservation status' and encourages range states to draft range-wide agreements for conservation and management of these species.

Some important points

- 1) It is the only global and UN-based intergovernmental organisation established exclusively for the conservation and management of terrestrial, aquatic and avian migratory species throughout their range.
- 2) It acknowledges the importance of conserving migratory species.

Prelims Point: Convention on the Conservation of Migratory Species**23. Parasitic creeper preys on Chengalpet forests, Vedanthangal Bird Sanctuary****Context:**

Parasitic creeper *Cuscuta dodder*

The invasive weed *Cuscuta dodder* is gradually choking the Chengalpet forests and Vedanthangal Bird Sanctuary. This poses a threat to the local vegetation, ecology, and the habitat of migratory birds.

About *Cuscuta dodder*

1. It is an invasive weed native to North America.
2. This rootless parasitic vine has invaded acres of trees in the Chengalpet reserve forests and is now spreading within Vedanthangal Bird Sanctuary.
3. It has been observed that dodder covering the canopy of *Barringtonia* trees, which are favoured nesting spots for migratory water birds.
4. This holoparasitic plant forms a canopy on the host plant and sends out numerous tendrils. It creates a dense mass that eventually chokes and kills the host.

5. Dodder has been designated as a 'declared noxious weed' in 25 countries, where the importation of its seeds and plant material is prohibited. In the United States, it stands as the sole weed seed whose transportation is forbidden in all states.

6. *Cuscuta* seeds are spheroid with a tough coat which allows them to survive up to 50 years in dry storage and at least 10 years in the field.

7. *Cuscuta* seeds can germinate without needing a specific stimulant, unlike root parasites.

Note- A technical paper from the National Research Centre for Weed Science in India highlights *Cuscuta* as a significant issue in oilseeds, pulses, and fodder crops across Andhra Pradesh, Chhattisgarh, Gujarat, Orissa, West Bengal, and parts of Madhya Pradesh. These concerns persist whether the crops are grown under rain-fed or irrigated conditions.

About Vedanthangal Bird Sanctuary**Location**

It is a 30-hectare protected area situated in Chengalpattu District, Tamil Nadu.

Significant Feature

It is the oldest water bird sanctuary in the country.

Migratory species

The area is a habitat for migratory birds like pintail, garganey, grey wagtail, blue-winged teal, common sandpiper, and others.

Ramsar site

Since 2022, it has been recognized as a protected Ramsar site.

Prelims Point: *Cuscuta dodder*, Vedanthangal Bird Sanctuary.

SCIENCE AND TECHNOLOGY

1. Lab grown fish meat

Context:

The ICAR-CMFRI in Kochi has partnered with a start-up for lab-grown fish meat. It is the first initiative of its kind in the country.

About lab grown fish meat

- **Process:** Cultivated fish meat is produced by isolating specific cells from fish and growing them in a laboratory setting using media that is free of animal components.

The final product is expected to replicate the flavour, texture, and nutritional qualities of 'real' fish meat.

Significance of this initiative

- It will address the ever-growing demand for seafood, and reduce excessive pressure on wild reContexts.
- It would help in minimising overfishing and protect marine environment.
- It would ensure food and nutritional security.
- Lab grown fish meat would be antibiotics- and environmental contamination-free.

About Central Marine Fisheries Research Institute

Established- by the government of India on 3 February 1947.

Concerned ministry-Ministry of Agriculture and Farmers Welfare.

Headquarter- Kochi, Kerala

UPSC Prelims point: Lab grown meat.

2. Solid-state batteries

Context:

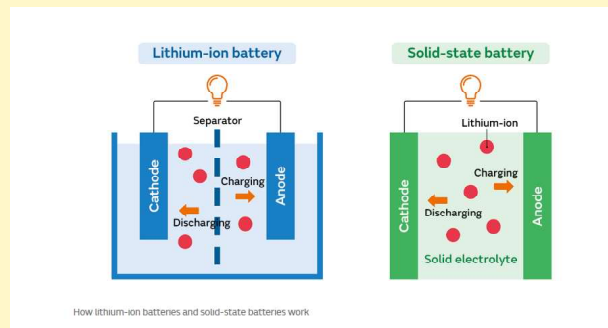
Japan's Toyota Motor Corp, a late entrant into the battery electric vehicle race, aims to roll out next-generation solid-state batteries over the next three years.

About Solid-state batteries

- These batteries use solid electrodes and a solid electrolyte, instead of the liquid or polymer gel electrolytes used in lithium-ion batteries.

How does it work:

- Solid-state batteries have almost the same mechanism as lithium-ion batteries for extracting electricity from the batteries.
- Metal is used as the material for the electrodes, and electrical flow is generated by ions moving through the electrolyte between the cathode and anode.
- The big difference is that the electrolyte is solid whereas in lithium-ion batteries electrolyte is liquid. Thus, in these batteries there is no need for a separator unlike lithium-ion batteries.



Context- Murat

Application of solid state batteries

- Solid-state batteries are potentially useful in **pacemakers, RFIDs, wearable devices, and electric vehicles.**

Advantages of solid-state batteries over lithium-ion batteries

- A solid-state battery has higher energy density than a Lithium-ion.
- It doesn't have a risk of explosion or fire. There is no need to have components for safety, and thus it saves more space

- **Longer Lifespan-** Solid-state batteries can last longer than traditional lithium-ion batteries due to their improved stability.

Limitation

- **Cost-** Manufacturing solid-state batteries are currently more expensive than traditional lithium-ion batteries. This has made them less accessible to everyday consumers.
- **Performance Challenges-** Solid-state batteries currently have some performance challenges such as limited cycle life, poor cold weather performance, and a high internal resistance that reduces their power output.
- **Unproven Technology-** Solid-state batteries are still under development, and more research is required to address their shortcomings and make them a commercially viable option for electric cars.

UPSC Prelims point: Solid state Batteries

3. Fentanyl Trafficking

Context:

Recently, discussions between America and China have centred around collaborative initiatives aimed at curbing the influx of fentanyl into the U.S. Fentanyl, a synthetic opioid (a type of drug) has caused chaos in America. It contains ingredients which are made in China.

About Fentanyl:

- Fentanyl is a potent synthetic opioid authorized by the FDA (Food and Drug Administration).
- It is 50 times stronger than heroin and 100 times stronger than morphine.
- It is typically used to treat severe pain, such as that experienced by cancer patients or those undergoing surgery.
- However, it is also sometimes made illegally and sold for recreational use. It is often mixed with heroin, cocaine,

and methamphetamine and formed into pills resembling prescription opioids. Fentanyl is highly addictive and can be deadly, especially in large doses or when combined with other drugs.

UPSC Prelims point: Fentanyl

3. Brainware: Scientists fuse Brain-like Tissue with Electronics

Context:

A team of researchers has recently combined brain-like tissue with electronics to create an 'organoid neural network' known as Brainware. It is capable of recognizing voices and solving complex maths problems.

How does it work:

- Researchers utilized lab-grown real human brain tissue to create mini-brains known as organoids.
- **Note-** Brain organoids are 3D clusters of brain cells. These organoids are not actual brains, they are simply tissue structures without thoughts or feelings. They help in studying how the brain works without using a real human brain.
- Brainware connects these organoids to microelectrodes through a method of artificial neural network known as reservoir computing.
- This device comprises three layers: input, reservoir, and output.
- The brain organoid, which is connected to microelectrodes, acts as the reservoir. It received inputs via electrical stimulation from the input layer (live brain cells). The output layer comprised modified conventional computer hardware programmed to recognize Brainware's neural activity.
- The researchers showcased Brainware's capabilities by forecasting a Henon map. Henon map is a mathematical function that plots a curve on a graph, displaying chaotic or

non-chaotic behaviour based on the values of two variables.

Significance:

It marks a significant advancement in multiple areas of science and engineering, such as tissue engineering, electrophysiology, and neural computation.

UPSC Prelims point : Brainware

4. MQ-9B drone deal

Context:

Recently, the U.S. Congress was officially informed of the potential sale of 31 MQ-9B high-altitude long-endurance armed Unmanned Aerial Vehicles (UAVs) to India, valued at approximately \$3.99 billion.

MQ-9B Reaper drones:

About

MQ-9B is a High Altitude Long Endurance (HALE) Unmanned Aerial vehicle(UAV).

Developed by

US based General Atomics Aeronautical Systems.

Variants

1. The MQ-9B has two variants – Sky Guardian and Sea Guardian.
2. The Indian Navy has been operating the MQ-9B Sea Guardian since 2020.

Features

1. It can operate at over 40,000 feet.
2. It also has a maximum endurance of 40 hours, making it useful for long-hour surveillance.
3. It can support land, maritime surveillance, anti-submarine warfare, anti-surface warfare, strike, electronic warfare and expeditionary roles.
4. It is equipped with advanced features such as automatic take-off and landing, detect and avoid

system, anti-spoofing GPS, and encrypted communication links.

Note- The deal also includes 170 AGM-114R Hellfire missiles, 16 M36E9 Hellfire captive air training missiles, 310 GBU-39B/B laser Small Diameter Bombs (SDB), and 08 GBU-39B/B LSDB guided test vehicles with live fuzes, among other items.

Benefits of acquiring MQ-9B Reaper drones by India:

Lower Operational Costs- It offers 80% of a manned maritime patrol aircraft's capability at just 20% of its hourly cost, making it highly economical for navies.

Enhance surveillance capability- For the Army and Air Force, it offers continuous surveillance extending far beyond borders. This includes monitoring Chinese military buildup and troop movements along the Line of Actual Control (LAC) and deep into enemy territory.

Integration with existing platforms- It also seamlessly integrates with other U.S.-origin platforms that India operates such as the P-8Is, AH-64 Apache attack helicopters and MH-60R multi-role helicopters.

UPSC Prelims point: MQ-9B drone

5. Zodiacal Light Skyglow

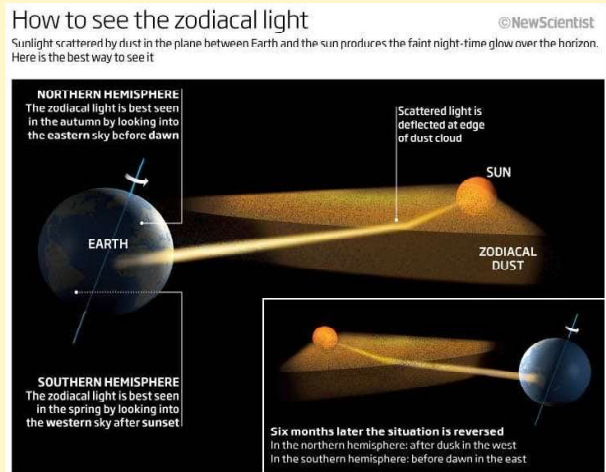
Context:

Zodiacal Light Skyglow, Recently a scientist at Physics Research Laboratory (PRL), Ahmedabad have published a paper attributing dust from Mar's two moon as the possible Context of Zodiacal light.

About Zodiacal Light

It is sunlight scattered by interplanetary dust. This is visible from the earth as a faint, diffuse glow on completely dark nights. Interplanetary dust consists of cosmic dust (small particles floating in outer space) that pervades the space between planets in solar system.

It is present across the entire path of the ecliptic. This is the path along which the Sun moves in the sky over the course of a year.



Context-NewScientist

NOTE-

- 1) 'AU' stands for 'astronomical unit', which is the distance between the earth and the Sun.
- 2) Mars's has two moons called Deimos and Phobos.
- 3) Stickney crater-This is a 10-km-wide crater in Phobos.

UPSC Prelims point: Zodiacal Light

6. Cygnus X-1

Context:

AstroSat, India's first, dedicated multi-wavelength astronomy mission, has achieved a remarkable feat by measuring X-ray polarisation from the Cygnus X-1 black hole.

About Cygnus X-1



Context-The Indian Express

It is one of the first confirmed black hole systems in our galaxy that was discovered over four decades ago.

Its distance from the earth is about 400 times of the distance between Earth and Sun.

It is 20 times heavier than the Sun, and has a companion - a heavy supergiant star (40 times more massive than the Sun) in a binary system.

Due to the gravitational pull of the black hole, material from the supergiant falls and spirals in towards the black hole. This process leads to the formation of a thin accretion disk, which is responsible for soft X-rays.

Importance of X-ray polarisation

- X-ray polarimetry is a unique observational technique to identify where radiation comes from near black holes.
- Unlike normal X-ray measurements which measure only the energy or intensity of the radiations, polarisation characteristics of X-rays tells about the orientation of the oscillating electric field. This hold clues on the geometry and other properties of the black hole.
- The measurement of high polarisation in the 100-380 keV range suggests that radiation emitted from the Context above 100 keV may have originated from the black hole jet.

NOTE-

- 1) AstroSat is India's first dedicated Space Astronomy Observatory.
- 2) The Imaging X-ray Polarimetry Explorer (IXPE) is NASA's first mission to study polarisation of X-rays from celestial objects.

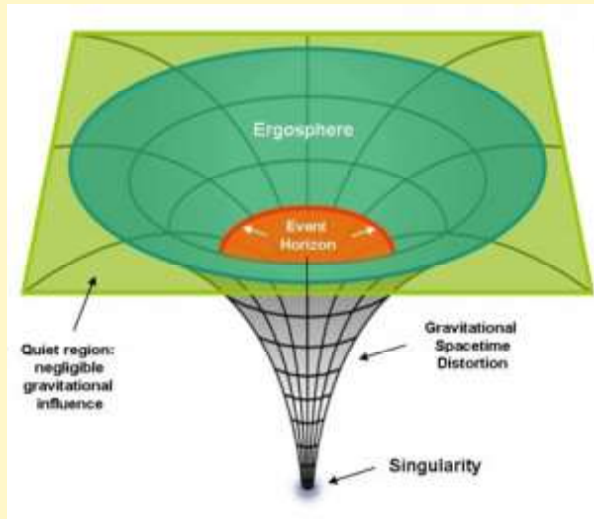
UPSC Prelims point: Cygnus X-1

7. Ergosphere

Context:

It is possible to extract matter and energy from Ergosphere as per some scientist.

About Ergosphere



Context-ResearchGate

- **Origin**-Ergosphere comes from the Greek word 'ergon' that means 'work'. It has got its name because it is possible to get energy and even mass from this place.
- **Definition**-It is the region in between the event horizon and the stationary limit
- **NOTE- Event Horizon:** It is a sphere around the singularity of a Black Hole. When anything enters this sphere, it can't escape unless it travels faster than light (which is impossible).

Stationary limit

It is a surface around the outside of a rotating black hole.

- **Shape:** An Ergosphere is shaped like an oblate spheroid, or a pumpkin.

Features Of Ergosphere

- In this region, space-time itself is dragged along with the rotation of the black hole.
- Objects within the ergosphere are forced to rotate along with the black hole's spin due to the distortion of spacetime caused by its immense gravitational pull.

Significance

- It is possible to send an object into the ergosphere. The object then can be allowed to accelerate there along the

black hole's direction of rotation. This may allow the object to come out moving faster. This energy 'gain' will translate to the black hole to lose some angular momentum. Hence, it may be possible to extract matter and energy from the black hole.

NOTE-Black hole-It is a region of spacetime where gravity is so strong that even light can not escape.

Gravitational Singularity:

- The centre of a black hole has a gravitational singularity, a one-dimensional point. This point contains a huge mass in an infinitely small space, where density and gravity become infinite. Here, laws of physics cease to operate.

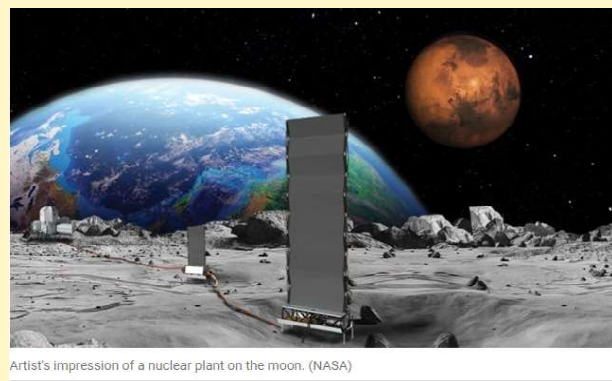
UPSC Prelims point: Ergosphere

8. Lunar nuclear reactor project

Context:

NASA has recently announced that it has completed the first phase of its plans to put a nuclear fission reactor on the Moon.

About Lunar nuclear reactor project



Artist's impression of a nuclear plant on the moon. (NASA)

Context-The Indian Express

Objective:

- To create a small electricity-generating reactor for future lunar missions and outposts.

Specifications:

- The project involves designing a reactor, power conversion systems, heat rejection mechanisms, and power distribution systems.

Significance of the project

- A nuclear reactor could be placed in permanently shadowed areas (where there may be water ice) of the moon. This would ensure continuous power production during lunar nights.
- It produces power without any dependence on weather and other conditions.
- It could play an important role in bolstering NASA’s ambitions to have a sustained human presence on the Moon for at least 10 years.

NOTE- Nuclear fission- It is the process of breaking large atomic nuclei into smaller atomic nuclei to release a large amount of energy.

UPSC Prelims point: Lunar nuclear reactor
9. Transiting Exoplanet Survey Satellite (TESS)

Context:

Recently, astronomers utilized data from NASA’s Transiting Exoplanet Survey Satellite (TESS) to uncover and analyze a potentially habitable zone planet known as TOI-715b.

Transiting Exoplanet Survey Satellite (TESS):



Context-NASA

Aspect	Details
About	1. It is a NASA mission dedicated to locating planets that orbit the brightest stars visible from Earth. 2. It is a successor to NASA’s Kepler space telescope, which discovered thousands of exoplanets over a decade following its launch in 2009.
Launched on	April 18, 2018, using a SpaceX Falcon 9 rocket from Cape Canaveral(USA).
Mission life	The main mission concluded on July 4, 2020, and TESS is currently in an extended mission phase.
Orbit	1. TESS follows a distinctive high Earth orbit, completing its cycle every 12 to 15 days. 2. This orbit is strategically inclined to minimize obstructions from Earth and the Moon, allowing the telescope an unimpeded view of the sky.
Significance	1. During its two-year primary mission, TESS’s four cameras scanned more than 200,000 nearby and bright stars, covering 75% of the sky. 2. TESS discovers planets of various sizes and compositions, from small rocky ones to giant ones, demonstrating the galaxy’s planet diversity.

- It employs the transit technique to identify planets.
- It searches for regular dips in the brightness of stars as planets pass in front of them from our perspective.
- The bigger the planet, the greater the drop in brightness during the transit.
- The duration it takes for a planet to transit in front of the star and return helps determine the shape of its orbit.
- This method unveils the planet’s diameter and the size of its orbit.

UPSC Prelims point: Lunar nuclear reactor

10. India’s first hypervelocity test facility

Context:

The Indian Institute of Technology Kanpur (IIT-K) has successfully established and tested India’s first Hypervelocity Expansion Tunnel Test Facility recently.

About India’s first hypervelocity test facility



Context-IIT Kharagpur

- **Location-**The S2, nicknamed ‘Jigarthanda’, is a 24-meter-long facility located at IIT Kanpur’s Hypersonic Experimental Aerodynamics

Laboratory (HEAL) within the Department of Aerospace Engineering.

Designed by-It was indigenously designed and developed over three years by the Department of Science and Technology (DST) and IIT Kanpur.

Funding-The development of the facility was supported by the Fund for Improvement in S&T Infrastructure (FIST) of the Department of Science & Technology (DST) with a sum of Rs 4.5 Crores in 2018.

Speed range-It is capable of generating flight speeds between 3-10 km/s. It can simulate the hypersonic conditions encountered during the atmospheric entry of vehicles, asteroid entry, scramjet flights, and ballistic missiles.

Significance of India's first hypervelocity test facility

It will be a critical asset for the Indian Space Research Organisation (ISRO) and the Defence Research and Development Organisation (DRDO).

It will serve as a testing ground for ongoing missions of ISRO and DRDO like Gaganyaan, Reusable Launch Vehicles (RLV), and hypersonic cruise missiles. This will enable the development of more advanced and reliable aerospace technologies.

It puts India amongst a handful of countries with this advanced hypersonic testing capability.

It is a major capacity boost for India's space and defense sectors. It also puts India in a better position to develop advanced hypersonic technologies.

NOTE-Aeronautical Research and Development Board (ARDB)- It is the national body for coordinating and funding futuristic research/development programmes in Aeronautics. It was established on recommendation of Subramanian Committee report and was constituted by the Government of India in 1971.

UPSC Prelims point: Hypervelocity

11. Satyendra Nath Bose

Context:

Distinguished scientists came together to celebrate 100 years of Satyendra Nath Bose's publications contributing to quantum mechanics.

About Satyendra Nath Bose



Context-wikipedia

Introduction

He was an Indian physicist who established modern theoretical physics in India. He is best known for providing the foundation of Bose-Einstein statistics and developing the theory of Bose-Einstein condensates.

He was born in Calcutta on January 1, 1894. He was an outstanding student who got inspired from brilliant teachers like Jagadish Chandra Bose and Prafulla Chandra Roy.

He started his career in 1916 as a lecturer in physics at Calcutta University and then joined Dacca University.

At the University of Dhaka, Bose carried out research and studied the theory of relativity.

Contribution of Satyendra Nath Bose

By treating radiation as a gas of photons (Photon gas) and using new statistical

techniques for counting photon states, Bose provided a new derivation of Planck's law.

The pioneering ideas of Bose, developed further by Einstein, were confirmed by the observation of a new state of matter in a diluted gas of ultra-cold alkali atoms, the Bose-Einstein condensate. This exotic material exists only when atoms of certain elements are cooled to temperatures near absolute zero.

At that point, clusters of atoms begin functioning as a single quantum object with both wave and particle properties.

According to scientists, BECs hold crucial information about curious phenomena like dark energy, the unidentified energy thought to be responsible for the universe's accelerating expansion.

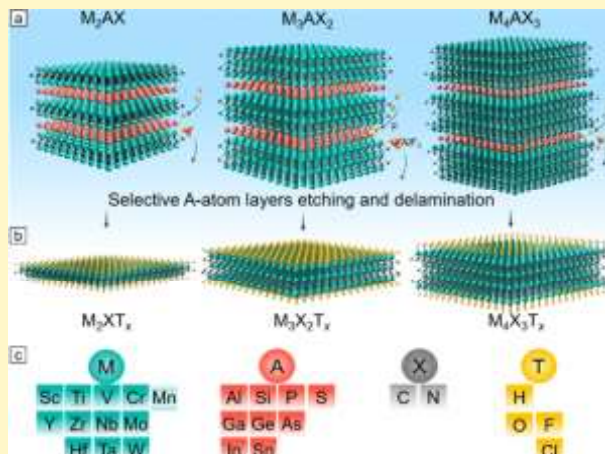
12. Mxenes

Context:

This post on **Mxenes** has been created based on the article "**MXene-coated devices can guide microwaves in space and lighten the payload**" published in PHY.ORG on 7 February 2024.

Researchers have recently reported on the potential of using MXene coatings that can lighten satellite payloads.

About Mxene



Context-Reserchgate

Introduction

- MXenes are an emerging class of two-dimensional (2D) ceramic nanomaterials that were first discovered in 2011.
- MXenes uniquely combine metallic conductivity, hydrophilic surfaces, and excellent mechanical properties.

Composition

- They are made from a bulk crystal called MAX.
- They have the general formula of $M_{n+1}X_nT_x$, where M is an early transition metal, X is carbon and/or nitrogen, and T is a functional group on the surface of an MXene (typically O, OH, and F).
- Among its various types, titanium carbide ($Ti_3C_2T_x$) is the most widely used.

Salient properties of Mxene

- High electrical conductivity (6,000 – 8,000 S/cm)
- Hydrophilic and clay-like surface terminating layers
- Very high volumetric capacitance ($>900 \text{ F cm}^{-3}$)
- Broad optical absorption from UV to NIR
- Excellent mechanical properties
- This unique combination is not found in other 2D materials. Example: Graphene lacks surface functionalization, while other ceramic 2D materials have poor electrical conductivity.

Application of Mxene

- Energy Storage**-They are used in storing energy. For example-Batteries (Li-ion, Li-S, Al-ion), Supercapacitors and Hydrogen storage.
- Electromagnetic Shielding**-Radar absorption and 5G communication.
- Water Purification**-Desalination membranes, Selective separation and Selective separation.
- Composites**-Polymer reinforcement and Ceramic matrix composites.

UPSC Prelims point: MXenes

13. High Altitude Pseudo Satellite Vehicle (HAPS)

Context:

The National Aerospace Laboratories (NAL) in Bengaluru has successfully completed the first test of a solar-powered high-altitude pseudo satellite vehicle, known as HAPS.

High-altitude pseudo satellite vehicle (HAPS):



Context- The Indian Express

Aspect	Details
About	1. It is an unmanned aerial vehicle (UAV). 2. It is designed for extended periods of operation at high altitudes, typically in the stratosphere.
Features	1. HAPS can reach altitudes of 18-20 km, nearly double that of commercial airplanes. 2. It is solar-powered and can remain in the air for months, even years, offering advantages similar to those of a satellite. 3. HAPS operating cost is significantly lower than that of a satellite.
Significance for India	1. It is still a developing technology; India's recent successful test flight places it among a select group of countries like China, South Korea, and the UK which are developing this technology. 2. It can significantly increase India's surveillance and monitoring capabilities in the border areas. 3. If calamities damage normal networks, it can deploy mobile communication networks in remote areas.

National Aerospace Laboratories (NAL):

- It is a premier aerospace research and development organization located in Bengaluru, India.
- It operates under the Council of Scientific and Industrial Research (CSIR) and is involved in the design, development, and testing of various aerospace technologies, including aircraft, unmanned aerial vehicles (UAVs), and related systems.

UPSC Prelims point: High Altitude Pseudo Satellite Vehicle

14. Open Radio Access Network (O-RAN)

Context:

The Ministry of Science and Technology recently unveiled a new technological solution designed specifically for stations based on Open Radio Access Network (ORAN).

Open Radio Access Network (ORAN):

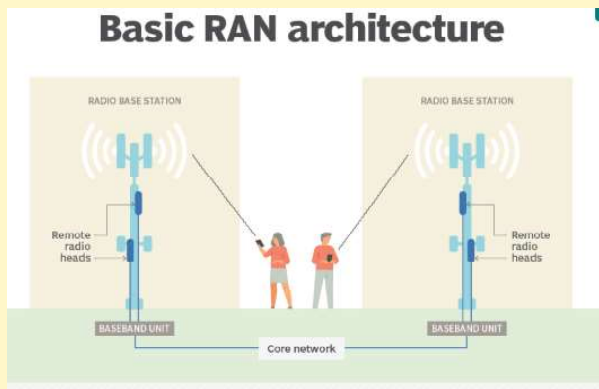


Context- PIB

- About-** It is not a technology but rather a continuous evolution in mobile network architectures that enables service providers to integrate non-proprietary subcomponents Contextd from diverse vendors.
- Features-** ORAN features an open, multi-vendor architecture for deploying mobile networks, contrasting with the single-vendor proprietary architecture.
- Conventional RAN vendor limitation-** Traditionally, RAN infrastructure has been provided by a few major vendors, which has led to vendor lock-in and limited flexibility for network operators.
- Software-Defined Collaboration-** ORAN employs software to enable hardware from various manufacturers to collaborate effectively.

- **Protocol and Interface Openness**– The main idea behind Open RAN is to ‘open up’ the protocols and interfaces among different parts (such as radios, hardware, and software) in the RAN.
 - **New solution for ORAN**– Recently, the new ORAN base station solution is being designed and developed for commercialization by IITB COMET Foundation (COMET), Bengaluru. Its aim is to create efficient wireless communication technology for 5G and 5G-Advanced radio networks.
- Note**– COMET is one of the 25 Technology Innovation Hubs (TIH) established under the National Mission for Interdisciplinary Cyber Physical Systems (NM-ICPS) by the Department of Science and Technology (DST).

Radio Access Network (RAN):



Context- TechTarget

About	It is a crucial component of a mobile network that connects individual devices to different parts of the network using cellular radio connections.
Objective	To enable fast and dependable connectivity at an affordable cost for remote and underserved regions.
Features and Functions	1. It includes antennas that send and receive signals to and from our smartphones or other compatible devices. 2. The signal is then converted into digital format at the Radio Access Network (RAN) base station and linked to the network.

UPSC Prelims point: Open Radio Access Network (ORAN)

15. FAST Telescope

Context:

Recently, astronomers from Nanjing University and other institutions discovered a radio pulsar in the supernova remnant CTB 87 using the FAST telescope.

What is Five-hundred-meter Aperture Spherical radio Telescope (FAST)?



Context-WIRED

- **Location**– It is located in a karst depression in Guizhou, China.
- **Size**– It is the world’s biggest single-dish radio telescope, with a receiving area as large as 30 football fields.
- **Objective:**
 - a. Detect neutral hydrogen at the universe’s edge to reconstruct images of the early universe.
 - b. Detect pulsars, set up a pulsar timing array, and engage in pulsar navigation.
 - c. Detecting gravitational waves in the future.
 - d. Leading the International Very-Long-Baseline Interferometry Network to study celestial bodies’ hyperfine structures.
 - e. Searching for signals of interstellar communication.

Pulsars:

- Pulsars are highly magnetized rotating neutron stars that emit beams of electromagnetic radiation out of their magnetic poles.
- These beams are observed as regular pulses of radiation, hence named as “pulsars.”
- Pulsars are formed from the remnants of massive stars that have undergone supernova explosions.

What are Supernova Remnants:

- Supernova remnants are the bright, expanding clouds of gas and dust formed when massive stars explode.

- As these stars end their lives, they eject their outer layers into space, while their dense core remains as a neutron star or black hole.
- Supernova remnants play a crucial role in the life cycle of galaxies. They enrich interstellar space with heavy elements and trigger the formation of new stars.

UPSC Prelims point: FAST Telescope

16. Unusual bridging fluorine discovered in one-of-a-kind interhalogen ion

Context:

Recently, Chemists have successfully synthesized an interhalogen compound featuring a distinctive central fluorine atom surrounded by four BrF₅ groups.

What are halogens:

Periodic table of elements with halogens highlighted in pink. The highlighted elements are Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Astatine (At), and Tennessine (Ts).

Halogens in the Periodic Table of the Elements [1]

Context- Calce

- Halogens refer to the six nonmetallic elements found in Group 17 (Group VIIa) of the periodic table.
- The halogen elements are- fluorine (F), chlorine (Cl), bromine (Br), iodine (I), astatine (At), and tennessine (Ts).
- The term halogen means “salt-producing” because halogens react with metals to create various salts. **For example** sodium chloride, commonly known as table salt is the most familiar.

Properties:

- Halogens are highly reactive and don't exist freely in nature. They are the most reactive nonmetals.
- Fluorine is the most reactive among all the halogens, while iodine is the least reactive.

- Halogens are the only group on the periodic table where elements exist as solids, liquids, and gases at room temperature. Chlorine and fluorine are gases, bromine is a liquid, and iodine and astatine are solids under normal temperature and pressure.
- They are strong oxidizers and have very high electronegativities.

About Fluorine

- Fluorine is obtained from a calcium salt known as calcium fluoride, or fluorspar.
- It is a highly reactive element.
- In compounds, fluorine is the most prevalent halogen found in Earth's crust.
- It is used in making fluorochemicals, plastics, agrochemicals, lithium-ion batteries, and drugs.

17. Frozen smoke (Aerogels)

Context:

Researchers have recently created a sensor using “frozen smoke” that uses artificial intelligence to detect formaldehyde in real-time, even at concentrations as low as eight parts per billion. It can exceed the sensitivity of many indoor air quality sensors.

Frozen smoke:



Context- newatlas

- It is technically known as aerogel and is an exceptional material. It's praised as a miracle material.
- It was first developed in the 1930s.

Properties:

- Aerogel has low density, high thermal resistance, and a very porous structure.

- b. Aerogel has the texture of a fine, dry sponge but feels significantly lighter. In fact, it holds the title as the world’s lightest solid.
- c. When gently pressed, aerogel regains its original shape, but pressing harder creates a dimple. However, excessive pressure can cause aerogel to shatter into tiny pieces like glass.
- d. They are mostly made of air and can eliminate contaminants.

About Formaldehyde:

- Formaldehyde is a colorless, strong-smelling gas used in various industries for manufacturing building materials and household products.
- It is a volatile organic compound (VOC) that can be emitted by certain materials like pressed wood products, wallpapers, paints, and synthetic fabrics.

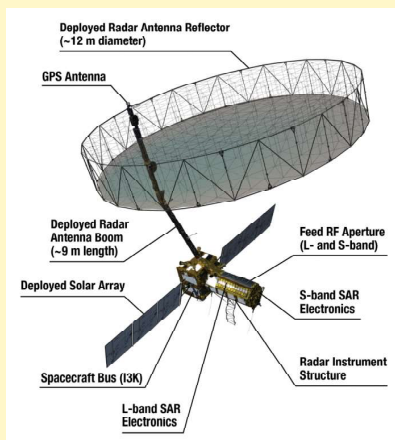
UPSC Prelims point: Aerogels

18. NISAR Satellite

Context:

The NISAR satellite which aims to monitor natural processes and changes in Earth’s ecosystems, is set to be launched in March 2024. The partnership agreement for NISAR development was signed between NASA and ISRO in 2014.

NISAR satellite:



Context- NASA

Aspect	Details
Full form	NASA-ISRO Synthetic Aperture Radar (NISAR)
About	1. NISAR is a satellite jointly developed by NASA and ISRO for Low Earth Orbit (LEO) observation. 2. It is an SUV-size satellite weighing around 2,800 kilograms.
Objective	1. Tracking subtle changes in the Earth’s surface. 2. Spotting warning signs of imminent volcanic eruptions. 3. Helping to monitor groundwater supplies. 4. Tracking the rate at which ice sheets are melting.
Launch year	It will possibly launch in early 2024 from Satish Dhawan Space Centre in Andhra Pradesh.
Mission life	Three years
Function	1. It will capture images of Earth’s land, ice sheets, and sea ice every 12 days. 2. It will be able to detect the earth’s surface movement as small as 0.4 inches over an area.
Features	1. It is a dual frequency satellite (L-band and S-band). Note – NASA contributed the L-band radar, GPS, solid-state recorder, and payload data subsystem, while ISRO supplied the S-band radar, GSLV launch system and spacecraft. 2. Another crucial part of the satellite is its large 39-foot fixed antenna reflector. It will be used to focus ‘the radar signals emitted and received by the upward-facing feed on the instrument structure’.

The significance of this mission:

- Earth observation**– It will offer detailed observations of Earth’s surface, tracking changes in ice sheets, land deformation, and ecosystems. This data will improve our understanding of Earth’s processes and aid in tackling environmental challenges.
- Disaster Management**– The mission offers vital data for managing natural disasters like earthquakes, tsunamis, and volcanic eruptions. This will enhance response time and risk assessments.
- Agriculture**- NISAR data will enhance agriculture management and food security by offering insights into crop growth, soil moisture, and land-use changes.
- Climate Change**- It will aid in monitoring and understanding climate change’s impacts on Earth’s land surface, including glacier melting, sea-level rise, and carbon storage changes.

UPSC Prelims point: NISAR satellite

19. InfexnTM- India’s First genomics-based infectious diseases Test

Context:

Kerala’s medical landscape is undergoing a great shift with the introduction of ‘InfexnTM’, a revolutionary next-generation sequencing test. This will be India’s first genomics-based infectious disease test.

About Infexn™- A Revolutionary Next-Generation Sequencing Test

- **Description**-The 'infexn™' is a state-of-the-art targeted next generation sequencing test.
- **Objective**- To detect any bacterial and/or fungal infection along with detection of relevant antimicrobial resistance genes, within 24 hours.
- **Developed by**- IIT-Bombay-based HaystackAnalytics and NIMS Medicity at Neyyattinkara.
- **Features**-1) The test is a kit-cum-software solution and can be performed within a hospital.
- It is "Made in India, Made for the World" test.

Significance of Infexn™

- It can empower the healthcare ecosystem with advanced, definitive diagnostics. This will ensure optimal antibiotic usage.
- It will enable effective implementation of the national goal of championing antimicrobial leadership.
- This innovative approach can enhance the accuracy and efficiency of infectious disease detection.
- This test ensures that clinicians get efficient and accurate diagnosis of infectious diseases. This will lead to targeted therapy and improved patient outcomes.
- The 'Infexn™' report can be life-saving for patients with suspected infection.
- Read more about- Genome sequencing

UPSC Prelims point: Genome sequencing

20. Alaskapox- An orthopox virus

Context:

An elderly man from Alaska recently became the first person to die after contracting Alaskapox which is an orthopox virus.

About Alaskapox



Context-NDTV WORLD

Aspect	Details
Origin	It is an <u>orthopox</u> virus that was first discovered in Alaska, USA, in 2015.
Description	It is a double-stranded DNA virus belonging to the same genus (<u>Orthopoxvirus</u>) as smallpox, <u>monkeypox</u> , and cowpox.
Types	They are zoonotic viruses that can infect various mammals, including humans.
Host	Current evidence indicates that the <u>Alaskapox</u> virus primarily occurs in small mammals. The virus has been most commonly identified in red-backed voles and shrews.
Symptoms	1) Symptoms of <u>Alaskapox</u> have included one or more skin lesions (bumps or pustules) and other symptoms like swollen lymph nodes and joint and/or muscle pain. 2) Nearly all patients had mild illnesses that resolved on their own after a few weeks. 3) Immunocompromised people might be at increased risk for more severe illness.
Is it contagious?	While human-to-human transmission of <u>Alaskapox</u> has not yet been observed, some <u>orthopoxviruses</u> can spread by direct contact with lesions (particularly broken skin contact with lesion secretions).

Orthopox virus:

Family-It is a genus of viruses in the family Poxviridae.

Host-Vertebrates, including mammals and humans, and arthropods serve as natural hosts.

Types-There are 12 species in this genus.

Diseases-Diseases caused by this virus are smallpox, cowpox, horsepox, camelpox, and monkeypox.

NOTE

Zoonotic Disease- Zoonotic diseases are infections that are spread between people and animals. These infections are caused by germs, such as viruses, bacteria, parasites, and fungi. For example- Rabies, Blastomycosis etc.

UPSC Prelims point: NISAR satellite

21. PACE satellite- NASA's satellite to monitor Climate, Ocean & Atmosphere

Context:

Nasa’s PACE (Plankton, Aerosol, Cloud, ocean Ecosystem) satellite launched on a SpaceX Falcon 9 rocket from the Cape Canaveral Space Force Station.

About PACE satellite



Context-NASA

Aspect	Details
Launched by	NASA from the Cape Canaveral Space Force Station’s Space launch complex.
Placed at	PACE is placed in a sun-synchronous orbit. Sun-synchronous orbit means that it will always be synced to the same position relative to the Sun.
Objective	To study the Interplay of light, aerosols, and clouds.
Primary instrument	Ocean Colour Instrument (OCI)– This is designed to measure the ocean’s colour across a spectrum from ultraviolet to short wave infrared.
Payloads	1) Spectro-polarimeter for Planetary Exploration (SPeXone) 2) Hyper Angular Research Polarimeter (HARP2).
Significance	1) It will help scientists better understand about the impact of climate change on ocean phytoplankton. 2) It will help understand the influence of particles in the air, like dust and smoke, on cloud formation, warming and cooling of the planet. 3) It may make significant breakthroughs in aerosol-cloud-ocean research.

UPSC Prelims point: PACE (Plankton, Aerosol, Cloud, ocean Ecosystem) satellite.

22. Ultracold atoms Study

Context:

Scientists at RRI have recently designed a new image-correction algorithm that can enhance the study of ultracold atoms.

About Ultracold atoms

- **Definition**– An ultracold atom is an atom with a temperature near absolute zero.
- **Properties**– At low temperatures near absolute zero, atoms behave according

to the principles of quantum mechanics rather than classical physics.

Ways to study ultracold atoms

- 1) The commonly used techniques for the study of ultracold atoms is by deploying magneto-optical traps with high-power laser cooling techniques.
- 2) Cold atoms of elements like sodium, potassium, rubidium are commonly studied.
- 3) Detection techniques like the fluorescence, absorption or phase-contrast imaging techniques are used.
- 4) The imaging through fluorescence or absorption techniques are widely used.

Limitation of these techniques:

- The images obtained using these techniques suffer due to unwanted interference fringes. These are unwanted dark-bright patterns imprinted on the actual images. Thus, it lowers the quality of results obtained.

Significance of new image correction technique

- It eliminates 50% of unwanted interference fringes in images. This is crucial for understanding the quantum mechanics properties of cold atoms.
- It is capable of getting better images during the study of cold atoms or atoms at absolute zero temperature.
- It improves temperature uncertainty in cold Rubidium atoms by 50%.
- It holds promise for the widespread application of absorption imaging in the study of ultracold atoms.

About Raman Research Institute (RRI)



Context-The Hindu

- **Nature of body**-It is an autonomous research institute engaged in research in basic sciences. It is located in Bengaluru.
- **Established**-The institute was established in 1948 by Indian physicist and Nobel Laureate Sir C.V. Raman. Sir C.V. Raman served as its director, carrying on his research until his demise in 1970.
- **Restructuring**-It was restructured in 1972 to become an aided autonomous institute receiving funds from the Department of Science and Technology.
- **Governing council**-The Governing Council is the executive body of the Institute and conducts the administration and management of the Institute.
- **Areas of work**-Astronomy & Astrophysics, Light & Matter Physics, Soft Condensed Matter, and Theoretical Physics are major area of research.

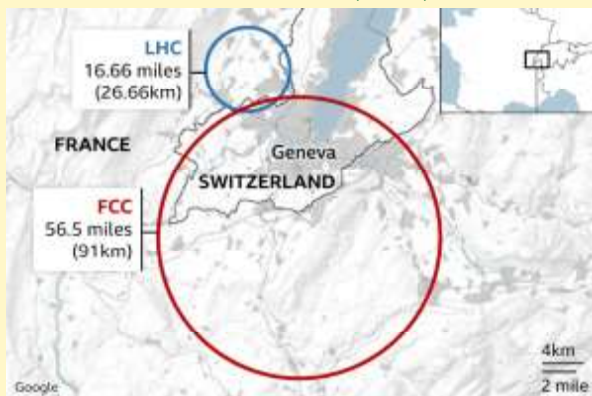
UPSC Prelims point: Ultracold atoms

23. Future Circular Collider (FCC)- Giant new atom-smasher

Context:

Recently, CERN (the European Organisation for Nuclear Research) scientists are advancing plans for a multibillion-euro project to construct the more powerful Future Circular Collider. The collider plans to start operating by 2040 with an estimated cost of around 17 billion dollar.

Future Circular Collider (FCC):



Context-BBC

- **About**- The Future Circular Collider (FCC) is a particle accelerator currently under design, intended to accommodate the next generation of particle colliders.
- **Purpose**- The FCC aims to design a hadron collider with a center-of-mass energy of about 100 TeV (trillion electron volts), which is eight times more powerful than the Large Hadron Collider's 13 TeV.
- **Location**- The FCC is planned to be in a newly constructed 80-100 km tunnel. The circular tunnel will be at a depth of 100 to 400 meters on the France-Switzerland border.
- **FCC extends LHC research**- The FCC aims to build upon the ongoing research at the Large Hadron Collider (LHC).

Significance:

- It will enhance our understanding of fundamental physics.
- It will foster advancements in fields such as cryogenics, superconductivity, vacuum tech, and detector instruments.

Large Hadron Collider(LHC):



Context-Britannica

- **About**- Large Hadron Collider is the world's largest and highest-energy particle collider.
- **Built by**- European Organization for Nuclear Research (CERN) between 1998 and 2008 in collaboration with over 10,000 scientists.

- **Located at**-The accelerator lies in a tunnel 100 meters underground at CERN, the European Organization for Nuclear Research, on the Franco-Swiss border near Geneva, Switzerland.
- **Purpose**-To explore tiny subatomic particles, which represent the smallest known units of matter and form the basis of everything.
- **Achievements**- In 2012, scientists at CERN announced to the world the discovery of the Higgs boson or the 'God Particle' during the LHC's first run. This led to Peter Higgs and his collaborator François Englert being awarded the Nobel Prize for physics in 2013.

UPSC Prelims point: Future Circular Collider

24. Bubonic Plague (Black death)

Context:

Recently, a rare case of bubonic plague, also known as the Black Death, has been detected in the US. It is likely transmitted by a pet cat.

Bubonic plague:



Context- Edmonton Journal

- **About**- Bubonic plague is a severe bacterial infection caused by a bacteria called *Yersinia pestis*, which is typically found in small mammals and their fleas.
- **Note**- *Y. pestis* bacteria can harm both humans and animals.

- **Name origin**- Bubonic plague is named after the swollen lymph nodes (buboes) it causes. It resulted in millions of deaths in Europe during the Middle Ages.
- **Fatality Rate**: It has a case-fatality ratio ranging from 30% to 60%.

Symptoms:

- Sudden fever and chills.
- Pain in the abdomen, arms, and legs.
- Headaches
- Swollen lumps in the lymph nodes that may leak pus.

Transmission:

- Y. pestis* is mainly spread by fleas on rodents and other animals.
- It spreads between animals and humans through flea bites, direct contact with infected tissues, and inhaling infected respiratory droplets.

- **Incubation period**- 2 to 8 days.

- **Treatment**: Bubonic plague can be cured with antibiotics like Ciprofloxacin, levofloxacin, moxifloxacin, Gentamicin, and Doxycycline.

The other types of plague:

- Bubonic is one type of plague. Other types of plague include:
 - Septicemic plague, involves infection of the blood which spreads throughout the body.
 - Pneumonic plague, when the lungs are infected.

UPSC Prelims point: Bubonic plague

SOCIAL ISSUES

1. The problem of moving attention away from services''

Context:

This article discusses the Indian Finance Minister's budget speech, highlighting the government's achievements over the past 10 years and its plans for future spending. It critiques the speech for lacking major new announcements and questions the government's claims about poverty reduction and income growth.

The current status of social sector in India:

- **Multidimensional Poverty:** The government claimed to have lifted 25 crore people out of multidimensional poverty in 10 years.
- **Income Levels:** It's noted that average real income reportedly increased by 50%, but this average doesn't reflect changes in the poor's lives.
- **Real Wages:** Real wages have been stagnant, with rural worker earnings barely increasing from \$3 in 2004-05 to \$4.80 in 2014-15.
- **Job Scenario:** The increasing share of agriculture in employment and high demand for jobs under MGNREGS suggest limited non-agricultural job opportunities.
- **Women's Labor Force Participation:** The increase in women's participation is viewed more as a sign of economic distress rather than improvement.

The provisions for the social sector in the Budget for 2025:

- **Overall Social Sector Funding:** The 2025 Budget maintains most social sector scheme allocations at levels similar to the previous year.
- **Education Sector:** Allocations for school and higher education depart-

ments show nominal increases compared to last year's BE, around 6-8%.

- **Health and Family Welfare:** The health and family welfare departments also received similar nominal increases.
- **Anganwadi Centres:** The budget for Saksham Anganwadi at Rs.21,200 crore is slightly lower than the RE of ¹ 21,523 crore for 2023-24.
- **Mid-Day Meal Scheme:** The PM-POSHAN budget for school mid-day meals is Rs. 11,600 crore, compared to the RE of Rs.12,800 crore for 2023-24.
- **Social Assistance Programs:** The allocation for the National Social Assistance Programme, which includes pensions, was only Rs.9,652 crore, lower than the Rs. 10,618 crore in 2014-15.

Way forward

- To ensure balanced development, the government needs to prioritize basic education, health, and nutrition, which have been overshadowed by high-profile schemes (such as the Awas Yojana or sanitation). Addressing these fundamental areas, along with creating diverse employment opportunities, is crucial for reducing inequalities and fostering a more inclusive and sustainable economic growth.

Mains point: The effectiveness of the government's approach to addressing multidimensional poverty and income growth in India over the past 10 years.

2. ASHA, anganwadi staff get health cover.

Context:

The Central government extended the benefits of its flagship health insurance scheme, Ayushman Bharat, to

Accredited Social Health Activist (ASHA) workers and Anganwadi workers.



About Accredited Social Health Activists (ASHA):

- **Launched**– In 2005-06 as part of the National Rural Health Mission, initially in rural areas. It was later extended to urban areas with the introduction of the National Urban Health Mission in 2013.

Selection:

- ASHA worker must be a woman resident of the village married/ widowed/ divorced, preferably in the age group of 25 to 45 years.
- ASHA must be chosen through a systematic process by involving various community groups, self-help groups, the Block Nodal officer, District Nodal officer, the village Health Committee and the Gram Sabha.

Role of ASHA:

- ASHA will provide information to the community about nutrition, basic sanitation & hygienic practices.
- ASHA will counsel women on birth preparedness, importance of safe delivery, breast-feeding and complementary feeding and immunization.
- ASHA will mobilise the community and help them in accessing health and health related services available at the Anganwadi/sub-centre/primary health centres.

MISSION INDRADHANUSH:

- **Aim**– to cover all children who are either unvaccinated, or are partially vaccinated against vaccine preventable diseases.
- **Coverage**–India's Universal Immunisation Programme (UIP) provide free vaccines against 12 life-threatening diseases. For example-Tuberculosis, Diphtheria, Pertussis, Tetanus, Polio, Hepatitis B, Pneumonia and Meningitis due to Haemophilus Influenzae type b (Hib), Measles, Rubella, Japanese Encephalitis (JE) and Rotavirus diarrhoea. (Rubella, JE and Rotavirus vaccine in select states and districts).

Prelims point:About Accredited Social Health Activists (ASHA)

3. Population priorities.

Context:

Rapid Population Growth of India, The article talks about a new committee being formed to address issues caused by India's rapid population growth and demographic changes. It also highlights the need for this committee to focus on related challenges, such as job creation and social security.

The Current Situation of India's Population:

- The Total Fertility Rate (TFR) in India has decreased to 2.
- Some states like Bihar (2.98), Meghalaya (2.91), Uttar Pradesh (2.35), Jharkhand (2.26), and Manipur (2.17) have TFRs above 2.1.
- The TFR has fallen from 5.7 in 1950 to 2 in 2020, showing significant reduction.
- Southern States' population share decreased from 26% in 1951 to 21% in 2011, due to rapid TFR reduction.
- This decrease in TFR is linked to better socio-economic outcomes and education in these regions.

The Challenges of Population Changes:

- **Aging and Urbanization:** The demographic shift and rising life

expectancy in India are leading to new challenges in managing an aging population and rapid urbanization.

Employment and Productivity: With high unemployment and slow creation of non-farm jobs, there's a risk of not fully capitalizing on the demographic dividend.

Social Security: Adequate social security is crucial for the aging workforce, ensuring support in later years.

Avoiding Distractions: The committee should focus on these demographic challenges rather than getting sidetracked by issues of religion and immigration, as suggested by the ruling party.

Way forward:

Form a Focused Committee: Establish a high-powered committee to address issues arising from population growth and demographic changes.

Job Creation and Social Security: The committee should focus on creating jobs and improving social security, crucial for the working-age population.

Avoid Distracting Issues: The committee must avoid getting sidetracked by the ruling party's focus on religion and immigration, and instead concentrate on the actual demographic challenges.

Utilize the Demographic Dividend: Address the challenges to effectively harness the demographic dividend, such as high unemployment and the need for skilled job opportunities.

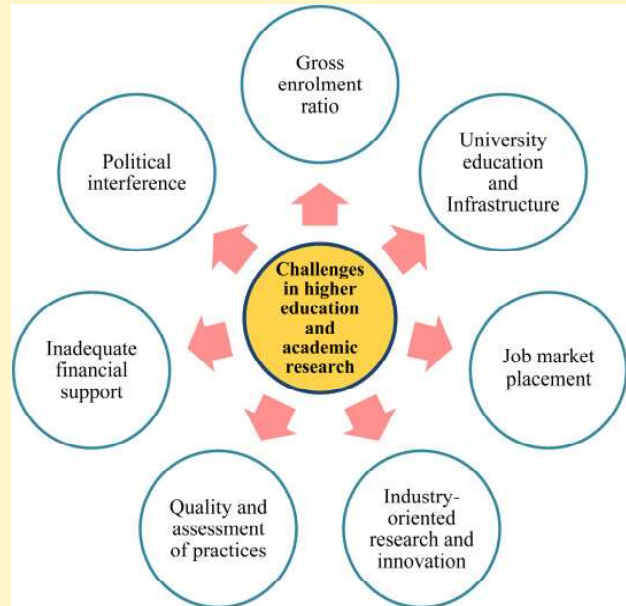
Mains point: The impact of decreasing Total Fertility Rate (TFR) on India's demographic changes and the challenges associated with it.

4. Micro-Credentials and Higher Education in India.

Context:

Micro-Credentials and Higher Education in India, This article discusses how micro-credentials, which are short learning programs, can help bridge the gap between what students learn in higher education institutes in India and the skills they need for employment.

Micro-Credentials:



Micro-credentials are concise, specialized learning programs, distinct from traditional multi-year degrees.

They are available in various formats – online, in-person, or hybrid – offering flexibility unlike traditional education's classroom-centric approach.

These programs target a wide range of learners, from beginners to professionals, focusing on specific skill sets.

While traditional education measures progress through time-based credits, micro-credentials assign credits based on acquired competencies, integrating seamlessly into established education systems.

Globally, entities like Google and Microsoft, along with universities, offer micro-credentials.

India's Approach to Micro-Credentials:

Alignment with National Education Policy (NEP) 2020: India's focus on

skilled education under the NEP 2020 complements the demand for micro-credentials. This policy emphasizes equipping students with practical skills from school to higher education levels.

National Credit Framework (NCrF) Integration: Micro-credentials are incorporated within the NCrF, standardizing their learning outcomes and credits in line with traditional education.

Academic Bank of Credits (ABC): Learners can deposit and accumulate micro-credential credits in the ABC, like traditional credit systems, allowing future educational or professional use.

Market Demand and Employability: With employers seeking skilled young employees, micro-credentials are increasingly seen as a valuable addition to standard education, enhancing job readiness.

Institution-Industry Collaboration: Indian educational institutions are encouraged to develop micro-credentials in partnership with industries, aligning education with current job market needs.

Way forward:

Higher Education Institutes in India should actively connect students with relevant job opportunities and skills for the future, bridging the educational gap.

Embrace micro-credentials as a flexible, accessible way to acquire modern skills, aligning with changing hiring practices that prioritize skills over degrees.

Establish clear benchmarks and regulations for micro-credentials to ensure uniformity in learning outcomes and ease of workplace endorsement.

Consider micro-credentials as a vital component in the strategic objectives of educational institutions, harmonizing them with existing academic programs.

Mains point: The India's approach to integrating micro-credentials into its higher education system .

5. Inclusive Education for Disabled at Secondary Stage (IEDSS) scheme .

Context:

The Karnataka government has registered FIR against 56 officials of Department of School Education and Literacy (DSEL) and 22 non-governmental organisations (NGOs) for criminal offences such as forging documents during the implementation of IEDSS scheme.



About Inclusive Education for Disabled at Secondary Stage (IEDSS) scheme:

Aspect

Detail

About

- 1) The Scheme of Inclusive Education for Disabled at Secondary Stage (IEDSS) has been launched from the year 2009-10.
- 2) This scheme replaces the earlier scheme of Integrated Education for Disabled Children (IEDC) and provides assistance for the inclusive education of the disabled children in classes IX-XII.
- 3) This scheme is now subsumed under Rashtriya Madhyamik Shiksha Abhiyan.

Objective

To enable students with disabilities to pursue four years of secondary schooling after completing eight years of elementary schooling in an inclusive environment.

Components

Funds are released per student for student-oriented components, such as medical and educational assessment, books and stationery, uniforms, transport allowance, reader allowance, stipend for girls, support services, assistive device etc.

Eligibility

The scheme covers all children studying at the secondary stage in Government, local body and Government-aided schools, with one or more disabilities as defined under the Persons with Disabilities Act (1995) and the National Trust Act (1999). For example- blindness, low vision, leprosy cured, hearing impairment, locomotory disabilities, etc.

Implementing agencies

The School Education Department of the State Governments/Union Territory (UT) Administrations. They may involve NGOs having experience in the field of education of the disabled in the implementation of the scheme.

Funding

Central assistance for all items covered in the scheme is on 100 percent basis. The State governments are only required to make provisions for scholarship of Rs. 600/- per disabled child per annum.

Prelims point: Inclusive Education for Disabled at Secondary Stage (IEDSS) scheme**6. Breathing bad: A lung surgeon's prescription for our air pollution.****Context:**

The article discusses the severe health problems caused by air pollution, the need for better monitoring and public awareness, and actions like improving healthcare and policy planning to combat air pollution's impact on health, especially in Indian cities.

India addressing its air quality crisis:

- India is dealing with severe air pollution, especially in urban areas.
- **The National Clean Air Programme (NCAP)** was initiated in 2019. NCAP originally aimed to reduce PM2.5 pollution by 20-30% by 2024.
- In 2022, the goal was revised to a 40% reduction by 2026, from the levels in 2017.
- The approach includes learning from global initiatives and adapting them to Indian conditions.

The impact of air pollution:**Health Impact:**

- Air pollution causes diseases like cancer, asthma, heart disease, and dementia.
- Globally, it results in 7 million deaths annually, comparable to COVID-19 pandemic deaths.

Economic Impact:

- The economic cost of health impacts from air pollution was over \$8.1 trillion in 2019.
- This represents 6.1% of the global GDP.
- **Other Impacts:** 99% of the world's population lives in areas exceeding WHO air quality guidelines.

Way forward:

- **Monitoring and Data Collection:** Cities should implement real-time sensor-based air pollution monitoring and collect health-impact data. This approach helps in identifying pollution hotspots and enables prompt, targeted interventions.
- **Policy and Planning:** Urban Local Bodies need to adapt successful global strategies, like **London's Air Quality**

Action Plan, to Indian contexts. Developing a disease calendar based on environmental and health data can optimize resource allocation and protect vulnerable areas.

Communication and Public Awareness: Transparently sharing real-time pollution data and health advisories across various channels is crucial. This approach makes air quality data relatable, fostering public engagement and awareness.

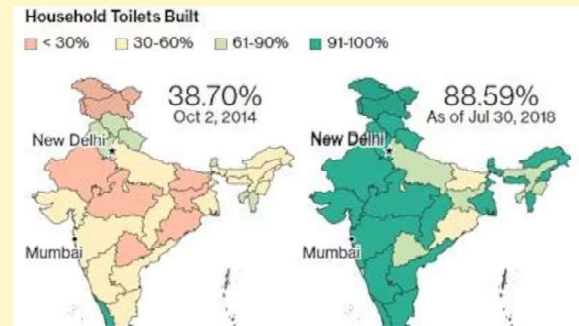
Healthcare System Improvements: Health centers should be upgraded for targeted care of pollution-affected patients, and healthcare workers must consider air pollution exposure in diagnoses and treatments. Initiatives like the Medanta Institute's research and advocacy for clean air are exemplary.

Addressing Root Causes: Strict compliance with emission norms is essential, focusing on the root causes of poor air quality rather than temporary fixes. This approach ensures sustainable improvements in air quality.

Mains point: The strategies for combating air pollution in Indian cities.

7. Sanitation coverage in India: A critical view of the 'sanitation miracle' in rural India.

Context: The article discusses how India improved public sanitation from 2014 to 2019, moving towards being Open Defecation Free. However, challenges remain in ensuring toilet use and addressing social norms.



The current status of sanitation coverage in India:

Access to water and sanitation is Goal 6 in the 17 Sustainable Development Goals envisaged by the United Nations. Sanitation coverage in India significantly improved from 39% in 2014 to 100% in 2019, as per the Government of India.

The Swachh Bharat Mission-Grameen (SBM-G), launched in 2014, aimed to make India Open Defecation Free (ODF) by October 2019. The government's current goal is to transition from ODF to ODF Plus by 2024-25, with about 85% of villages already achieving ODF Plus status.

The National Annual Rural Sanitation Survey (NARSS) Round-3 (2019-20) reports that 95% of India's rural population had access to toilets. Of these, 79% owned their toilets, 14% shared facilities, and 1% used public toilets.

Although 96% of these toilets were functional and had water access, only 85% of the rural population used safe and hygienic toilets.

Toilet access varied by caste, with 97% for upper castes and 95% for Scheduled Castes.

The upper castes showed a higher percentage of toilet non-use compared to backward castes.

Between 2014 and 2019, approximately 10 crore toilets were constructed under the SBM-G.

The issues with sanitation coverage in India:

- . **Incomplete Usage Despite Access:** While sanitation coverage improved to 100% by 2019, only 85% of rural Indians use safe and hygienic toilets, indicating a gap in actual usage.
- . **Quality and Infrastructure Issues:** Problems like malfunctioning facilities, unhygienic conditions, and structural issues like full pits or collapsing superstructures hinder toilet usage.
- . **Water Scarcity Impact:** Lack of water access, especially in rural areas like Gujarat's Dahod district, leads to higher non-use of toilets.
- . **Behavioral and Social Norms:** Cultural norms and behaviors affect toilet usage, with some households using them for purposes other than defecation.
- . **Caste-Based Variances:** Toilet access and usage vary across castes, with upper castes surprisingly showing higher rates of non-use.
- . **Challenges in Larger Households:** Larger households often struggle with toilet usage due to overcrowding and limited facilities.

The initiatives have been taken for sanitation coverage in India:

- . **Central Rural Sanitation Programme (CRSP):** Launched in 1986, it was India's initial step towards improving rural sanitation with substantial subsidies.
- . **Total Sanitation Campaign:** Started in 1999, this marked a shift to a lower subsidy, demand-driven approach.
- . **Swachh Bharat Mission-Grameen (SBM-G):** Launched in 2014, this mission aimed to make India Open Defecation Free (ODF) by October 2019. The government aims to transform India from ODF to ODF Plus by 2024-25.
- . **Phase II of SBM-G:** Focuses on sustainability, promoting solid and

liquid waste management, and covering households left out earlier.

. **National Annual Rural Sanitation Survey (NARSS):** Conducted to assess rural sanitation coverage, showing 95% of rural India having toilet access.

Way forward:

- . Focus on changing cultural and social norms to increase actual toilet usage.
- . Ensure toilets are functional and hygienic, addressing issues like collapsing structures and full pits.
- . Focus on households that were not covered in the initial phases, particularly in rural areas.
- . Tailor strategies to be sensitive to the variations in toilet usage across different social and caste groups.
- . Align sanitation initiatives with other related programs like the Jal Jeevan Mission for better outcomes.

Mains point: The key factors contributing to the challenges in achieving full and effective sanitation coverage in India.

8. "Mobile health initiative Kilkari launched with local content in Gujarat, Maharashtra.

Context:

Health ministry has launched Mobile Health Service 'Kilkari' and Mobile Academy in Maharashtra and Gujarat to improve health services..

About Kilkari programme:

Aspect	Details
About	'Kilkari' means 'a baby's gurgle'. It is a centralized interactive voice response (IVR) based mobile health service.
Objective	To improve families' knowledge and uptake of life-saving preventative health practices.
Funding	Cost is completely born by the central government. It is centrally hosted by

the Ministry of Health and Family Welfare (MoHFW).

Implementation

The programme is integrated with the centralized Reproductive Child Health (RCH) portal of MoHFW's.

Features

- 1) It delivers free, weekly, time-appropriate 72 audio messages about pregnancy, childbirth, and childcare directly to families' mobile phones.
- 2) It starts sending messages from the second trimester of pregnancy until the child is one year old.
- 3) Women who are registered in Reproductive Child Health (RCH) portal also receive a weekly call with pre-recorded audio content directly on their mobile phones
- 4) Kilkari audio messages are present in the form of the voice of a fictitious doctor character called Dr. Anita.

Current state of implementation

It is under implementation in 18 States / UTs of India.

The mobile academy:

- . It is a free audio training course designed to expand and refresh the knowledge of Accredited Social Health Activists (ASHA). This course is provided on their mobile phones to improve their communication skills.
- . **Accessibility**-It is an anytime, anywhere training course that can train thousands of ASHAs simultaneously via mobile phone.
- . **Languages**-It is available in six languages viz. Hindi, Bhojpuri, Oriya, Assamese, Bengali & Telugu versions.
- . **Current state of operation**-It is operational in 17 States/UTs except Chandigarh.

Prelims point: About Kilkari programme

MISCELLANEOUS ISSUES

1. "Philippines and Vietnam agree to expand cooperation in South China Sea, which Beijing also claims"

Context:

The Philippines and Vietnam have recently signed agreements to avoid incidents in the South China Sea and enhance cooperation between their coast guards.

About South China Sea:

- It is one of the world's most important, strategic, and contentious bodies of water.
- It is an arm of western Pacific Ocean in Southeast Asia.

Bordering states and territories:



Source-Reserchgate

- (clockwise from north): the People's Republic of China, the Republic of China (Taiwan), the Philippines, Malaysia, Brunei, Indonesia, Singapore and Vietnam.

Features

- It is connected by Taiwan Strait with the East China Sea and by Luzon Strait with the Philippine Sea.
- It contains numerous shoals, reefs, atolls and islands. For example-The Paracel Islands, the Spratly Islands and the Scarborough Shoal.

Prelims point: South China Sea

2. National Mission for Mentoring.

Context:

The National Council for Teacher Education (NCTE) held a 2-day seminar to share best practices and review the National Mission for Mentoring (NMM) with stakeholders.

National Mission for Mentoring (NMM):

Aspect

Details

About

- It is a programme in line with the National Education Policy (NEP) 2020.
- It provides mentors with opportunities to share expertise with mentees, assisting them in becoming effective teachers.

Objective

To establish a strong mentorship system that empowers teachers to improve teaching practices and effectiveness.

Launched on

July 29, 2022, in 30 selected Central Schools nationwide by NCTE as a pilot program.

Features

- NMM enhances mentee teachers' teaching abilities and fosters a culture of continuous learning.

2. It keeps teachers updated and relevant in today's dynamic educational landscape.
3. NCTE has onboarded 60 professionals as NMM mentors for various areas including leadership, digital education, socio-emotional learning, inclusive education etc.

National Council for Teacher Education (NCTE):

About

It is a governmental statutory body established under the National Council for Teacher Education Act of 1993 in India. This council advises both central and state governments on Teacher Education matters.

Objective

- a. To achieve coordinated development of teacher education nationwide.
- b. To regulate and uphold Norms and Standards in teacher education and related matters.
- c. To train individuals to teach at all school levels, including pre-primary, primary, secondary, and senior secondary, as well as non-formal, part-time, adult education (correspondence), and distance education courses.

Prelims point: National Mission for Mentoring (NMM)

3. The future of water.

Context:

Future of Water as a Trading Commodity, The article discusses the issue of the trading of water as a commodity. It also highlights the safeguards regarding access to water established by the Constitution and Supreme Court. Recently, there have been reports of water being traded as a commodity (like gold, oil). For instance, a futures contract allows buyers and sellers to barter a fixed price for the delivery of a fixed quantity of water at a future date.



The Concerns With the Trading of Water as a Commodity:

- One should not put a value on water as it belongs to everyone and is a public good.
- If water was traded as a futures commodity, then hedge funds, banks, large industrial and agricultural players would buy into it and marginalize vulnerable sections like small-scale farmers.
- According to the author, if this happens, water scarcity will become a norm and water will become unaffordable for many.

The Situation of Water Scarcity:

- **Water scarcity** is caused by the overuse of groundwater, climate change, a warming planet and rapid migration to already overpopulated large cities.
- **Globally:** The UN 2023 World Water Development Report notes that 26% of the world's population does not have access to safe drinking water.
- **In India:** The World Bank explains that India has 18% of the world's population, but only 4% of its water resources, making it among the most water-stressed in the world.

The Constitution and Supreme Court Deal with Issues of Access to Water:

Constitution:

- a. **Article 262** provides that Parliament may by law provide for the adjudication of any dispute with respect to the use, distribution or control of the waters of any inter-State river or river valley.

Hence, **Inter-State Water Disputes Act, 1956** was enacted to deal with complaints by state governments against each other. For instance, Cauvery water dispute between Tamil Nadu and Karnataka.

- b. **Article 39** provides that the state shall direct its policy towards securing that the ownership and control of material resources of the community are distributed to subserve the common good. Water would fall within this category of resources.

Supreme Court:

- a. In **Narmada Bachao Andolan v Union of India (2000)**, the Court concluded that water is part of the right to life enshrined in **Article 21**.
- b. In **A.P. Pollution Control Board II v Prof. M.V. Nayudu (2001)**, the court declared that it is the duty of the state under **Article 21** to provide clean drinking water to its citizens.
- Thus, a fundamental right for every Indian to access safe and clean water has been established. This may act as the deterrence against pricing water outside the reach of the average Indian.

Pricing of Water Determined in India:

- Water pricing is determined by states by the respective municipality frameworks. There is no central authority for the regulation of water pricing.

Mains point: The trading of water as a commodity? Elaborate upon the safeguards regarding access to water established by the Constitution and Supreme Court in India.

4. GHAR (GO Home and Re-Unite) Portal for Restoration and Repatriation of Child launched by NCPCR".

Context:

The Ministry of Women and Child Development developed the "Track Child Portal" to track missing and found children in all States/UT.

About GHAR(Go Home and Re-Unite) portal:

- Launched by: National Commission for Protection of Child Rights(NCPCR)
- Objective: The GHAR portal has been developed to digitally monitor and track the restoration and repatriation of children as per the protocols under **the Juvenile Justice (Care and Protection of Children) Act, 2015**.

Key Features of the Portal

- Digital tracking and monitoring of children who are in the Juvenile Justice(JJ) system and have to be repatriated to another Country/State/District.
- Digital transfer of cases of children to the concerned **Child Welfare Committees(CWCs)** of the State. It will help in the speedy repatriation of children.
- CWCs and District Child Protection Units (DCPUs)** will ensure proper restoration and rehabilitation of children by digitally monitoring the progress of the case of the child.

About Track child porttal

- Launched by- The Ministry of Women and Child Development Portal.
- Objective- It enables tracking of the missing and found children in all States/UTs.
- Implemented by- It is implemented with support and involvement of various stakeholders namely Ministry of Home Affairs, Ministry of Railways, State Governments/ UT Administrations, Child Welfare Committees, Juvenile Justice Boards, National Legal Services Authority, etc.

Key features

- The Track Child portal is integrated with the CCTNS or Crime and Criminal Tracking & Network Systems of the Ministry of Home Affairs.
- This allows interoperability in terms of matching of F.I. Rs of missing children with database of TrackChild to trace and

match missing children by the concerned State/UT police.

“**Khoya-Paya**”-It is one of the component of Track Child Portal. In this portal, any citizen can report for any missing or sighted children.

NOTE-National Commission for Protection of Child Rights(NCPCR)-It is a statutory body.It has been constituted under the Commission for Protection of Child Rights (CPCR) Act, 2005.

5. Dam projects across the Mekong River in Laos raises fears.

Context:

A multibillion-dollar dam project on river Mekong in Laos’s Luang Prabang city, may result in the city losing its UNESCO status.

About Mekong river



Source-Radio Free Asia

Aspect	Details
About	It is a trans-boundary river in East Asia and Southeast Asia.It is the world’s twelfth-longest river and the third-longest in Asia.
Origin	It originates from the Sanjianyuang in the Tibetan Plateau in China.
Mouth	The river drains into the South China Sea

Countries

It flows through six Asian countries: China, Myanmar, Laos, Thailand, Cambodia and Vietnam. It covers a total length of 2700 km.

Biodiversity

It is the second most biodiverse river basin in the world, after Amazon River Basin. It contains about 20,000 plant species,1,200 birds, 430 mammals, 800 amphibians and reptiles, and 850 fish species.

Capital cities on its banks

- 1) Vientiane- the capital of Laos
- 2) Phnom Penh-the capital of Cambodia

Significance for India

- 1) The Mekong Ganga Cooperation (MGC) is an initiative by six countries - India and five ASEAN countries - Cambodia, Laos, Myanmar, Thailand, and Vietnam.
- 2) Mekong Delta is a potential source of regional tension due to an increasing number of hydroelectric projects that are altering the flow and raising concerns of ecological damage.

Note-Luang Prabang-

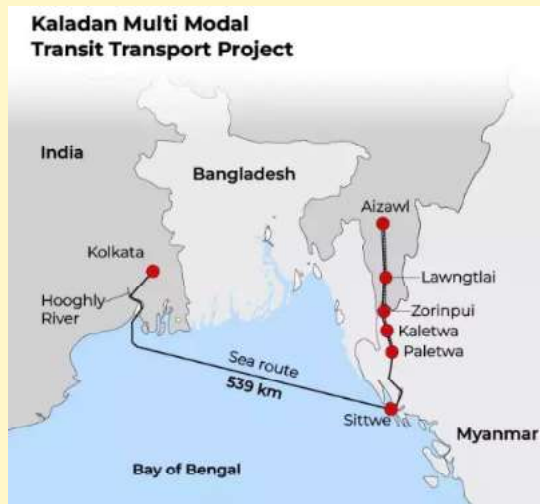
It is a UNESCO World Heritage Site where as per legend Buddha once rested during his travels.

6. Kaladan multimodal Project.

Context:

Kaladan project is getting delayed due to ongoing Political crisis in Myanmar.

About Kaladan multimodal Project



Source-Ministry of Development of North-Eastern region

Background

The Kaladan Multi-Modal Transit Transport Project was jointly identified by India and Myanmar to create a multi-modal mode of transport for the shipment of cargo from the eastern ports of India to Myanmar.

Details of project:

It connects the eastern Indian seaport of Kolkata with Sittwe seaport in Rakhine State, Myanmar by sea. It will reduce the distance from Kolkata to Sittwe by approximately 1,328 km.

- In Myanmar, it will then link Sittwe seaport to Paletwa in Chin State via the Kaladan river boat route
- From Paletwa by road to Mizoram state in Northeast India (Paletwa is less than 20 km from the Bangladesh border).

Components of project:

The project involves sea, river, and road transportation:

Sea Route:

From Kolkata to Sittwe (539 km).

River Route:

Sittwe to Paletwa via the Kaladan River (158 km).

Road Route:

Paletwa to Indo-Myanmar border (110 km), and further into Mizoram.

Stretch	Mode	Distance
Kolkata to Sittwe port in Myanmar	Shipping	539 km
Sittwe to Paletwa (River Kaladan)	Inland Water Transport (IWT)	158 km
Paletwa to Indo-Myanmar Border (in Myanmar)	Road	110 km
Border to NH.54 (Lawngtlai) (in India)	Road	100 km

Source-Ministry of Development of North-Eastern region

Significance of the project

Economic significance:

- The project will reduce the distance from Kolkata to Sittwe by approximately 1,328 km. It will reduce the need to transport goods through the narrow Siliguri corridor.
- This project will connect Sittwe Port in Myanmar to the India-Myanmar border. It will contribute to the economic development of the North-Eastern States of India, by opening up the sea route for the products.

Strategic significance:

- This would enhance India's strategic footprints in East Asia and more importantly in our immediate neighbourhood.
- It provides an alternative to the Chicken's Neck. This will lead to enhanced India's control over its northeastern frontier and reduced logistical vulnerabilities.
- It will strengthen India's Act East Policy

Prelims point: Kaladan project

7. Israeli scientists find new underwater canyon near Cyprus.

Context:

The Geological Institute of Israel recently uncovered an underwater

canyon near Cyprus that dates back to the Messinian Event.

About Messinian Event:

- It is also known as the Messinian Salinity Crisis (MSC)
- It was a geological event during which the Mediterranean Sea went into a cycle of partial or nearly complete desiccation (drying up). It was one of the most severe ecological crises in the Earth's history.
- The MSC began approximately 6 million years ago (MYA) and lasted until around 5.3 MYA.

Countries bordering the Mediterranean Sea:



Source-Pinterest

- There are 22 countries and one territory (Gibraltar - a British Overseas Territory) whose coasts are on the Mediterranean Sea
 - The European Countries-** Spain, France, Italy, Malta, Monaco, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, and Greece.
 - The West Asian (Middle Eastern) countries-** Turkey, Syria, Lebanon, Israel, the Palestine Gaza Strip and the divided island of Cyprus.
 - Five North African countries-** Morocco, Algeria, Tunisia, Libya and Egypt.
 - NOTE- Deep-sea Canyon-** They are steep-sided valleys cut into the seafloor of the continental slope. They may sometimes extend well onto the continental shelf.
- The deepest canyon on Earth is actually on the ocean floor. The Mariana Trench is the deepest feature on Earth.

Prelims point:About Messinian Event

8. Pradhan Mantri Matsya Kisan Samridhi Sah Yojna.

Context:

The Central government has recently approved the "Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY).

About Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY)



Source-ETNownews

Aspect

Details

About

The PM-MKSSY is a central sector sub-scheme under the Pradhan Mantri Matsya Sampada for formalisation of the fisheries sector.

Objective

- Gradual formalisation of the unorganized fisheries sector through self registration of fishers, fish farmers.
- Facilitating access to institutional financing, fisheries sector micro and small enterprises.
- Providing one-time incentive to beneficiaries for purchasing aquaculture insurance.

Duration

Period of next four 4 years from FY 2023-24 to FY 2026-27 in all States/ Union Territories.

Funding

Total outlay- Rs.6,000 crore-50% i.e. Rs.3,000 crore will be provided by public finance including the World Bank and the AFD external financing,

and rest 50% i.e. Rs.3,000 crore will be provided by private sector/beneficiaries.

Intended beneficiaries

Fishers, Fish (Aquaculture) Farmers, Fish workers, Fish Vendors or such other person directly engaged in fisheries value chain. Micro and Small enterprises, SHGs, Fish Farmers Producer Organizations (FFPOs) and Startups in fisheries sector.

Digital platform

National Fisheries Digital Platform will be created to provide 40 lakh small and micro-enterprises work-based identities.

Major components

- 1) Formalisation of fisheries sector.
- 2) Facilitating adoption of aquaculture insurance.
- 3) Adoption and expansion of fish and fishery product safety and quality assurance systems.
- 4) Project management, monitoring and reporting.

Significance

- 1) It will create 1.7 lakh new jobs, with a special emphasis on employing 75,000 women.
- 2) It will improve value chain efficiency and ensuring safe, quality fish by supporting 55,000 targeted micro and small enterprises.
- 3) It will ensure environment friendly fisheries sector.
- 4) It will Facilitate Ease of Doing Business and transparency.

Prelims point: Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY)

9. Middle-class housing scheme.

Context:

Recently Finance minister has announced a Middle-class housing

scheme for the middle class as part of 'Housing for all' policy.

The Middle class housing scheme:

- Its announcement was made in the recent budget for FY 25.
- The government will start a program to assist middle-class individuals living in rented houses, slums, chawls, and unauthorized colonies to purchase or construct their own homes.
- While it is part of the 'housing for all' policy, it's not an extension of Pradhan Mantri Awas Yojana (PMAY).
- Its a new scheme where the government will define income levels, location, and accommodation types to identify beneficiaries.
- **Note-** There is no defined criteria for the identification of the middle class in India yet.

Pradhan Mantri Awas Yojana (PMAY):

- **About-** It is a housing scheme launched by the Government of India with the aim of providing affordable housing for all by the year 2022.
- **Components-** It has two components: Pradhan Mantri Awas Yojana (Urban) (PMAY-U) for the urban poor and Pradhan Mantri Awas Yojana (Gramin) (PMAY-G) for the rural poor.
- **Nodal Ministry-** Pradhan Mantri Awas Yojana (Urban) (PMAY-U) administered by Ministry of Housing and Urban Affairs while Pradhan Mantri Awas Yojana (Gramin) (PMAY-G) administered by Ministry of Rural Development.

Prelims point: The Middle class housing scheme:

10. Merchant Shipping Act recast in the works.

Context:

India is revising its Merchant Shipping regulations as it seeks to replace the current Merchant Shipping Act, 1958. Proposed legal changes are under

discussion with the Ministry of Ports, Shipping, and Waterways being the nodal ministry.

The purpose of the newly proposed provisions:

- . The new rules aim to incorporate recent international maritime agreements that India has joined. They will also streamline ship registration for NRIs, overseas citizens of India, and corporations, including limited liability partnerships.
- . Additionally, the regulations will allow for electronic vessel registration and accept e-documents such as log-books and record books.

Key Provisions:

- . **Three tier- dispute resolution mechanism:**
 - a. The new provisions propose a three-tier dispute resolution system to address conflicts between ship-owners and salvors, as well as between seafarers and ship owners, masters, or agents.
 - b. The resolution mechanism aims to make the shipping master's decision enforceable, rather than having a Magistrate enforce it.

Clear definition of 'abandoned vessels' and regulations for 'unsafe vessels':

- a. Clear definitions for terms like 'abandoned vessels' have been established. The new regulations also address 'unsafe vessels.'
- b. The Central government will have the authority to instruct port authorities and others to take measures regarding abandoned vessels.

Coverage of New Areas:

- a. The new provisions address marine incidents and emergency response, aiming to assure ship-owners of statutory safety measures for vessels.
- b. There are also discussions about implementing strict rules, including

prosecution and conviction, to prevent and contain pollution. Air pollution caused by ships at sea is also being aimed to be addressed with appropriate actions.

Note- Merchant shipping involves commercial activities rather than defence or warfare.

Mains point: Merchant Shipping regulations