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A House Journal of **APTI PLUS**

DECEMBER 2022



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TH EDITION



COP27
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EGYPT 2022

CHALLENGES TO COP27



**SOVEREIGN
GREEN BONDS**

**GLOBAL
DASHBOARD
FOR VACCINE
EQUITY**



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A MONTHLY PERIODICAL FOR ASPIRANTS OF UPSC EXAMINATION



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GENERAL STUDIES - I

WORLD HERITAGE GLACIERS

GS-I CULTURE & HERITAGE

Context

- According to a study conducted by the UN body, a third of the glaciers on the UNESCO World Heritage list are under threat, regardless of efforts to limit temperature increases.

Details

- The study said it was still possible to save the other two-thirds if the rise in global temperature did not exceed 1.5°C compared to the pre-industrial era.
- In addition to drastically reduced carbon emissions, the UNESCO is advocating for the creation of a new international fund for glacier monitoring and preservation.
- Such a fund would support comprehensive research, promote exchange networks between all stakeholders and implement early warning and disaster risk reduction measures, the study said.
- Half of humanity depends directly or indirectly on glaciers as their water source for domestic use, agriculture, and power.
- Glaciers are also pillars of biodiversity, feeding many ecosystems.
- This study highlights the urgent need to cut greenhouse gas emissions and invest in nature-based solutions, which can help mitigate climate change.
- As many as 50 UNESCO World Heritage sites are home to glaciers, representing almost 10% of the Earth's total glacierised area.
- The UNESCO study, in partnership with the International Union for Conservation of Nature (IUCN), showed that these glaciers have been retreating at an accelerated rate since 2000 due to CO₂ emissions, which are warming temperatures.
- They are currently losing 58 billion tonne of ice every year – equivalent to the combined annual water use of France and Spain – and are responsible for nearly 5% of observed global sea level rise.

What are World Heritage Sites?

- It is a **landmark or area with legal protection** by an international convention administered by the **United Nations Educational, Scientific and Cultural Organisation (UNESCO)**.
- World Heritage Sites are designated by **UNESCO for having cultural, historical, scientific or other forms of significance**.
- As per the '**Convention concerning the Protection of the World Cultural and Natural Heritage**' 1972, UNESCO seeks to **encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity**.
- As of July 2021, a total of 1,154 World Heritage Sites (897 cultural, 218 natural, and 39 mixed properties) exist across 167 countries. With **58 selected areas, Italy is the country with the most sites on the list**.
- Categories:** A World Heritage Site can be either **cultural or natural areas objects** which are inscribed on UNESCO's World Heritage List for having "**outstanding universal value**".
- These sites are usually considered to have cultural significance to all the people in the world, including future generations.

How are they selected?

- According to **The Operational Guidelines for the Implementation of the World Heritage Convention**, a country must first list its significant cultural and natural sites into a document known as the **Tentative List**.
- The sites selected from that list move onto the Nomination File, which is then evaluated by the International Council on Monuments and Sites and the World Conservation Union.
- Any site that wasn't first included in the Tentative List cannot be nominated.
- The two bodies then make their recommendations to the World Heritage Committee, which consists of diplomatic representatives from 21 countries.
- The committee meets each year to decide whether a nominated property can be inscribed on the World Heritage List.
- The committee makes the final decision if a site meets at least one of the ten selection criteria.

Can a site lose its designation?

- A site **may lose its designation** when the World Heritage Committee determines if it is **not properly maintained or protected**.
- It is first placed in the list of **World Heritage in Danger** as the Committee attempts to find a remedy involving the local authorities. If any remedies fail, the designation is revoked.
- A country can also request the Committee to partially or fully delist a property, generally in such cases when its condition has seriously deteriorated.

How many World Heritage Sites are in India?

- There are **currently 32 cultural, seven natural and one mixed World Heritage Sites** in India.
- **Oldest sites:** Agra Fort, Ajanta Caves, Ellora Caves, and Taj Mahal made it to the list in 1983.
- **Latest sites:** The latest sites to be added to the list Dholavira in Gujarat, Kakatiya Rudreshwara (Ramappa) Temple in Telangana in 2021.
- There are **46 sites in the Tentative List** including a group of monuments at Mandu and the historic ensemble of Orchha in Madhya Pradesh, Satpura tiger reserve, temples of Kanchipuram, temples at Bishnupur in West Bengal, and Sri Harimandir Sahib in Amritsar, Punjab.

Indian Properties inscribed on the World Heritage List (40)

Cultural (32)

- Agra Fort (1983)
- Ajanta Caves (1983)
- Archaeological Site of Nalanda Mahavihara at Nalanda, Bihar (2016)
- Buddhist Monuments at Sanchi (1989)
- Champaner-Pavagadh Archaeological Park (2004)
- Chhatrapati Shivaji Terminus (formerly Victoria Terminus) (2004)
- Churches and Convents of Goa (1986)
- Dholavira: a Harappan City (2021)
- Elephanta Caves (1987)
- Ellora Caves (1983)
- Fatehpur Sikri (1986)
- Great Living Chola Temples (1987,2004)
- Group of Monuments at Hampi (1986)
- Group of Monuments at Mahabalipuram (1984)
- Group of Monuments at Pattadakal (1987)
- Hill Forts of Rajasthan (2013)
- Historic City of Ahmadabad (2017)
- Humayun's Tomb, Delhi (1993)
- Jaipur City, Rajasthan (2019)
- Kakatiya Rudreshwara (Ramappa) Temple, Telangana (2021)
- Khajuraho Group of Monuments (1986)
- Mahabodhi Temple Complex at Bodh Gaya (2002)
- Mountain Railways of India (1999,2005,2008)
- Qutb Minar and its Monuments, Delhi (1993)
- Rani-ki-Vav (the Queen's Stepwell) at Patan, Gujarat (2014)
- Red Fort Complex (2007)
- Rock Shelters of Bhimbetka (2003)
- Sun Temple, Konârak (1984)
- Taj Mahal (1983)
- The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement (2016)
- The Jantar Mantar, Jaipur (2010)
- Victorian Gothic and Art Deco Ensembles of Mumbai (2018)

Natural (7)

- Great Himalayan National Park Conservation Area (2014)
- Kaziranga National Park (1985)
- Keoladeo National Park (1985)
- Manas Wildlife Sanctuary (1985)
- Nanda Devi and Valley of Flowers National Parks (1988,2005)
- Sundarbans National Park (1987)
- Western Ghats (2012)

Mixed (1)

- Khangchendzonga National Park (2016)

PASHMINA AND SHAHTOOSH

GS-I CULTURE & HERITAGE

Context

- **Traders of Pashmina shawls are complaining that "obsolete testing methods" have resulted in many of their export consignments being flagged by Customs authorities for presence of Shahtoosh guard hair, which is obtained from endangered Tibetan antelopes.** The traders claim the use of obsolete techniques such as "light microscopy" by the authorities has resulted in several cases of "false positives", leading to their wrongful prosecution.

Details

About Pashmina

- It refers to a **fine variant of spun cashmere**, the **animal-hair fibre forming the downy undercoat of the Changthangi goat**.
- Generic cashmere ranges from 12 to 21 microns in diameter, whereas **pashmina refers only to those fibres that range from 12 to 16 microns**.
- Wool fibres discovered from corroded copper artifacts from **Harappa** dating back to the **Indus valley civilization** are extremely fine and resemble **Pashmina and Shatoosh**.
- **China accounts for 70% of the world's cashmere production**, Mongolia 20%, and the remaining 10% of production is in Afghanistan, Australia, India, Iran, Nepal, Pakistan, the United States.
- Kashmiri Pashmina has got the GI tag.

Shahtoosh Shawls

- Shahtoosh also known as Shatoush, is a wool obtained from the fur of the chiru (*Pantholops hodgsonii*, also called Tibetan antelope).
- Also, shawls made from the wool of the chiru are called shahtoosh.
- Shahtoosh is the finest animal wool, followed by vicuña wool.

Operation Softgold

- To tackle Shahtoosh Shawl (made from Chiru wool) illegal trade and to spread awareness among the weavers and traders engaged in this trade.

Chiru (Tibetan Antelope)

- As undomesticated wild animals, the chirus cannot be shorn, so they are killed for this purpose.
- Due to the severe decline of the chiru population by 90 % in the second half of the 20th century, they were internationally classified as a critically endangered species until 2016. Since 2016, they have been classified as a near-threatened species due to species conservation programs and partial recovery of population size.
- The wool is mostly used to make luxurious scarves and shawls, although the production, sale, and acquisition of shahtoosh has been illegal under CITES since 197
- It lives at a 3,250-5,500 metre elevation in high altitude plains and montane valleys comprising of alpine and desert steppe and pasture, distinguished by low vegetation cover and productivity.
- It has been enlisted in Schedule I of Wildlife Protection Act, 1972.
- To enhance its protection, its prime habitats have been declared as Wildlife Sanctuaries viz. Karakorma Wildlife Sanctuary and Changthang Cold Desert Wildlife Sanctuary.

About GI

- A geographical indication or GI is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.
- Geographical Indications are part of the intellectual property rights that comes under the Paris Convention for the Protection of Industrial Property.
- In India, Geographical Indications registration is administered by the Geographical Indications of Goods (Registration and Protection) Act of 1999.
- This tag is valid for a period of 10 years following which it can be renewed.
- GI tags are covered under World Trade Organization.
- Geographical indications are typically used for agricultural products, foodstuffs, wine and spirit drinks, handicrafts, and industrial products.
- It is basically an assurance that the product is coming from that specific area. It's kind of trademark in the international market.
- Karnataka has the highest number of GI tags i.e. 47 products followed by Tamil Nadu (39).

Benefits of registration of Geographical Indications

- It confers legal protection to Geographical Indications in India
- Prevents unauthorised use of a Registered Geographical Indication by others
- It provides legal protection to Indian Geographical Indications which in turn boost exports.
- It promotes economic prosperity of producers of goods produced in a geographical territory.

How a geographical indication is different from a trade mark?

- A trade mark is a sign which is used in the course of trade and it distinguishes goods or services of one enterprise from those of other enterprises.
- Whereas a geographical indication is an indication used to identify goods having special characteristics originating from a definite geographical territory.

To read about to complete list of GI Tags, Visit: <https://www.iasgyan.in/blogs/complete-list-of-geographical-indications-gi-tags-in-india-as-of-2021>

Context

- Elaben (1933-2022) was the voice of the invisible women of India's informal economy

Details

- Ela Bhatt, or Elaben as she was popularly known, was a product of the early days of Independence.
- Inspired by Gandhiji and the atmosphere of hope and excitement for the future, she studied law in Ahmedabad and saw her future as a participant in building a new India.
- After graduation, Elaben joined the Textile Labour Association (or Majoor Mahajan) and Rameshbhai joined the Gujarat Vidyapeeth in Ahmedabad.
- The TLA, a trade union of mill workers founded by Anasuya Sarabhai and whose constitution was written by Gandhiji, was Elaben's learning ground.
- There, she learnt the elements of organising, of the importance of a trade union — poor people and workers coming together to give each other strength to create a voice and to negotiate for rights.
- It was here that she first met women from the unorganised or informal economy, women who pulled carts or sold vegetables or stitched garments, and saw how poor and yet hardworking they were.

About SEWA

- Self-Employed Women's Association (SEWA) was set up in 1972 by Ela Bhatt.
 - She belonged to a family of freedom fighters; her grandfather had walked the Dandi March with Mahatma Gandhi.
 - Her ideology was shaped by the freedom movement, she was a trained lawyer, and She associated with the Textile Labour Association.
 - In 1968, the closure of two major textile mills in Ahmedabad gave Bhatt her first understanding of the importance of women's involvement in running homes.
 - ✓ As the men agitated for reopening the mills, the women worked to earn their families' livelihoods. "They sold fruits and vegetables in the streets; stitched in their homes at piece-rate for middle-men; worked as labourers in wholesale commodity markets, loading and unloading merchandise; or collected recyclable refuse from city streets".
- SEWA was born out of the Textile Labour Association founded by Anasuya Sarabhai and Mahatma Gandhi in 1920, but it could not register as a trade union until 1972 because its members did not have an "employer", and were thus not seen as workers.
- SEWA has built many institutions for the poor on the principle that "the poor do not need charity, they need an effective tool to aspire and come out of the vicious circle of poverty and vulnerability".
- According to Ela Bhatt, SEWA is a trade union of women who "did not need to come together against anyone, they just needed to come together for themselves".
- SEWA allows any self-employed woman to become a member with an annual membership fee of just Rs 10. The organisation took a conscious decision to keep men out.
- The network of SEWA is spread across 18 Indian states, in other countries in South Asia, South Africa, and Latin America.
- It has helped rehabilitate women in person, and even in political or social crises, by empowering them through skilling and training.
- In 1974, SEWA Bank was established to provide small loans to poor women; it was recognised by the International Labour Organisation (ILO) as a microfinance movement.
- The Unorganised Workers Social Security Act (2008), the National Rural Livelihoods Mission (2011), and the Street Vendors Act (2014), are seen as successes of SEWA's struggle. The PM Street Vendors Atmanirbhar Nidhi (PM-SVANidhi) scheme is seen as being inspired by SEWA's microfinance model.
- It has changed the lives of over 2.1 million members and has been recognised as a model for the world.
 - Former United States first lady Hillary Clinton, and Cherie Blair, wife of former British Prime Minister Tony Blair, have visited SEWA and partnered with it.

TOMB OF AFZAL KHAN**GS-I CULTURE & HERITAGE****Context**

- The Supreme Court sought reports from the district collector and the deputy conservator of forests of Satara district in Maharashtra, on the demolition drive conducted around the tomb of Afzal Khan, a 17th-century commander of the Adil Shahi dynasty of Bijapur.

Details

- The administration demolished the “unauthorised structures”, constructed around the medieval tomb of Afzal Khan.
- Khan was killed by Maratha king Chhatrapati Shivaji Maharaj near the Pratapgarh Fort in Satara and a tomb was built there later.
- The Bombay High Court’s 2017 orders, in response to petitions by Hindu right-wing organisations that “unauthorised structures” around the tomb be removed, were cited for the action. As per the administration, since the early 1990s, additional structures – including pucca structures – were constructed at the spot. The High Court orders pertained to their removal.
- The action was incidentally carried out on the 363rd anniversary of the killing of Afzal Khan by Shivaji, celebrated by admirers of Shivaji Maharaj as ‘Shiv Pratap Day’, and was seen as a major win for the Hindu groups in Maharashtra.

What is the history of Afzal Khan’s tomb?

- With Shivaji’s rise and increasing control of the region, Afzal Khan was seen as the man to subdue him in the Deccan.
- Khan put together a force of 10,000 cavalry and marched from Bijapur to Wai, plundering Shivaji’s territory along the way.
- Shivaji called a council of war at the fort of Pratapgarh, where most of his advisers urged him to make peace. However, Shivaji was not eager to back down and he set up a meeting with Khan.
- During the meeting, an embrace between the two turned into an attack in which Shivaji emerged victorious. This was followed by a rout of the Adilshahi army at the hands of the Marathas.
- Khan’s remains were buried at the fort and a tomb was constructed on Shivaji’s orders.
- The sword of Afzal Khan was preserved as a valued trophy in the armoury of Shivaji and his descendants.

BIRSA MUNDA**GS-I CULTURE & HERITAGE****In News**

- The President of India visited Ulihatu village in Jharkhand – the birthplace of Birsa Munda to pay her respects to Birsa Munda.
- The President will address a Janjatiya Samagam at Shahdol, Madhya Pradesh, being organised by the State Government of Madhya Pradesh, on the occasion of Janjatiya Gaurav Divas (15th November).

Birsa Munda

- He was an Indian tribal freedom fighter, reformer and religious leader. He was nicknamed ‘Dharti Abba’ or Father of the Earth, by his followers.

His contributions**Religion**

- He renounced Christianity and protested against the conversion of Tribals by Christian missionaries.
- He created a new religion called “Birsait”, which worshipped only one god. Birsait soon became the popular religion among the Mundas and Oraons.
- He preached a strong anti-British sentiment through his religion.

Reformer

- He stressed the need for the tribals to study their religion and not forget their cultural roots.
- He convinced people to give up superstition, alcohol, theft, lying, murder and begging under his new religion.

Munda Rebellion**Background**

- Munda tribals practised the Khuntkatti system (joint holding by tribal lineages). However, the British colonial system intensified the transformation of the tribal agrarian system into a feudal state by introducing the Zamindari-tenancy system.
- Outsiders (Dikus) were invited by the British to settle on and cultivate the tribal land.
- Thus, the various tribes, who were the original owners of the land, were left bereft of land and any means of livelihood.

'Ulgulan' or the 'Great Tumult' (1899-1900)

- Birsa Munda infused in tribals the values to love, respect, support and safeguard their land from outsiders.
 - He used traditional symbols and language to rouse people, urging them to destroy “Ravana” (dikus and the Europeans) and establish a kingdom under his leadership.
 - He mobilised thousands of tribal folk to form guerrilla armies to attack the British Raj.
 - He declared that the reign of Queen Victoria was over and the Munda Raj had begun.
 - He gave orders to the raiyats (tenant farmers) to pay no rent.
- The people attacked police stations and churches and raided the property of moneylenders and zamindars. They raised the white flag as a symbol of Birsa Raj.
- The attacks were launched not only on the moneylender-landlord-Mahajan-contractor combine but directly against the British.
- The **massacre at Dumbri Hill made it a “hill of the dead”** when hundreds of tribals lost their lives for the cause of freedom against the modern ammunition of the British.
- The Great Tumult against Britishers sought to establish Munda Raj and independence.
- The slogan of the movement was “Abua Raj ete Jana, Maharani Raj Tundu Jana” which means “Let the kingdom of queen be ended and our kingdom established”.

Outcome

- The Britishers were forced to abolish the feudal system that plagued the Adivasi lands in Jharkhand and Bihar.
- Birsa compelled the Britishers to introduce new legislation - the Chota Nagpur Tenancy Act, 1908. This Act prohibited the transfer of tribal land to non-tribal parties.
- The government recognized Khuntkatti's rights and banned Beth Begari (forced labour).

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15 CANDIDATES SCORED 190+ IN UPSC CSE INTERVIEW 2021

GENERAL STUDIES - II

AMENDMENTS TO THE IT RULES 2021

GS-II POLITY

In News

- The Ministry of Electronics and IT (MeitY) has notified amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules, 2021).

Background

- World over, governments are grappling with the issue of regulating social media intermediaries (SMIs). A **social media intermediary is an intermediary that primarily or solely enables interaction between two or more users and allows them to create, upload, share, disseminate, modify or access information using its services.**
- SMIs play a central role in shaping public discourse. It has an impact on governance and the right to freedom of speech and expression. The magnitude of information SMIs host it is important for governments to regulate them.
- In a bid to keep up with these issues, India 2021, replaced its decade-old regulations on SMIs with the IT Rules, 2021. It primarily aimed at placing obligations on SMIs to ensure an open, safe and trusted internet.

Key features

- Due diligence by intermediaries:** Under the IT Act, an SMI is **not liable for the third-party information that it holds or transmits.** However, to claim such an exemption, it must adhere to the due diligence requirements. According to 2011 Rules, the requirements included: (i) specifying, in service agreements, the categories of content that users are not allowed to upload or share, (ii) taking down content **within 36 hours** of receiving a court or government order, (iii) assisting law enforcement agencies, (iv) **retaining blocked content and associated records for 90 days**, and (v) providing a grievance redressal mechanism for users and affected persons and designating a grievance officer.
 - The 2021 Rules retain these requirements, while: (i) modifying the categories of content that users are not allowed to upload or share, and (ii) prescribing stricter timelines for the above requirements.
- Personnel:** An SSMI must appoint:
 - A chief compliance officer for ensuring compliance with the Rules and the Act.
 - A nodal person for coordination with law enforcement agencies.
 - A grievance officer, all of whom should reside in India.
- Identifying the first originator of information:** An SSMI, which primarily provides messaging services, **must enable the identification of the first originator of information within India on its platform.** This may be required by an order of a Court or the competent authority under the IT Act.
 - Such orders will be issued on specified grounds including **prevention, detection, and investigation of certain offences such as those relating to national security, public order, and sexual violence.**
- Technology-based measures:** SSIMs will endeavour to deploy technology-based measures to identify: (i) content depicting child sexual abuse and rape, or (ii) information that is identical to the information previously blocked upon a court or government order.
 - Such measures: (i) must be proportionate to the interests of free speech and privacy of users, and (ii) have human oversight and be reviewed periodically.
- User-centric requirements:** SSIMs must provide users with
 - A voluntary **identity verification mechanism.**
 - A mechanism to check the status of grievances.
 - An explanation if no action is taken on a complaint.
 - A notice where the SSMI blocks the user's content on its own accord, with a dispute resolution mechanism.
- Digital Media Publishers:** The 2021 Rules prescribe certain requirements for online publishers of; (i) news and current affairs content which include **online papers, news portals, aggregators and agencies;** and (ii) curated audio-visual content.
 - The Rules institute a three-tier structure for regulating these publishers: (i) **self-regulation by publishers, (ii) self-regulation by associations of publishers, and (iii) oversight by the central government.**
- Code of Ethics:** For publishers of news and current affairs, the following existing codes will apply:
 - Norms of journalistic conduct formulated by the Press Council of India.
 - Programme code under the **Cable Television Networks Regulation Act, 1995.** For online publishers of curated content, the Rules prescribe the code of ethics. This code requires the publishers too.
 - Classify content into specified age-appropriate categories, restrict access to age-inappropriate content by children, and implement an age verification mechanism.
 - Exercise due discretion in featuring content affecting the sovereignty and integrity of India, and national security, and

likely to disturb public order.

- Consider India's multiple races and religions before featuring their beliefs and practices.
- Make the content more accessible to disabled persons.
- Grievance redressal:** Any person aggrieved by the content of a publisher may file a complaint with the publisher, who **must address it within 15 days**. The complaint will be considered by an inter-departmental committee constituted by the Ministry of Information and Broadcasting if:
 - Further escalated by the complainant or the association under certain conditions.
 - Referred by the Ministry itself.
- Oversight by Ministry:** The Ministry of Information and Broadcasting will:
 - Publish a charter for self-regulating bodies, including Codes of Practice.
 - Issue appropriate advisories and orders to publishers.
 - Have powers to block content on an emergency basis.** Any directions for blocking content will be reviewed by a committee headed by the Cabinet Secretary.

SOCIAL MEDIA

- Identify 'first originator' of content that authorities consider anti-national
- Appoint grievance officer, resolve complaints in 15 days
- File monthly compliance report on complaints received, action taken

DIGITAL NEWS

- Follow Press Council of India, Cable TV Networks (Regulation) Act norms.
- Self-regulatory bodies to oversee adherence to Code of Ethics
- I&B Ministry to form panel, oversight mechanism

OTT PLATFORMS

- Self-classify content into five age-based categories: U (universal), U/A 7+ (years), U/A 13+, U/A 16+, and A.

- Parental locks for any content classified as U/A 13+ or above.
- Age verification mechanism for content classified as 'A' (adult)

Key Issues and Analysis

- The Rules may be **going beyond the powers delegated under the Act in certain cases**, such as where they provide for the regulation of significant social media intermediaries and online publishers and require certain intermediaries to identify the first originator of the information.
- Grounds for restricting online content are overbroad and **may affect freedom of speech**.
- There are no procedural safeguards for requests by law enforcement agencies for information under the possession of intermediaries.
- Requiring messaging services to enable the identification of the first originator of information on its platform **may adversely affect the privacy of individuals**.

What was the need to amend the IT Rules, 2021?

- The stated objectives of the amendments were three-fold.
- First, there was a need **to ensure that the interests and constitutional rights of netizens are not being contravened** by big tech platforms.
- Second, to **strengthen the grievance redressal framework** in the Rules.
- Third, that compliance with these should not impact early-stage Indian start-ups.

Additional obligations placed on the SMIs through the recent amendment

- First, the original IT Rules, 2021 obligated the SMIs to merely inform its users of the "rules and regulations, privacy policy and user agreement" that governed its platforms along with the categories of content that users are prohibited from hosting, displaying, sharing etc. on the platform. This obligation on the SMIs has now been extended to **ensure that its users comply with the relevant rules of the platform**.
- Further, **SMIs are required to "make reasonable" efforts to prevent prohibited content from being hosted on its platform by the users**. To a large extent, this **enhances the responsibility and power of SMIs to police and moderate content on their platforms**.
- It has newly introduced an obligation on SMIs to **"respect all the rights accorded to the citizens under the Constitution, including in the articles 14, 19 and 21"**.
- SMIs are now obligated to remove information or a communication link in relation to the six prohibited categories of content as and when a complaint arises. They have to **remove such information within 72 hours of the complaint being made**. Given the virality with which content spreads, this is an important step to contain the spread of the content.
- Lastly, SMIs have been obligated to "take all reasonable measures to ensure accessibility of its services to users along with the reasonable expectation of due diligence, privacy and transparency". The obligation is meant to strengthen inclusion in the SMI ecosystem such as allowing for participation by persons with disabilities and diverse linguistic backgrounds. In this context, the amendments also mandate that "rules and regulations, privacy policy and user agreement" of the platform **should be made available in all languages listed in the eighth schedule of the Constitution**.

Grievance Appellate Committees (GAC)

Before the IT Rules, in 2021, online platforms followed their mechanisms and timelines for resolving user complaints. The IT Rules uniformed this by mandating that all social media platforms should have a grievance officer who would acknowledge the receipt of a complaint within 24 hours and dispose of it within 15 days. However, the performance of the current grievance redressal mechanism has been sub-optimal. To remedy this, the government has instituted **Grievance Appellate Committees (GAC)**. The committee is styled as a **three-member council out of which one member will be a government officer** (holding the post ex officio) while the other two members will be independent representatives. Users can file a complaint against the order of the grievance officer **within 30 days**. Importantly, the GAC is required to adopt an online dispute resolution mechanism which will make it more accessible to the users.

Concerns

- Users are apprehensive that the increased power of the SMIs would allow them to **trample on freedom of speech and expression**.
- Frequent alterations to the design and practices of the SMI platform, to meet obligations could result in **heavy compliance costs for SMIs**.
- The creation of Grievance Appellate Committees (GAC) makes the in-house grievance redressal more accountable and the appellate mechanism more accessible to users. But **appointments being made by the central government could lead to apprehensions of bias in content moderation**.
- The Rule says the institution of the GAC would not bar the user from approaching the court directly against the order of the grievance officer. If users can approach both the courts and the GAC parallelly, it could lead to **conflicting decisions often undermining the impartiality and merit of one institution or the other**.

Way Forward

- Given the importance of SMIs in public discourse and the implications of their actions on the fundamental rights of citizens, the **horizontal application of fundamental rights is laudable**.
- Any other concern needs to be addressed through **multistakeholder consultation and consensus building**.

VOTING RIGHTS TO NRI

GS-II POLITY

In News

- The Attorney General of India stated in the Supreme Court that the **government is in the process to facilitate non-resident Indians (NRI) to cast their votes remotely** while ensuring the integrity of the electoral process of Indian Democracy.
- Recently The Union Law Minister informed the Lok Sabha that the Government is exploring the possibility of allowing online voting for non-resident Indians (NRIs) as well as considering linking Aadhar with the electoral rolls to check fraudulent voting.

NRI Voter

- **Citizen of India, who is absent from the country owing to employment, education etc**, and has not acquired citizenship of any other country are known as Overseas Voters and are eligible to be registered as a voter at the address mentioned in their Indian passport.
- **According to the provisions of Section 19 of the Representation of People Act, 1950, an NRI could join the electoral rolls as an elector.**
 - However, till 2010, NRIs settled in other countries were not permitted to exercise their right to vote during the elections.
 - It was a simple amendment to the Representation of People (Amendment) Act, 2010 that crystallized voting rights for non-resident Indians, even though they had to be physically present in the constituency.

Present Status

- **NRIs form an impressive force across the globe, with a population of 3.10 crore according to the Ministry of External Affairs.**
- It is expensive as well as complex to fly back home merely to push a button to indicate your preference for leadership.
 - The logistical and practical issues have always been difficult for the Election Commission as well.
- The Representation of People Act, 1950 was amended in the year 2010 that made special provisions for Indian Citizens living abroad to get enrolled as a voter, but **less than 1% of total NRIs who are eligible have registered as voters as per the latest electoral roll published by the ECI in 2019.**
 - **More than 92% of the registered are from Kerala.**
- As per the data released by the ECI, only 8 NRI voters voted in the 2014 Lok Sabha elections out of 13039 registered by then. In

other words, less than 0.1% of the registered NRI voters voted.

How NRIs get voting rights

- They should be Indian and not citizens of the foreign country where they live; that means they must possess a valid Indian passport.
- **They must be at least 18 years old as of January 1st of the year in which the electoral roll is published.**
- Once they fulfil these conditions, they may register themselves as an overseas voter.
- **Offline registration**
 - Step 1: If they wish to apply for an NRI Voter ID offline, they need to visit their constituency.
 - Step 2: Visit the Election Registration Office.
 - Step 3: **Fill out form 6A** for being registered in the roll for the constituency pertaining to the locality in which his place of residence in India as mentioned in the passport is located.
 - Step 4: Submit documents, including a recent passport-size coloured photograph, self-attested photocopies of relevant passport pages, address in India, and visa endorsement.
 - Step 5: They need to show their original passport for verification.
- **Online registration**
 - Visit the ECI website.
 - Choose your state or union territory and go to the State Election Commission of India division.
 - Find form 6A and download it, Print out the form, and Fill in the details.
 - Check that the details are the same as those mentioned in the documents and passport.
 - Scan the form as well as the documents required: One recent passport-sized coloured photograph, duly affixed in Form 6A; self-attested photocopies of the relevant pages of the passport containing the photograph, your address in India, all other particulars and also the page of your passport containing the valid visa endorsement.
 - To submit, create a login ID with a password if the online registration is supported for your area.
 - Upload the scanned documents and apply online.
 - The application will be scrutinized and posted to screen for objections over a week.

About Non-Resident Indians (NRIs)

- Overseas Indians, officially known as Non-Resident Indians (NRIs) are people of Indian birth or ancestry who live outside the Republic of India.
 - **An Indian citizen who is ordinarily residing outside India and holds an Indian Passport**
- According to a Ministry of External Affairs report, there are 32 million NRIs residing outside India.
 - **Every year 2.5 million (25 lakhs) Indians migrate overseas**, which is the highest annual number of migrants in the world.
- **If an individual has been in India for a minimum of 182 days in the previous financial year is deemed to be a Resident of India.** Anyone who does not meet the conditions will be considered an NRI for the previous financial year.
 - In simple terms, an Indian citizen residing outside India for a combined total of at least 183 days in a financial year is considered to be an NRI.
- **NRIs are eligible to vote**, and only the income that they have earned in India is taxable in India.
 - Therefore, **any income earned outside India is not taxable in India.**
- **They are entitled to all benefits available to Indian citizens subject to notifications issued by the Government from time to time.**
- They don't require a visa for visiting India.
- They can adopt children in India, appear in competitive exams, purchase or sale of immovable property barring agricultural land and farmhouses, and pursue professions such as doctors, lawyers, architects, and chartered accountants.
- They have parity with Indian nationals in the matter of domestic airfares, and entry fees to monuments and public places.
- **They are exempted from registration with the Foreigners' Regional Registration Officer (FRRO) for any length of stay in India.**
 - Foreigners visiting India who hold long-term visas (more than 180 days) are required to register their presence in India with the Foreigners' Regional Registration Office (FRRO).
- Fundamental Rights guaranteed by Articles 14, 20, 21, 21A, 22, 23, 24, 25, 26, 27 and 28 are available to all persons whether citizens or foreigners.
 - **The Fundamental Rights guaranteed by Articles 15, 16, 19, 29, and 30 are available only to citizens of India and NRIs.**
- In case an NRI wishes to take up foreign citizenship, he/she will have to give up Indian citizenship as the Indian constitution does not allow dual citizenship.
 - **A person cannot hold Indian as well as foreign citizenship simultaneously.**

Significance of Overseas Indian

- Remittances close to 90 billion dollars make an invaluable contribution by aiding in socio-economic development, poverty reduction and changes in consumption behaviour in rural areas.
- NRIs are more prone to donate to domestic charities because of the strong cultural and emotional feelings that they experience.
- **Diaspora acts as 'agents of change' facilitating and enhancing investment, accelerating industrial development, and boosting international trade and tourism.**
- **They act as "bridge-builders" between their home and adopted countries.** The migration of labour (especially to West Asia) has also helped in bringing down disguised unemployment in India.
 - The migration of skilled labourers to foreign countries and their eventual success bolstered the nation's image.
- Diaspora's motives to invest in India are in contrast to non-diaspora FDI. Their investments are long-lasting as many of them wish to establish a long-term base in India.

EWS QUOTA

GS-II POLITY

In News

- **A five-judge Bench of the Supreme Court by a majority of 3:2 has upheld the validity of the 103rd Constitutional Amendment Act.**
- **Petitioner arguments:** The amendment violates the basic structure of the Constitution. However, there is no clear definition of basic structure.
 - It violates the Supreme Court's 1992 ruling in **Indra Sawhney & Ors v Union of India**, which restricted reservations to 50%. The court held that economic backwardness cannot be the sole criterion for identifying a backward class.
- **Government Arguments:** The government argued that under **Article 46 of the Indian Constitution**, the state has a duty to protect the interests of economically weaker sections: "The state shall promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation."
- **Arguments by the judges in favour of EWS reservation;**
 - Reservation based only on economic criteria does not damage the basic structure of the Constitution.
 - Treating EWS as a separate class would be a reasonable classification, and treating unequals equally would violate the principle of equality under the Constitution.
- **Arguments by the judges in against EWS reservation;**
 - While reservation on economic criteria is not violative of the basic structure of the Constitution, excluding SC/ST/OBC from the purview of EWS is a clear violation of the basic structure.

EWS QUOTA UPHELD: CHRONOLOGY

- Jan 8, 2019:** Lok Sabha clears the 103rd Constitution amendment Bill
- Jan 9:** Rajya Sabha clears the 103rd Constitution amendment Bill
- Jan 12:** Ministry of Law and Justice issues notice saying President Ram Nath Kovind has given assent
- February:** New law challenged before SC
- Feb 6:** SC issues notice to govt on pleas challenging amendment
- Feb 8:** SC declines to stay 10 per cent EWS quota
- Sep 8, 2022:** SC bench headed by CJI U U Lalit constitutes bench to hear appeals
- Sep 13:** SC starts hearing arguments
- Sep 27:** SC reserves order
- Nov 7:** SC, by majority of 3:2, upholds validity of 103rd Constitution amendment providing 10 pc reservation to EWS in admissions, govt jobs

(PTI)

Details

- In 2019, The Indian parliament has passed the 103rd Amendment act that inserted Articles 15(6) and 16(6) in the Constitution of India to provide up to 10% reservation to the economically weaker sections (EWS) among non-OBC and non-SC/ST sections of the population.
 - **The amendment introduced a quota for the poor among the so-called 'forward castes' or 'general category'.**
- The 10% EWS quota is available in admissions to higher educational institutions, and initial recruitment in central government jobs.
- The amendment also empowered state governments to provide reservations based on economic backwardness.

Economically Weaker Section (EWS)

- **Economically Weaker Section (EWS) in India is a subcategory of people belonging to the Economy Based Un-Reserved Category** having an annual family income of less than ₹8 lakh and who do not belong to any category such as SC/ST/OBC across India.
 - Candidates who do not fall under SC/ST/OBC and fulfil the EWS economic criteria are to be part of the EWS category.
- In January 2019, the Union Council of Ministers approved a 10% reservation in government jobs and educational institutions

for the Economically Weaker Section (EWS) in the General category.

- The cabinet decided that this would be over and above the existing 50% reservation for SC/ST/OBC categories.
- **The 103rd Amendment of the Constitution of India amended articles 15(6) and 16(6) of the Constitution of India to permit 10% reservations to the EWS category students among the unreserved category or General category students.**
 - **Several state cabinets approved the law and announced their intention to implement the 10% EWS reservations.**

Eligibility Criteria under EWS Reservation

- **The eligibility to get the EWS certificate is not only purely based on annual family income but also based on the held property.**
- The central government has set the income limit for admission to central government-owned colleges and jobs offered by the central government.
 - State governments are given the authority to change the eligibility criteria and also to extend the income limit further for candidates seeking reservation under the EWS category, which will be valid only in state-owned colleges and state government jobs as deemed fit for the respective states.
- **Criteria for identifying EWS quota;**
 - The candidate's annual family income must be less than Rs. 8 lakhs per annum.
 - Their family must not own more than 5 acres of agricultural land.
 - The residential flat area should be below 1000 sq ft.
 - The residential plot's area should be below 100 square yards if in a notified municipality sector.
 - The residential plot's area should be below 200 square yards if in a non-notified municipality sector.

Significance of EWS Reservation

- People belonging to the Economically Weaker Section now get 10% reservation in education and government jobs in India (vertical reservations) similar to OBC, SC, and ST.
- **This reservation weakened the pace of many reservation agitations such as the Jat reservation movement, the Patidar reservation movement, and the Kapu reservation movement.**

Concern

- Aspirants from the EWS category are not fully satisfied with this reservation because it does not include many benefits like age relaxation, fee relaxation, etc.
- **In Indra Sawhney's Judgement**, a nine-judge bench had struck down a provision that provided 10% reservation for the economically backward on the ground that economic Criteria Cannot be the Sole basis to determine backwardness.
- **In Nagaraj's judgment, a Constitution Bench ruled that equality is part of the basic structure of the Constitution.** It is said the 50% ceiling, among other things, was a constitutional requirement without which the Structure of equality of opportunity would Collapse.
- Another issue is whether reservations can go to a Section that is already adequately represented in Public Employment.
- One of the Criteria has an income limit of less than 8 lakh Per Annum, National Sample Survey Shows that the annual per Capita expenditure for 99% of households fall under this limit, even if we apply all the other Criteria for exclusion the bill would Still Cover over 95% of households.

Way Forward

- The general problem faced by children and youth of so-called Socially Advanced Castes who are poor is that they are not able to afford education. This problem needs to be resolved by the scheme of scholarships and educational loans so that no child or youth of any caste has to drop out of education at any stage due to financial incapacity.
- **Future economic growth in India is going to come from the Private Sector and entrepreneurship. To ensure that all Indians, regardless of caste, class and religion, can take part in economic growth, we must focus on basic skills.** We need to focus on reducing inequalities where they 1st emerge, within primary Schools.
- The Provision of Reservation to some communities aims at **empowering them and ensuring their participation in the decision-making process of the State and enabling them to contribute to Nation building.**

NATIONAL POPULATION REGISTER

GS-II POLITY

About

- The Union Home Ministry in its 2021-22 annual report highlighted that there is a **need to update the National Population Register (NPR) to adjust the changes due to birth, death and migration.**
- The NPR was **first prepared in 2010 and was updated in 2015 by collecting information on all usual residents of the country.**

- In 2015, a few fields such as name, gender, date and place of birth, place of residence and father's and mother's name were updated and Aadhaar, mobile and ration card numbers were collected.
- The Ministry said that the **NPR could be updated through self-enumeration as it allows residents to update their data fields after following some protocols on the official web portal.**
- The report stated that the Citizen Amendment Act (CAA) does not apply to Indian citizens and "therefore, it does not in any way take away the rights of any Indian citizen."

National Population Register (NPR)

- It is a register of the usual residents of the country.
 - A usual resident is a person who has resided in a local area for the past 6 months or more or a person who intends to reside in that area for the next 6 months or more.
- Every usual resident of India must register in the NPR.
- It includes both Indian citizens as well as foreign citizens.
- The objective of the NPR is to create a comprehensive identity database of every usual resident in the country.
- The first National Population Register was prepared in 2010 and updating this data was done in 2015 by conducting door-to-door surveys.
- NPR is prepared under the Citizenship Act 1955 and the Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003.

NO SUPPORTING DOCUMENTS NEEDED

➤ NPR, a pan-India exercise excluding Assam, will seek info regarding date & place of birth of a usual resident's mother and father as well as his/her identity details like Aadhaar, passport, driving licence & voter ID

➤ A 'usual resident' is defined as a person who has resided in an area for the past 6 months or more or who intends to reside in that area for next 6 months

➤ Data will be recorded as

declared by respondent & no proof or supporting documents will be sought

➤ Sharing Aadhaar, passport, driving licence & voter ID details will be **voluntary**. PAN details won't be sought

➤ No biometrics will be collected during NPR, though the same can be sourced from UIDAI if needed on the basis of Aadhaar

➤ NPR was last prepared in 2010 along with Census 2011, followed by updation in 2015

Citizenship (Amendment) Act, 2019

- The Bill amended the Citizenship Act, of 1955.
 - The Citizenship Act, of 1955 provides various ways in which citizenship may be acquired.
 - It provides for citizenship by birth, descent, registration, naturalisation and by incorporation of the territory into India.
 - It regulates the registration of Overseas Citizens of India Cardholders (OCIs) and their rights.
- The Act provide that the **Hindus, Sikhs, Buddhists, Jains, Parsis and Christians from Afghanistan, Bangladesh and Pakistan, who entered India on or before December 31, 2014, will not be treated as illegal migrants.**
 - They are also exempted from the Foreigners Act, of 1946 and the Passport (Entry into India) Act, of 1920.
 - The 1920 Act mandates foreigners to carry passports, while the 19th Act regulates the entry and departure of foreigners in India.
- The Act allows a person to apply for citizenship by registration or naturalisation if the person meets certain qualifications;
 - To obtain citizenship by naturalisation, one of the qualifications is that the person must have resided in India or have been in service of the central government for at least 11 years before applying for citizenship.
 - The present act creates an exception for Hindus, Sikhs, Buddhists, Jains, Parsis and Christians from Afghanistan, Bangladesh and Pakistan, concerning this qualification. For these groups of persons, the 11 years requirement was reduced to five years.

AGE OF CONSENT

GS-II POLITY

About

- The Karnataka High Court, while dismissing a case under the Protection of Children from Sexual Offences (POSCO) Act, 2012, stated that the Law Commission of India would have to rethink the age criteria, to take into consideration the ground realities.

Details

- Under the POCSE Act, 2012, and several provisions of the IPC, **whoever commits a penetrative sexual assault on a child (below 18 years of age) can be "imprisoned with minimum 7 years and it may be extended to imprisonment for life, and shall also be liable to fine."**

- Even if the girl is 16 years old, she is treated as a "child" under the POCSO Act and hence her consent does not matter, and any sexual intercourse is treated as rape.
- There have been several instances when the courts have quashed criminal proceedings of rape and kidnapping, after being convinced that the law was being misused to suit one or the other party.

Age of consent in India

- India's age of consent for sex is set at 18 years under the Criminal Law (Amendment) Act, 2013, regardless of gender.
- In 1892, the marital rape and subsequent death of a 10-year-old girl, Phulmoni Dasi, caused the age of consent to be raised from 10 to 12 years.
 - In 1949, it was raised to 16 years after agitation from women's groups about the adverse effect of early pregnancy.
- The Criminal Law (Amendment) Act, of 2013 increased the legally permissible age for sexual consent from 16 to 18.
 - Although the Criminal Law (Amendment) Act, of 2013 initially sought to lower the age to 16, it was set at 18 due to political pressure from conservative parties.
 - Section 375 of the Act: A man is said to commit "rape" if he has sexual relations with a girl less than 18 years of age with or without her consent.
- POSCO Act, 2012 disallows any such sexual relationships between people under 18 years of age and puts such crimes within marriages as an aggravated offence.
 - An exception under the act; According to Section 375, Sexual Intercourse by a man with his wife, the wife not being under 15 years of age, is not rape.

Concern

- The Karnataka High Court said the effect of such criminal prosecution of a minor girl or boy is causing severe distress to all concerned, including the families.
- Sometimes, dissatisfied parents file a case to foil a relationship between two adolescents.
- Misuses by parents to decide who their daughters or sons want to marry.
- The government introduced the Prohibition of Child Marriage (Amendment) Bill, 2021 which seeks to increase the minimum age of marriage for women to 21 years.
 - Social activists feel that

increasing the marriage age may force vulnerable women to remain under the control of family and social pressures.

MARRIAGE, CONSENT, MARITAL SEX: 1 LAW

► Till now, the minimum age for a girl's marriage was 18, which was also the minimum age for consent

► However, IPC Sec 375 (2) cleared a husband of rape charges for sex with his wife if she was above 15

► For the first time since the IPC came into effect in 1860, there is now a **uniform minimum age (18)** for **marriage, consent and marital sex**

% OF UNDER-18 MARRIED OF THE TOTAL POPULATION IN INDIA			
WORST STATES	Total	M	F
Rajasthan	2.6	1.6	3.7
Maharashtra	2.1	1.5	2.9
Gujarat	2.1	1.4	2.9
BEST STATES			
Mizoram	0.9	0.4	1.3
Uttarakhand	0.9	0.5	1.3
Delhi	0.8	0.5	1.3
India	1.6	1.0	2.3

LAW AROUND THE WORLD	Marriage				Consent For Sex
	Without Parental Consent		With Parental Consent		
	Country	M	F	M	
US*	18	18	No Minimum Age		16 -18
China	22	20	NA	NA	14
Japan	20	20	18	16	13
Russia	18	18	16	16	16
UK	18	18	16	16	16
France	18	18	18	18	15

*US has a close-in-age exemption clause (also known as Romeo and Juliet law) e.g in Delaware, where the age of consent is 18, but someone aged 16 or 17 can legally give consent to an older partner who's under 21

*US has a close-in-age exemption clause (also known as Romeo and Juliet law) e.g. in Delaware, where the age of consent is 18, but someone aged 16 or 17 can legally give consent to an older partner who's under 30

Way Forward

- In 2021, in the Vijaylakshmi v/s State Rep case, the Madras High Court, while dismissing a POCSO case, said that the definition of 'child' under Section 2(d) of the POCSO Act can be redefined as 16 instead of 18. "Any consensual sex after the age of 16 or bodily contact or allied acts can be excluded from the rigorous provisions of the POCSO Act."
 - The court also suggested that the age difference in consensual relationships should not be more than 5 years to ensure that a girl of an impressionable age is not taken advantage of by "a person who is much older."
- The age of consent must be lower than the age of marriage to decriminalize sex among older adolescents to protect them from the misuse of law and harassment.

POCSO ACT

GS-II POLITY

In News

- An analysis titled "A Decade of Pocso", carried out by the Justice, Access and Lowering Delays in India (JALDI) has found that case under the Protection of Children from Sexual Offences (POCSO) Act;
 - 43.44% of trials end in acquittals and 14.03% lead to convictions under POSCO Act.

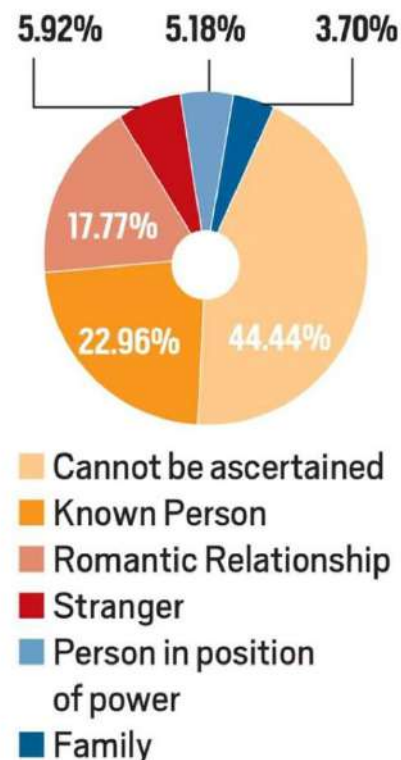
- In 22.9% of cases accused were known to the victims, and in 3.7% of cases, they were family members.
- 18% were involved in a "prior romantic relationship" while the relationship between the victim and accused were not identified in 44%.

Details

- According to data published by the National Crime Record Bureau (NCRB) in 2021; in nearly 96% of cases, the accused was a person known to the victim.
- The analysis "A Decade of Pocso" was conducted in collaboration with the Data Evidence for Justice Reform (DE JURE) program at the World Bank.
 - It studied 230,730 cases from e-Courts in 486 districts across 28 states and Union Territories for the period 2012 to 2021.
- Among the states, Andhra Pradesh shows a huge difference between acquittal and conviction figures with 56.15% of the total disposed cases ending in acquittals and only 7.25% convictions.
 - In West Bengal, acquittals (53.38%) are nearly five times the conviction figures (11.56%).
 - In Kerala, the gap between acquittal and conviction is not very high with acquittals constituting 20.5% of the total cases and convictions constituting 16.49%.
 - Delhi has the highest number of POCSO trials with a number reaching 13.54 cases per 100,000 populations in 2018.
 - Uttar Pradesh has the highest pendency with more than 77% of the total cases filed between November 2012 and February 2021.
- The study found a **sharp increase of cases in the number of pending cases between 2019 and 2020 due to the Covid pandemic.**
- The study found that on average, it takes nearly 510 days for a case to be disposed of, whereas the POCSO Act has the provision that cases should be disposed of within a year.

POCSO CASES

Relationship between the victim & accused



Protection of Children from Sexual Offences (POCSO) Act

- The POCSO Act was enacted in 2012.
- It is a **gender-neutral act**; it also recognizes that boys can also become victims of sexual violence as well.
- **It defines a child as someone under the age of 18.**
- It also specifically lays down stringent punishment for exposing children to or using them to create child sexual abuse material.
- The law lays down the procedures for reporting sexual crimes against children.
- **It places the burden of proof on the accused, following 'guilty until proven innocent' unlike the IPC.**
- The Act penalizes storage of pornographic material for commercial purposes with a punishment of up to 3 years, a fine, or both.

Challenges with the Act

- **Lack of complaint:** Most of the victims experience terrific social humiliation and feelings of shame and guilt when they report that they are sexually assaulted. It either delays or leaves out a no of victims.
- **Lack of awareness:** Parents or guardians often do not have the knowledge to safeguard their children either by educating the children about sexual abuse or by being watchful to prevent abuse on their children.
- **Poor rate of conviction:** POSCO act is plagued by the low rate of conviction. It was 14% in 2014 and 18% in 2018.
- Many states have not complied with the provisions of the act as they have not established special children's courts.
- The act doesn't cover all aspects of the crime against children. It doesn't cover cyberbullying and other types of online crime against children.
- Ineffective training of public prosecutors has often led to the acquittal of the perpetrator.

Way Forward

- **More awareness needs to be generated** to make more children come forward for their child abuse.
- **Proper training of police,** forensic staff and public prosecutors need to be put in place for enhancement of the conviction rate.
- **The introduction of sex education in schools and educating the children about good touch and bad touch is significant.** In

2008-09 Parliamentary committee report mentions the introduction of sex education, but it never materialized. It has to be implemented.

- The Supreme Court issued a direction to set up special courts within 60 days in the districts that are having more than 100 pending POCSO cases. This has to be implemented urgently.

REMISSION OF SENTENCE

GS-II POLITY

In News

- The **Supreme Court ordered the immediate release of convicts** who are serving a life sentence for more than three decades in the Rajiv Gandhi assassination case.

Background

- **Tamil Nadu state government recommends the premature release of convicts in** the Rajiv Gandhi assassination case. The State government stated that the state cabinet decided an early release of the convicts is “final” and can be executed by the governor as per the aid and advice of the state government.
 - Then, the union government claimed that the President, and not the Tamil Nadu Governor, has “exclusive power” to decide on the plea for pardon by the Rajiv Gandhi assassination convict.
 - The State Government's stand was challenged in the Supreme Court.
- **In the Supreme court**, A three-judge Bench, led by Justice L. Nageswara Rao, **said that the Union government's argument, if accepted, then it would leave Article 161 (the constitutional power of Governors of States to grant pardon) a “dead letter”**.
 - The bench stated that “if only President would have the exclusive power to grant pardons. So, over the period of 70-75 years, all pardons granted under Article 161 by Governors for the IPC are unconstitutional”.

Law on Remissions

- Under **Articles 72 and 161 of the Indian Constitution**, the President and Governors have the power to pardon, suspend, remit, or commute a verdict passed by the courts.
- Since **prisons are a state subject**, state governments also have authority under **Section 432 of the Code of Criminal Procedure (CrPC) to remit sentences**.
- Section 433A of the CrPC puts certain limitations on state government powers of remission:
 - Where a sentence of life imprisonment is imposed on a person for an offence for which death is one of the punishments provided by law.
- Such a person shall not be released from prison unless he had served at least fourteen years of imprisonment.
- Prisoners are usually released on the birth and death anniversaries of prominent leaders and other important events (Independence Day, Republic Day, Gandhi Jayanti, etc).

Grounds for remission

- Many **States have set up their Sentence Review Boards** to exercise the powers under Section 432 of the CrPC.
 - The policy varies from state to state; broadly the grounds for remission considered by the Board are the same.
- The **Supreme Court has highlighted that states cannot arbitrarily exercise the power of remission and they must need to follow due process**.
- The **following factors need to be considered before granting remission**;
 - The seriousness of the crime.
 - The status of the co-accused.
 - Conduct of accused in jail.
- The **Supreme court in the ‘Laxman Naskar v. Union of India’ (2000) case verdict has laid down 5 grounds on which remission is considered**:
 - Whether the offence is an individual act of crime that does not affect society.
 - Whether there is a chance of the crime being repeated in future.
 - Whether the convict has lost the potential to commit a crime.
 - Whether any purpose is being served in keeping the convict in prison.
 - Socio-economic conditions of the convict's family.
- **Jail manuals contain rules that allow certain days of remission every month for the good behaviour of convicts**.
 - However, convicts serving life sentences are entitled to seek remission only after serving a minimum of 14 years.

DRAFT DIGITAL PERSONAL DATA PROTECTION BILL 2022**GS-II POLITY****In News**

- The Union Government has released a new draft of the data protection bill 'the Digital Personal Data Protection Bill, 2022 (DPDP Bill, 2022)'.
- The draft bill has been uploaded for public consultation and the government is expected to introduce the Bill in Parliament in the budget session of 2023.

The Bill

- The purpose of this bill is to provide for the processing of digital personal data in a manner that recognizes both the right of individuals to protect their data and the need to process personal data for lawful purposes.
- The Bill will establish a comprehensive legal framework governing digital personal data protection in India.
- According to an explanatory note for the bill, it is based on seven principles.
- Usage of personal data by organizations must be done in a manner that is lawful, fair to the individuals concerned and transparent to individuals.
- Personal data must only be used for the purposes for which it was collected.
- This third principle talks of data minimization while the fourth emphasizes data accuracy when it comes to collection.
- Personal data that is collected cannot be "stored perpetually by default," and storage should be limited to a fixed duration.
- There should be reasonable safeguards to ensure there is "no unauthorised collection or processing of personal data."
- The person who decides the purpose and means of the processing of personal data should be accountable for such processing.

Data Principal and Data Fiduciary

- The bill uses the term "Data Principal" to denote the individual whose data is being collected.
- The term "Data Fiduciary" the entity (can be an individual, company, firm, state etc), which decides the "purpose and means of the processing of an individual's data."
- The law also makes a recognition that in the case of children –defined as all users under the age of 18 – their parents or lawful guardians will be considered their 'Data Principals.'
- Under the law, personal data is "any data by which or about which an individual can be identified." Processing means "the entire cycle of operations that can be carried out in respect of personal data." So right from collection to storage of data would come under processing of data as per the bill.
- The bill also ensures that individuals should be able to "access basic information" in languages specified in the eighth schedule of the Indian Constitution.
- The bill also makes it clear that individual needs to give consent before their data is processed and that "every individual should know what items of personal data a Data Fiduciary wants to collect and the purpose of such collection and further processing."
- Further, the notice of data collection needs to be in clear and easy-to-understand language. Individuals also have the right to withdraw consent from a Data Fiduciary.

Significant Data Fiduciaries

- The bill also talks of 'Significant Data Fiduciaries, who deal with a high volume of personal data. The Central government will define who is designated under this category based on several factors ranging from the volume of personal data processed to the risk of harm to the potential impact on the sovereignty and integrity of India. This category needs to fulfil certain additional obligations to enable greater scrutiny of its practices.
- Such entities will have to appoint a 'Data protection officer' who will represent them. They will be the point of contact for grievance redressal. They will also have to appoint an independent Data auditor who shall evaluate their compliance with the act.

Right to erase data, right to nominate

- Data principals will have the right to demand the erasure and correction of data collected by the data fiduciary. They will also have the right to nominate an individual who will exercise these rights in the event of death or incapacity of the data principal.
- The bill also gives consumers the right to file a complaint against a 'Data Fiduciary' with the Data Protection Board in case they do not get a satisfactory response from the company.

Cross-border data transfer

- The bill also allows for cross-border storage and transfer of data to "certain notified countries and territories." However, "an assessment of relevant factors by the Central Government would precede such a notification.

Rationale

- Placing restrictions on cross-border data flows is likely to result in higher business failure rates, introduce barriers for start-ups, and lead to more expensive product offerings from existing market players.
- Ultimately, the above mandates will affect digital inclusion and the ability of Indian consumers to access a truly global internet and quality of services.
- The proposal also seeks to give Union Government the powers to exempt state governments from the law in the interest of national security.

Financial penalties

- The draft also proposes to impose significant penalties on businesses that undergo data breaches or fail to notify users when breaches happen. Entities that fail to take "reasonable security safeguards" to prevent personal data breaches will be fined as high as Rs 250 crore.
- The Centre has revised the draft Bill on personal data protection and proposed a hefty increase in penalty amounts of up to ₹500 crores.

JUDICIAL ACCOUNTABILITY

GS-II POLITY

About

- The Supreme Court of India has the final say over decisions of the 24 high courts in the states, and also over a hundred tribunals, central and state, functioning across India.
- **Under Article 141 of the Indian Constitution, the decision of the Supreme Court is binding on all other courts and authorities in the country (Article 141).**
 - There is virtually no area of legislative or executive activity which is beyond the Supreme Court's scrutiny.

Indian Judiciary

- In India we have the rule of law; laws apply equally to all persons and a certain set of fixed procedures need to be followed when a law is violated.
 - To enforce this rule of law, we have a judicial system that consists of the mechanism of courts that a citizen can approach when a law is violated.
- **As an organ of government, the judiciary plays a crucial role in the functioning of India's democracy.** It can play this role only because it is independent.
- **Role of the Judiciary:** Courts take decisions on a very large number of issues. Broadly speaking, the work that the judiciary does can be divided into the following:
 - **Dispute Resolution:** The judicial system provides a mechanism for resolving disputes between citizens, between citizens and the government, between two state governments and between the centre and state governments.
 - **Judicial Review:** As the final interpreter of the Constitution, the judiciary also has the power to strike down particular laws passed by the Parliament if it believes that these are a violation of the basic structure of the Constitution. This is called judicial review.
 - **Upholding the Law and Enforcing Fundamental Rights:** Every citizen of India can approach the Supreme Court or the High Court if they believe that their Fundamental Rights have been violated.
- **Independent Judiciary**
 - The Indian Constitution provided independence for the judiciary.
 - Separation of powers; other branches of government 'the legislature and the executive' cannot interfere in the work of the judiciary.
 - The courts are not under the government and do not act on their behalf.
 - All judges in the High Court as well as the Supreme Court are appointed with very little interference from these other branches of government.
 - Once appointed to this office, it is also very difficult to remove a judge.
 - It is the independence of the judiciary that allows the courts to play a central role in ensuring that there is no misuse of power by the legislature and the executive.
 - It also plays a crucial role in protecting the Fundamental Rights of citizens because anyone can approach the courts if they believe that their rights have been violated.
- **Structure of Courts in India**
 - **There are three different levels of courts in our country.** There are several courts at the lower level while there is only one at the apex level.
 - The courts that most people interact with are what are called subordinate or district courts. These are usually at the district or Tehsil level or in towns and they hear many kinds of cases. Each state is divided into districts that are presided

over by a District Judge.

- Each state has a High Court which is the highest court of that state.
- At the top is the Supreme Court which is located in New Delhi and is presided over by the Chief Justice of India. The decisions made by the Supreme Court are binding on all other courts in India.

Judicial Accountability

- Judicial accountability means that the judges are responsible for the decisions they deliver.
 - **Every public institution is responsible for answering the public for the decision they take and the function they carry out.**
- The Judiciary is not subjected to the same level of accountability as the Executive or Legislative wings of the Government due to the principles of Judicial Independence.
 - If Judiciary is made accountable to the Legislature or the Executive it will impact its Independence. So special provisions have been provided to ensure judicial accountability.
- **The Indian Constitution provides for the removal of the Supreme Court judges through impeachment under Article 124 of the Indian Constitution and the High Courts under Article 124 for misbehaviour and incapacity.**
- Article 235 of the Constitution provides for the 'control' of the High Court over the subordinate judiciary. This provides an effective mechanism to enforce the accountability of the lower judiciary.

Why need for stronger judicial accountability

- Change in demands of the public belonging to a welfare State.
- Absence of remedy for regulating misbehavior among judges.
- To ensure legitimacy, the judiciary should be held accountable as well to show that the decisions are taken abiding by the Indian Constitution.
- **Knowledge about the standard of the judges practising in the courts:** There has also been the appointment of several judges based on political connections, and biases which are disadvantageous for the judiciary. To avoid the same in the future, stronger judicial accountability is necessary to ensure the delivery of justice with fairness and clarity.
- **Absence of provision to review the Supreme Court's decisions:** There exists no provision in the Indian Constitution which directs in reviewing the Supreme Court's decision.

Way Forward

- **The need of the hour is to enhance Judicial Accountability to ensure Speedy Justice, Impartial functioning to earn public trust, etc.**
- If the judges are checked and are restricted from accessing excessive power then the efficiency of the judicial system will automatically be improved.
- Judiciary is the only organ of the government that delivers justice to the common citizens. Therefore, to successfully achieve this role of the judiciary, there comes a requirement for accountability on the part of the judicial system.

PESA ACT

GS-II POLITY

In News

- The Chief Minister of Madhya Pradesh Shivraj Singh Chouhan said that the Panchayats Extension to Scheduled Areas (PESA) Act will ensure that conversions and marriages done by "alluring" tribal women to get land notified as tribal land is stopped.

PESA (Panchayat Extension to Scheduled Areas) Act 1996

- **In many states, the Panchayati raj provisions of the 73rd amendment were not extended** to the areas inhabited by the Adivasi populations (5th Scheduled of the Indian constitution).
 - **PESA Act, 1996 was passed to extend the provisions of Part IX of the Indian Constitution relating to the Panchayats to the Scheduled Areas.**
- Under the Act, Scheduled Areas are those areas mentioned in Article 244(1), the provisions of the 5th Schedule apply to the Scheduled Areas and Scheduled Tribes in states other than Assam, Meghalaya, Tripura, and Mizoram.
- **10 states have been notified under the 5th Schedule** areas that cover (partially or fully) several districts in each of these states: Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, and Telangana.
- **The Act was enacted to ensure self-governance through village assemblies (Gram Sabhas) for the people living in the Scheduled Areas.**
 - It recognises the rights of resident tribal communities of the Scheduled Areas, to govern themselves through their systems of self-government, and also recognises their traditional rights over natural resources.
- The idea behind this act is that local traditions of self-government should be protected while introducing modern elected

bodies.

- **The Act empowers Gram Sabhas to play a key role in approving development plans and controlling all social sectors. This includes:**
 - Exercising control over minor (non-timber) forest resources, minor water bodies and minor minerals.
 - Managing local markets, preventing land alienation.
 - Right to mandatory consultation with gram sabha in land acquisition, resettlement and rehabilitation of displaced persons.
 - **Mandatory recommendations by Gram Sabha or Panchayat at an appropriate level for prospective licenses/leases for mines and concessions for the exploitation of minor minerals.**
 - Regulate the sale/consumption of intoxicants and ownership of minor forest produce.
 - Prevent land alienation and restore alienated land.
 - Control over institutions and functionaries in the social sector, and local plans including Tribal sub-plans and resources.

About Tribal in India

- The Term "Tribal" is used for the very old Communities, being among the oldest inhabitants of the Sub-Continent.
- **They did not practice a religion with a written text, did not have Sharp Caste/Class divisions**
- **In terms of language, tribes are Categorized into 4 Categories:**
 - Indo-Aryan
 - Dravidian
 - Austric
 - Tibeto-Burman
- In terms of size, the biggest tribes are Gonds, Bhils, Santhals, Oraons, Minas, Bodos and Mundas.
 - The total population of tribes amounts to about 8.2% of the population of India.
- Based on livelihood, tribes can be categorized into Fishermen, food gatherers and hunters, Shifting Cultivators, Peasants Plantation and industrial workers.
- Tribal Society is a more egalitarian and kinship-based mode of Social organization.
- **Tribals were not always the oppressed groups they are now; there were Several Gond kingdoms in Central India.**
 - Many of the So-Called Rajput kingdoms of Central and western India emerged through a Process of Stratification among Adivasi Communities themselves.
 - Adivasis often exercised dominance over the Plains People through their Capacity to raid them, and through their Services as local militias.
 - They also occupied a Special trade niche, trading forest Produce, Salt and elephants.
 - Capitalist economics to exploit forest resources and minerals to recruit cheap labour has brought tribal Societies into Contact with mainstream Society a long time ago.
 - They were losing their land to non-tribal immigrant Settlers, and their access to forests because of the government policy of reservation of forests and the introduction of mining operations.

Challenges faced by Tribals

- Land and Forests were taken away from Tribal Societies in the name of development.
- **Development involved the building of large dams, factories and mines. Because the tribal areas were located in mineral-rich and forest Covered Parts of the Country, tribals have paid a huge Price for the development of the rest of Indian Society.** This kind of development has benefited the mainstream at the expense of the tribes.
- Forests Started to be systematically exploited in British times and the trend continued after Independence. The Coming of Private Property in the land has also adversely affected tribals, whose Community-based forms of Collective ownership were placed at a disadvantage in the new System.
- **Many tribal Concentration regions and States have been experiencing the Problem of heavy in-migration of non-tribals.** This threatens tribal Communities and Cultures, besides accelerating the Process of exploitation of tribals.
 - In Tripura, the tribal Share of its Population halved within a Single decade, reducing them to a minority. Similar Pressure is being felt by Arunachal Pradesh.
- Many Tribals in the North-East States have been living for decades under Special laws that limit the Civil liberties of Citizens, States have been declared as 'disturbed areas'.
- **The vicious Circle of armed rebellions Provoking State repression which in turn fuels further rebellions has damaged the economy, Culture and Society of the North-eastern State.**

Schemes for the development of Tribal

- The Pre and Post Metric schemes are demand-based schemes and every ST student whose family income is up to Rs 2.5 lakhs is entitled to a scholarship for pursuing education from class IX to Post Doctorate across India.
 - The states send the proposal for the estimated expenditure during the financial year based on the expenditure incurred in previous years and advance up to 50% of the Central share is released to the States.

- After the State has disbursed the scholarship to the students and has submitted certificates, the balance amount is released to the State provided the State has contributed its share.
- Pradhan Mantri Adi Adarsh Gram Yojna:
 - Comprehensive development of 36,428 villages will be undertaken to develop these villages as Adarsh Gram, under 'Pradhan Mantri Aadi Adarsh Gram Yojana'.
 - These villages have a tribal population of more than 500 and are 50% tribal.
- Pradhan Mantri Janjatiya Vikas Mission
 - The Mission seeks to achieve livelihood-driven tribal development in the next five years through the formation of Van Dhan groups that have been organized into Vandhan Kendras.
 - New haats bazaar and warehouses will be developed in the next 5 years as part of "Atmanirbhar Bharat Abhyan".
 - TRIFED would be the nodal agency for implementing the scheme. The products produced will be marketed through Tribe India Stores.
- Venture Capital Fund for STs
 - An amount of Rs. 50 cr. has been sanctioned for the new scheme of 'Venture Capital Fund for Scheduled Tribes' (VCF-ST), which is aimed at promoting Entrepreneurship among the STs.
 - The VCF-ST scheme would be a social sector initiative to promote ST entrepreneurship and to support and incubate the start-up ideas of ST youth.
- Central Sector Scholarship Scheme for ST students was introduced in the academic year 2007-08 to encourage meritorious ST students for pursuing studies at the Degree and Postgraduate level in any of the Institutes identified by the Ministry of Tribal Affairs for the purpose.
- Vocational Training Centers in Tribal Areas
- The main aim of this scheme is to upgrade the skills of the tribal youth in various traditional/ modern vocations depending upon their educational qualification, present economic trends and the market potential, which would enable them to gain suitable employment or enable them to become self-employed.

APPOINTMENT OF ELECTION COMMISSIONERS

GS-II POLITY

In News

- The **Supreme court of India stated that the Chief Election Commissioner must be a person "with character" who "does not allow himself to be bulldozed"**, the Supreme Court has introduced the idea of including the Chief Justice of India in the appointment committee to ensure "neutrality".
- The Court mentioned that the independence of the institution should be ensured at the threshold for which the appointment should be scanned at the entry-level.
- The court highlighted that **since 2004, no chief election commissioner has completed the six-year tenure.**

Election Commission of India

- It is a permanent and independent body established by the Constitution of India directly to ensure free and fair elections in the country.
- Under Article 324 of the Indian Constitution, the Election Commission **supervises the conduct of elections to the Parliament and Legislature of every State and elections to the offices of the President and Vice-President of India.**
 - **Article 324** does not provide the procedure for such appointments.
- It consists of the Chief Election Commissioner and two Election Commissioners.
 - Originally, there was only Chief Election Commissioner, there were no Election Commissioners.

Appointment of Election Commissioner

- The President **appoints Chief Election Commissioner and Election Commissioners.**
- **Tenure of 6 years, or up to 65 years of age, whichever is earlier.**
- The status, salary and perks of election commissioners are equivalent to Judges of the Supreme Court of India.
- **The Chief Election Commissioner can be removed from office only through impeachment by Parliament.**
 - The President can remove other members in consultation with the Chief Election Commissioner.
- The President may appoint Regional Election Commissioners in consultation with the CEC before elections to the Parliament or Assemblies.
- The Chief Election Commissioner cannot hold any office of profit after retirement.
- The Chief Election Commissioner cannot be reappointed to the post.

Powers of the Election Commission

- The EC **enjoys complete autonomy and is insulated from any interference from the Executive.**
- It also functions as a quasi-judicial body regarding matters related to elections and electoral disputes. Its recommendations are binding on the President of India.

- However, its decisions are subject to judicial review by High Courts and the Supreme Court acting on electoral petitions.
- During the election process, **the entire Central and state government machinery (including paramilitary and police forces) is deemed to be on deputation to the Commission.**
- The Commission takes effective control of government personnel and movable and immovable property for the successful conduct of elections.
- **Once the Polls are Completed and the result declared, Commission cannot review any result on its own,** Can only be reviewed through the process of an election Petition, which Can be filed before the High Court, in respect of elections to the Parliament and State Legislatures. In respect of elections for the offices of President and Vice President, Such Petitions Can only be filed before Supreme Court.
- It provides experts and observers for elections to other Countries in Cooperation with United Nations and Commonwealth Secretariat.

Functions of the Election Commission

- Preparation of the Electoral Rolls.
- Revision of Electoral Rolls.
- Superintendence, direction and Control of all matters related to the Elections.
- Granting of Recognition of Political Parties.
- Allotment of Symbols.
- Ensuring fair and free elections.
- Advises the President or Governor regarding all electoral matters including questions relating to disqualifications of members.
- Settles disputes and Petitions referred to it by President or Governor.
- Decides disputes relating to election Symbol in the event of a Split in the Political Party.
- Has the Power to impose a Ceiling on the election expenses of the Candidate.
- The task of collecting affidavits from the Candidates regarding their assets.
- Power and duty to disqualify a Candidate if He/She fails to submit election returns within the Prescribed Period.
- It issues a notification after the election is over, that the house is duly constituted.

PREVENTION OF CRUELTY TO ANIMALS ACT

GS-II POLITY

In News

- **The Union Government has proposed to introduce 61 amendments in the Prevention of Cruelty to Animal Act 1960,** including the provision of three-year jail for committing “gruesome cruelty” and five-year imprisonment for killing an animal.

Key Points of the Draft

- In the draft, several offences have been made cognizable.
- The draft includes ‘bestiality’ as a crime under the new category of ‘gruesome cruelty’ and it defines gruesome cruelty as “an act that leads to extreme pain and suffering to the animals which may cause lifelong disability or death”.
- “Gruesome cruelty...shall be punishable with a minimum fine of Rs 50,000 which may be extended up to Rs 75,000 or the cost may be decided by a judicial magistrate in consultation with the jurisdictional veterinarians whichever is more or with the imprisonment of one year which may extend up to three years or with both,” reads the draft proposal.
- The draft proposes a maximum 5-year imprisonment, along with a fine, for killing an animal. For this, a new clause, Section 11(B) has been proposed.
- **The draft also proposes the insertion of a new Section 3A, which provides ‘five freedoms’ to animals. “It shall be the duty of every person having charge of an animal to ensure that the animal in his care or under his charge has:**
 - Freedom from thirst, hunger and malnutrition;
 - Freedom from discomfort due to environment;
 - Freedom from pain, injury and diseases;
 - Freedom to express normal behaviour for the species; and
 - Freedom from fear and distress.
- In the case of community animals, the local government shall be responsible for their care.
- The draft proposals introduce the community animal as “any animal born in a community for which no ownership has been claimed... excluding wild animals as defined under the Wildlife Protection Act, 1972 (53 of 1972).”

About the Prevention of Cruelty to Animals Act, 1960

- The legislative intent of the Act is to “prevent the infliction of unnecessary pain or suffering on animals”.
- The Animal Welfare Board of India (AWBI) was established in 1962 under Section 4 of the Act.
- This Act provides **punishment for causing unnecessary cruelty and suffering to animals. The Act defines animals and different forms of animals.**
- Discusses different forms of cruelty, exceptions, and killing of a suffering animal in case any cruelty has been committed against it, to relieve it from further suffering.
- Provides guidelines relating to experimentation on animals for scientific purposes.
- The Act enshrines the provisions relating to the exhibition of performing animals, and offences committed against the performing animals.
- This Act provides for a limitation period of 3 months beyond which no prosecution shall lie for any offences under this Act.

DECENTRALISATION OF MGNREGA

GS-II GOVERNANCE

In News

- Recently an internal study conducted by the Union Ministry of Rural Development has suggested for decentralization of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).
 - It also suggested providing more flexibility at the ground level.

Details

- The Union Ministry recently released the report of the 6th Common Review Mission, which surveyed; Andhra Pradesh, Arunachal Pradesh, Karnataka, Nagaland, Gujarat, Jharkhand, Himachal Pradesh, and the Union Territory of Jammu and Kashmir to evaluate the implementation of all rural development schemes, including the MGNREGS.

Key suggestions made in the Report

- There should be a diversification of permissible works according to the local area requirement instead of listing the types of permissible works.
- The flexibility of work should be given at ground level to select the type of work.
- For the last few years, the fund manager has been centralized instead of paying the gram sabhas an advance enabling them to decide the work they want to initiate.
 - The report highlighted that gram sabhas can take into account the local conditions and the community's requirements; therefore some decision-making must be decentralized to them.

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005

- The MGNREGA is Indian labour law and social security programme that aims to **guarantee the 'right to work'**.
- It provides a **legal right for 100 days of employment in every financial year to at least one member of every rural household** whose adult members agree to do **unskilled manual work**.
- The Ministry of Rural Development is monitoring** the implementation of this scheme.
- Women were guaranteed one-third of the jobs** made available under the MGNREGA.
- The MGNREGA programme also helps in **creating durable assets** (such as roads, canals, ponds and wells).
- Work is to be provided within 5 km of workers' residence** and minimum wages are to be paid.
- Right to get unemployment allowance** in case employment is not provided within 15 days of applying.
- MGNREGA is implemented mainly by gram panchayats. Adult members of rural households submit their details to the Gram Panchayat. The Gram Panchayat registers households after making an enquiry and issues a job card. The job card contains the details of the adult member enrolled and his /her photo
- The involvement of contractors is banned.**
- The Social Audit of MGNREGA works is mandatory**, which ensures accountability and transparency.

Constitutionality of MGNREGA

- MGNREGA provides a 'right to work' in accordance with Article 41 which directs the State to secure for all citizens the right to work.
- It also protects the environment through sustainable rural works, which is **consistent with Article 48A** which directs the State to protect the environment.
- Article 21 guarantees the right to life with dignity to every citizen of India, this act promotes dignity among the rural people through an assurance of livelihood security.
- Article 16 guarantees equality of opportunity in matters of public employment and prevents the State from discriminating against anyone in matters of employment on the grounds only of religion, race, caste, sex, descent, place of birth, place of residence or any of them.
- NREGA also follows Article 46** which requires the State to promote the interests of and work for the economic uplift of the scheduled castes and scheduled tribes and protect them from discrimination and exploitation.
- Article 40 mandates the State to organize village panchayats** and award them with such powers and authority as may be necessary to enable them to function as units of self-government.

Significance of MGNREGA

- The programme is providing **economic security and creates rural assets**.
- It also helps in protecting the environment, reducing rural-urban migration and promoting social equity, etc.
- It focuses on the economic and social empowerment of women.
- It provides "Green" and "Decent" work.

- Works under MGNREGA help to address the climate change vulnerability and protect the farmers from such risks and conserve natural resources.

MOTHER TONGUE SURVEY

GS-II GOVERNANCE

About

- **The Union Ministry of Home Affairs (MHA) has completed the Mother Tongue Survey of India (MTSI).**
 - The objective of the survey is to preserve and analyze the original flavour of each indigenous Mother Tongue; it has been planned to set up a web archive at the National Informatics Centre (NIC).
 - The survey also documents the linguistic features of the selected languages.
- The National Informatics Centre (NIC) and the National Film Development Corporation (NFDC) will document and preserve the linguistic data of the surveyed mother tongues in audio-video files.

Mother tongues in India

- **As per 2011 linguistic census data, more than 19,500 languages grouped into 121 mother tongues are spoken in India.**
- 43.6% of the population declared the Hindi language as their mother tongue.
 - **Bengali is the 2nd most popular mother tongue accounting for 8% of the population.**
- The new National Curriculum Framework (NCF) for the foundational stages of education has recommended that the mother tongue should be the primary medium of instruction in schools for children up to 8 years of age.
 - Evidence from research confirms the importance of teaching children in their mother tongue during the foundational years and beyond
 - Children learn concepts most rapidly and deeply in their home language, the primary medium of instruction would optimally be the child's home language/ mother tongue/ familiar language in the Foundational Stage," it states.
- According to the Census of 2011, in India, there are 121 mother tongues, of which 22 languages are included in the eighth schedule of our Constitution, and account for the mother tongue of 96.72% of Indians.
- The **National Education Policy (NEP) 2020 recommended the use of the mother tongue as a medium of instruction in schools whenever possible.**

Highlights of New Education Policy 2020

- The National Education Policy (NEP) 2020 was released in July 2020.
- NEP 2020 will **replace the National Policy on Education, 1986.**
- It aims at **ensuring Universal Access at All Levels of schooling** from pre-primary school to Grade 12.
- It Ensures quality early childhood care and education for all children between 3-6 years.
- **It introduced a New Curricular and Pedagogical Structure (5+3+3+4).**
 - 5 years of foundational stage (for ages 3 to 8).
 - 3 years of preparatory stage (for ages 8 to 11 or classes 3 to 5).
 - 3 years of middle stage (for ages 11 to 14 or classes 6 to 8).
 - 4 years of secondary stage (for ages 14 to 18 or classes 9 to 12).
- No strict separations between arts and sciences, between curricular and extracurricular activities, and between vocational and academic streams.
- To establish a **National Mission on Foundational Literacy and Numeracy.**
- Promoting multilingualism and Indian languages.
- Reform in Assessment of Board Exams. Setting up a new National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development).
- Special priority is given to socially and Economically Disadvantaged Groups.
- A **separate Gender Inclusion fund and Special Education Zones** for disadvantaged regions and groups;
- A transparent process for recruitment of teachers and merit-based performance assessment.
- Ensuring availability of all resources through school complexes and clusters.
- Setting up of the State School Standards Authority.
- Promoting Vocational education in school and higher education systems.
- **Increasing Gross Enrolment Ratio (GER) in higher education to 50%.**
- Multidisciplinary Education with multiple entry/exit options.
- Establishment of Academic Bank of Credit
- Setting up of Multidisciplinary Education and Research Universities.
- Setting up of **the National Research Foundation.**
- Expansion of open and distance learning to increase GER.
- Teacher Education - 4-year integrated stage-specific, subject-specific Bachelor of Education

- **All higher education institutions (HEIs) will be restructured into 3 categories:**
 - Research universities focus equally on research and teaching.
 - Teaching universities focus primarily on teaching.
 - Degree-granting colleges primarily focused on undergraduate teaching.
- Multiple mechanisms with checks and balances will combat and stop the commercialization of higher education.
- All education institutions will be held to similar standards of audit and disclosure as not-for-profit entities.
- The Centre and the States will work together to increase public investment in the Education sector to **reach 6% of GDP** at the earliest.
- Strengthening of the Central Advisory Board of Education to ensure coordination to bring overall focus on quality education.

OLD PENSION SCHEME

GS-II GOVERNANCE

In News

- During the election campaign, many political parties are promising to switch to the Old Pension Scheme. The state governments of Rajasthan and Chhattisgarh have already reverted to the Old Pension Scheme and the Punjab state government has announced that it would do the same in the state.

Old Pension Scheme (OPS)

- **Earlier the Pension of the Centre and states government employees was fixed at 50% of the last drawn basic pay.**
 - For example: If a government employee's basic monthly salary at the time of retirement was Rs 20,000, he/she would be assured of a pension of Rs 10,000.
- **The monthly payouts of pensioners also increased with hikes in dearness allowance (DA) announced by the government for serving employees.**
 - DA is calculated as a percentage of the basic salary, it is a kind of adjustment the government provides to its employees and pensioners to make up for the steady increase in the cost of living.
 - DA hikes are announced twice a year, generally in January and July.
- Currently, the minimum pension paid by the government is Rs 9,000 a month, and the maximum is Rs 62,500 (50% of the highest pay in the Central government, which is Rs 1, 25,000 a month).
- **The Old Pension System was replaced by a New Payment System (NPS), that came into effect for employees joining government service from 1st January 2004,**
 - The New Pension System promises an assured or 'defined' benefit to the retiree. It is therefore described as a 'Defined Benefit Scheme'.

Concerns related to the OPS

- **Under OPS, the main problem was that the pension liability remained unfunded,** there was no corpus specifically for pension, which rise continuously.
- **The government budget provided for pensions every year; there was no clear plan on how to manage growing expenditures in future.** It also created inter-generational equity issues; the present generation had to bear the continuously rising burden of pensioners.
- Over the last three decades, pension liabilities for the Centre and states have increased manifold.
 - In 1990-91, the Centre's pension bill was Rs 3,272 crore, and the outgo for all states put together was Rs 3,131 crore.
 - By 2020-21, the Centre's bill had jumped 58 times to Rs 1,90,886 crore; for states, it had shot up 125 times to Rs 3,86,001 crore.
- Overall, **pension payments by states take away a quarter of their tax revenues. For some states, it is much higher such as;**
 - For Himachal, it is almost 80 % (pensions as a percentage of the state's tax revenues), and for Punjab, it is almost 35%.
- If wages and salaries of state government employees are added to the pension bills, states are left with hardly anything from their tax receipts.

Steps taken to reform Pension System

- **In 1998, the Union Ministry of Social Justice and Empowerment released a report for an Old Age Social and Income Security (OASIS) project.**
 - The OASIS project was not meant to reform the government pension system — its primary objective was targeted at unorganised sector workers who had no old age income security.
 - The committee formed under the project noted that less than 11% of the estimated total working population had some post-retirement income security like a government pension, Employees' Provident Fund (EPF), or the Employee Pension Scheme (EPS). The rest of the workforce had no means of post-retirement economic security.
- **The OASIS report recommended that individuals could invest in three types of funds;**

- Safe (allowing up to 10% investment in equity).
- Balanced (up to 30% in equity).
- Growth (up to 50% in equity)
- The balance would be invested in corporate bonds or government securities.
- The **Union Ministry of Personnel, Public Grievances and Pensions set up a high-level expert group (HLEG) under B K Bhattacharya to look into the situation for government employees.**
 - The HLEG suggested 2 types of hybrid defined benefit/ defined contribution schemes for government employees.
 - Type 1: It recommended a 10% contribution by the employer and the employee. The accumulated funds would be used to pay pension in annuity form.
 - Type 2: No limit was specified for the employee, but the employer's contribution would be matching but limited to 5%. Accumulated funds could be withdrawn in lumpsum or converted into an annuity. These incomes would be tax-exempt.
 - The report was submitted in 2002, but not accepted by the government.

Origin of the New Pension Scheme (NPS)

- The **Project OASIS report became the basis of the New Pension System.**
 - NPS was originally designed for unorganised sector workers and was adopted by the government for its employees.
- NPS for Central government employees was notified on December 22, 2003, and it was made mandatory for all recruits joining government service from January 1, 2004.
 - The defined contribution comprised 10% of the basic salary and dearness allowance by the employee and a matching contribution by the government. In January 2019, the government increased its contribution to 14% of the basic salary and dearness allowance.

Significance of NPS

- **Simple:** Opening an account with NPS provides a Permanent Retirement Account Number (PRAN), which is a unique number it remains with the subscriber throughout his lifetime.
- **Flexible:** NPS offers a range of investment options and choices of Pension Funds (PFs) for planning the growth of the investments reasonably and monitoring the growth of the pension corpus.
 - Subscribers can switch over from one investment option to another or from one fund manager to another.
- **Portable:** NPS provides seamless portability across jobs and locations. It would provide a hassle-free arrangement for the individual subscribers while he/she shifts to the new job/location, without leaving behind the corpus build, as happens in many pension schemes in India.
- **Well Regulated:** NPS is regulated by Pension Fund Regulatory and Development Authority (PFRDA), with transparent investment norms, regular monitoring and performance review of fund managers by NPS Trust.
- **The dual benefit of Low Cost and Power of compounding:** Till retirement, pension wealth accumulation grows over the period with a compounding effect.
- **Ease of Access:** The NPS account is manageable online. An NPS account can be opened through the e-NPS portal. Further contributions can also be made online through the following eNPS portals.

UNNATI PROJECT

GS-II GOVERNANCE

In News

- The 'Unnati' project was launched to provide skill training to existing workers of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), to reduce their dependency on the scheme.
 - Due to the weak response to project Unnati, the **Union Rural Development Ministry wants to link the performances of the States under the project with its MGNREGS budget for the upcoming financial year.**
- Since 2020, just a little over 25,000 persons have been trained under the 'Unnati' project, falling short of its target of 2 lakh.

'Unnati' project

- The 'Unnati' project was launched to reduce the dependency on the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), **by providing skill training to existing workers.**
- Under the project, **one adult member of a household which has completed 100 days of work under the MGNREGS will be provided training through the Rural Skill Division of the Union Ministry of Rural Development and the Krishi Vigyan Kendras of the Union Ministry of Agriculture.**
- A family member in the 18-35 age group from the household will be eligible for training, In the case of special groups, persons of up to 45 years of age can apply.
- **Under the project, the selected candidates are skilled through three established training programmes;**
 - The DeenDaya IUPadhyay Grameen Kaushal Yojana (DDU-GKY): It is a placement-linked programme, in which 70% of

the trained candidates have to be compulsorily employed with a minimum salary of ₹6,000 per month.

- The Rural Self Training Institute (RSETI): It is for entrepreneurial skills where persons in the age group of 18-45 get short-term residential training with long-term hand-holding support for up to two years.
- The Krishi Vigyan Kendra trains candidates in trades related to the agricultural sectors.

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005

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- Women were guaranteed one-third of the jobs made available under the MGNREGA.
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- Significance of MGNREGA
 - The programme is providing economic security and creates rural assets.
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 - It focuses on the economic and social empowerment of women.
 - It provides "Green" and "Decent" work.
 - Works under MGNREGA help to address the climate change vulnerability and protect the farmers from such risks and conserve natural resources.

POLICE COMMISSIONERATE SYSTEM

GS-II GOVERNANCE

About

- The **state government of Uttar Pradesh has decided to introduce the police commissioner system** in Agra, Ghaziabad and Prayagraj.
 - The system is already implemented in Noida, Varanasi, Lucknow and Kanpur.
- The government officials stated that the three districts (Agra, Ghaziabad and Prayagraj) would be declared metropolitan cities as per the rules of the Code of Criminal Procedure (CrPC) before implementing the police commissioner system.
- With the inclusion of these three districts, Uttar Pradesh now will have seven districts where the police commissioner system has been implemented.
- **In the police commissioner system, additional director general of police (ADGP) rank officials will be assigned to all three commissioners and officers with the IG rank will become joint commissioners.**
 - The police commissioners will have the powers of a magistrate.

About Deputy Inspector General of Police (DIG)

- Deputy Inspector General of Police is a **high-ranking official position in the Police department.**
- DIG is a rank held by Indian Police Service officers who had successfully served as Senior Superintendent of Police or Deputy Commissioner of Police and got promoted to this rank.
- DIGs rank just below the Inspector General of Police.
- There is no limit to the number of DIGs a state can have and most states have several DIGs.

Why Police reforms?

- **To ensure an efficient, accountable and people-centric policy that upholds the Rule of Law in all situations.**
- **Police forces need to be well-equipped, in terms of personnel, weaponry, forensics, communication and transport support, to perform their role well.**
- Police forces need to have the operational freedom to carry out their responsibilities professionally and in satisfactory working conditions while being held accountable for poor performance or misuse of power.
- To promote Internal and external accountability of the Police department.
- The UN recommended standard is 222 police per lakh persons, in India the actual police strength in India is 137 police per lakh persons.

- To improve the quality of Crime investigation.
- To resolve the issue of underreporting of crime in India.
- **The conviction rate for crimes recorded under the Indian Penal Code, of 1860 was less than 50%.**
- To Strengthen Police infrastructure; Strong communication support, modern weapons, and a high degree of mobility.
- **To create strong Police-Public relations, police require the confidence, cooperation and support of the community to prevent crime and disorder.**

Directions of the Supreme Court in Prakash Singh v/s Union of India

- **Constitute a State Security Commission in every state** that will lay down policy for police functioning, evaluate police performance, and ensure that state governments do not exercise unwarranted influence on the police.
- **Constitute a Police Establishment Board** in every state that will decide postings, transfers and promotions for officers below the rank of Deputy Superintendent of Police, and make recommendations to the state government for officers of higher ranks.
- **Constitute Police Complaints Authorities** at the state and district levels to inquire into allegations of serious misconduct and abuse of power by police personnel.
- **Provide a minimum tenure of at least two years for the DGP** and other key police officers within the state forces.
- Ensure that the DGP of state police is appointed from amongst three senior-most officers based on length of service, good record and experience.
- **Separate the investigating police from the law and order police.**
- **Constitute a National Security Commission** to shortlist the candidates for appointment as Chiefs of the central armed police forces.

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WOMEN'S PARTICIPATION IN PROTESTS

GS-II SOCIAL JUSTICE

About

- Women's participation in the protests against the three agriculture laws allowed them to proclaim their overlooked position as farmers in the country, and also expanded the scope and character of the agitation.
- **According to the Census 2011;**
- 55% of working women were engaged as agricultural labourers.
- 24% were cultivators.
- Only 12.8 % of the operational holdings were owned by women.

Women's Participation in Protests

- Despite the prevalent patriarchal system, women have actively participated in protests against the ruling government, be it during the colonial rule of the British, or against the government in independent India.
- **Women activists, politicians and leaders have emerged even from the most orthodox regions of the country.**
- Their protests against the State or for socio-economic common cause allowed them to express their voice openly and created a space for themselves within the public discourse.
- The reasons behind their participation are rooted in the socio-economic factors that affect women throughout the country.
- Though women play an important role in the agricultural system, they are denied land ownership and are involved in unpaid labour.

Women's role during farm protest

- They joined the demand to repeal the agriculture laws.
- **They took up responsibilities for the production and distribution of food and bringing supplies to the protest sites.**
- Many women drove themselves in tractors to the protest sites, symbolizing their status as farmers.
- Women's participation also questioned and challenged the society that burdens them disproportionately.
- **Women created songs and slogans that criticized the new laws,** discussed the problems of the peasants and workers, and challenged the political system.
- Women's participation in the protests also helped in creating a festive mood, boosting the morale of the protesters.
- Women's participation in the farmer's protests against the State brought them to the centre stage of agrarian politics.

Significance of Women's movement

- Women and girls now have the right to study and go to school. Women individually and collectively have struggled to bring about these changes.
- Many men supported the women's movement as well.
- Campaigns to fight discrimination and violence against women are an important part of the women's movement.
- They raise public awareness of women's rights issues. Their message has been spread through street plays, songs and public meetings.
- Public rallies and demonstrations are a very powerful way of drawing attention to injustices.
- **Efforts made by the women's movement led the Supreme Court to formulate guidelines to protect women** against sexual harassment in the workplace and within educational institutions.

EKLAVYA MODEL RESIDENTIAL SCHOOLS (EMRS)

GS-II SOCIAL JUSTICE

In News

- **The Union Tribal Affairs Ministry decided to go ahead with its plan to build new Eklavya Model Residential Schools (EMRS) on 15 acres of land in all sub-districts which have Scheduled Tribe (ST) communities of more than 20,000 people, who make up at least 50% of their total population.**
 - Recently the Parliamentary Standing Committee on Social Justice and Empowerment recommended an immediate review of these criteria, pointing to significant difficulties in identifying and acquiring lands in several districts, especially in forested or hilly areas.
 - The present criteria would also deprive scattered ST populations of the benefit of the Eklavya schools.
- The Tribal Affairs Ministry is pushing ahead; with **officials in the National Education Society for Tribal Students (NESTS) saying that there is no process as of yet to even review the guidelines as suggested by the Standing Committee.**
 - Tribal Affairs Secretary said that "These criteria were decided and finalized by the Cabinet and we intend to go ahead with it."

Eklavya Schools

- Eklavya schools established by the Union Ministry of Tribal Affairs to promote education among Tribal students are facing a shortage of teachers.
- Eklavya Schools were started in the year 1997-98 to provide quality education to Schedule Tribes (STs) children in remote areas.
 - The aim was to enable Tribal students to utilize opportunities in high and professional education courses and get employment in diverse sectors.
 - According to the data released by the Ministry, nearly 4,000 teachers have been appointed across the 378 schools, of which nearly 70% are either on contract or deputation from State government schools.
- These schools focus on academic education and also ensure the all-around development of the students.
- **Objectives of the Eklavya Schools;**
 - Complete physical, mental and social development of all students.
 - Students will be empowered to become change agents, beginning in their school, in their homes, in their village and finally in a larger context.
 - Focus differentially on the educational support to be made available to Students.
 - Construction of infrastructure that provides education, physical, environmental and cultural needs to student life.
- **Structure of the Eklavya Schools;**
 - Admission to these schools is through selection/competition with suitable provisions for preference to children belonging to Primitive Tribal Groups, first-generation students, etc.
 - The land provided by the State Government for the school, playgrounds, hostels, residential quarters, etc., is free of cost.
 - The number of seats for boys and girls will be equal.
 - Education will be entirely free in these schools.
 - Every class can have a maximum strength of 60 students preferably in 2 sections of 30 students each.
 - Each school has the strength of 480 students from Class VI to XII.
- The Union Government provides grants to the State Governments under Article 275 (1) of the Indian Constitution for the construction of schools and other expenses.
- The Union government has announced that by 2022, every block with more than 50% Schedule Tribes (STs) population and at least 20,000 tribal individuals, will have Eklavya Schools.
 - According to the census of 2011, there are 564 such sub-districts out of which 102 sub-districts already have Eklavya School. Therefore, 462 new schools have to be opened by the year 2022.
- The Ministry has highlighted that Eklavya schools will have special facilities like Navodaya Vidyalaya for maintaining local art and culture and also provide training in sports and skill development.
- **Eklavya Model Day Boarding Schools (EMDBS)**
 - Wherever the density of the ST population (90% or more), the government has proposed to set up Eklavya Model Day Boarding School (EMDBS) for providing additional coverage for ST Students.

National Education Society for Tribal Students

- The National Education Society for Tribal Students (NESTS) was established in 2018 to manage Eklavya schools. NESTS issued guidelines to State governments in 2020 to ensure a total of 52 staffers, of which 30 were meant to be teachers. This would mean that 378 schools would have a total of 11,340 teachers.
 - After the NESTS were set up, the State Education Societies for Tribal Students (SESTS) were also set up.
- 2018 guidelines released by the National Education Society for Tribal Students (NESTS) mentioned that NESTS would be responsible for recommending the syllabi, the school and hostel standards, and the teacher recruitment guidelines, and the state Education Societies for Tribal Students (SESTS) would be in charge of implementing these guidelines with room for local modifications.

Concern

- According to several officials, the structure of the NESTS had made it difficult for it to monitor and enforce its recommendations to the schools as far as teacher recruitment was concerned.
- The guidelines never demanded that the SESTS must follow NESTS recommendations, which were made to ensure the minimum requirements to maintain a standard education quality and uniformity across schools.
- The Ministry had found that the responsibilities of teacher recruitment in the States were leading to a non-uniformity in the quality of teachers, not enough recruitment happening in reserved positions, and a large number of schools recruiting teachers contractually in a bid to save on the salary expenses, which was resulting in large gaps in the salaries of teachers working at the same level.

Way Forward

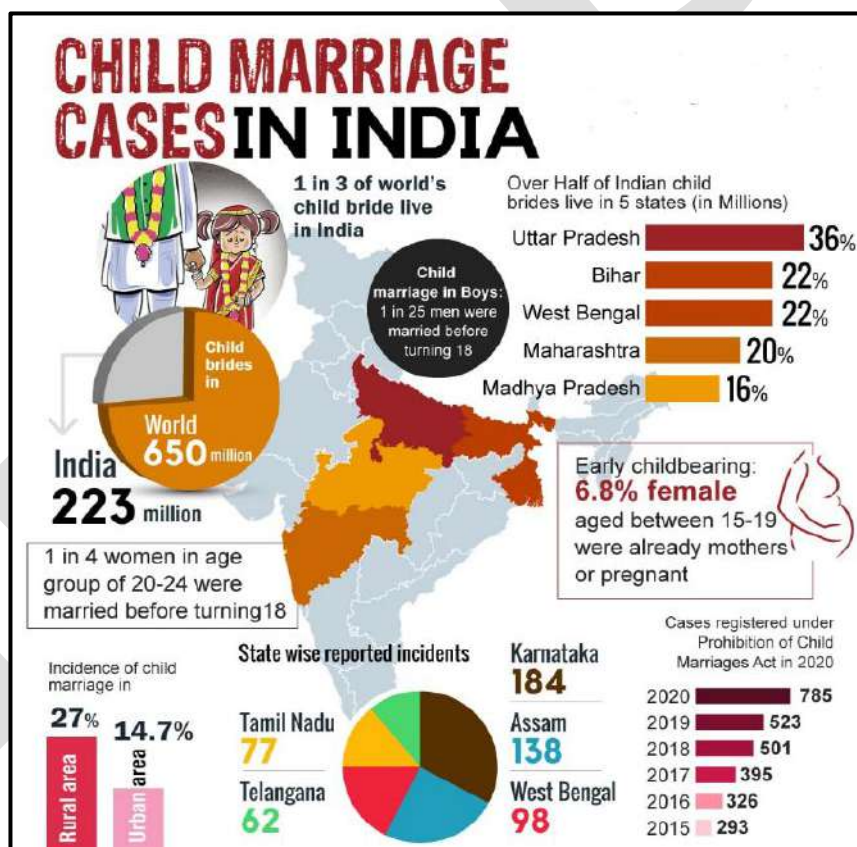
- According to Census 2011, **Schedule Tribes (STs) constitute 8.6% of India's total population and out of which only 58.96% are literate.**
 - Education is necessary to ensure the socioeconomic development of tribal societies.
- Issues like the language of education need to be addressed by designing the **entire curriculum and teachers' modules in the regional/local language of the tribal students.**
- The need of the hour is to **create adequate employment opportunities and ensure proper implementation of welfare programmes among the tribal people so that they send their children to attend schools instead of Child labour.**
- To handle the shortage of teachers in Eklavya schools, the **Ministry of Tribal Affairs highlighted that the only way to deal with the teacher shortage and to ensure uniformity in the teaching standards is to completely reform the administrative structure under which the eklavya schools are functioning at present.**

CHILD MARRIAGES

GS-II SOCIAL JUSTICE

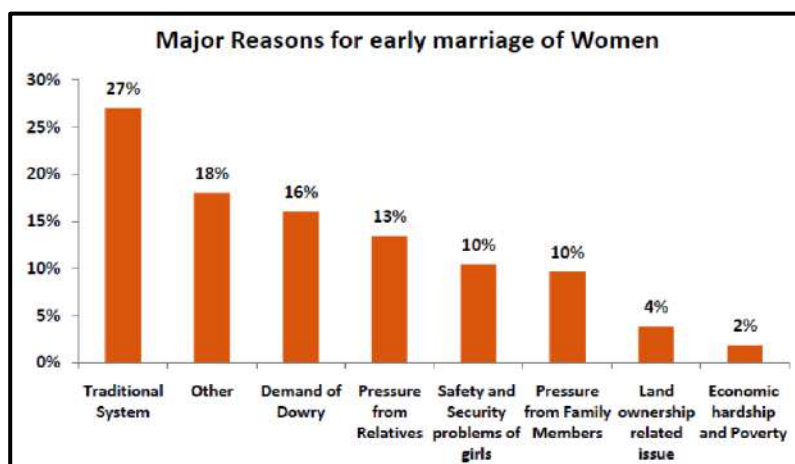
About

- Financial distress after the closure of businesses and loss of employment during national lockdowns imposed to check the spread of the COVID-19 pandemic has resulted in increasing child marriage in several states where it is culturally acceptable.
- Overall the country has seen a steady decline in the practice of Child marriage from 47.4% in 2005 to 23.3% in 2021, but recently the United Nations Population Fund (UNFPA) has warned that pandemic-induced economic hardship could hurt the progress made in this direction.
- According to the UNFPA study, **child marriage is deeply linked to the economic status of a community.**
 - Data from the National Family Health Survey-5 (2019-21) also show variations in child marriage in accordance with the household wealth index.
- According to social activists, **the only way to stop child marriages is by improving their economic and educational status.**



Child Marriage in India

- In 2021, Over 223 million child marriages were reported in the country.
- Child Marriage is defined as a marriage of a girl or boy before the age of minimum legal age (18 years).
- According to the data released by National Family Health Survey-5
 - In India, 8 States have a higher prevalence of child marriage than the national average; West Bengal, Bihar and Tripura top the list with more than 40% of women aged 20-24 years married below 18.
 - States with a large population of tribal poor have a higher prevalence of child marriage. In Jharkhand, 32.2% of women in the age bracket 20-24 got married before 18 years.
 - Assam too has a high prevalence of child marriage (31.8% in 2019-20).



- States with high literacy levels and better health and social indices have performed much better; In Kerala, women who got married before the age of 18 years stood at 6.3% in 2019-20.
- **The reason behind Child Marriage**
 - It is a widely practised social custom.
 - Poverty and Illiteracy of a Child's parents.
 - Social and Economic Condition of the family including the Cultural values of the family and the Surrounding Society.
 - Lack of awareness about the harmful effects Lack of easy access to Schooling.
 - Political Patronage: Due to Social acceptance politicians find it difficult to oppose the practice of child marriage as it may mean losing votes and Support.
- **Child marriage is also widely reported to be used to traffic girls from poor and tribal families for either the Sex trade or as cheap labour.**
- It is more prevalent in rural areas.
- **Rates of Child marriage are highest in the Central and Western parts of India and lower in the eastern and southern parts of India.**
- **Result of Child Marriage;**
 - It Restricts access to education and better opportunities in the future.
 - It limits the freedom of decision and promotes socio-economic and gender inequality.
 - It is associated with multiple health risks, limited Knowledge and access to, and use of, Contraception and reproductive health services and information.

Concern

- Child marriage violates children's rights, and also results in more infant and maternal deaths. Children born to adolescent mothers have a greater possibility of seeing stunted growth as they have low weight at birth. According to NFHS-5, the prevalence of child stunting is 35.5% in 2019-21.
- **About a quarter of 20-24-year-old women are married before the age of 18 years, despite that being the minimum age of marriage since 1978.**
 - The limited success of the current law raises the question of whether an increase in the minimum age would have any significant impact on reducing the incidence of child marriage
- **According to NFHS-5 (2019-21)**, the prevalence of underage marriages remains high, with 23% of women between 20 and 24 years of age married before the age of 18. At the same time, the detection of such marriages remains low, with only 785 cases registered under the law in 2020.
 - This raises the question of whether the increase in the minimum age would have any significant impact on reducing child marriages.
- **Increasing the legal age for marriage for women will increase the number of marriages performed underage and render young adults without legal protection.**

Steps taken by the Government

- Indian Parliament enacted several laws including the Prohibition of Child Marriage Act, 2006 and the Protection of Children from Sexual Offences Act, 2012, to protect the human rights of Children.
- BetiBachaoBetiPadhao to address the declining Child Sex Ratio.
- **PM MatruVandanaYojana (PMMVY) Providing Cash incentives** for improved health and nutrition to pregnant and nursing mothers.
- **Scheme for Adolescent Girls aims at girls in the age group 11-18, to empower and improve their social status through nutrition, life skills, home skills and vocational training**
- Pradhan MantriMahila Shakti Kendra scheme promotes community participation through the involvement of Student Volunteers for the empowerment of rural women
- **National Crèche Scheme to provide daycare facilities to children of the age group of 6 months to 6 years of working women who are employed.**
- RashtriyaMahilaKosh (RMK) to provide micro-credit to poor women for various livelihood support and income-generating activities at concessional terms
- SwadharGreh provides relief and rehabilitation to destitute women and women in distress.
- **Ujjawala is a Comprehensive Scheme for the prevention of trafficking and rescue**, rehabilitation, reintegration and repatriation of victims of trafficking for commercial sexual exploitation.
- Working Women Hostels for ensuring safe accommodation for women working away from their place of residence.
- **One-Stop Centre (OSC) and Women Helpline (WH)** are being implemented to facilitate access to an integrated range of services including medical aid, police assistance, legal aid/ case management, psychosocial counselling and temporary support services to women affected by violence.

- Emergency Response Support System set up under Nirbhaya Fund.
- Mahila Police Volunteers, to report the incidences of violence against women.
- **The dowry Prohibition Act, of 1961, Penalizes Giving & taking.**
- SABLA Scheme, Providing life Skills and Supplementary nutrition to out-of Schoolgirls.
- The national database on Sexual offenders includes the name, addresses, photographs and fingerprint details of those Convicted in Sexual assault Cases.
- **National Policy for Women, 2016**
 - **Addresses women's issues throughout life-Cycle**, issues from education, health, economic participation, decision making, violence, Creation of an enabling environment etc.
- In 2020, the Union government has set up a task force under Ms Jaya Jaitly, it suggested increasing the age of marriage for females to 21.
- The Prohibition of Child Marriage (Amendment) Bill, 2021 seeks to increase the minimum age of marriage for females to 21 years.

Way Forward

- **The issue of increasing the age of marriage for women must be supported with other measures** that help delay underage marriages such as access to education and improving women's safety.
- **The practice of child marriages is largely due to the overall social customs, tradition, illiteracy, poverty, low status of women in society, and lack of awareness.** These issues cannot be tackled by legislative interventions alone.
- There is a need for improved access to education, skill training and employment opportunities, safety for women and strengthening maternal health services to reduce maternal and infant mortality rates.
- **Need to adopt a comprehensive approach to curb the factors closely related to child marriage**, including poverty eradication, better education and public infrastructure facilities for children and raising social awareness on health, nutrition, regressive social norms and inequalities.

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 **IASGYAN**
PREDICT THE UNPREDICTABLE

ASEAN-INDIA SUMMIT**GS-II INTERNATIONAL RELATIONS****Context**

- The Vice President, Shri Jagdeep Dhankhar, who was on a three-day tour of Cambodia, led the Indian delegation, including the External Affairs Minister, Dr S. Jaishankar, at the 19th ASEAN-India Summit in Phnom Penh, Cambodia.

Details

- Vice President stated that India-ASEAN relationship forms the central pillar of India's ACT-EAST policy. He reiterated India's support to ASEAN centrality in the Indo-Pacific.
- At the summit, ASEAN and India **adopted a joint statement announcing the elevation of the existing Strategic Partnership to Comprehensive Strategic Partnership.**
- Both sides reaffirmed the importance of maintaining and promoting peace, stability, maritime safety and security, freedom of navigation and overflight in the Indo-Pacific region.
- **The Joint Statement also reiterated the commitment to enhance India-ASEAN cooperation in various areas** such as maritime activities, counter-terrorism, transnational crimes, cyber security, digital economy, regional connectivity, smart agriculture, environment, science & technology, tourism, among other areas.
- **The Joint Statement also proposes expediting the review of ASEAN-India Trade in Goods Agreement (AITIGA) to make it more user-friendly, simple, and trade-facilitative.**
- **India and ASEAN:**
- Association of Southeast Asian Nations (ASEAN), a 10-nation grouping, is considered one of the most influential groupings in Southeast Asia.
- It promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration among its members and other countries in Asia.
- ASEAN operates under six fundamental principles, two of which are mutual respect for independence, sovereignty, and territorial integrity, and non-interference in member countries' internal affairs.
- India and several other countries, including the US, China, Japan and Australia, are its dialogue partners.
- The ASEAN-India dialogue relations started with the establishment of a sectoral partnership in 1992.
- This graduated to full dialogue partnership in December 1995 and summit-level partnership in 2002.
- India is hosting the two-day conclave to mark the 30th anniversary of its relations with the 10-nation Association of Southeast Asian Nations (ASEAN).
- The ASEAN comprises Indonesia, Thailand, Vietnam, Laos, Brunei, the Philippines, Singapore, Cambodia, Malaysia and Myanmar.

Why ASEAN matters to India?

- The ten countries of South East Asia connect the two great oceans in both the geographical and civilizational sense.
- Central to India's Pacific vision, ASEAN assumes importance on the backdrop of an increasing Chinese influence in the region.
- While India and China are locked in a bitter standoff along the Line of Actual Control, New Delhi's outreach to ASEAN nations will help strengthen much needed diplomatic ties.
- ASEAN is also India's fourth-largest trade partner with about \$86.9 Bn in trade between India and the ten ASEAN nations.
- ASEAN and India share land and maritime borders, and there is a lot of scope for enhancing connectivity through land, air and sea.
- India-Myanmar-Thailand Trilateral Highway is an ongoing effort to enhance road connectivity between Northeast India and Southeast Asia.
- ASEAN-India strategic partnership stands on a strong foundation of shared geographical, historical and civilisational ties.
- India's Act East Policy, underlining ASEAN centrality, reflects the importance, India attaches to engagement with ASEAN.
- Inclusiveness, openness and ASEAN centrality and unity, lie at the heart of the new Indo-Pacific.
- With the increasing focus on oceans as providers of resources, the reservoirs of biodiversity, the highways of global trade and the frontiers of scientific research, cooperation in the maritime domain has become increasingly important under the overall rubric of ASEAN-India cooperation.

Issues with ASEAN

- Lack of a custodian and lacks of strong institutions to guarantee the success of the implementation of its collective decisions.
- Facing strategic competition for influence in the Asia-Pacific between the United States and China and have been forced to choose sides.
- Each member faces their own unique social, economic, and political challenges. As a result, each seems to have no choice but focus on addressing their own internal affairs.

- ASEAN members faces internal and external security challenges that are border disputes and conflicts, illegal migration, ethnic crises etc.

Way Forward

- ASEAN must put in extra efforts to sustain and enhance its existing successes and achievements. The bloc should emerge as a catalyst for peace by promoting rule of law in the region.
- ASEAN must also promote transparency and work to reduce corruption.
- This association needs to enhance closer coordination and regional connectivity. India should also start delivering the pending project. For ex. the India-Myanmar-Thailand (IMT) highways project
- ASEAN need to strike a good balance between commercial gains and environmental protection if ASEAN wishes to achieve inclusive growth and sustainable development.

AGE OF MINIMALISM: INDO-PAK TIES

GS-II INTERNATIONAL RELATIONS

Context

- India-Pakistan relations have entered an age of minimalism, counter-intuitive as it might seem. **There is very little bilateral contact today, even fewer expectations of a bilateral breakthrough, and hardly any warmth in the relationship.** And yet, there is a certain 'cold peace' between the traditional rivals — on the Line of Control, inside Kashmir and in the verbal exchanges between the two sides.

Details

- **India-Pakistan relations of the kind we have been used to over several decades now — characterised by intense engagement, high value terror attacks, Indian responses, a breakdown of talks, and eventual resumption of talks; rinse and repeat — may well be a thing of the past.**
- Today, there is no political will for any grand relationship, grand gestures or grand outreach.
- **The bilateral contact is tactical, business-like and unemotional.**
- **The BJP government in New Delhi began with the standard package of engaging Pakistan.**
- There was the invitation extended to Nawaz Sharif (the then Pakistan Prime Minister) for Narendra Modi's inaugural function in New Delhi (May 2014), which Mr. Sharif attended, followed by Mr. Modi's surprise visit to Lahore (December 2015), and the discreet meetings between the two National Security Advisers (NSA).
- In January 2016, even when the Pathankot airbase was attacked by a Pakistan-based terrorist organisation, New Delhi hoped that things would get better.
- But it was not to be. The September 2016 terror attack in Uri, which led to the 'Surgical Strikes' by India, practically froze the relationship.
- The February 2019 terror attack in Pulwama, and the BJP government's decisions made in August 2019 on Kashmir put the relationship in deep freeze.
- **Over time, New Delhi appears to have realised that it requires too much time, commitment and effort to make peace with Pakistan — and little guarantee that it will succeed despite all that.**
- This historical and experiential learning about the 'futility' of pursuing a normal relationship with its western neighbour has led to this current phase of minimalism.
- **As a result, India-Pakistan relations today have been reduced to a backchannel conversation between the Indian NSA and the Pakistan Army establishment.**

Reasons

- For one, the relationship is the history of missed opportunities, failed attempts at conflict resolution, political inability to resolve conflicts due to the dual power centre in Pakistan, and the lack of political will on either side.
- Second, there is a recognition on both sides that for all the talk about conflict resolution, there is no easy way to resolve their complicated conflicts and that, going forward, bilateral conflict resolution may get harder due to rising populism fuelled by online hate.
- Third, New Delhi also realises that the traditional logic in India that it should first settle its conflicts with Pakistan and then move on to addressing the bigger challenges may take New Delhi nowhere for, after all, none of the key bilateral conflicts between them has been resolved since the Indus Waters Treaty of 1960.
- Four, there is also a certain confidence in New Delhi today that it does not need to talk to Pakistan to ensure peace inside Kashmir.
- Finally, both sides today are preoccupied with other geopolitical challenges — Pakistan with the Taliban-led Afghanistan, and India with an aggressive China on its borders — thereby keeping them busy elsewhere than with each other.
- **Characteristics of age of minimalism:**

- Interlocutors on either side (more so on the Indian side) appear to have adopted a clinical approach to dealing with the other side: discuss and deal with only those issues that need urgent attention.
- The second feature is the unmissable focus on conflict management, with little focus on conflict resolution.
- The third important aspect of this minimalist approach is that it has so far served as a useful platform for clarifying red lines, expectation management, and achieving limited but clear outcomes. The 2021 February ceasefire agreement is one such outcome, and relative reduction in violence in Kashmir is another.

Attempts for engagement

- India has followed a **consistent and principled policy towards Pakistan**: in keeping with its “**Neighbourhood First Policy**”, India seeks normal neighbourly relations with Pakistan.
- There have been numerous attempts to improve the relationship, notably the **Shimla summit, the Agra summit, and the Lahore summit**.
- In 2014, India has invited to the then Prime Minister Nawaz Sharif for the swearing-in ceremony of PM Modi
- External Affairs Minister’s (EAM) took the initiative to propose a Comprehensive Bilateral Dialogue with acts of **cross-border terrorism and violence against India** including the cross-border terror attack on Pathankot Airbase on 2 January 2016; attack on Army Camp in Uri in August 2016; and terror attack on the convoy of Indian security forces in Pulwama by Pakistan based Jaish-e-Mohammad (JeM) on 14 February 2019.
- Time and again India has stressed on creating trust and an environment free of violence and terrorism for fostering cooperation for peace, progress and prosperity in the region.
- On 7 August 2019 Pakistan took unilateral actions to **downgrade diplomatic relations with India** in an attempt to present an alarming picture of bilateral ties to the world.

Security issues

- **Cross-border Terrorism**: Terrorism emanating from territories under Pakistan's control remains a core concern in bilateral relations. India has consistently stressed the need for Pakistan to take credible, irreversible and verifiable action to end cross border terrorism against India.
- India has repeatedly called upon Pakistan to bring perpetrators of Mumbai terror attacks to justice expeditiously. However, there has been no progress in the ongoing trial of Mumbai terror attacks case in Pakistan even after all the evidence has been shared with Pakistan side.

Trade and Commerce

- India had accorded **Most Favored Nation status** to Pakistan in 1996. Pakistan cabinet decision to reciprocate remains unimplemented.
- In August 2012, India announced reduction of 30% in its SAFTA Sensitive List for non-Least Developed Countries of SAFTA [including Pakistan], bringing down tariff on 264 items to 5% within a period of three years.
- Pakistan continued to follow restrictive trade policy towards India.
- In the aftermath of cross border terror attack in Pulwama, **India withdrew Most Favoured Nation Status to Pakistan**.
- India also hiked customs duty on exports from Pakistan to 200% on 16 February 2019. Subsequently, as part of its unilateral measures, Pakistan suspended bilateral trade with India on 7 August 2019.

Indus Waters Treaty

- The Indus Waters Treaty governs the rivers that flow from India into Pakistan.
- Water is cited as one possible cause for a conflict between the two nations, but to date issues such as the **Nimoo Bazgo Project** have been resolved through diplomacy.

People to People Relations

- As of 01 July, 2019, 209 fishermen and 52 other civil prisoners who are believed to be Indian nationals were in the custody of Pakistani authorities.
- India suggested to Pakistan to revive the mechanism of the **Joint Judicial Committee** which looks into humanitarian issues of fishermen and prisoners in each others custody.
- The visit to religious shrines between India and Pakistan is governed by the **Bilateral Protocol on Visits to Religious Shrines** signed between India and Pakistan in 1974. The protocol provides for three Hindu pilgrimage and four Sikh pilgrimage every year to visit 15 shrines in Pakistan while five Pakistan pilgrimage visit 7 shrines in India.

Kartarpur Corridor

- The Government of India in 2018 formally conveyed to the Government of Pakistan that it would initiate the **Kartarpur Corridor on the Indian side and urged Pakistan to build a corridor with suitable facilities in its territory from the**

international border to Gurdwara Kartarpur Sahib in Pakistan to facilitate easier access and smooth passage of Indian pilgrims throughout the year.

Cultural links

- India and Pakistan, particularly **Northern India and Eastern Pakistan**, to some degree have similar cultures, cuisines and languages due to common **Indo-Aryan heritage** which span through the two countries and throughout much of the northern subcontinent which also underpin the historical ties between the two.
- Pakistani singers, musicians, comedians and entertainers have enjoyed widespread popularity in India. Likewise, Indian music and film are very popular in Pakistan.

Sporting ties

- Cricket and hockey matches** between the two have often been political in nature.
- In tennis, Rohan Bopanna of India and Aisam-ul-Haq Qureshi of Pakistan have formed a successful duo and have been dubbed as the "**Indo-Pak Express**".

INDIA-RUSSIA BILATERAL TALKS

GS-II INTERNATIONAL RELATIONS

Context

- India's External Affairs Minister recently held wide-ranging talks with his Russian counterpart.

Details

- Russian Deputy Prime Minister - Minister of Industry and Trade Denis Manturov had talks with the External Affairs Minister of India S. Jaishankar in the format of a meeting of the **co-chairs of the Intergovernmental Russian-Indian Commission on trade, economic, scientific, technical and cultural cooperation to push bilateral trade to \$30 billion by the end of this year.**
- They substantively discussed bilateral trade, economic and investments spheres
- Indian Minister stated that the **Ukraine conflict was a dominant feature in his discussions with the Russian Foreign Minister.**
- He also stated that the global economy is too interdependent not to be impacted by a significant conflict and the Global South is feeling "this pain very acutely", especially after two years of the pandemic.
- India "strongly advocates a return to dialogue and diplomacy" and is on the side of "peace, respect for international law and support for the UN Charter".**
- He even **offered help in issues including food grains and fertiliser shipments, and support for any initiative that de-risks the global economy.**
- On buying cheap Russian oil, he made it clear that India will continue with the purchases to cater to the needs of its consumers.
- Indian Minister **expressed concern about the trade imbalance and also urged Russia to address impediments that stand in the way of greater Indian exports.**
- They talked about **cooperation in the area of logistics and transportation, including the International North-South Transport Corridor, high-tech and nuclear.**
- Both ministers had a detailed discussion on the prospects in military and technical cooperation including joint production of weaponry.

India-Russia relations

Historical background:

- India and Russia have enjoyed **good relations since 1947.**
- It started with a visit by the then Indian PM Nehru to the Soviet Union in 1955 and the First Secretary of the Communist Party Khrushchev's return trip during the same year.
- India and the Soviet Union signed the **Treaty of Peace and Friendship** in August 1971
- After the dissolution of the Soviet Union, India and Russia entered into a **new Treaty of Friendship and Cooperation in January 1993 and a bilateral Military-Technical Cooperation agreement in 1994.**
- In 2000 both countries established a **Strategic Partnership.**
- In 2010, it was elevated to the level of a "**Special and Privileged Strategic Partnership.**"
- PM Modi is the first Indian Prime Minister to visit the Russian Far East and this visit is intended to give "a new direction, new energy, and new speed" to the bilateral relations.

Political Relations:

- Annual Summit:** The Annual Summit meeting between the Prime Minister of India and the President of the Russian Federation is the highest institutionalized dialogue mechanism in the strategic partnership between India and Russia.

- PM Modi was awarded with Russia's highest state decoration - Order of St Andrew the Apostle.
- Indian Defence Minister undertook a trip to Russia for its 'Victory Day' parade, the first high-level visit from India to any country during the pandemic.
- **Intergovernmental Commissions:** Two Inter- Governmental Commissions - one on Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC), and another on Military Technical Cooperation (IRIGC- MTC) meet annually.
- International/Multilateral Organizations and Connectivity Projects: BRICS, SCO, Russia has been a long standing supporter of India's membership of the Nuclear Suppliers Group and Permanent Membership in an expanded UNSC.

Defence and Security Cooperation:

- **Russia-Traditional military supplier:** Russia has been a traditional military supplier, **over 60% of Indian military inventory** is of Russian origin, including fighter jets, tanks, helicopters and submarines.
- In 2021, India and Russia signed a **₹5000 crore deal for 6.1 lakh AK-203 assault rifles** to be manufactured jointly in Uttar Pradesh.
- Russia is **manufacturing two stealth frigates for the Navy**. While another two are being manufactured by the Goa Shipyard Limited under technology transfer.
- India is also looking to receive the third Akula class nuclear attack submarine (SSN) sometime in 2025.
- India-Russia military technical cooperation has evolved from a **buyer - seller framework to one involving joint research, development and production of advanced defence technologies and systems**.
- **BrahMos Missile System** as well as the licensed production in India of **SU-30 aircraft and T-90 tanks**, are examples of such flagship cooperation.
- Furthering this cooperation, an agreement on the cooperation in the production of spare parts for Russian/Soviet military equipment was signed.
- **Agreements on supply of S-400 air defence systems, construction of frigates and shareholders agreement on the formation of joint venture to manufacture Ka-226T helicopters in India.**
- Production of AK Series Assault Rifles at Ordnance Factory Korwa under the 'Make-in-India' program.
- The two countries also hold exchanges and training exercises between their armed forces annually.
- The first-ever Tri-Services exercise - 'INDRA 2017' took place in 2017.

Trade and Economic Relations:

- Enhancing trade and economic cooperation between India and Russia is a key priority for the political leadership of both the countries.
- It is clear by the revised targets of **increasing bilateral investment to US \$ 50 billion and bilateral trade to US \$ 30 billion by 2025**.
- India-Russia trade and connectivity lag behind **those between China and Russia**.
- Bilateral trade during April 2020-March 2021 **amounted USD 8.1 billion**. Indian exports amounted USD 2.6 billion while imports from Russia amounted USD 5.48 billion.
- A number of **institutionalized mechanisms** have been set up for the development of economic cooperation between the two countries.
- **India Russia Intergovernmental Commission for Trade, Economic, Scientific & Cultural Cooperation (IRIGC-TEC).**
- **India-Russia Strategic Economic Dialogue (IRSED)** has been established for cooperation in the field of development of economic policy and to encourage regular interactions and cooperation between the two countries.
- India is **contemplating an FTA/ CECA with the Eurasian Economic Union**. India is keen to engage more closely with Russia and the CIS countries to further intensify our trade and economic cooperation with this region.

Energy Security:

- In Energy sector Russia has built nuclear reactors in India (Kudankulam reactors), adopted strategic vision in nuclear energy, offered oil, gas and investment opportunities in the fuel sector of Russia e.g. Sakhalin I etc.
- Both are extending civil nuclear cooperation to 3rd countries, e.g. Bangladesh.

Space technology:

- The former Soviet Union launched India's first two satellites, Aryabhata and Bhaskar.
- It has provided India Cryogenic technology to build heavy rockets.

Science & Technology:

- The Working Group on Science and Technology, the Integrated Long Term Programme (ILTP) and the Basic Science Cooperation Programme are the three main institutional mechanisms for bilateral Science and Technology cooperation.
- Science Academies of the two countries promote inter-academy exchanges.

Cultural Cooperation:

- There is a strong tradition of Indian studies in Russia.
- As per the reciprocal agreement, regular cultural exchange between India and Russia has been taking place since 2015.

Reasons for Recent Downturn in Relations

- **India Going West:** China's expansionist foreign policy forced India to shed past hesitations and actively pursue closer ties with the West, particularly the US.
- **Russia Going East:** Russia revved up its own "Pivot to the East". The most distinct results of which are markedly improved relations with China, and better ties with Turkey, Iran, and Pakistan.
- **Defence:** India has been recently diversifying its defence relations with US, Israel etc. Russia's share of Indian defense imports fell from 79 percent between 2008-2012 to 62 percent between 2013-2017. Trade has been one-dimensional i.e. defence based. The trade in 2017-18 was \$10.7 billion, which is far below potential in comparison to India's trade with China (\$89.7 billion), the United States (\$74.5 billion).
- **Towards Taliban:** Russia is showing inclination towards Taliban in Afghanistan while India continues to have concerns about the group.

What are the recent positive developments in India-Russia ties?

- Agreements on the construction of 12 nuclear power plants in India
- The 'localized manufacturing' in India of Russian-designed nuclear power plants
- The finalisation in 2014 and 2015 of the supply of crude oil by Rosneft to Essar.
- Supply of S-400 Triumph Air Defence Missile System, 4 frigates and also the manufacturing of Ka-226T.
- In terms of investments, both the countries had set the target of \$30 billion by 2025.
- Gaganyaan Project: Russia would help train the Indian astronauts for the manned space mission.
- Russia supports India's bid for permanent membership in UNSC and NSG.

Importance of Russia for India

- **Balancing China:**
 - Russia organised a trilateral meeting among the foreign ministers of Russia, India and China following deadly clashes in Galwan valley.
 - This shows that Russia can contribute in defusing tensions with China whose relations with India have come to an inflection point.
- **Emerging New Sectors of Economic Engagement:**
 - mining, agro-industrial, and high technology, including robotics, nanotech, and biotech.
 - India's footprint in the Russian Far East and in the Arctic is set to expand.
 - Connectivity projects may get a boost too.
- **Combating Terrorism:**
 - India and Russia are working on Afghanistan.
 - Similarly, both are calling for early formalisation of Comprehensive Convention on International terrorism.
- **Support At Multilateral Forums:**
 - Russia has been a long standing supporter of India's membership of the Nuclear Suppliers Group and Permanent Membership in an expanded UNSC.
 - Important supplier of defence materials and equipment of all kinds.

Way Forward

- It is in the vital interest of both countries to ensure that the area which relates to the **security and defence, civil nuclear energy and space among**, is insulated from mutual differences in outlook on some geo-political issues and the pressures of other powers.
- It would also be mutually beneficial for both countries to explore other areas of cooperation such as **connectivity through both land and sea as well as trade**.
- There is a need of a **free trade agreement** to augment trade.
- India should pursue and facilitate **Russia's engagement in the Indo-Pacific**.
- India must promote mutually **beneficial trilateral cooperation between Russia, China, and India**.
- **Cooperation At Multilateral Forums:** India and Russia continue to share a common strategic rationale for their relationship.
- There are areas of convergence that can be used to improve the relationship between the two countries. For example, **both are involved in the Rooppur nuclear plant project in Bangladesh on a trilateral basis**.
- There is a need for a more **"extensive Eurasian partnership involving the EAEU and China, India, Pakistan, and Iran"**.
- India can help Russia by providing the **much-needed workforce in sectors like agriculture and construction** without engaging in permanent settlement.
- Both countries must take advantage of policies like **'Make in India'**.

INDIAN-NORWAY RELATIONS

GS-II INTERNATIONAL RELATIONS

Context

- Recently, Norway's Ambassador to India has reported that the bilateral trade between India and Norway has doubled to \$2 billion in the last two years.

Details

- Norway would invest \$1 billion from its climate investment fund in five years worldwide, how much of the funds would be invested in India would depend on the projects.
- Norway is working with the National Institute of Wind Energy for Wind Energy related projects. However, the problem in India is that only Tamil Nadu and Gujarat had stable wind to make it viable.
- Norway is working closely with India to find a way to get enough countries to ratify the Hong Kong Convention.

Background

- As early as the 1600s, a Danish-Norwegian trading station was established in Tranquebar (Tharangambadi), which today lies in the Indian state of Tamil Nadu.
- Norway's first Consulates in India opened in Kolkata and Mumbai in 1845 and 1857, respectively.
- In 1952, the "India fund" was established" with the aim to provide development assistance with a focus on fisheries. The same year, Norway opened its Embassy in New Delhi.
- The Consulate General in Mumbai re-opened its doors in 2015. It had been closed since the 1970s.
- In December 2018, the Norwegian government launched a new 'India Strategy'. The strategy sets clear priorities for the Norwegian government until 2030 and gives renewed impetus to develop our bilateral cooperation.
- The India Strategy outlines five thematic priorities:**
 - Democracy and a rules-based world order
 - The oceans
 - Energy
 - Climate and Environment
 - Research, higher education and global health



Democracy and a rules-based world order

- Norway and India both prioritise stability and predictability. Norway seeks to cooperate with India to strengthen the multilateral governance systems, the international trading system and the international legal order, not least regarding the oceans.

The oceans

- Norway and India are both ocean nations seeking to develop the vast economic, scientific and ecological potential of the oceans. In 2019, Norway and India signed a Memorandum of Understanding (MoU) establishing a structured and strategic cooperation on the oceans.

Energy

- The Indo-Norwegian cooperation on energy aims to develop energy sources that power economic growth, alleviate poverty, and foster peace and prosperity. Promoting access to clean and sustainable energy while combating climate change is a key concern for both countries. Norway is eager to work with India to achieve the Indian government's ambitious targets for its transition to a green economy.

Climate and Environment

- Norway considers India a critical partner in addressing global climate, environment and resource challenges, and continuously seeks to increase cooperation in support of the Paris agreement and the SDG-agenda.

Research, higher education and global health

- Norway's research cooperation with India has seen impressive growth in the last few years. With more than 100 ongoing joint projects, the research program with India is largest in Asia. In 2010, the Research Council of Norway established the Norwegian Program for Research Cooperation with India (INDNOR) to strengthen and promote cooperation between Norway and India on research and research funding.
- India is also one of six priority countries identified by Norway for cooperation on higher education and research in the Panorama strategy (Strategy for cooperation on higher education and research with Brazil, China, India, Japan, Russia and South Africa (2016–2020)). At the heart of this cooperation are thematic areas relating to the oceans, such as climate change, the environment, marine research, the maritime sector and polar research.
- India is also a central theme in the Research Council of Norway's domestic program on international relations, foreign policy and Norwegian interests (UTENRIKS) under the focus area 'Asia in transition'.
- Since 2006, Norway has collaborated with India on the development of innovative models for improving maternal and child health

Business cooperation

- In 2019, an agreement to establish an Indo-Norwegian Dialogue on Trade and Investments was signed between our two countries. Norwegian investment interests in India are increasing, in particular in ocean related areas. As of 2019, more than 100 Norwegian companies have established themselves in India. Another 50 are represented by agents. The Norwegian Pension Fund Global is likely one of India's largest single foreign investors. In 2019, its investments amounted to USD 9.5 billion.
- The Norwegian Business Association (India) (NBAI) was established in 2013. It aims to promote bilateral relationships and promote business in general between India and Norway.

COUNTER TERRORISM FINANCING

GS-II INTERNATIONAL RELATIONS

Context

- Union Home Minister Shri Amit Shah delivered concluding remarks at the closing session of 3rd "No Money For Terror" Conference (Counter-Terrorism Financing) in New Delhi.

Details

- He said that "Terrorism is the biggest enemy of democracy, human rights, economic progress, and world peace, which we cannot allow to succeed".
- The international community must continue to fight shoulder-to-shoulder against this increasingly complex and borderless threat.
- With the vision of Prime Minister Shri Narendra Modi, the world's first National Forensic Science University has been established.
- He said that in order to combat cybercrime in a comprehensive manner, the Government of India has established the Indian Cybercrime Coordination Center.
- Union Home Minister reiterated Prime Minister Shri Narendra Modi's resolve that India will be the focal point of international cooperation for "Counter-Terrorism (CT) and Combating Financing of Terrorism (CFT)".
- He said that some countries, their governments and their agencies have made 'Terrorism' their State Policy. He said that in these Terror havens, it is necessary to shackle their unrestrained activities along with a strict economic crackdown and all the countries of the world will have to make up their minds on this, rising above their geo-political interests.
- All countries will have to agree on one common definition of 'terrorism' and 'terror financing', because it is an issue of the protection of our citizens, and their human and democratic rights, it should not become a political issue.
- He stated that according to an estimate by the IMF and the World Bank, criminals around the world launder around 2 to 4 trillion dollars every year. And a major part of it goes to fuel terrorism.
- He drew the attention of the delegates towards some priority issues,**
 - Preventing diversion from legal financial instruments by fighting anonymity in financial networks,
 - Restricting the use of proceeds of other crimes for terrorist activities,
 - Preventing use of new financial technologies, virtual assets like crypto-currencies, wallets etc., for terror activities,
 - Eliminate the use of Illegal Channels, Cash Couriers, Hawala by Terror Networks
 - Prevent the use of Non-Profit Organisation, NPOs Sector to Spread Terror Ideology

- Continuous capacity building of counter-terror and financial intelligence agencies of all countries.
- **He said that to combat the financing of terrorism, our approach must be based on five pillars:**
 1. Establish a comprehensive monitoring framework involving cooperation, coordination, and collaboration among all intelligence and investigative agencies.
 2. The strategy of “Trace, Target, and Terminate”, to be adopted from low-level economic offenses to more organized economic crimes,
 3. Strengthening and harmonizing the legal structures related to terror finance,
 4. Developing a robust mechanism against the misuse of Next Generation Technology, and,
 5. Strengthening the legal and regulatory framework for asset recovery.
- He said that to stop the borderless finance movement that supports terrorism, we also have to accept the approach of ‘Beyond-Border Cooperation’, among us, only then this platform will be successful.
- **He said that during the deliberations, India has sensed the need for permanency of this unique initiative of NMFT, in order to sustain the continued global focus on countering the financing of terrorism and now the time is ripe for a permanent Secretariat to be established.**
- He said that in order to take this thought forward, the Chair Statement includes the offers to establish a Permanent Secretariat in the country and shortly, India will circulate a discussion paper to all Participating Jurisdictions for their valuable comments.

The conference

- The hosting of this conference shows the importance being given by the Modi Government to the issue of international terrorism as well as its zero tolerance policy against this menace and having discussions on this issue in the international community.

Aim

- This Conference aims to progress the discussions on combating terrorist financing held by the international community in the previous two Conferences in Paris (2018) and Melbourne (2019).
- It also intends to include discussions on technical, legal, regulatory and cooperation aspects of all facets of terrorism financing.
- It attempts to also set the pace for other high level official and political deliberations, focused on countering terrorist financing.

Background

- Globally, countries have been affected by terrorism and militancy for several years.
- The pattern of violence differs in most theatres, but is largely engendered by a tumultuous geo-political environment, coupled with prolonged armed sectarian conflicts. Such conflicts often lead to poor governance, political instability, economic deprivation and large ungoverned spaces.
- The involvement of a compliant State often exacerbates terrorism, especially its financing.
- India has suffered several forms of terrorism and its financing over more than three decades, hence it understands the pain and trauma of similarly impacted nations.
- **In order to display solidarity with peace-loving nations and to help create a bridge for sustained cooperation on countering terrorist financing, India was host to two global events in October - the annual General Assembly of the Interpol in Delhi and a special session of the UN Counter Terrorism Committee in Mumbai and Delhi.**
- The forthcoming NMFT Conference will further our efforts to build understanding and cooperation amongst nations.

AI-ECTA

GS-II INTERNATIONAL RELATIONS

Context

- Recently, an Australian parliamentary committee on treaties has recommended to its government to ratify the Australia-India Economic Cooperation and Trade Agreement (AI-ECTA).

Details

- AI-ECTA needs ratification by the Australian parliament before its implementation. In India, such pacts are approved by the Union Cabinet.
- The agreement, once implemented, will provide duty-free access to the Australian market for over 6,000 broad sectors of India, including textiles, leather, furniture, jewellery and machinery.
- Under the pact, Australia is offering zero-duty access to India for about 96.4% of exports (by value) from day one. This covers many products that currently attract 4-5% customs duty in Australia.
- The Agreement inter-alia covers areas like Trade in Goods, Rules of Origin, Trade in Services, Technical Barriers to Trade (TBT), Sanitary and Phytosanitary (SPS) measures.

Background

- The India-Australia bilateral relationship has undergone evolution in recent years, developing along a positive track, into a strategic partnership.
- The two nations have much in common, underpinned by shared values of pluralistic, Westminster-style democracies, Commonwealth traditions, expanding economic engagement and increasing high level interaction.
- The long-standing people-to-people ties, ever increasing Indian students coming to Australia for higher education, growing tourism and sporting links have played a significant role in further strengthening bilateral relations between the two countries.
- The historical ties between India and Australia started immediately following European settlement in Australia from 1788.
- All trade to and fro from the penal colony of New South Wales was controlled by the British East India Company through Kolkata.
- India and Australia established diplomatic relations in the pre-Independence period, with the establishment of India Trade Office in Sydney in 1941.
- The end of the Cold War and simultaneously India's decision to launch major economic reforms in 1991 provided the first positive move towards development of closer ties between the two nations.
- With the changing global scenario, Australia has come to look at India as an important partner in promoting regional security and stability. This led to **upgradation of bilateral relationship to a 'Strategic Partnership', including a Joint Declaration on Security Cooperation in 2009.**



Political relations:

- Over the years an array of institutional mechanism has been put in place to promote bilateral co-operation.
- Bilateral mechanisms include **high level visits, Annual Meetings of Prime Ministers, Foreign Ministers' Framework Dialogue, Joint Trade & Commerce Ministerial Commission, India-Australia '2+2' Foreign Secretaries and Defence Secretaries Dialogue, Defence Policy Talks, Australia-India Education Council, Defence Services Staff Talks, Energy Security Dialogue, JWGs on different issues etc.**
- Australia's White Paper on Foreign Policy released in November 2017 sees **India in the front rank of Australia's international partnerships.**
- During the 2018 Indian President visit, Australian Prime Minister announced support to its **India Economic Strategy's priority recommendations, including to take measures to increase Australian investment in India from A\$10 billion to 100 billion by 2035.**
- Trilateral dialogues:** India-Australia-Japan, Indonesia-Australia-India
- India and Australia **co-operate in various multilateral fora.** Australia supports India's candidature in an expanded UN Security Council. Both India and Australia are members of the Commonwealth, IORA, ASEAN Regional Forum, Asia Pacific Partnership on Climate and Clean Development, and have participated in the East Asia Summits. Both countries have also been cooperating as members of the Five Interested Parties (FIP) in the WTO context. Australia is an important player in APEC and supports India's membership of the organisation. In 2008, Australia became an Observer in SAARC.

Economic And Trade Relationship:

- India Economic Strategy**, prepared by Australian Think Tank, to define a pathway for Australia to unlock opportunities offered by Indian Economic growth aims for a clear exposition of the kind of relationship Australia should aspire to have with India out to 2035. The Paper identifies ten key sectors (Education as flagship sector; Agribusiness, Resources and Tourism as lead sectors; Energy, Health, Financial Services, Infrastructure, Sports, Science & Innovation as Promising Sectors) and ten states in India (Andhra Pradesh, Delhi NCR, Gujarat, Karnataka, Maharashtra, Punjab, Tamil Nadu, Telangana, UP and West Bengal) where Australia should focus efforts
- India-Australia Joint Ministerial Commission (JMC)** was established in 1989 to enable interaction at a Government and business level on a range of trade and investment related issues.

- India is the **5th largest trade partner of Australia** with trade in goods and services at A\$ 29 billion representing 3.6% share of the total Australian trade in 2017-18, with export at A\$ 8 billion and import at A\$ 21 billion.
- The two countries are also discussing a Comprehensive Economic Cooperation Agreement (CECA).
- **India-Australia CEO Forum** is a mechanism for business from both nations to engage directly on ways to build the bilateral trade and investment relationship

Civil Nuclear Co-Operation:

- A Civil Nuclear Cooperation Agreement between the two countries was signed in September 2014
- The Australian Parliament passed the “Civil Nuclear Transfer to India Bill 2016” in 2016 which ensures that Uranium mining companies in Australia may fulfil contracts to supply Australian uranium to India for civil use with confidence that exports would not be hindered by domestic legal action challenging the consistency of the safeguards applied by the IAEA in India and Australia’s international non-proliferation obligations.

Defence Co-Operation:

- Defence Policy Talks and Service to Service Staff talks are also held regularly.
- The first-ever Bilateral Maritime Exercise, **AUSINDEX 15**, was conducted in Visakhapatnam in 2015.
- 4th edition of **AUSTRAHIND** (Special Forces of Army Exercise) was held in 2019.

Agriculture, Science And Technology:

- An **Australia-India Strategic Research Fund (AISRF)**, which was established in 2006, supports scientists in India and Australia to collaborate on leading-edge research.

Resources And Energy Security:

- A **Joint Working Group on Energy and Minerals** was established in 1999 to expand bilateral relationship in the energy and resources sector.

Education, Sports, Art And Culture:

- The **Joint Working Group on Education** between the two countries has identified several key areas for co-operation, including collaborative research in education policy, student exchange programmes, capacity building in vocational education and distance learning in higher education.
- The number of **Indian students currently enrolled for studying in Australia is around 90,000**.
- Under the New Colombo Plan of Australian government, Australian undergraduates have studied and completed internships in India.
- Australia has also agreed to help in establishing a world class Sports University in India.

Consular Cooperation:

- The **Mutual Legal Assistance Treaty (MLAT)** and the **Extradition Treaty between India and Australia**, which were signed in 2008, have been ratified by both the Governments, and have entered into force

Indian Community In Australia:

- The Indian community in Australia continues to grow in size and importance, with the **population of nearly half seven lakhs**.
- India is one of the top sources of skilled immigrants to Australia.
- **India is now the third largest source of immigrants to Australia, after UK and New Zealand and the largest source of skilled professionals for Australia.**

Roadblocks

- Australian **concerns have to do with China’s** increased activities in the Pacific; while India is concerned about China’s greater presence and influence in the Indian Ocean
- **Australia has long been an American ally, while India remains uncomfortable about alliances**
- **Deficit of military capabilities**, especially on the Indian side: India’s reluctance to involve Australia in the Malabar trilateral naval exercise alongside the other three Quad nations.
- Although Australia has developed its uranium export industry in recent years, there are still **considerable reservations among many in Australia about its sale**
- India and Australia are **too far from concluding the bilateral Comprehensive Economic Cooperation Agreement (CECA) in the near term**.
- **Australia’s investment in India is not improving due to compromises**, an interfering bureaucracy, corruption etc.
- **India opted out from Regional Comprehensive Economic Partnership**. India and Australia could not agree regarding market access over agriculture and dairy products.

Way Forward

- India and Australia should **find more innovative ways to work together to shape a stable Asian strategic order**
- The **convergence of strategic interests in ensuring an Indo-Pacific order** is a glue that will bind India and Australia further in the coming years.
- The **several commonalities and closely aligned values in principles of democracy, liberty, the rule of law, human rights**,

freedom of speech, free press and multiculturalism serve as a foundation for a closer co-operation, multifaceted interaction and enhancement of bilateral relationship.

INDIA-UAE RELATIONS

GS-II INTERNATIONAL RELATIONS

Context

- External Affairs Minister S Jaishankar met with his UAE counterpart, Sheikh Abdullah bin Zayed Al Nahyan, and noted that bilateral trade has shown appreciable growth under the Comprehensive Economic Partnership Agreement (CEPA), which came into force on May 1, 2022.

Details

- They discussed cooperation in the areas of energy, food security, trade and defence, besides exchanging views on various "regional hotspots".
- Jaishankar and Sheikh Abdullah, who was on a two-day visit to India accompanied by a high-level delegation, reviewed the continuous progress in bilateral relations across different domains, since the 14th Joint Commission meeting held by them in September 202
- India's exports to the UAE between April and September this year were about \$16 billion, an increase of 24 per cent year-on-year, while India's imports increased 38 per cent to reach \$28.4 billion in the same period.

Recent developments

- During the 14th India-UAE Joint Commission Meeting, both the Ministers expressed their satisfaction with the continued high growth trajectory of bilateral relations between the two nations.
- The bilateral relations between India and the UAE have strengthened in all sectors in recent years. Both sides have collaborated closely during the COVID-19 pandemic in critical areas of healthcare and food security. The two sides are also strengthening their cooperation in new areas of renewable energy, start-ups and fintech. The UAE is India's third largest trade partner. Around 35 lakh Indians live in the UAE and play a major role in the economic development of the UAE.
- Growing India-UAE economic and commercial relations contribute to the stability and strength of a rapid diversifying and deepening bilateral relationship between the two countries.
- India-UAE bilateral trade, valued at US\$ 180 million per annum in the 1970s has increased to US\$ 60 billion making the UAE, India's third-largest trading partner for the year 2019-20 after China and the US.**
- Moreover, the **UAE is the second-largest export destination of India** (after US) with an export value of US\$ 29 billion for the year 2019-2020.
- The **UAE is the eighth largest investor in India** with an estimated investment of US\$ 18 billion.
- India and the UAE signed a bilateral "Comprehensive Economic Partnership Agreement" (CEPA) in February.

Background

- Political:**
 - India and the United Arab Emirates (UAE) **established diplomatic relations in 1972.**
 - The traditionally strong bilateral relations enjoyed by India & UAE received impetus with the visit of PM Modi to UAE in 2015 that marked the beginning of a new strategic partnership.
 - Sheikh Mohamed bin Zayed Al Nahyan, (MBZ) Crown Prince of Abu Dhabi visited India again in as the Chief Guest at India's Republic day celebrations.
 - It was during this visit that the bilateral relations were upgraded to a '**Comprehensive Strategic Partnership**'.
 - PM received the UAE's **highest civilian award, 'the Order of Zayed'** in 2019.
 - The visit also witnessed the official launch of the 'RuPay Card' in UAE, and the release of a set of stamps issued by Emirates Post commemorating the 150th Birth Anniversary of Gandhi.
- Economic & Commercial Relations:**
 - India and UAE have shared trade links through the centuries.
 - India-UAE trade is today around US\$ 60 billion, making UAE, **India's third largest trading partner for the year 2018-19.**
 - Moreover, UAE is the **second largest export destination of India** (after US) with an amount of over US\$ 30 billion for the year 2018-19.
 - For UAE, **India was the second largest trading partner during 2018.**
 - UAE is the **10th biggest FDI investor for India.**
 - A consortium led by ONGC was awarded a 10 per cent stake in the Lower Zakum Concession in 2018.- first time that the Emirate awarded a stake in a functioning oil field to an Indian group.
 - NRI Remittances:** The annual remittances made by the large Indian community in UAE amount to over US\$ 17.56 billion (2018).
- Cultural Relations:**
 - Indian expatriate community of approx. **3.3 millions is the largest ethnic community in UAE constituting roughly about 30 per cent of the country's population.**
 - Among the Indian States, Kerala is the most represented followed by Tamil Nadu and Andhra Pradesh.

- Indian schools: There are 130 Indian schools in the UAE following the CBSE and Kerala Board curricula with approx 219,000 students.
- Defence and Security Cooperation:**
 - There have been regular high level & functional level exchanges between the two countries.
 - The ships of the Navies of both countries have regularly made port calls enhancing bilateral defence co-operation.
 - UAE Air Force Officers participated as Observers in **Trilateral Air Exercise** on Humanitarian Assistance & Disaster Relief (HADR) in 2018.
 - Indian Navy Ships participated in the maiden **IN-UAEN Bilateral Exercise** in 2018 named Gulf Star 1.
 - IN Ships have been regularly participating in **IDEX/NAVDEX** held in Abu Dhabi biennially.
 - '**Desert Eagle II**', a ten-day air combat exercise, was held in 2016 between the air forces of India and UAE.
 - While India and UAE are constantly in touch with each other through institutionalised **deradicalisation programmes and promote tolerance**, Abu Dhabi has turned into a no-go area for anyone looking for a haven after fleeing Indian law enforcement agencies.

Why the relations are on an upswing?

- Diversification of UAE economy:** Foreign trade and the oil and gas sectors were the fulcrum of bilateral relations in the decades preceding the end of the oil era boom. But since then, the UAE has pursued an aggressive strategy of diversifying its economy, and its relations with India have benefited as a result.
- Evolving country profile and priorities:** The recent upsurge in relations is a reminder that both the UAE and India have leapfrogged in terms of global reputation and foreign policy since 1981.
- Key partners in combating extremism:** The UAE and India share a deeply common goal – fighting terrorism, combating extremism and ideologies of hatred.
- The two countries have a common interest in ensuring maritime security in the Indian Ocean and the Gulf region.
- Common economic goals:** India has now become the world's one of the fastest growing major economy and the third largest consumer of oil. On the other hand, the UAE has sovereign funds with a corpus of over a trillion dollars.
- Challenges:**
 - As far as investments are concerned, **the systemic problem faced due to slow implementation of various projects** from Indian side is a major obstacle.
 - Indian companies operating in the UAE also face problems due to **lack of clarity in many aspects of commercial regulations, labor laws and lack of transparency on part of Emirati businesses**.
 - There is also a need to smoothen **problems faced by Indian migrants** due to cumbersome and strict regulations that favour the Emirati employers and at times leads to serious problems for Indian workers, especially unskilled workers.

Analysis

- Since 2014, Indian foreign policy has witnessed significant changes in approach, priority issues, and focus.
- The **relationship with United Arab Emirates (UAE) is at the core of an assertive new Gulf policy** subsumed under the "Extended Neighborhood Policy."
- Mutually reinforcing economic visions and compatible geopolitical outlooks have laid the basis for a more robust and promising partnership** between India and the UAE.
- The Emirates' plans to develop a diversified, knowledge-based 21st century economy have dovetailed with the Modi administration's blueprint for unleashing India's economic potential.
- India – the world's fastest expanding market opportunity, with its talent pool of human capital, well acknowledged for innovation and UAE – a hub of cutting-age technologies – are natural partners in the field of Artificial Intelligence.**
- Space is a new arena in which India and the UAE have collaborated** through the work of the UAE Space Agency and ISRO. Together, the two space agencies have developed the nano-satellite, Nayif-1 and are likely to work together on Emirates' 'Red planet Mission'.

Way Forward

- The growing engagements between India and the UAE has to be seen within the broader contexts of UAE's policy of engaging with Asia to improve economic prospects and India's search for **foreign investments** to expedite economic growth and address the threat of **extremism and terrorism**.
- Medical tourism** can be an important area where India can attract UAE given India's high quality man power in medical sector and improving medical infrastructure in the country.
- There are further untapped potentials in the arena of **renewable energy**. The cost for production and transmission of solar energy in the UAE are a fraction to that of India and this is a priority area for the UAE government.

FUNGAL PRIORITY PATHOGENS LIST (FPPL)

GS-II HEALTH

Context

- The World Health Organisation (WHO) has published a report highlighting the first-ever list of fungal "priority pathogens".

Details

- WHO's fungal priority pathogens list (FPPL) is a **catalogue of 19 fungi that represent the greatest threat to public health**.
- FPPL is **the first global effort to systematically prioritize fungal pathogens**. Until now the research and development (R&D) need in this field was unmet despite its public health importance.

What is a Fungus?

- Fungi are **multicellular organisms consisting of eukaryotic cells**. There are **more than 100,000 varieties of fungi**. They have **no mechanisms for locomotion**. Fungi get nutrients by absorption and range in size from microscopic to bigger ones like mushrooms. They **usually act as decomposers** by obtaining their energy from the chemical breakdown of dead organisms as well as from animal and plant waste products.
- Fungi are one of the categories in the 5-kingdom classification. The other 4 are Protista (the single-celled eukaryotes), Plants; Animals and prokaryotes (Monera). The major group of microbes that causes diseases to humans are Viruses, Prions, Bacteria, Fungi, Protozoa, and Helminths(worms).

WHO's Findings

- As per WHO, Fungal pathogens are a major threat to public health as they are becoming increasingly common and resistant to treatment.
- Currently, **only four classes of systemic antifungal medicines (azoles, echinocandins, pyrimidines and polyenes)** are used in clinical practice, and only a few others are under development. Although existing antifungal medicines are effective, they are associated with a plethora of adverse effects.
- Most fungal pathogens lack rapid and sensitive diagnostics and those that exist are not widely available or affordable globally.

Reasons for the Rise in Fungus

Global Warming and Increased Travel and Trade

- Due to global warming and the increase in international travel and trade, the incidence and geographic range of fungal diseases are expanding worldwide.
- During the COVID-19 pandemic, the reported incidence of invasive fungal infections increased significantly among hospitalized patients.

Resistant to Treatment

- As the fungi that cause common infections (such as candida oral and vaginal thrush) become increasingly resistant to treatment, risks for the development of more invasive forms of infections in the general population are also growing.
- Resistance to antifungal medicines is partly driven by **inappropriate antifungal use across the One Health spectrum**. For example, the injudicious use of antifungals in agriculture was linked to the rising rates of azole-resistant *Aspergillus fumigatus* infections.

Neglect and lack of attention

- Despite the growing concern, fungal infections receive very little attention and resources, leading to a scarcity of quality data on fungal disease distribution and antifungal resistance patterns. As a result, the exact burden of fungal diseases and antifungal resistance is unknown, and the response is therefore undermined.

Expansion of at-risk population

- Cases of invasive fungal disease (IFD) are rising as the at-risk population continues to expand. This is due to many factors, including **advancements in modern medicine and accessibility to therapies and interventions that impair the immune system**, such as chemotherapy and immunotherapy for cancer, and solid organ transplantation.
- The invasive forms of these fungal infections often affect severely ill patients and those with significant underlying immune system-related conditions. Populations at the greatest risk of invasive fungal infections include those with **cancer, HIV/AIDS, organ transplants, chronic respiratory disease, and post-primary tuberculosis infection**.

Three priority categories

- The WHO FPPL list is divided into three categories: critical, high, and medium priority.
 - The critical group includes ***Candida auris***, which is highly drug-resistant and has caused a number of outbreaks in hospitals worldwide, as well as ***Cryptococcus neoformans*, *Aspergillus fumigatus*, and *Candida albicans***.
 - The high group includes a number of other fungi from the *Candida* family as well as others such as *Mucorales*, a group

containing the fungi that causes *mucormycosis* or "black fungus", an infection which rose rapidly in seriously ill people - particularly in India - during COVID-19.

- The medium group lists a number of other fungi, including *Coccidioides spp* and *Cryptococcus gattii*.

19 Fungi under the Fungal Priority Pathogens List

Critical

Cryptococcus neoformans
Candida auris
Aspergillus fumigatus
Candida albicans

High

Nakaseomyces glabrata (*Candida glabrata*)
Histoplasma spp.
Eumycetoma causative agents
Mucorales
Fusarium spp.
Candida tropicalis
Candida parapsilosis

Medium

Scedosporium spp.
Lomentospora prolificans
Coccidioides spp.
Pichia kudriavzevii (*Candida krusei*)
Cryptococcus gattii
Talaromyces marneffei
Pneumocystis jirovecii
Paracoccidioides spp.

Way Ahead

- We need **more data and evidence on fungal infections and antifungal resistance** to inform and improve response to these priority fungal pathogens.
- The report proposes actions and strategies for policymakers, public health professionals, and other stakeholders. The actions are targeted at improving the overall response to these priority fungal pathogens including preventing the development of antimicrobial resistance.
- Three primary areas for action are proposed, focusing on:
 - strengthening laboratory capacity and surveillance;
 - sustainable investments in research, development, and innovation; and public health interventions.

NEW HOPE FOR MALARIA VACCINE

GS-II HEALTH

Context

- After decades of slow progress, there seems to be new hope for Malaria Vaccine. WHO approval in October 2021 for RTS, S/AS01 (Mosquirix) developed by GlaxoSmithKline for immunizing children was a major milestone.

Malaria

- Malaria is caused by single-celled microorganisms of the **Plasmodium group parasites**.
- The disease is most commonly spread by an infected **female Anopheles mosquito**.
- The mosquito bite introduces the parasites from the mosquito's saliva into a person's blood.
- The parasites travel to the liver where they mature and reproduce.
- Five species of Plasmodium can infect and be spread by humans.
- Most deaths are caused by *falciparum*, whereas *P. vivax*, *P. ovale*, and *P. malaria* generally cause a milder form of malaria.
- The species *knowlesi* rarely causes disease in humans.
- Malaria is predominantly found in **the tropical and subtropical areas of Africa, South America as well as Asia**.
- Symptoms:** Fever, tiredness, vomiting, and headaches. In severe cases, it can cause yellow skin, seizures, coma, or death.
- Malaria is preventable as well as curable.
- Vaccine:** RTS, RTS, S vaccine.

Vaccine

Malaria kills nearly 600,000 people every year, the majority of whom are children under the age of five in sub-Saharan Africa. The need to develop an effective vaccine against the disease has long been a top priority.

RTS, S/AS01 Malaria Vaccine

- Mosquirix is a vaccine that is given to children aged 6 weeks to 17 months to help protect against malaria caused by the parasite *Plasmodium falciparum*.
- The vaccine significantly reduces malaria and life-threatening severe malaria in children. If implemented broadly, the vaccine could save tens of thousands of lives each year.
- Mosquirix also helps protect against infection of the liver with the hepatitis B virus.

Note: However, RTS, S/AS01 fails to meet the WHO's benchmark for a malaria vaccine efficacy of 75 percent set in 2015.

R21/Matrix M

- In September 2021, another malaria vaccine, R21/Matrix M, developed by the University of Oxford in the UK, demonstrated **an efficacy of 77 percent** in phase 1 and 2 trials. In early September 2022, this vaccine once again **showed high efficacy of 80 percent maintained after two years.**
- A more effective **R21 is the first malaria vaccine to meet the WHO's goal, set in 2015, of 75% efficacy.**
- The **vaccine, called R21,** could be an effective weapon in the fight against malaria, which is one of the biggest killers of children globally.

Ways the vaccines work

- RTS, S, and R21 are similar in that they both **contain the same part of a major protein that is found on the surface of the liver stage parasite, called sporozoite.** Both also contain **hepatitis B virus surface antigen (HBsAg),** a protein that can self-assemble and that helps in the formation of virus-like particles of the CSP antigen fused with it.
- To boost immune responses, all protein-based recombinant vaccines rely heavily on a **strong adjuvant.**
- RTS, S is formulated with an adjuvant called AS01; R21 employs an adjuvant called Matrix-M developed. Matrix M contains **saponin-plant-based material and stimulates both antibody and cellular immune responses to vaccines.** Both **adjuvants have shown high levels of efficacy and safety.** Matrix-M has been used in a variety of vaccine formulations against influenza, and more recently in the Novovax Covid-19 vaccine.
- These vaccines can continue to be developed to achieve the ultimate goal of malaria eradication.

ALL ABOUT ADJUVANTS

An adjuvant is a substance that enhances the immune system's response to the presence of an antigen. They are commonly used to improve the effectiveness of a vaccine. Generally, they are injected alongside an antigen to help the immune system generate antibodies that fight the antigen. [Note: An antigen is any foreign substance that causes our immune system to produce antibodies against it.]

The purpose of adding adjuvants into vaccines is to boost the immune system response. Aluminum, one of the most commonly used adjuvants, was first discovered to have adjuvant properties back in 1926. Since then, numerous vaccines, such as hepatitis A, hepatitis B, diphtheria-tetanus, Haemophilus influenza type b, and pneumococcal vaccines have been developed with the use of Aluminium adjuvants. Today, a number of different kinds of adjuvants have been discovered and successfully used to develop new vaccines.

When adjuvants are added to a vaccine **they activate antigen-presenting cells to signal to the immune system's T cells that foreign substances have infiltrated.**

To do this adjuvant **boosts the activation of antigen-presenting cells** -these are cells of the immune system that encompass foreign substances and break them up, presenting the resulting particles to the immune system's T cells. This activates the T cells, which has the impact of activating the antibody-producing B cells.

Note: T Cells act as "killer cells", attacking cells that have been infected with a virus or another kind of pathogen, or they can act as "helper cells" by supporting B cells to produce antibodies.

India's efforts in tackling Malaria

- According to The World Malaria Report (WMR) 2020 **India is the only high endemic country, which has reported a decline of 17.6% in 2019 as compared to 2018.**
- India has made remarkable progress in recent years in reducing malaria incidence.
- In May 2015, the World Health Assembly endorsed the **Global Technical Strategy (GTS) for Malaria Elimination** 2016-2030, which lays down clear global goals, milestones, and targets till 2030.
- In line with the GTS, the Government of India launched the **National Framework for Malaria Elimination 2016-2030 in February 2016 and the National Strategic Plan for Malaria Elimination 2017-2022** in July 2017 with WHO support.
- India has a vision of a **malaria-free country by 2027 and elimination by 2030.**
- The WHO has also identified 25 countries with the potential to eradicate malaria by 2025 under its 'E-2025 Initiative'.

Malaria Free Status

- Countries that have achieved at least **three consecutive years of zero indigenous cases can apply for WHO certification of their malaria-free status.**

Malaria Free Countries

- China is the **first country in the WHO Western Pacific Region to** be awarded a malaria-free certification in more than 3 decades.
- Globally, 40 countries and territories have been granted a malaria-free certification from WHO.

- **Recent Declarations:** El Salvador (2021), Algeria (2019), Argentina (2019), Paraguay (2018), and Uzbekistan (2018).

China's Malaria Elimination Strategy in brief

- **1-3-7 Strategy: The strategy refers to:**
 - A one-day deadline to report a malaria diagnosis,
 - Confirming a case and determining the spread by the third day, and
 - Measures taken to stop the spread by the seventh day, along with continued surveillance in high-risk areas.

Road Ahead for India

- A major gap is in the establishment of safe and scientifically robust control human infection models in India for diseases like malaria or influenza. All malaria vaccines under development need to be tested in the safe and scientifically robust **Controlled Human Malaria Infection (CHMI) model** after completing phase 1 safety studies. This has been established in many countries in Europe, the UK, Colombia, and Thailand.

Controlled Human Malaria Infection (CHMI)

Controlled human malaria infection (CHMI) entails **deliberate infection with malaria parasites either by mosquito bite or by direct injection of sporozoites or parasitized erythrocytes**. When required, the resulting blood-stage infection is curtailed by the administration of antimalarial drugs.

- But further development of these vaccines has been a challenge in the absence of the CHMI model in India.
- Scientific, long-term continuous funding, regulatory and logistic processes need to be better coordinated to assist scientists in the development of novel vaccines against infectious diseases.
- With a highly successful and deeply committed vaccine-producing biopharma industry and a strong scientific base, India should be able to lead the world in developing and producing vaccines.

ANTIMICROBIAL RESISTANCE

GS-II HEALTH

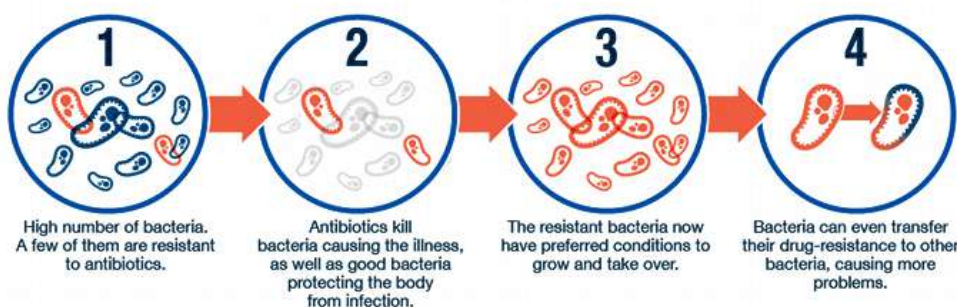
Context

- Minister of State for Health and Family Welfare Dr Bharati Pravin Pawar has said, anti-microbial resistance, AMR, is a silent and invisible pandemic that cannot be overshadowed by other competing public health priorities.

What is antimicrobial resistance?

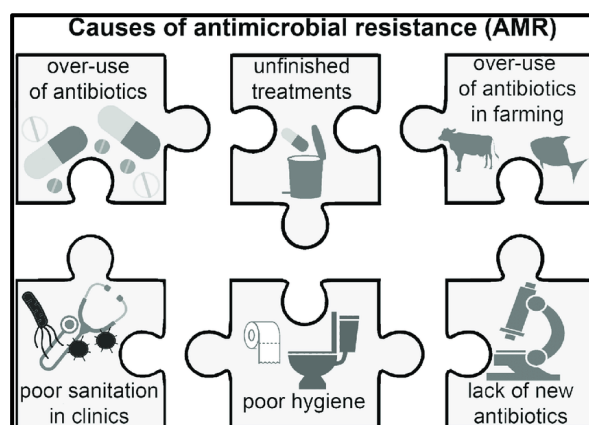
- Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat.

How does antibiotic resistance occur?



Factors leading to AMR

- The main drivers of antimicrobial resistance include the
 - Misuse and overuse of antimicrobials;
 - Lack of access to clean water,
 - Sanitation and hygiene (wash) for both humans and animals;
 - Poor infection and disease prevention and control in health-care facilities and farms;
 - Poor access to quality, Affordable medicines, Vaccines and diagnostics;
 - Lack of awareness and knowledge; and Lack of enforcement of

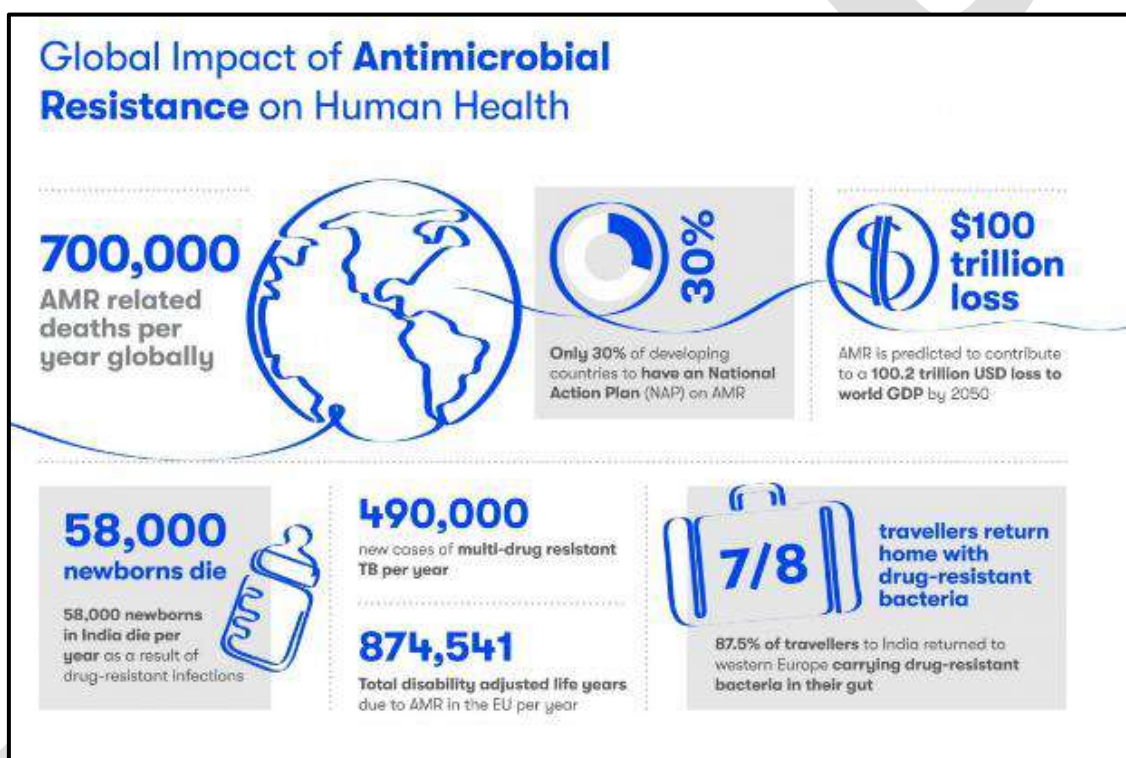


legislation.

- Lack of access to timely and appropriate treatments for infections,
- Self-medication, prescription sharing, over-the counter sale of antimicrobials,
- Non-compliance with the prescribed treatment.
- Genetic mutation of bacteria.
- By one species acquiring resistance from another.

Economic impact	Extra healthcare costs: diagnostics, use of second-line drugs, increase of time in care, and prolonged hospital stay
	Indirect costs such as loss of productivity and costs of not doing interventions because of AMR
	Societal costs to address the problem of AMR: costs of surveillance, conservation programs, and support for R&D
	Loss of productivity in animal health
Societal impact	Lack of trust in the healthcare system, fear of medical procedures, and barriers to poverty eradication

Abbreviations: AMR, antimicrobial resistance; CSF, cerebrospinal fluid; R&D, research and development.



The case of India

- India is one of the largest consumers of antibiotics in the world.
- Antibiotic use in India has risen sharply, with about a 30% increase in their per capita use during the past decade, according to the State of the World's Antibiotics 2021 report.
- 5 lakh people die annually due to AMR worldwide.

Steps taken to curb AMR in India

Red Line Campaign

- It urges people not to use medicines marked with a red vertical line, including antibiotics, without a doctor's prescription. These medicines are called as the 'Medicines with the Red Line'.

National Action Plan on Antimicrobial Resistance

- India has a National Action Plan on Antimicrobial Resistance in place

Delhi Declaration on Antimicrobial Resistance

- Delhi Declaration on Antimicrobial Resistance, was endorsed at the Inter-Ministerial Consultation on Antimicrobial Resistance in 2017.

AMR Surveillance Network

- ICMR has established AMR surveillance and research network (AMRSN) in 2013, to generate evidence and capture trends and patterns of drug resistant infections in the country.
- This network comprises of 30 tertiary care hospitals, both private and government.

AMR Research & International Collaboration

- ICMR has taken initiatives to develop new drugs / medicines through international collaborations in order to strengthen medical research in AMR.
- ICMR along with Research Council of Norway (RCN) initiated a joint call for research in antimicrobial resistance in 2017.
- ICMR along with Federal Ministry of Education and Research (BMBF), Germany has a joint Indo-German collaboration for research on AMR.

Initiatives to control overuse or misuse of antibiotics


- ICMR has initiated an **Antibiotic Stewardship Program (AMSP)** on a pilot project basis in 20 tertiary care hospitals across India to control misuse and overuse of antibiotics in hospital wards and ICUs.
- On the recommendations of ICMR, DCGI has banned 40 fixed dose combinations (FDCs) which were found inappropriate.
- ICMR worked in collaboration with the Indian Council of Agriculture Research, Department of Animal Husbandry, Dairy and Fisheries and the DCGI to ban use of Colistin as growth promoter in animal feed in poultry.

Guidelines issued

- National Guidelines for Infection Prevention and Control in Healthcare Facilities have been released by MoHFW in Jan 2020.
- ICMR has developed evidence-based treatment guidelines for the treatment of ten syndromes of infections. It aims to rationalize the usage of antibiotics on Essential Medicines Formulary (EMF) and to establish consistency in the treatment of various infectious conditions.
- Further, ICMR has also issued the Treatment Guidelines for Antimicrobial Use in Common Syndromes" in 2019.

Way Ahead

- Lowering of antibiotic consumption is not sufficient because the spread of resistant strains and resistance genes are the dominant contributing factor.
- Providing sanitation, clean water, and good governance, increasing public health expenditure and better regulating the private health sector are all necessary to reduce antimicrobial resistance.



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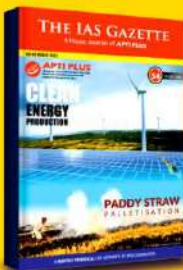
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GENERAL STUDIES - III

DIGITAL RUPEE

GS-III ECONOMY

Context

- The Reserve Bank of India (RBI) has finally launched its pilot programme for the e-rupee, India's own Central Bank Digital Currency (CBDC).

What Is CBDC?

- CBDC is a digital currency that is issued by the central bank of a sovereign nation. By definition, it is freely convertible against the physical currency issued by the same central bank. Similar to physical currency, one need not have a bank account to transact using CBDCs either.
- However, one major distinguishing factor between CBDCs and physical currency is that CBDCs will have an infinite life, in the sense that they cannot be damaged or lost in any physical form. It will be managed on a digital ledger that may or may not be blockchain-enabled.

Features of Digital Rupee

- CBDC is a sovereign currency issued by central banks in alignment with their monetary policy.
- It appears as a liability on the central bank's balance sheet.
- It must be accepted as a medium of payment, legal tender, and a safe store of value by all citizens, enterprises, and government agencies.
- CBDC is freely convertible against commercial bank money and cash.
- CBDC is a fungible legal tender for which holders need not have a bank account.
- CBDC is expected to lower the cost of issuance of money and transactions.

Types of CBDCs

- CBDCs can be of two types: retail (CBDC-R) and wholesale (CBDC-W). The wholesale kind would be used for interbank settlements and other wholesale transactions whereas CBDC-R would be used for retail transactions as an electronic form of cash. CBDC-W is expected to reduce transaction costs and make interbank markets more efficient. The RBI pilot program that began on November 1 2022 is for CBDC-W alone.
- Another pilot program for CBDC-R is expected to start by next month. Presently, several other central banks across the world are exploring the possibilities of putting CBDCs into practice.

In a nutshell,

Retail CBDC

- Retail CBDC can be used by all including the private sector, non-financial consumers, and businesses. Wholesale CBDC is designed for restricted access to select financial institutions.
- Retail CBDC can provide access to safe money for payment and settlement as it is a direct liability of the central bank.

Wholesale CBDC

- While retail CBDC is an electronic version of cash primarily meant for retail transactions, the wholesale CBDC is designed for the settlement of interbank transfers and related wholesale transactions.
- Wholesale CBDC has the potential to transform settlement systems for financial transactions and make them more efficient and secure. Going by the potential offered by each of them, there may be merit in introducing both CBDC-W and CBDC-R.

How is Digital Rupee different from money in digital form?

- A CBDC would differ from existing digital money available to the public because a CBDC would be a liability of the Reserve Bank, and not of a commercial bank.

Why is RBI introducing CBDC?

- CBDC is aimed to complement, rather than replace, current forms of money and is envisaged to provide an additional payment avenue to users, not to replace the existing payment systems.
- RBI believes that the digital rupee system will "bolster India's digital economy, enhance financial inclusion, and make the monetary and payment systems more efficient."

Pointing out the motivations for India to consider issuing CBDC, RBI mentioned these reasons:

- Reduction in cost associated with physical cash management
- To further the cause of digitisation to achieve a less cash economy.

- c) Supporting competition, efficiency, and innovation in payments
- d) To explore the use of CBDC for improvement in cross-border transactions
- e) Support financial inclusion
- f) Safeguard the trust of the common man in the national currency vis-à-vis proliferation of crypto assets

CBDCs around the World

- A study by Atlantic Council Geo Economics Center has found that **close to 105 countries are considering the possibility of launching a CBDC** that would be primarily used for interbank transactions. From an estimated 35 nations in as recently as 2020, this is a significant jump.
- About 19 of the Group of Twenty (G20) countries are exploring the issuing of CBDCs and most of them have made progress beyond the initial research stage.

ONE NATION, ONE ITR FORM

GS-III ECONOMY

Context

- The Central Board of Direct Taxes (CBDT) has proposed a single income tax return (ITR) form for all taxpayers. A draft form has been released, to which all stakeholders can provide inputs up to December 15.

What is ITR?

- Income Tax Return (ITR) is a form in which taxpayers file information about their income earned and tax applicable to the income tax department. It reports income, expenses, and other relevant tax information.

How many kinds of ITR forms are there now?

- There are seven kinds of ITR forms, which are used by different categories of taxpayers. The applicability of ITR forms varies depending on the sources of income of the taxpayer, the amount of the income earned and the category of the taxpayer like individuals, HUF, company, etc. They are as follows:
 - **ITR Form 1**, called 'Sahaj', is for small and medium taxpayers. Sahaj forms can be filed by individuals who have an income up to Rs 50 lakh, with earnings from salary, one house property/ other sources (interest etc).
 - **ITR-2** is filed by people with income from residential property.
 - **ITR-3** is intended for people who have income as profits from business/ profession
 - **ITR-4 (Sugam)** is, like ITR-1 (Sahaj), a simple form, and can be filed by individuals, Hindu Undivided Families (HUFs) and firms with total income up to Rs 50 lakh from businesses and professions.
 - **ITR-5 and 6** are for limited liability partnerships (LLPs) and businesses respectively.
 - **ITR-7** is filed by trusts and non-profit organizations.

What is the change that has been proposed?

- According to the proposal, all taxpayers, **barring trusts and non-profit organizations (ITR-7)**, will be able to use a common ITR form, which will include a separate head for disclosure of income from virtual digital assets.
- The draft ITR proposes to introduce a common ITR by merging all the existing returns of income except ITR-7.

Will ITR-1 (Sahaj) and ITR-4 (Sugam) be withdrawn?

- No. The current ITR-1 and ITR-4 will continue. This will give an option for such taxpayers to file the return either in the existing form (ITR-1 or ITR-4), or the proposed common ITR, at their convenience.
- The new ITR form would be available alongside the old forms ITR-1 and ITR-4, **but taxpayers filing ITR-2, ITR-3, ITR-5 and ITR-6 would not have the option to file the old forms.**

The rationale behind the Draft ITR

- The current ITRs are in the form of designated forms wherein the taxpayer is mandatorily required to go through all the schedules, irrespective of the fact whether that particular schedule is applicable or not. This increases the time taken to file the ITRs and in turn, may create avoidable difficulties for taxpayers.
- The proposed draft ITR takes a relook at the return filing system in tandem with international best practices. The draft form aims to make it easier to file returns and to considerably reduce the time taken for the job by individuals and non-business-type taxpayers.
- The taxpayers will not be required to see the schedules that do not apply to them. It intends the smart design of schedules in a user-friendly manner with a better arrangement, logical flow, and increased scope of pre-filling of the Form.

Scheme of Proposed Form

- As per the draft proposal issued by the CBDT, the proposed common ITR form will have:
 - Basic information (comprising parts A to E), Schedule for computation of total income (Schedule TI), Schedule for computation of tax (schedule TTI), Details of bank accounts, and a schedule for the tax payments (schedule TXP) is applicable for all the taxpayers.
 - The ITR is customised for the taxpayers with applicable schedules based on certain questions answered by the taxpayers (wizard questions).
 - The questions have been designed in such a manner and order that if the answer to any question is 'no', the other questions linked to this question will not be shown to him.
 - Instructions have been added to assist in the filing of the return containing the directions regarding the applicable schedules
 - The proposed ITR has been designed in such a manner that each row contains one distinct value only. This will simplify the return filing process. The utility for the ITR will be rolled out in such a manner that only applicable fields of the schedule will be visible and wherever necessary, the set of fields will appear more than once. For example, in the case of more than one house property, the schedule HP will be repeated for each property. Similarly, where the taxpayer has capital gains from the sale of shares taxable under section 112A only, applicable fields of schedule CG, relating to 112A, shall be visible to him.
- The taxpayers only need to answer **questions that apply to them and fill the schedules linked to those questions where the answer has been given as 'yes'**. The new proposed form will save time and energy for the taxpayers.

INDIA INFRASTRUCTURE PROJECT DEVELOPMENT FUND SCHEME

GS-III ECONOMY

Context

- The Department of Economic Affairs (DEA), Ministry of Finance, Government of India, has notified the **Scheme for Financial Support for Project Development Expenses of PPP Projects - India Infrastructure Project Development Fund Scheme (IIPDF Scheme)**.

About

- As a **central sector scheme**, the IIPDF Scheme will aid the development of quality PPP projects by providing necessary funding support to the project sponsoring authorities in the central and state governments.
- Funding under IIPDF Scheme is in addition to the already operational Viability Gap Funding Scheme that provides Financial Support to PPPs in Infrastructure that is economically justified, but commercially unviable.

Note: In PPP, public and private stakeholders sign up to jointly develop, finance, execute and operate a (mostly) infrastructure project.

Must Read: <https://www.iasgyan.in/blogs/forms-of-projects-modes-of-construction>

VGF

Viability Gap Funding is designed to provide capital support to projects that are **economically justified but not financially viable**. In this incentive scheme, the Government provides a certain percentage of the total capital cost to make the project financially viable. VGF reduces the revenue required to recover costs and provides a financially attractive return for the private sector.

Aim

- To improve the country's quality and pace of infrastructure development by encouraging private sector participation.
- The Scheme is for creating a shelf of bankable viable PPP projects to achieve the country's vision of modern infrastructure.

Advisory to PSAs

- A key step in structuring quality PPP projects is to provide **quality advisory/consultancy services to the Project Sponsoring Authorities (PSAs)**. However, the procurement of such services is a time-consuming and difficult process often resulting in delays.
- There is a lack of appropriate **transaction advisers (TAs)** and there is non-optimal structuring of PPP projects.

TAS

Transaction advisory services (TAS) assist public and private sector clients in structuring and procuring viable projects, particularly public-private partnership projects. TAS can help guide the choice and design of a project, improve its quality, and enhance its acceptability to investors.

- To address these issues, the Department of Economic Affairs (DEA) notified a panel of pre-qualified TAs in July 2022.
- Now, the IIPDF scheme will provide the necessary support to the PSAs, both in the Central and state governments. Financial

assistance will be extended to meet the cost of transaction advisors and consultants engaged in developing PPP projects.

MARKET INFRASTRUCTURE INSTITUTIONS (MII)

GS-III ECONOMY

Context

- The SEBI Committee on 'Strengthening governance of market infrastructure institutions (MIIs)' has proposed stricter regulations for enhancing accountability and transparency of MIIs like stock exchanges, depositories and clearing houses.

Details

- The panel, headed by former Sebi Whole-time Member G Mahalingam, has mooted measures for strengthening the role played by the governing board and committees of MIIs, reviewing the requirements related to appointment and role & responsibility of directors on the board and key managerial persons (KMPs) and developing effective metrics for monitoring various aspects of their functioning.

Report

- In its report submitted to Sebi Chairperson Madhabi Puri Buch, the committee also proposed reviewing the policy on safekeeping and sharing of information held by MIIs, revisiting the code of conduct and code of ethics for directors of the governing board and KMPs and activities and governance of investee companies of MIIs.
- It said the functions of MIIs should be categorized into three verticals – critical operations, regulatory, compliance and risk management and other functions including business development.
- The KMPs heading the functions under the first two verticals should be at par in hierarchy with the KMPs heading the third vertical.
- In terms of resource allocation and utilization, the functions under the first two verticals separately should be given higher priority by MIIs over functions under the third vertical.
- The resources including the human as well as financial and technology resources deployed by MIIs for each of the core functions under different verticals should be quantified and disclosed in the annual report of the MIIs.
- To ensure greater independence of the Board of the MII, at least two-third members of the Board of the MII should comprise public interest directors (PIDs). The roles and responsibilities of all directors should be clearly outlined, especially their responsibilities towards regulatory, compliance and risk management functions.
- The panel said periodic review through an internal as well as external mechanism, should be conducted to evaluate the effectiveness of the MIIs in discharging their core and critical functions.
- Accordingly, the MIIs, as an entity, should internally evaluate its own performance on an annual basis and engage an external agency for evaluating its performance once in every three years, it said.
- It has recommended that the MII may frame its own evaluation metrics based on the indicative parameters as specified by SEBI. The first external evaluation should be conducted within a period of twelve months from the date of implementation of the recommendations.

What are MIIs?

- Stock exchanges, depositories and clearing houses are all Market Infrastructure Institutions and constitute a key part of the nation's vital economic infrastructure.
- A panel set up under the chairmanship of former RBI Governor Bimal Jalan – to examine issues arising from the ownership and governance of MIIs – in its 2010 report said: "The term 'infrastructure' would mean the basic, underlying framework or features of a system; and the term 'market infrastructure' denotes such fundamental facilities and systems serving this market. The primary purpose of securities /capital market is to enable allocation/reallocation of capital/financial resources."
- Such movement, it pointed out, helped optimal use of money in the economy and fostered economic development.
- Well-functioning MIIs, constitute "the nucleus of (the) capital allocation system", are indispensable for economic growth and have a net positive effect on society like any other infrastructure institution, the panel noted.

Why are they considered to be systemically important?

- That MIIs are systemically important in India is clear from the phenomenal growth of these institutions in terms of market capitalisation of listed companies, capital raised and the number of investor accounts with brokers and depositories and the value of assets held in the depositories' account, as highlighted by the Jalan committee.
- Unlike typical financial institutions, the number of stock exchanges, depositories and clearing corporations in an economy is limited due to the nature of its business, although they cater to the entire marketplace, the panel pointed out.
- Any failure of such an MII could lead to even bigger cataclysmic collapses that may result in an overall economic downfall that could potentially extend beyond the boundaries of the securities market and the country.

Why are governance norms critical in the regulation of MIIs?

- Given the potential for a domino effect that a failure of an MII could have on the wider market and economy, governance and oversight are absolutely critical and need to be of the highest standards.

What are the specific institutions in India that qualify as MIIs?

- Among stock exchanges, the SEBI lists seven, including the BSE, the NSE, the Multi Commodity Exchange of India and the Metropolitan Stock Exchange of India.
- There are two depositories – charged with the safekeeping of securities and enabling their trading and transfer – that are tagged MIIs: the Central Depository Services Ltd. and the National Securities Depository Ltd.
- The regulator also lists seven clearing houses including the Multi Commodity Exchange Clearing Corporation. Clearing houses, for their part, help validate and finalise securities trades and ensure that both buyers and sellers honour their obligations.

PUSH FOR UPI-ENABLED PAYMENTS

GS-III ECONOMY

Context

- With the mushrooming of mobile wallets, QR-based apps and the Unified Payments Interface (UPI), the volume of digital transactions leapfrogged from 293 crore in March 2020 to 799 crore by March 2022, as per RBI data. But CIC (currency in circulation) as a proportion of GDP has been rising too.
- But a recent study by SBI Ecowrap offers hope that digital payments may finally be reducing the need for hard cash, in some respects. For the first time, the Diwali week this year saw a dip in CIC as opposed to sharp spikes witnessed in the last 20 years.**

Details

- After hovering at 11-12 per cent until FY20, CIC hit 14 per cent in FY21 and remained at 13 per cent in FY22. CIC in developed economies tends to be in the single digits.
- The lower need for cash can mainly be traced to the widespread adoption of UPI.**
- As SBI notes, should UPI manage to materially reduce the need for the public to deal in cash, this could usher in many advantages to the economy.**
- UPI use prompts bank account holders to hold larger balances in their savings accounts, providing banks with a low-cost source of funds and a higher CASA cushion for lending.
- Substitution of anonymous cash payments with digital ones also allows for greater traceability of transactions for the taxman looking to widen the tax base.
- Should the demand for paper currency diminish, banks would save on the logistics costs involved in safely storing and transporting paper currency and regularly refilling their ATMs.
- But despite affluent consumers embracing them in a big way, digital payments are still far from ubiquitous.
- In an interview this July, the NPCI chief pointed out that digital payment services like UPI were currently used by just a fifth of the population. Unless a third adopted it, cash in circulation would not see a durable reduction.

About UPI Service

- Unified Payments Interface (UPI) is an **instant real-time payment system** developed by **National Payments Corporation of India (NPCI)**.
- It facilitates **inter-bank peer-to-peer (P2P) and person-to-merchant (P2M) transactions**.
- The system powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.
- NPCI launched Unified Payments Interface (UPI) with member banks **in 2016**.

Features of UPI Service

- Immediate money transfer through mobile device **round the clock 24*7 and 365 days**.
- Single mobile application for accessing different bank accounts.
- Single Click 2 Factor Authentication – Aligned with the Regulatory guidelines, yet provides for a very strong feature of seamless single click payment.
- Virtual address of the customer for Pull & Push provides for incremental security with the customer **not required to enter the details such as Card no, Account number; IFSC etc.**
- Merchant Payment with Single Application or In-App Payments.
- Utility Bill Payments, Over the Counter Payments, QR Code (Scan and Pay) based payments.
- Donations, Collections, Disbursements Scalable.

- Raising Complaint from Mobile App directly.

Steps involved in UPI Payments

- UPI based payments function broadly through three steps:
 1. First, one's bank account is mapped to a Virtual Payment Address (VPA). A VPA eliminates the risk of mentioning account details in every transaction. It can be created in a couple of minutes using a UPI app. The only prerequisite is that user's bank account be linked to a mobile number.
 2. Secondly, a Payment Service Provider (typically a bank) takes care of the to-and-fro transactions to this VPA (and hence to the underlying bank account) and
 3. Finally, the UPI software orchestrates the fund movement from a customer's VPA to a target VPA and completes the transaction.

Evaluation of UPI Ecosystem in India

- The Economic Survey 2021-22 highlighted the growing trend of increasing digital transactions over the years and **emergence of Unified Payments Interface (UPI) as the most preferred mode of transactions since its launch in 2016.**
- **UPI emerged as the single largest retail payment system in India in terms of number of transactions.** In December 2021, a whopping 4.6 billion transactions worth Rs 8.26 lakh crore were carried out on the platform.
- Commensurate with growing participating in equity markets, **UPI also emerged as a popular method of participation in the primary market by investors.** In 2018, SEBI introduced UPI as a payment channel to invest in IPO. Overtime, RBI has increased the transaction limit for IPO participation from Rs 1 lakh to Rs 5 lakh.
- RBI and the Monetary Authority of Singapore announced a project to link UPI and PayNow, which is targeted for operationalisation by July 2022.
- Bhutan recently became the first country to adopt UPI standards for its QR code. It is also the second country after Singapore to have BHIM-UPI acceptance at merchant locations.
- Reserve Bank of India launched a new **Unified Payments Interface (UPI) payments solution - 'UPI123Pay'** for feature phone users. So, UPI service, which was limited to smartphones till date, will be now available for feature phones without internet. The service is expected to benefit 40 crore feature phone users and is likely to increase digital financial inclusion, especially in the rural parts of the country.

Reasons behind penetration of UPI in the country

- The popularity of UPI is evident — from tiny roadside shops to large brands, many merchants accept UPI-based payments.
- The reasons for this kind of penetration of UPI are the following:
 1. **Transaction amount:** It accepts transactions as small as one rupee and for merchants,
 2. **Absence of MDR** that they have to pay to their banks is a significant incentive to accept UPI payments.
 3. **Simple process:** Since just a smart-phone is needed to complete a transaction it makes the **process as simple as it can get**, instead of using devices like the Point-of-Sale card-swiping machines.
 4. **Ecosystem in which UPI thrives:** presence of high-speed internet, cloud computing and modern software engineering technologies that fulfil a transaction in a few seconds.
 5. **Security:** The security of a UPI transaction is tied to the user's authentication with the mobile phone — there is a mobile personal identification number (MPIN) for the UPI application and there is one more layer of security when the bank's online transaction PIN is to be keyed in as part of every UPI transaction. If a user blocks a mobile number due to theft, for example, then UPI transactions on that mobile number will also be halted.
 6. **Innovation:** The NPCI has come up with multiple new innovations over the past few years: **recurring payments for monthly bills, international payments, linking UPI to credit cards, 123PAY** that allows people without smartphones but with only ordinary mobile phones to use UPI using missed calls, allowing one-time payment by letting a merchant generate a QR (Quick Response) code that is valid for just that specific transaction and many more features.

Cost of running UPI

- There is no extra price to be paid by customer or merchant, but still NPCI manages the cost of running the infrastructure for UPI.
- This is because cost savings from the reduction in hassles and overheads for banks (by supporting UPI) is used to bear the cost of operating UPI in the long run.

Way forward

- Policymakers may need to address two stumbling blocks to further the reach of digital payments.
- With options such as mobile wallets, payment apps and QR code readers available only on smartphones, feature phone users who make up roughly half of India's mobile subscriber base have been left behind.

- RBI is trying to remedy this with the launch of UPI123PAY for feature phones.
- **But the launch needs to be accompanied by a widespread awareness campaign to educate users about the safe use of UPI and the convenience it brings.**
- Digital payments are currently characterised by high transaction failure rates.
- **This requires users to be given access to more channels beyond the app providers themselves, to seek redress.**
- **Banks and other ecosystem participants also need to make adequate investments in backend infrastructure to keep up with burgeoning transaction volumes.**
- On this score, it is imperative that RBI and the Centre quickly arrive at an understanding on the issue of charging for UPI services.

SOVEREIGN GREEN BONDS

GS-III ECONOMY

Context

- Union Minister for Finance & Corporate Affairs Smt. Nirmala Sitharaman **approved the final Sovereign Green Bonds framework of India.**

Green Bonds

- Green bonds are **financial instruments that generate funds for investment in environmentally sustainable and climate-suitable projects.** Also, green bonds command a relatively lower cost of capital compared to regular bonds.

India's Sovereign Green Bond

- In keeping with the ambition to significantly reduce the carbon intensity of the economy, the Union Budget 2022-23 announced the issue of Sovereign Green Bonds.
- The issuance of Sovereign Green Bonds will help the Government of India (GoI) in tapping the requisite finance from potential investors for deployment in public sector projects aimed at reducing the carbon intensity of the economy.

Sovereign Green Bond Framework

- Green Bond Framework sets forth the obligations of the Government of India as a Green Bond issuer. The Framework applies to all sovereign Green Bonds issued by the Government of India.
- Payments of principal and interest on the issuances under this Framework are not conditional on the performance of the eligible projects. Investors in bonds issued under this Framework **do not bear any project-related risks.**
- Green Finance Working Committee (GFWC) was constituted to validate key decisions on the issuance of Sovereign Green Bonds.

Core Components of the Framework

Use of Proceeds

- A 'green project' classification is based on the following principles:
- Encourages energy efficiency in resource utilization.
- Reduces carbon emissions and greenhouse gases.
- Promotes climate resilience and/or adaptation.
- Values and improves natural ecosystems and biodiversity, especially in accordance with SDG principles.

Excluded Projects:

- Projects involving new or existing extraction, production, and distribution
- of fossil fuels, including improvements and upgrades; or where the core
- energy source is fossil-fuel based
- Nuclear power generation
- Direct waste incineration
- Alcohol, weapons, tobacco, gaming, or palm oil industries
- Renewable energy projects generating energy from biomass using feedstock originating from protected areas
- Landfill projects
- Hydropower plants larger than 25 MW
- Expenditures directly related to fossil fuels are excluded. However, investments/expenditures aimed at a relatively cleaner Compressed Natural Gas (CNG) are allowed as an 'eligible expenditure' when used in public transportation projects only. Subsidy/incentive for private transportation using CNG is neither envisaged nor included.

Management of Proceeds

- The proceeds will be **deposited to the Consolidated Fund of India (CFI)**, and then funds from the CFI will be made available

for eligible green projects. A separate account will be created and maintained by the Ministry of Finance.

- The Public Debt Management Cell (PDMC) will keep a track of proceeds within the existing guidelines regarding debt management, **and monitor the allocation of funds** towards eligible green expenditures. **Unallocated proceeds**, if any, will be **carried forward to successive years** for investment in eligible green projects only.

Significance of the Sovereign Green Bond Framework

- At COP 26, India underlined the need to start the one-word movement '**LIFE**' which means '**Lifestyle For Environment**' urging for mindful and deliberate utilization instead of mindless and destructive consumption of natural resources.
- India further enhanced its ambition on addressing climate. These include five nectar elements (Panchamrit) of India's climate action:
 1. Reach 500GW non-fossil energy capacity by 2030.
 2. 50 percent of its energy requirements from renewable energy by 2030.
 3. Reduction of total projected carbon emissions by one billion tonnes from now to 2030.
 4. Reduction of the carbon intensity of the economy by 45 percent by 2030, over 2005 levels.
 5. Achieving the target of net zero emissions by 2070.
- As mentioned earlier, the issuance of Sovereign Green Bonds will help the Government of India (GoI) in tapping the requisite finance from potential investors for deployment in public sector projects aimed at reducing the carbon intensity of the economy.
- This approval will further strengthen India's commitment towards its Nationally Determined Contribution (NDCs) targets, adopted under the Paris Agreement, and help in attracting global and domestic investments in eligible green projects.

GENERAL NETWORK ACCESS

GS-III ECONOMY

Context

- Alongside a draft proposal to streamline the regulatory framework for the country's power transmission, new connectivity regulations released by the **electricity regulator CERC** are being red-flagged and questioned by market players.

Background

- The Central Electricity Regulatory Commission (CERC) had issued the CERC (Connectivity and General Network Access to the Inter-State Transmission System) Regulations, 2022 (**GNA Regulations**) on 7 June 2022.
- GNA Regulations are supposed to replace the existing inter-state connectivity and open access framework, i.e. the CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission and related matters) Regulations, 2009 (**CERC Regulations 2009**).
- The regulatory framework – called General Network Access (GNA) regulations – seeks to do away with pre-determined point-to-point transmission access to instead enable both access or drawal on the entire transmission corridor in a way that it provides generators and procurers the flexibility of both injection and drawal.

The new Regulations

- The GNA Regulations have been issued in line with the concept of '**One Nation, One Grid**'. These regulations aim to provide non-discriminatory open access to the **inter-state transmission system (ISTS) to generating companies through general network access (GNA)**.
- The Government issued new rules for providing general network access, allowing generators to connect to and evacuate power through the inter-state transmission system without designating the location of the offtaker. These rules mark a new paradigm in transmission system planning by enabling flexible, non-discriminatory open access.
- Unlike the present ISTS open access system where generators are required to identify a consumer prior to grant of open access, GNA provides flexibility to the generators by providing them with open access rights without having to specify the injection point and drawal point.
- The GNA Regulations also contemplate grant of temporary GNA (T-GNA), which is akin to the concept of short-term open access. T-GNA is an open access right provided to an eligible buying entity for any duration from one time block and up to 11 months. T-GNA is to be applied and processed through a single window electronic platform, i.e. the National Open Access Registry. As is the case with short-term open access, T-GNA will be granted for the available surplus capacity in ISTS after allocation towards GNA.

Significance

- The new framework is being seen as a quantum leap in tiding over the problem of transmission constraints and fostering open access to help develop a seamlessly integrated electricity market.

Concern

- There are loopholes in the accompanying connectivity regulations issued subsequently by the regulator. The concern is that **these connectivity regulations could potentially end up favouring the bigger players in the sector.**
- There is a perceived dilution of the pre-conditions set for grant of connectivity.

Final Thought

- The GNA as a transmission service provides more flexibility and the possibility of open access to the buyers and sellers of power in terms of scheduling, subject to grid constraints, and does not suffer from the rigidity of the current point-to-point open access mechanism.
- Currently, users have to pay long-term charges under the point-to-point connectivity regime, and shell out short-term charges for any deviations from the agreed path. All that changes with GNA, where there is complete flexibility offered to players on injection and drawal.
- The need of the hour is to allay the apprehensions of the market players through multistakeholder consultation.

URBAN INFRASTRUCTURE INVESTMENT REPORT

GS-III ECONOMY

Context

- World Bank has released a report, titled **“Financing India’s Urban Infrastructure Needs: Constraints to Commercial Financing and Prospects for Policy Action”**
- The Report underlines the urgent need to leverage more private and commercial investments to meet emerging financial gaps.

Observations made in the Report

Growing Urban Population and Demand

- By 2036, 600 million people will be living in urban cities in India, representing 40 percent of the population. This is likely to put additional pressure on the already stretched urban infrastructure and services of Indian cities.
- There will be more demand for clean drinking water, reliable power supply, and efficient and safe road transport amongst others.

Need for Private Financing

- Currently, the central and state governments finance over 75 percent of city infrastructure, while urban local bodies (ULB) finance 15 percent through their own surplus revenues.
- Only 5 percent of the infrastructure needs of Indian cities are currently being financed through private sources. With the government’s annual urban infrastructure investments topping at \$16 billion (2018), much of the gap will require private financing.

Need for greater investments

- India will need to invest \$840 billion over the next 15 years – or an average of \$55 billion per annum – into urban infrastructure if it is to effectively meet the needs of its fast-growing urban population.

Need for expanding the capacities of city agencies

- The new report recommends expanding the capacities of city agencies to deliver infrastructure projects at scale. Currently, the 10 largest Urban Local Bodies were able to spend only two-thirds of their total capital budget over three recent fiscal years. A weak regulatory environment and weak revenue collection also add to the challenge of cities accessing more private financing. Between 2011 and 2018, **urban property tax stood at 0.15 percent of GDP** compared to an average of 0.3-0.6 percent of GDP for low- and middle-income countries. Low service charges for municipal services also undermine their financial viability and attractiveness to private investment.
- Over the medium term, the report suggests a series of **structural reforms including those in the taxation policy and fiscal transfer system** - which can allow cities to leverage more private financing. In the short term, **it identifies a set of large high-potential cities that have the ability to raise higher volumes of private financing.**
- The World Bank report recommended making the transfer of funds to cities formula-based and unconditional and increasing the mandates of city agencies gradually.

Final Thoughts

- The Government of India can play an important role in removing market frictions that cities face in accessing private financing.
- The World Bank report proposes a **range of measures that can be taken by city, state, and federal agencies** where in the future private commercial finance can play a much bigger part in the solution to India’s urban investment challenge.

NON-PERFORMING ASSET (NPA)

GS-III ECONOMY

Context

- AFTER WRITING off a huge amount of loans worth over Rs 10 lakh crore in the last five years, banks have been able to recover only 13 per cent of it so far.
- The mega write-off exercise has enabled banks to reduce their non-performing assets (NPAs).

About NPA

- NPA or Non Performing Assets are those kinds of loans or advances that are in default or in arrears.
- In simpler terms, **if the customers do not repay principal amount and interest for a certain period of time**, then such loans are considered as Non Performing Assets or NPA.
- In India, the timeline given for classifying the asset as NPA is 180 days.
- This is as against 45 to 90 days of international norms.

Types of NPAs

- NPAs are of 4 types:
 - Standard Assets:** It is a kind of performing asset which creates continuous income and repayments as and when they become due. These assets carry a normal risk and are not NPA in the real sense of the word. Hence, no special provisions are required for standard assets.
 - Sub-Standard Assets:** Loans and advances which are non-performing assets for a period of 12 months, fall under the category of Sub-Standard Assets.
 - Doubtful Assets:** The Assets considered as non-performing for a period of more than 12 months are known as Doubtful Assets.
 - Loss Assets:** All those assets which cannot be recovered by the lending institutions are known as Loss Assets.

Impact of NPAs

- The crisis of NPAs in the Indian banking system is one of the foremost and the most formidable problems that had impacted the entire banking system.

Profitability

- NPAs impact profitability, banks stop to earn income on one hand and attract higher provisioning (set aside an amount in an organization's account) compared to standard assets on the other hand.

Capital Adequacy

- According to the Basel norms, banks are required to maintain adequate capital on risk-weighted assets. – Every increase in the NPAs level adds to risk-weighted assets which require banks to increase their capital.

Liability Management

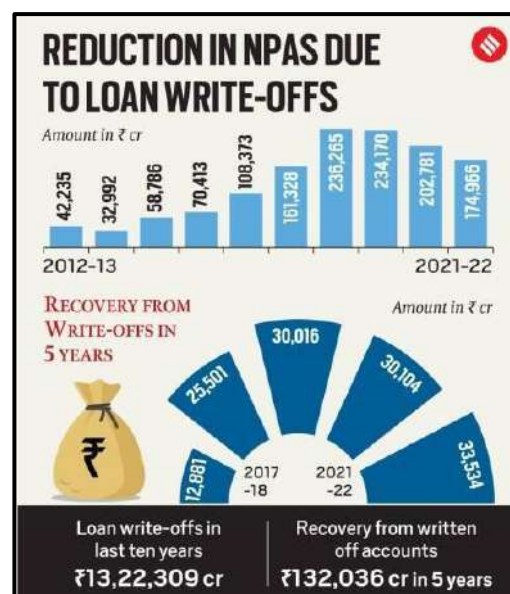
- In the light of high non-performing assets, banks tend to lower the interest rates on deposits on one hand and likely to levy higher interest rates on advances. This may hamper economic growth.

Public confidence

- The credibility of the banking system is also affected greatly due to higher level NPAs because it has impacted the confidence of the general public of the society with respect to soundness of the banking system.

The banks then try to recover their loss by restructuring the loan or liquidating the assets or selling the loans to asset reconstruction companies at steep discounts.

How to Tackle NPAs: <https://www.iasgyan.in/daily-current-affairs/non-performing-assets>



DIRECT BENEFIT TRANSFER (DBT)

GS-III ECONOMY

Context

- There is one limitation with the present agri-DBT schemes, such as the Centre's Pradhan Mantri Kisan Samman Nidhi (PM-Kisan), the Telangana government's Rythu Bandhu and Andhra Pradesh's YSR Rythu Bharosa – they do not reach tenant farmers, i.e. those who undertake cultivation on leased land.

Details

- Most economists advocate the conversion of all agricultural subsidies — whether on inputs (supplying fertiliser, power, water at below cost) or outputs (procuring crops at above market prices) — into direct income support to farmers.
- Such support, in the form of direct benefit transfers (DBT) on a per-acre or per-farmer basis, is seen as transparent and simple to administer.
- Moreover, it is crop-neutral (only rice, wheat and sugarcane farmers effectively get minimum support prices now) and does not cause distortions in input/output markets.

Schemes:

- PM-Kisan provides an annual income support of Rs 6,000 to all landholding farmer families in India.
- Rythu Bandhu extends financial assistance of Rs 10,000 per acre, again to all farmers owning land and without any size limit.
- Under YSR Rythu Bharosa, farmer families are paid Rs 13,500 per year, which includes Rs 6,000 through PM-Kisan and the AP government's top-up of Rs 7,500.

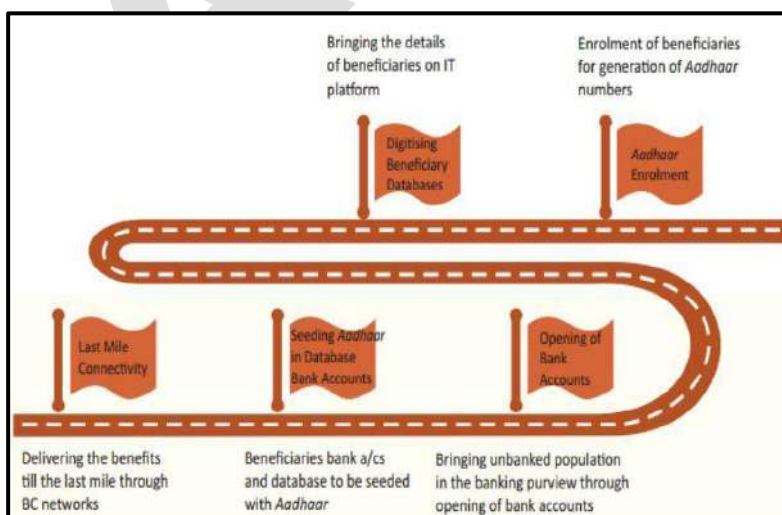
Challenges:

- The exclusion of tenant farmers — from income support and also zero/low-interest loans, crop insurance, disaster compensation and other agri-related schemes — is significant, given the rising trend of owners no longer directly cultivating their lands.
- According to the National Statistical Office's (NSO) 'Situation Assessment of Agricultural Households' survey for 2018-19, 17.3 per cent out of the total estimated 101.98 million operational holdings in rural India were on leased lands.
- The incidence of non-owners cultivating agricultural lands is the highest for Andhra Pradesh (AP) (42.4 per cent) and Odisha (39 per cent).
- While the NSO surveys point to a steady increase in tenant farmers these would, perhaps, be underestimates: farm tenancy agreements are largely oral, unwritten contracts and seldom recorded leases.
- A better idea of the costs of exclusion can be had from AP, probably India's most DBT-advanced state. Between June 2019 and October 2022, the government transferred over Rs 176,500 crore to some 7.37 crore people under 26 DBT schemes.
- RSV study found just 364 out of the 3,855 tenant farmers to have received "crop cultivator rights cards (CCRC)".
- **Agriculture in India is increasingly seeing both "tenancy" (landless/marginal farmers leasing in land to cultivate) and "reverse tenancy" (small landowners leasing out to better-off farmers keen to reap economies of scale).**

Direct Benefit Transfer

- Direct Benefit Transfer (DBT) is the **process of directly transferring the subsidy amount and making other transfers directly into the account of beneficiaries.**
- In this context, the transfer can be defined as the payment that the government makes directly to the beneficiary without receiving any returns.
- Some examples of transfers are scholarships and subsidies.
- The Union Government introduced **Direct Benefit Transfer (DBT) in 2013.**
- The main aim was to improve the Government's delivery system and redesign the current procedure in welfare schemes by making the flow of funds and information faster, and more secure, and reducing the number of frauds.
- **DBT brings about accountability, transparency, effectiveness, and efficiency in the Government of India system.** The DBT enablers are Jan Dhan, Aadhaar, and Mobile (JAM); RBI's Business Correspondents (BC) Infrastructure; Payments Bank; Mobile Bank etc.

Pre-Requisites for DBT



Benefits of the DBT scheme

- The DBT scheme **prevents corruption**. The Government sends the funds straight to the beneficiaries' accounts, which removes the possibility of fraud through a middleman.
- The beneficiaries can be recognized with the use of their Aadhaar number. Because Aadhaar is a universal ID, the **Government can easily verify the beneficiaries using their Aadhaar details**.
- DBT **promotes accountability in subsidy distribution**. As a result, it aids in the elimination of inconsistency and delay in payments.
- DBT aids in the distribution of subsidies to deserving applicants living below the poverty level. It helps the Government reach out to the intended beneficiaries with ease.
- The scheme **eliminates pilferage in the distribution of money and reduces the misuse of public funds**.
- DBT is a powerful transaction and settlement technology that works with multiple organizations.
- DBT has proven to be an effective technique for connecting with people to distribute relief funds.

Present Status of Union Government subsidy and to what extent is it under DBT?

- In the fiscal year 2021-22 Union Budget, the Centre provided around Rs 3.70 lakh crore (over 10% of the total budget size of Rs 35.83 lakh crore) for 38 types of subsidies, of which food, fertilizer and fuel are the important ones.
- **All the subsidies are part of DBT. Also, not only subsidies but different types of scholarships/ stipends and cash assistance are covered under DBT.**
- 312 schemes, including key subsidies being run by 54 Central Government Ministries and Departments, are part of DBT.
- Since 2014, more than 9 lakh Crore rupees have been transferred through Direct Benefit Transfer (DBT).
- The Public Distribution Scheme (PDS) saw the maximum gains with the deletion of 3.99 crore duplicate and fake/ non-existent ration cards (between 2013 and 2020) and that resulted in an estimated saving of over Rs 1 lakh crore.
- **MGNREGS saw 10% savings on wages on account of the deletion of duplicate, fake/ non-existent, ineligible beneficiaries.** That apart, 4.11 crore duplicate, fake/ non-existent, inactive LPG connections have been eliminated.
- **In the 2014-15 edition of the Economic Survey**, the chapter titled, 'Wiping every tear from every eye: The JAM Number Trinity Solution', used the term leakage to describe subsidized goods that do not reach households. Leakages, it said, not only have the direct costs of wastage, but also the opportunity cost of how the government could otherwise have deployed those fiscal resources. Converting all subsidies into direct benefit transfers is therefore a laudable goal of government policy.

For More Information: <https://www.iasgyan.in/daily-current-affairs/international-monetary-fund-imf>



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PARTIAL STUBBLE BURNING

GS-III AGRICULTURE

Context

- This year, many farmers said that they are not burning the paddy stubble completely and instead resorting to partial burning or burning only the loose straw.

Must Read: <https://www.iasgyan.in/blogs/stubble-burning-an-in-depth-analysis>

Stubble Burning

- Stubble burning is, the **act of removing crop residue from the field**. It's usually required in areas that use the 'combine harvesting' method which leaves crop residue behind.
- Combines are machines that harvest, thresh i.e separate the grain, and also clean the separated grain, all at once. The problem, however, is that the machine doesn't cut close enough to the ground, leaving stubble behind. This stubble is of no use for the farmer. There is pressure on the farmer to sow the next crop in time for it to achieve a full yield. The quickest and cheapest solution, therefore, is to clear the field by burning the stubble.

What is partial stubble burning?

- After harvesting, sometimes **farmers opt for partial burning**. They let the loose straw dry for a couple of days and then they set these dumps on fire to prepare the field for the next crop. In such cases, the standing stubble, which is mostly green, does not get burnt fully but it gets scorched close to those places in the field where loose straw is burnt.

Why do farmers opt for partial stubble burning?

- Farmers only want to see their field clean at the time of sowing new crops so they resort to partial burning without paying attention to the soil and air health.

Solutions to the burning problem

Farmers can also manage crop residues effectively by employing agricultural machines like:

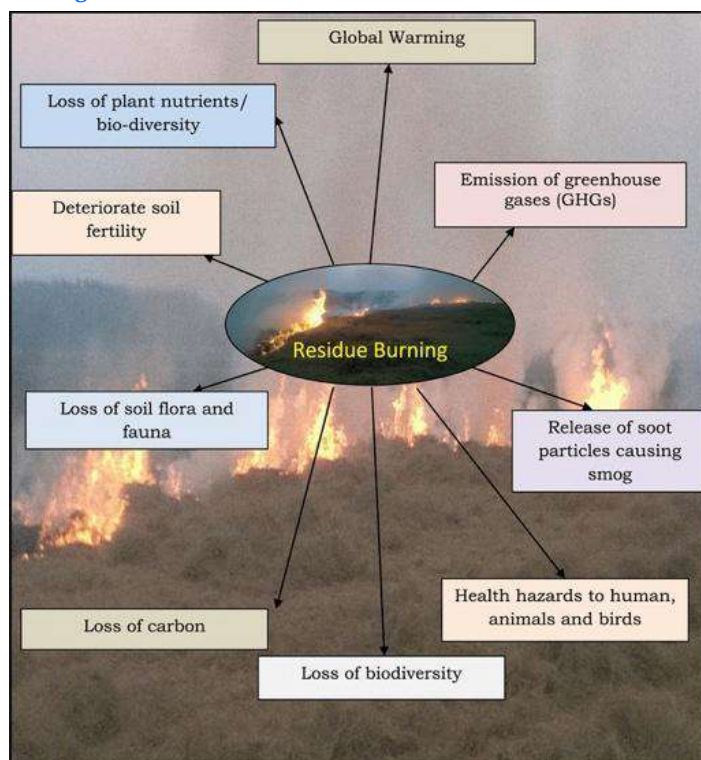
- Happy Seeder** (used for sowing of the crop in standing stubble)
- Rotavator** (used for land preparation and incorporation of crop stubble in the soil)
- Zero till seed drill** (used for land preparations directly sowing of seeds in the previous crop stubble)
- Baler** (used for collection of straw and making bales of paddy stubble)
- Paddy Straw Chopper** (cutting of paddy stubble for easy mixing with the soil)
- Reaper Binder** (used for harvesting paddy stubble and making it into bundles)

Among these, the most efficient technology to counter crop burning at the moment seems to be the Turbo Happy Seeder (THS).

Concern

- State Governments are distributing stubble management machines and a large number of individual farmers and groups of farmers have purchased these machines on subsidy. Farmers who do not have these machines but want to manage the stubble, get these on rent from farmers groups and cooperative societies. **However**, even after having three main machines such as Happy Seeder, Smart Seeder and Super seeder, many farmers are resorting to partial burning. This is because, with these three machines **except Super Seeder**, stubble remains in the field even after sowing. To avoid this sight post wheat sowing, farmers resort to partial burning.

Impact of Stubble Burning



Solutions and Suggestions

Converting Crop Stubble into Animal Feed, Manure, Cardboard

- In South India, stubble is not burnt as there's economic value as animal feed.
- Instead of burning the stubble, it can be used in different ways like cattle feed, compost manure, roofing in rural areas, biomass energy, mushroom cultivation, packing materials, fuel, paper, bio-ethanol and industrial production, etc.

Converting Crop Stubble to Biodegradable Cutlery

- Kriya Labs, an IIT-Delhi startup, has developed a machine that can convert the leftover rice straw into pulp, and that is further molded to produce biodegradable cutlery.

Biochar

- Another option is to convert stubble into biochar, which can be used as a fertilizer, by burning it in a kiln.

In power plants

- There is also the option of **using a straw to replace coal in old power plants**. This would not only help to extend the life of the built infrastructure but will also reduce environmental costs.

Redesigning- Combine Harvesters

- It's important to gradually develop and improve the design of Combine Harvesters that do not leave stubble behind. This can be done by the Combine Harvester manufacturers by **slightly tweaking the design of their machines** with a modified cutter that chops off the plant from the bottom, nearer to the base, and does not leave behind the stubble. The government on its part should strictly regulate and allow only such Combine Harvesters to function that conform to the laid down standards of stubble size. This will eradicate the entire problem from root and cause.

Agri-Waste Collection Centers

- The government may consider setting up "**Agri- waste Collection Centres**" alongside the "Paddy Purchase Centres". Here, the farmers **may sell their agri-waste at a reasonable price** and earn some additional income, and are not tempted to burn it. Farmer Producer Organizations (FPOs) or Farmers' Co-operatives may be supported for purchasing this agri-waste/ crop residue from the farmers and later selling it to industries that convert it into cattle feed or fuel.
- Basically, the idea is to incentivize the farmers not to burn the stubble, by providing economic value for this crop residue or stubble, which may be converted into either cattle feed or fuel.

Incentivizing industries

- The industries which are converting this agri-waste/crop residue into wealth in the form of cattle feed or fuel, may also be suitably incentivized and subsidized.

Crop Diversification - A long-term solution

- A **shift to crops such as maize, beans and lentils** need to be envisaged. This would reduce the burning because they are normally harvested by hand or can be gathered earlier. The Centre and state governments could adopt methods to incentivize farmers. If the production of other crops, like maize, is made more lucrative, then farmers will switch to growing those.

NUTRITION-BASED SUBSIDY SCHEME

GS-III AGRICULTURE

Context

- Considering the huge increase in the prices of fertilizers in global market, the Centre has 'doubled' the fertilizer subsidy for this rabi season.

Details

- The total fertilizer subsidy for the rabi season, including ₹80,000 crore for urea, would be Rs. 1,38,875 crore and for both the rabi and kharif, the subsidy amount would be ₹2.25 lakh crore. This is the highest subsidy so far.

Nutrient Based Subsidy Scheme

- Under the scheme, a fixed amount of subsidy decided on an **annual basis** is provided on each grade of subsidized Phosphatic and Potassic (P&K) fertilizers, **except for Urea**, based on the nutrient content present in them.

What is fertilizer subsidy?

- Farmers buy fertilizers at MRPs (maximum retail price) below their normal supply-and-demand-based market rates or what it costs to produce/import them.
- The MRP of neem-coated urea, for instance, is fixed by the government at Rs 5,922.22 per tonne, whereas its average cost-plus price payable to domestic manufacturers and importers comes to around Rs 17,000 and Rs 23,000 per tonne, respectively.
- The difference, which varies according to plant-wise production cost and import price, is footed by the Centre as subsidy.
- The **MRPs of non-urea fertilisers are decontrolled or fixed by the companies**.
- The Centre, however, pays a flat per-tonne subsidy on these nutrients to ensure they are priced at "reasonable levels."
- Decontrolled fertilisers, thus, retail way above urea, while they also attract lower subsidy.

How is the subsidy paid and who gets it?

- The subsidy goes to fertiliser companies, although its ultimate beneficiary is the farmer who pays MRPs less than the market-determined rates.
- From March 2018, direct benefit transfer (DBT) system was introduced**, wherein subsidy payment to the companies would happen only after actual sales to farmers by retailers.
- Each retailer has a point-of-sale (PoS) machine linked to the Department of Fertilisers' e-Urvarak DBT portal.
- Anybody buying subsidised fertilisers is required to furnish his/her Aadhaar unique identity or Kisan Credit Card number.
- Only upon the sale getting registered on the e-Urvarak platform can a company claim subsidy**, with these being processed on a weekly basis and payments remitted electronically to its bank account.

The Challenges of Subsidizing Fertilizer use in India

- India is the second-largest user of fertilizer in the world, after China. Subsidies on fertilizers were introduced more than 40 years ago to make them affordable to farmers – and ultimately, to ensure food security for the country.
- The subsidy bill has grown exponentially over the years. From just \$700 million in 1990-91, it went to nearly \$11 billion in 2017-18. **Fertilizer is the country's second-largest subsidy payment, after food.**
- But this increase in expenditure **hasn't necessarily benefited farmers**. An estimated **65% of the fertilizer produced does not reach the intended beneficiaries** – that is, small and marginal farmers, according to government data.
- A bulk of the subsidy is given in the form of urea, which makes up 70% of all fertilizer used in India.
- The government sets an artificially low price for each quintal (equal to 100 kilograms) of urea, which buyers (i.e.: farmers) pay to the retailer (i.e.: fertilizer shops).
- These retailers are the last-mile touch-points that sell fertilizer to farmers on a commission basis. A retailer is **given a license by the state government** on the basis of pre-defined selection criteria. The gap between this sale price and the cost of producing the urea is paid by the government to the manufacturer.
- There are no restrictions on who can buy the subsidized fertilizer, or on how much they can buy.** This has led to the
 - overuse of fertilizers in cultivation, and
 - diversion of urea to other industries (like dairy, textile, paint, fisheries, etc.) and to neighboring countries like Bangladesh and Nepal (through organized black market players who buy it in the guise of farmers and sell it for a profit).

Steps taken

- Mindful of these leakages, the Indian government has been taking steps to reform the system, using technology.
- It implemented the **Mobile Fertilizer Management System** to digitize the fertilizer distribution supply chain.

- In 2016 it took its most significant step, when it piloted a **Direct Benefit Transfer (DBT) system to pay the subsidy**. The pilot was followed by a pan-India rollout in March of 2018.
- In the new DBT system, manufacturers get paid only after the retailer has sold the fertilizer to “authenticated” individuals. That means the **buyer is required to prove his identity at the time of purchasing the fertilizer**. Preferably with Aadhaar.
- The **buyer also has to give his fingerprints on a Point of Sale machine possessed by the retailer**.
- Once the Point of Sale machine verifies the buyer’s identity, the retailer sells them the fertilizer at the subsidized price, the sale is recorded in the fertilizer management system, and **the proportionate subsidy is remitted to the manufacturer**.
- The biggest benefit of the DBT system is that, for the first time, **it allows the government to know exactly who is buying the fertilizer**.
- However, it’s important to note that **the system doesn’t verify if the buyer is a farmer, since there is no database of farmers in India**.
- Still, despite these issues, the DBT system has made an impact – especially in increasing transparency.

Further reforms

- There is scope for more efficiency, and the government is already talking about switching to another system — one where it would credit the subsidy directly into the bank account of farmers.
- The government already provides such direct transfers for cooking fuel subsidies and pension payments.
- In these cases, a pre-defined amount of money is deposited directly into the beneficiary’s bank account.
- However, replicating this model for fertilizer subsidies is more complex, partly **because the government doesn’t have a list of beneficiaries (i.e.: a database of farmers)**.

PRIME MINISTER’S KISAN SAMMAN NIDHI (PM-KISAN)

GS-III AGRICULTURE

Context

- The **number of farmers** who received the 11th installment of funds from the Prime Minister’s Kisan Samman Nidhi (PM-KISAN) has **fallen by 67%**, according to the Agriculture Ministry’s response to a Right to Information (RTI) query from activist Kanhaiya Kumar.

About PM Kisan Samman Nidhi Yojana

- PM Kisan Samman Nidhi Yojana or PM-KISAN is a **central sector scheme** launched in 2019.
- PM-Kisan provides **income support to all landholding farmers’ families** who have cultivable lands. Under this scheme, **100% of funding is provided by the Government of India**.
- Under PM-KISAN, the Union government **provides financial support of Rs 6000/- per year in three equal installments (Rs 2000 each installment)**.
- The amount is directly transferred into the bank accounts of farmers through the Direct Benefit Transfer (DBT) system.
- **Aadhar validation has been made compulsory**.
- **The scheme was initially available for only small and marginal farmers having land holding less than 2 hectares but the government removed these minimum land requirement criteria, and now the scheme covers all eligible landholding farmers**.
- The scheme provides a **Self-registration Mechanism**: Registration through mobile app, PM KISAN portal and Common Service Centers.
- A centralized call center has been established to support the beneficiaries regarding any issues faced during the registration process or for any other grievances.
- **A mandatory physical verification of 5% beneficiary every year**, In order to maintain the authenticity of the scheme.

Exclusions

- **Farmer as well as any member of the family belonging to the following categories are not eligible for PM KISAN:**
 - Person **holding or retired from the constitutional posts**.
 - Former and present Ministers/State Ministers.
 - Former or present members of Lok Sabha/ Rajya Sabha/ State Legislative Assemblies/ State Legislative Councils
 - Former and present Mayors of Municipal Corporations
 - **Former and present Chairpersons of District Panchayats**.
 - Any serving or retired officers as well as employees under the Central/ State Government Ministries /Offices/Departments.
 - All retired pensioners who get a monthly pension of Rs.10,000/-or more and belong to the above category.
 - **Any individual who paid their income tax** in the last assessment year is not eligible under this scheme.

- Professionals like Doctors, Engineers, Lawyers, Chartered Accountants, and Architects registered with Professional bodies.

There is an option to refund the received amount if one is not an ineligible farmer.

Challenges in PM KISAN Scheme

- **Lack of Data Base:** The scheme was hurriedly announced right ahead of the 2018 elections and then the government did not have proper database of farmers.
- **Difficulty in Identifying Beneficiary Farmers.**
- **No provision for landless or tenant farmers:** Around 14.3 crore landless farmers (census 2011) are not able to avail this scheme. Mainly due to the fact they are not the landholders and are contract farmers.
- Providing Inadequate financial support.
- **Implementation issues like incomplete land records, land disputes.**
- Lack of infrastructure and uncertainty in agricultural markets has adversely affected agricultural productivity and stability of farm incomes.

Further Concern

- Agriculture Ministry's installment-wise payment success report showed that only 3.87 crore farmers received the 11th installment of Rs. 2,000 in their accounts in May-June 2022. This is a sharp drop from the 11.84 crore farmers who received the first installment back in February 2019.

Government's stance

- No money was transferred to any fraud beneficiary under the PM-KISAN scheme, adding that the benefits have been transferred directly into bank accounts only after the receipt of 100% error-free data of farmers from States, which is validated through Aadhaar or the Public Financial Management System (PFMS) database.

Evaluation

- Central Government's PM Kisan is in line with **Rythu Bandhu scheme of Telangana** and the **KALIA (Krushak Assistance for Livelihood and Income Augmentation) of Odisha**.
- **Rythu Bandhu scheme of Telangana** is the first direct farmer welfare support scheme in India, where cash is paid directly. It provides 58.33 lakh farmers Rs 4,000 per acre per season to support farm investment, twice a year, for the rabi and kharif seasons.
- PM Kisan will boost rural consumption if implemented properly. But rollout of the scheme is not easy as it depends on proper land records.
- The agricultural sector employs more than 50 percent of the total workforce in India, while **its contribution to GDP is declining and stands at around 17-18 percent of GDP**. Any measure aimed at enhancing rural employment is the best way to address agrarian distress.

Way Ahead

Proactive role of Banks

- Banks involved in primary sector lending or disbursement of crop loans, etc need to be sensitized properly on their critical role in the implementation of PM-KISAN.

Strengthening IT backbone

- States with robust computerized land records data base and a good IT infrastructure will be in a better position to implement PM-KISAN. With ICT usage and direct transfer of money to farmers' bank accounts, pilferage would also be less. Farmers not having bank accounts should be encouraged to open 'no-frills' accounts under the Jan-Dhan Yojana. Linking Aadhaar data base will further strengthen the system and analytics later on from this big-data eco-system could assist decision making empirically.

Targeting benefits and updation of land records

- The PM-KISAN is intended to benefit small and marginal farmers. In many States, land records are not updated regularly and therefore, there could be instances where the cultivating farmers would have partitioned their holdings from other family members, but would not have the records-of-right to claim the benefit instantly (say, the original land holder might have more than two hectares of land). These kind of genuine cases need to be redressed by revenue authorities so that eligible cases are not deprived. Similarly, fraudulent claims should also be avoided. Involving the Gram Panchayats, wherever possible in targeting of beneficiaries may be explored.

Addressing structural issues

- Rationalizing and reducing the input subsidies, particularly that on power and fertilizers would be having less adverse impact on the environment.

- Any income support scheme can't cover all the farm households and therefore, enhancing investments in rural infrastructure (roads; irrigation, marketing infrastructure, etc.) and agri R&D would have commentary outcomes in raising farm incomes. The research in agriculture should increasingly focus on the development of climate-resilient varieties and nutrition aspects of agricultural productivity.

STATUS OF TEA INDUSTRY IN INDIA

GS-III AGRICULTURE

Context

- Tea Board of India said it had sought a special financial package of ₹1,000 crore from the Centre for the tea Industry over five years. Tea Board officials admitted that Indian tea had not been able to establish itself globally, and that one of its key brands, Darjeeling Tea, was under acute stress.

Details

Why is it important to save Darjeeling Tea?

- Darjeeling Tea, called the 'Champagne of Teas', was the first Indian product to get the GI (Geographical Identification) tag in 2004 for its distinctive aroma and flavour.
- About 87 gardens in Darjeeling which employ about 55,000 workers produce approximately 7 million kg of tea, most of which is exported.

Issues:

- According to insiders, over the past few months a lot of gardens in the hills have changed hands because the owners were reeling under higher costs of production and other issues.
- A report by the Parliamentary Standing Committee of the Ministry of Commerce, tabled in Parliament in June, said "unhampered and easy influx of substandard tea from neighbouring countries, especially Nepal" is jeopardising the tea industry of India. The document pointed out that inferior quality tea from Nepal was being imported, and then sold and re-exported as premium Darjeeling Tea.
- The reduction in production and rise of input costs is another worry. Tea production in Darjeeling which used to be around 10-12 million kg a decade back now stands at 6.87 mkg (2021).
- Industry experts say the decline in production is due to multiple factors, which include climate change, declining yields and high absenteeism among workers.
- Because of the hilly terrain of Darjeeling there is no land left for expansion of tea gardens. The tea bushes are older than other parts of the country. Uprooting and planting them is both time and cost intensive.
- Planters have also been complaining about the stagnant prices of auction of Darjeeling Tea.
- In November 2021, the Tea Board of India issued a notification to restrict the import and distribution of cheap quality tea. Packeteers have brought down their purchase of Darjeeling Tea after the notification impacted prices. Some global factors like the decline in demand from European markets in the wake of the Russia-Ukraine war have compounded the problem.

Indian Tea

- Indian tea is among the **finest in the world** owing to strong geographical indications, heavy investment in tea processing units, continuous innovation, augmented product mix and strategic market expansion.

Major Tea growing regions

- The main tea-growing regions are in the **Northeast (including Assam) and in north Bengal (Darjeeling district and the Dooars region)**.
- Dibrugarh is currently known as Tea City of India.
- The soil of the district is mostly fertile, alluvial soil.
- It is the gateway to the three tea-producing districts of **Tinsukia, Dibrugarh, and Sivasagar**.
- These three areas account for approximately 50% of India's Assam tea crop, and this gives Dibrugarh its rightly earned sobriquet as the "Tea City of India".
- The state of Assam is the world's single largest tea-growing region.
- Tea is also grown on a large scale in the Nilgiris in south India.
- India is one of the world's largest consumers of tea, with about three-fourths of the country's total produce consumed locally.

Market Size of Tea Industry in India

- In 2020, nearly 1.10 million tons of tea was consumed in the country.
- The market in the country is projected to witness a further growth in the forecast period of 2022-2027, growing at a CAGR of 4.2%. In 2026, the tea industry in India is expected to attain 1.40 million tons.

What is the way forward?

- The Standing Committee of Parliament has recommended that the Government "review and revisit the Indo-Nepal Treaty for incorporating stringent requirements for certificate of origin on tea imports from Nepal."

- The committee suggested that Small Tea Growers (STGs) should also be recognised as GI-registered producers on a par with the 87 tea estates which produce Darjeeling Tea to ensure better price premium.

IMPORTANCE OF AGRI-EXPORTS FOR INDIA

GS-III AGRICULTURE

Context

- India's agriculture exports have grown 16.5% year-on-year in April-September, and look set to surpass the record \$50.2 billion achieved in 2021-22 (April-March).

Details

Exports:

- Interestingly, even commodities whose exports have been subjected to curbs – wheat, rice and sugar – have shown impressive jumps in shipments.
- The government had, on May 13, banned the export of wheat. Yet, according to Commerce Ministry data, wheat exports, at 45.90 lakh tonnes (lt) during the April-September period, were nearly twice the 23.76 lt for the same period last year.
- On May 24, sugar exports were moved from the "free" to "restricted" list. Also, total exports for the 2021-22 sugar year (October-September) were capped at 100 lt. On September 8, exports of broken rice were prohibited, and a 20% duty slapped on all other non-parboiled non-basmati shipments.
- Despite these measures, non-basmati exports have risen from 82.26 lt in April-September 2021 to 89.57 lt in April-September 2022, alongside that of basmati rice (from 19.46 lt to 21.57 lt).
- Sugar exports, likewise, grew 45.5% in value terms to \$2.65 billion during April-September, and are on course to exceed the all-time-high of \$4.6 billion reached in the 2021-22 fiscal year.

Imports:

- The impressive growth in exports is, however, offset somewhat by imports that have surged even more.
- 2021-22 registered both record exports (\$50.2 billion) as well as imports (\$32.4 billion).
- The resultant surplus of \$17.8 billion was much below the \$27.7 billion surplus in the previous all-time-high export year of 2013-14.
- The first six months of the current fiscal have seen the surplus narrow further, albeit marginally – the reason being imports grew at a faster rate (27.7%) than exports (16.5%).
- The surplus in agricultural trade matters because this is one sector, apart from software services, where India has some comparative advantage
- To put things in perspective, India's deficit in its overall merchandise trade account (exports minus imports of goods) widened from \$76.25 billion in April-September 2021 to \$146.55 billion in April-September this year. During the same period, the surplus in agriculture trade reduced only a tad, from \$7.86 billion to \$7.46 billion.

Trends in composition of trade:

- All barring two (cotton and spices) have posted positive growth in the first half of the current fiscal too.
- In cotton, not only have exports collapsed from over \$1.1 billion in April-September 2021 to \$436 million in April-September 2022, imports have soared from below \$300 million to \$1.1 billion.
- This has primarily been due to lower domestic production forcing mills to import. In the process, India has turned a net cotton importer.
- Equally interesting is spices, where India's exports in recent times have been powered mainly by chilli, mint products, oils & oleoresins, cumin, turmeric, and ginger.
- On the other hand, in traditional plantation spices such as pepper and cardamom, the country has become as much an importer as an exporter. India has been out-priced by Vietnam, Sri Lanka, Indonesia, and Brazil in pepper, while it has lost market share to Guatemala in cardamom.
- Another traditional export item where India has largely turned an importer is cashew. In 2021-22, the country's cashew exports were valued at \$453.08 million, compared to imports of \$1.26 billion. Imports have further shot up to \$1.4 billion-plus during the first six months of this fiscal alone.
- 60% of India's total agri imports is accounted for by a single commodity: vegetable oils.
- Their imports were valued at a massive \$19 billion in 2021-22, and imports have increased by more than 25% in the first half of this fiscal.
- Vegetable oils are today the country's fifth biggest import item after petroleum, electronics, gold, and coal.
- This explains two major decisions taken by the government last month. The first is the raising of the minimum support price of mustard from Rs 5,050 to Rs 5,450 per quintal for the 2022-23 crop season.
- The second decision has been to grant clearance ("environmental release") for commercial cultivation of genetically modified (GM) hybrid mustard
- A similar approach, aimed at boosting domestic output and yields, may be required in cotton
- Production has since been falling, touching a 12-year low in 2021-22, even as India has turned a net importer. It attests to the importance of focusing on domestic production and productivity, while not blocking technologies that enable these.

GLOBAL DASHBOARD FOR VACCINE EQUITY

GS-III SCIENCE & TECHNOLOGY

Context

- The Global Dashboard for Vaccine Equity has put out recent data that says only one in four people has been vaccinated with at least one dose in low- and middle-income countries as of November, 2022. In comparison, in high-income countries, three in four people have got at least one dose.

Global Dashboard for Vaccine Equity

- Global Dashboard for Vaccine Equity is a joint effort by the United Nations Development Programme (UNDP), the World Health Organization (WHO), and the University of Oxford with cooperation across the UN system.
- The Global Dashboard for Vaccine Equity combines the latest data on the global roll-out of COVID-19 vaccines with the “most recent socio-economic information to illustrate why accelerating vaccine equity is critical to saving lives. It also drives a faster and fairer recovery from the pandemic with benefits for all. It provides new, actionable insights and possibilities for policy makers to dive into the implications of vaccine inequity for socio-economic recovery, jobs and welfare.

What is Vaccine Equity?

- Vaccine equity means that vaccines should be allocated across all countries based on needs and regardless of their economic status.
- Access to and allocation of vaccines should be based on principles grounded in the right of every human to enjoy the highest attainable standard of health without distinction of race, religion, political belief, economic, or any other social condition.

Concerns

Delayed Vaccination Rollout

- A slower and delayed vaccination rollout in low and middle-income countries has left them vulnerable to COVID-19 variants, new surges of the virus and a slower recovery from the crisis. High-income countries started vaccination on average two months earlier than low-income countries and vaccination coverage in low-income countries is still strikingly low.

The financial burden for low-income countries

- Data from the M4A COVID-19 Vaccine Purchase Dataset shows that the average cost per COVID-19 vaccine dose ranges between US\$ 2 – \$ 40. The estimated delivery cost is US\$ 3.70 per person vaccinated with two doses, after accounting for vaccine wastage.
- This represents a significant financial burden for low-income countries, where the average annual per capita health expenditure amounts to US\$ 41 (Global Health Expenditure Database).

Gaps in global vaccine equity

- Lancet Study:** Widening gaps in global vaccine equity have led to a two-track pandemic with booster COVID-19 vaccinations proliferating in high-income countries (HICs) and first doses not yet reaching all populations in low-income countries (LICs).

Insufficient Vaccine Production

- During COVID-19 pandemic, vaccine production was insufficient to meet global demand. Many wealthy countries turned inwards, procuring vaccine doses through exclusive bilateral deals for their domestic populations (vaccine nationalism).

Increased healthcare expenditure

- While vaccination programmes will increase healthcare costs across all countries, it is especially the case in low-income countries as they would need to increase their health expenditure by a staggering 30-60% to reach 70% of their population under the current pricing. High-income countries are expected to increase theirs by only 0.8% to achieve the same vaccination rate in one year.

Significance of Global Dashboard for Vaccine Equity

- Globally, the distribution of vaccines is shaped by **challenging political, economic, social, diplomatic, and health-related matters.** Therefore, accurate and up-to-date data and information are critical components in guiding the international community’s understanding of vaccine equity and shed light on the blind spots essential for achieving the last mile on vaccine equity.

Way Ahead

- Going by WHO’s dictum that **no one is safe until everyone is safe**, it is imperative that adequate quantities of COVID-19 vaccine are available to countries across the world, particularly at a time when the risk of new variants causing further waves of infections is still alive.
- The WHO has called for concerted and urgent action from countries, international partners and agencies to increase vaccination levels and expedite access.

XENOTRANSPLANTATION

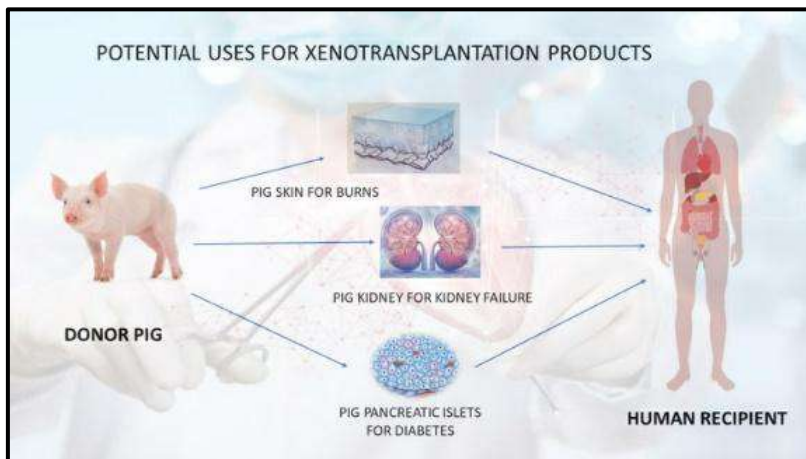
GS-III SCIENCE & TECHNOLOGY

Context

- A research team found that the ECG parameters of the pig heart after being transplanted into a human were different from native pig hearts. Genetically modified pig heart took longer than usual to beat for human receiver.

About Xenotransplantation

- Xenotransplantation is any procedure that involves the transplantation, implantation or infusion into a human recipient of either -
 - live cells, tissues, or organs from a nonhuman animal source, or
 - human body fluids, cells, tissues or organs that have had ex vivo contact with live nonhuman animal cells, tissues or organs.
 - Such cells, tissues or organs are called xenografts or xenotransplants.



Need

- The development of xenotransplantation is, in part, driven by the fact that the demand for human organs for clinical transplantation far exceeds the supply.

Challenges pertaining to Xenotransplantation

Shorter life spans of animal organs.

- Typically, animals have much shorter life spans than humans. Even if the success rate improves for transplanting animal organs to humans, there would still be a risk of the organs wearing out or dying prematurely.

Xenozoonosis

- Disease transmission (xenozoonosis) and permanent alteration to the genetic code of animals are also causes for concern.

Animal Rights

- Similar to objections to animal testing, animal rights activists have also objected to xenotransplantation on ethical grounds.

Moral issues

- Many oppose xenotransplantation because of their religious beliefs that uphold humans being a superior species to animals, thus making them stand their ground that mixing species is against God's will.

Very high rejection rate

- Human body recognizes tissues and organs from animals as not being natural. Thus, strong anti-rejection drugs are needed when performing xenotransplantation to depress the entire immune system. Most organ transplant procedures were not able to prove very effective in the long run.

Prospects of Xenotransplantation

Potential treatment for end-stage organ failure

- Human xenotransplantation offers a potential treatment for end-stage organ failure, a significant health problem in parts of the industrialized world.

Increase Organ Availability

- Xenotransplantation has the potential to increase organ availability.

Open New Research Areas

- This would open new research about treating illnesses meaning that different animals have individual ways of fighting infections and through xenotransplantation humans might be able to cure deadly diseases.

End Transplant List

- If xenotransplantation has a positive outcome when transferring pig organs to humans the availability of pig organs is much higher than human organs. This would help decrease the organ transplant list and cut waiting time for patients.

Life-saving benefits

- It can offer life-saving solutions to extend the life of a person who is on a human transplant list long enough.

Reduces opportunities on the black market for organ donations

- The sale of human organs on the black market has been a huge issue. Using organs from animals, instead of those donated by humans, can end this type of trade.

Satisfy the supply and demand of organs

- This method of organ transplantation has the potential to eliminate the huge deficit between high demand and minimal supply of organs.

Final thoughts

- Xenotransplantation has raised a lot of good questions that lean toward both the positive and the negative sides.
- By weighing its pros and cons, the government and concerned stakeholders can decide whether this is a technology that we pursue as a society or not.



SELF-RELIANCE IN DEFENCE SECTOR

GS-III SECURITY & DEFENSE

Context

- DefExpo 2022 held in Gandhinagar, Gujarat in October drew attention to a major policy initiative of Prime Minister Narendra Modi – the need for India to acquire the appropriate degree of “aatmanirbharata” (self-reliance) in the defence sector and the arduous path ahead. This objective is unexceptionable and the Modi government is to be commended for keeping this critical issue on the national radar.

Details

Current scenario:

- Defence exports have grown eight times in the last five years.
- We are exporting defence materials and equipment to more than 75 countries of the world.
- In 2021-22, defence exports from India reached \$1.59 billion (about Rs 13,000 crore).
- The government has now set a target of \$5 billion (Rs 40,000 crore).
- This is an ambitious target and will demand mission-mode resolve to be realised.

Recent developments:

- A quick recap of the more recent defence-related events includes:
- The commissioning of the indigenously-designed and built aircraft carrier Vikrant
- The firing of an SLBM (submarine-launched ballistic missile) from the INS Arihant
- The radical decision to award the manufacture of a military transport aircraft (C 295) to a major private sector entity; the induction of the made in India Prachand LCH (light combat helicopter)
- The conclusion of a deal with Russia to manufacture a Kalashnikov-type light weapon/small arms in India. These achievements have been applauded as the success of the indigenous effort.
- While it is commendable that India is now going to manufacture the C295 transport aircraft in a collaboration with Airbus, France, the reality is that the engine, avionics, landing gear, etc, will come from abroad and the integration will be done by the Indian entity.

Concerns:

- Even as India aspires to become a \$5-trillion economy, it is evident that it faces many national security inadequacies.
- The high dependency index on foreign suppliers (traditionally the former USSR now Russia) for major military inventory items is stark.
- This dependency induces a macro national vulnerability and dilutes India's quest for meaningful and credible strategic autonomy.
- Furthermore, the current gaps in combat capacity expose the chinks in the Indian ability to safeguard core national security interests. The Galwan setback apropos China is illustrative.
- India does not yet have the domestic competence to fully design and manufacture any significant combat weapon/platform and is dependent on the foreign supplier for the critical components that lie at the core of the combat index of the equipment in question.
- India has not invested enough in the national research and development (R&D) effort. As per data collated by the World Bank, India has been able to allocate only 0.66 per cent of GDP (2018) towards R&D, while the world average is 2.63 per cent. The comparable individual R&D allocation (per cent of GDP) for some other nations is as follows: Israel 5.44; USA 3.45; Japan 3.26; Germany 3.14; China 2.4; and Turkey 1.09.

Analysis

- Unexpected exigencies such as the Russian invasion of Ukraine and other factors including the Covid that disrupted the global economy and related supply chains, further exacerbated by a weakening rupee add to the challenges faced by the Indian defence manufacturing ecosystem.
- The management of this extended turbulence across different axes will be the biggest challenge for governance.
- Cumulatively, these multi-layered challenges and the opportunities embedded in moving towards “aatmanirbharata” ought to provide the framework for an informed and objective debate about the way ahead though this kind of discourse has remained elusive.**
- While there are some promising green shoots – for instance, the 155-mm artillery guns being designed and manufactured in the country – meaningful indigenisation and credible “atma nirbharta” calls for sustained funding support, fortitude and an ecosystem that will nurture this effort.
- Composite combat and manufacturing capabilities have not been reviewed and honed appropriately.
- Thus, while India now claims that it will soon become a major arms exporter, the composition of such inventory leans towards the “soft” category (clothing, helmets, surveillance equipment) and yes, the Brahmos missile.**

- While there is an aspiration to add helicopters to this list – the ALH and the LCH – the reality check is that the engines for both these platforms are imported.
- **Providing a sustained fillip to the national R&D effort across the board (state, corporate and academia) remains critical if India is to emerge as a credible military power and one would identify this as a high-priority issue for the national security apex – the CCS (cabinet committee on security).**
- India missed the industrial design and manufacturing bus, a national competence demonstrated by nations like South Korea and China, over the last five decades.
- Technological advances have made the design and manufacture of the semiconductor chip the new currency of national prosperity and military power.
- The US and China are now locked in intense competition in this domain and India is yet to acquire a profile that would be deemed relevant.
- **Paradoxically, Indian brain power is very visible in the global semiconductor/chip fabrication effort but more at the lower end of the food chain, often as employees of the global venture capitalists. Progressively changing this techno-strategic landscape in India's favour should be accorded the highest priority in the national policy debate.**

MARITIME SECURITY

GS-III SECURITY & DEFENSE

Context

- As many as 392 reported incidents of illegal, unreported and unregulated fishing were monitored in 2021 compared to 379 in 2020 in the Indian Ocean- Indian Navy.

Findings of Information Management and Analysis Centre (IMAC)

- Chinese fishing vessels, fishing vessels from European Union countries and other countries from outside the region were observed to be fishing in the Indian Ocean. Most of the illegal activity is found in the Northern Indian Ocean Region (IOR).
- There has been a growing incidence of Chinese deep sea fishing trawlers in the Indian Ocean in addition to an overall rise of China's maritime presence in the region.

Illegal, Unregulated Fishing and Underreported Fishing (IUU Fishing)

- Illegal Fishing refers to fishing activities conducted by foreign vessels without permission in waters under the jurisdiction of another state.
- Unregulated Fishing on the other hand refers to fishing activities in areas where there are no applicable management measures to regulate the catch; this is the case in the South Atlantic, for example.
- **Unreported fishing:** It means Fishing which has not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or is undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

Global Scenario

- IUU fishing is a global problem, occurring in the South China Sea, off the west coast of Africa (where estimates put illegal catch at 40 percent), off both coasts of South America, in the eastern Indian Ocean, throughout Oceania, and around Antarctica.
- According to the Global Initiative Against Transnational Organized Crime's IUU Fishing Index, which benchmarks countries' vulnerability to, prevalence of, and response to IUU fishing, four of the top five worst-scoring countries are in Southeast Asia. **China tops the list**, and Russia is the sole non-Southeast Asian country, at number four.
- In one particularly egregious example, in 2020, a fleet of 350 Chinese vessels was observed conducting predatory high-seas fishing around Ecuador's Galapagos Islands, a UN Educational, Scientific and Cultural Organization (UNESCO) World Heritage site.

Impact of Illegal, Unregulated and Unreported Fishing

- In many maritime regions of the world, **illegal fishing has massively contributed to the depletion of fish stocks, especially in developing countries' coastal waters.**
- Illegal fishing is a key driver of global overfishing, it **threatens marine ecosystems, puts food security and regional stability at risk**, and is **linked to major human rights violations and even organized crime.**
- The global supply chain is complex and weakly regulated and illegal fish **can penetrate the supply chains quite easily.**
- IUU fishing **undermines national and regional efforts to conserve and manage fish stocks** and, as a consequence, inhibits progress towards achieving the goals of long-term sustainability and responsibility.
- In 2020, the U.S. Coast Guard said that **IUU fishing has replaced piracy as the leading global maritime security threat.** It is

estimated that up to one in every five fish caught around the world is obtained through IUU fishing, representing about a \$23 billion annual loss for the legal fishing industry. And, in large part, the poorest countries in the world, which depend on fisheries for food and livelihoods, are hit the hardest.

- Fish is an essential protein source for over 40 percent of the global population. **IUU fishing can decimate fish stocks, undermining a country's ability to feed its people.**
- Further, IUU fishing **can disrupt and destabilize the fragile economies of coastal states.** Small island nations are particularly vulnerable, in that many have vast ocean resources but very limited capacity to patrol their exclusive economic zones, or EEZs. Many of these small nations also struggle to apprehend and prosecute transgressors.
- IUU fishing often happens along with other unlawful activities, including **human trafficking and forced labor.** Interpol reports that fishing vessels are **often used to smuggle people, drugs, and weapons, as well as to carry out acts of piracy and terrorism.** IUU fishing activities are highly mobile, increasingly sophisticated, and **sometimes conducted with logistical and security support from fishers' flag states.**

Challenges in combating IUU fishing

- The ocean is vast, and monitoring it for illegal fishing and enforcing laws that criminalize this activity continue to be big challenges.
- Many countries have insufficient resources for patrols at sea and remote surveillance, leaving much of their 200-nautical-mile exclusive economic zones (EEZs) vulnerable to illegal operators. Many also lack sufficient regulations, oversight, or inspections at ports.
- There are two main regulations globally on IUU fishing: the **Cape Town Agreement and the Agreement on Ports State Measures.** So far, **India is not a signatory of either agreement.**
- Fishing vessels across the world are supposed to have vehicle management systems installed which not only identify their position, but also requires them to record the volume and location of their catch, helping to tackle the issue of IUU fishing. For instance, the European Union has made it mandatory to provide this information for all fish imports. In India, while larger vessels, over 20 metres in length, have such Automatic Identification Systems installed, similar efforts for sub-20 metre vessels have been delayed.

Way Ahead

- Developing an **international fisheries enforcement regime** will significantly reduce IUU fishing.
- A globally consistent means of identifying and tracking fishing vessels and their history.
- Reliable, near-real-time, and transparent information sharing among port, flag, and coastal states.
- Political will.
- Trained and ready enforcement personnel willing and able to act.
- States to take responsibility for the vessels they flag and a mechanism to assess their compliance.
- Robust regional and international policies with adequate legal frameworks to carry them out.
- Strict regulation of transshipment on the high seas and in port.
- **Making it mandatory for all merchant vessels to install the Automatic Identification System (AIS),** this helps in tracking vessels at sea.
- **All port states need to become Party to the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate IUU Fishing (PSMA).**
- **Real-time information sharing and global data on high seas fishing vessels** and their activities is critical to deter IUU fishing. It also helps in tracing defaulting vessels. This requires robust maritime domain awareness, which is technology intensive.
- Fish traceability is an effective mechanism to curb IUU fishing. For instance, the US National Ocean Council Committee to Combat Illegal, Unreported and Unregulated Fishing and Seafood Fraud has proposed a **seafood traceability system** that will collect data about harvest, landing, and chain of custody of fish and fish products brought into the United States and if the catch is found suspicious, list it as seafood fraud.
- The civil society organizations can play an important role as watchdogs and compliment international, regional and State efforts to curb IUU fishing.
- Port states also can play a significant role by blocking vessels engaged in IUU fishing from using their ports and landing their catches.

Closing Thoughts

- IUU fishing is an important issue of concern under the ten targets contained in Sustainable Development Goal (SDG) 14. It, therefore, becomes incumbent on the States to understand the impact of IUU fishing on the marine ecosystem and food supply chain both for life at sea and humanity ashore. This can be achieved by developing effective measures to enhance transparency, institute accountability, and develop technological capability to monitor IUU fishing in international waters.
- IUU fishing can only be combated by a whole-of-world approach, presenting an opportunity for state-to-state cooperation.

- The world needs to collectively continue to fight the scourge of IUU fishing in order to protect sensitive marine environments and food sustainability, prevent irreparable damage to coastal economies, counter corruption and associated criminal activity, and uphold the sovereignty and security of the world's maritime nations.

LIGHT COMBAT HELICOPTER

GS-III SECURITY & DEFENSE

Context

- The Army has moved its first Light Combat Helicopter (LCH) squadron to Missamari, Assam, in the eastern sector near the Line of Actual Control (LAC). The LCH, India's first indigenously designed and developed attack helicopter, is also the first dedicated attack helicopter operated by the Army.

Background

- **The IAF operates the older Russian Mi-25 and Mi-35 attack helicopters, of which one squadron has been phased out following the induction of 22 Boeing AH-64E Apache attack helicopters.**
- The existing Mi-35 squadron is in the process of being sent for overhaul which will extend its life by many years.
- The Army had already raised its first LCH squadron on June 1 in Bengaluru.
- The Army plans to acquire 95 LCHs of which seven units, each having 10 helicopters, are planned to be deployed for combat role in the mountains.
- In March 2022, the Cabinet Committee on Security (CCS) had approved procurement of 15 Limited Series Production (LSP) variants of the LCH at the cost of ₹3,887 crore along with infrastructure sanctions worth ₹377 crore. Of the 15 helicopters, 10 are for the IAF and five for the Army. The LCH is designed and developed by Hindustan Aeronautics Limited (HAL).
- LCH LSP is an indigenously designed, developed and manufactured state-of-the-art modern combat helicopter containing 45% indigenous content by value which will progressively increase to more than 55% for Series Production Version.
- **The LCH is the first dedicated attack helicopter of the Army, which otherwise operates 75 Rudra helicopters, the weaponised variant of the indigenous Advanced Light Helicopter.**
- It will start receiving Apache attack helicopters from early 2024 onwards, six of which have been contracted under an estimated \$800 mn deal from the U.S. It is also in talks with Boeing for the procurement of 11 additional Apache helicopters

When was the LCH project envisaged?

- The genesis of the LCH lies in the Kargil conflict of 1999 when the absence of an attack helicopter which could operate in ultra-high altitude areas was felt acutely by the Indian Army and the Indian Air Force (IAF).
- The intruding Pakistan Army troops had occupied various heights on the Indian side of the Line of Control but the existing Russian-made attack helicopters in the inventory of the Indian military did not have the operational ceiling which permitted their deployment at those heights.
- The IAF was forced to use the MI-17 helicopters in a modified role against those heights and suffered the loss of a helicopter when it was fired upon by the enemy.
- It was in 2006 that the Hindustan Aeronautics Limited (HAL) announced its intention to develop a LCH which could operate in the harsh desert conditions as well as the high altitude areas of Ladakh including the Siachen Glacier.

What are the major features of LCH?

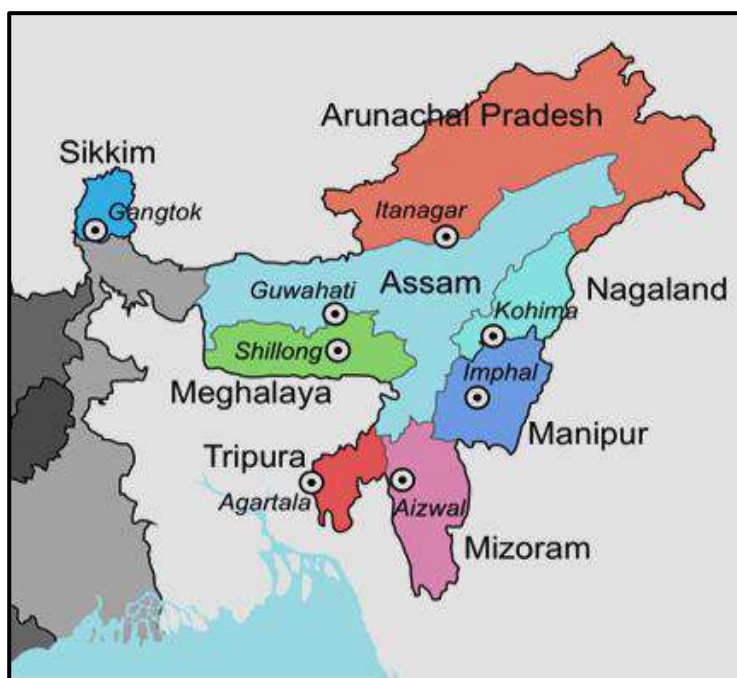
- According to HAL, the LCH has "the maximum possible commonality with Advanced Light Helicopter (ALH)".
- The attack helicopter has a pilot and co-pilot sitting in tandem position (one behind the other).
- The helicopter has several stealth features and has armour protection, night attack capability and crash worthy landing gear to give it better survivability.
- It is powered by two Shakti engines and has a maximum take off weight of 5,800 kg.
- **With a maximum speed of 268 km per hour it has a range of 550 km and an operational ceiling of 6.5 kms.**
- Armed with air-to-air and air-to-ground missiles, LCH also has a 20 mm gun and 70 mm rockets. With a full glass cockpit, the LCH has an Electronic Warfare suite and helmet mounted display for the flying crew.
- The LCH is well suited for anti-tank role wherein it can fly low and fast to attack enemy armour columns and destroy them.
- As per HAL, it is also suitable for scout role wherein it can fly ahead of advancing columns of the Army and detect enemy presence.
- It is also suitable for air defence roles and destruction of enemy air defence assets. It can also be used in urban warfare missions and combat search and rescue operations.

ASSAM MEGHALAYA BORDER DISPUTE

GS-III SECURITY & DEFENSE

In News

- Both Meghalaya and Assam State governments stated that they would ask for a probe from a central agency into the Assam Police firing that killed six people along the states' border.
- Recently, near the border district of Assam and Meghalaya, 6 people were killed and several others injured during an alleged clash between the Assam Police and a mob,
- 5 of the 6 people killed are from Meghalaya. The incident drew a sharp reaction from Meghalaya's Chief Minister, who termed the Assam Police's actions "inhuman" and said the state will set up a judicial commission and a Special Investigation Team to probe the shooting until a central agency takes over.
- The Assam Police has claimed they opened fire in self-defence after a mob surrounded them when they were trying to intercept a truck allegedly smuggling timber.
 - Assam has announced a one-man inquiry commission under a retired High Court judge.



Background of the Assam-Meghalaya conflict

- Meghalaya was carved out of Assam as a separate state in 1972 but the new state challenged the Assam Reorganisation Act, of 1971, leading to disputes in 12 locations in the border areas.

The major point of dispute

- Meghalaya's Langpih district, bordering the Kamrup district of Assam, in West Garo Hills, is a major point of contention between the two neighbouring states.**
 - Langpih was part of the Kamrup district of Assam during the British colonial period but after India's Independence in 1947; it became part of the Garo Hills and Meghalaya.
- Another point of contention is the Mikir Hills, which Assam considers to be its part.
 - Meghalaya has questioned Blocks I and II of the Mikir Hills, now Karbi Anglong region, being part of Assam.
 - Meghalaya says these were parts of erstwhile United Khasi and Jaintia Hills districts.

Efforts made to resolve the border issue

- The two states have formed border dispute settlement committees.
- Recently, the Chief Minister of both states decided to set up two regional panels to resolve the border disputes in a phased manner.
- The panel recommended 5 aspects to be considered in resolving the border dispute;**
 - Historical facts
 - Ethnicity
 - Administrative convenience
 - Mood and Sentiments of the people concerned.
 - The closeness of the land.
- In April 2022, In presence of the Union Home Minister Shri Amit Shah, **a historic agreement was signed in New Delhi by the Chief Minister of Assam and the Chief Minister of Meghalaya for the settlement of the interstate boundary between the States of Assam and Meghalaya, in respect of 6 out of 12 areas of difference.**

Key points of the Border Agreement

- Out of the 12 points of dispute between Assam and Meghalaya, the six areas with relatively less critical differences were taken up in the first phase.
- Assam and Meghalaya have partially resolved a 50-year-old border dispute in 6 of the 12 sectors along their 885 km boundary.**
 - The 6 disputed sectors are Tarabari, Gizang, Hahim, Boklapara, Khanapara-Pillangkata and Ratacherra under the

Kamrup, Kamrup (Metro) and Cachar districts of Assam and the West Khasi Hills, Ri-Bhoi and East Jaintia Hills districts of Meghalaya.

- The two States had in June 2021 adopted a “give-and-take” policy to start the process of resolving the boundary dispute by constituting three regional committees each.
 - The draft resolution, prepared based on the recommendations of the regional panels, proposed dividing the disputed 36.79 sq. km of land into the six areas of difference between the two States.
 - While Assam will get 18.51 sq. km of the disputed areas, Meghalaya will get the remaining 18.28 sq. km.

Other Major Agreements of the Northeast

NLFT Tripura Agreement

- The agreement was signed on 10 August 2019 in the presence of the Home Minister.
- **As per the MoU, for the overall development of the tribes of Tripura, the Government of Tripura will be provided with a Special Economic Development Package (SEDP) of Rs. 100 crores by the Government of India during five years.**
 - Out of this amount of Rs. 100 crores, an amount of Rs. 40 crores has already been released to Tripura during the financial year 2020-21.

Bru Agreement

- A historic agreement was signed in the presence of the Home Minister on 16.01.2020 by the Government of India, Government of Tripura, and Government of Mizoram along with representatives of Bru migrants for the permanent settlement of 6959 Bru families in Tripura with a financial package of about Rs. 661 crores.
- **As per the agreement, each resettled Bru family would be given financial assistance** in the form of a fixed deposit of Rs.4 lakh, free ration, five thousand rupees per month for two years, housing assistance at the rate of Rs.1.5 lakh, and a land plot of 30x40 square feet.

Bodo Peace Accord

- In the presence of Home Minister Shri Amit Shah, a Memorandum of Understanding (MoU) was signed on 27.01.2020 by the Government of India, the Government of Assam, and representatives of Bodo groups to resolve the long-pending Bodo issue.
- Most of the demands of the Bodo groups have been met and the remaining demands would be met when as per the MoU, the committees constituted for this purpose would give their recommendations.
- **As per the agreement, a special development package of Rs 1,500 crore (750 crores by the Central Government and 750 crores by the Assam government) will be provided over three years for the all-around development of the Bodo region in Assam.**

Karbi Anglong Agreement

- To end the decades-old crisis in the Karbi Anglong region of Assam, a Memorandum of Understanding (MoU) was signed on 04.09.2021 in the presence of the Home Minister between the Government of India, the Government of Assam and representatives of Karbi groups.
- As a result of this historic agreement, more than 1000 armed cadres renounced violence and joined the mainstream of society.
- **As per the agreement, a special development package of Rs 1,000 crore will be given over five years by the central government and the Assam government to take up special development projects in the Karbi areas.**
- This agreement will ensure the protection of the culture, identity, language, etc. of the Karbi people and the all-around development of the region.

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CHALLENGES TO COP27**GS-III ENVIRONMENT & ECOLOGY****Context**

- It is the time of the year when, for two weeks, climate change takes global center stage. The annual United Nations Climate Change Conference (COP27), beginning 6 November, is being held in the Egyptian resort town of Sharm el-Shaikh amid fresh reminders that the window for meeting climate goals is closing fast.

Details

- Latest assessments suggest that current action plans of countries to meet climate goals are falling woefully short.
- And yet, no major win is expected at the conference, as, amid a deepening energy crisis and prevailing economic gloom, there is little appetite among countries to scale up climate action.
- Remedial actions have been slow and incremental, while the impacts of global warming have been unfolding at a very rapid rate.

Emissions still rising

- It's been at least two-and-a-half decades since the world decided to restrain its greenhouse gas emissions.
- In absolute terms however, the annual global emissions are still rising, now touching almost 50 billion tonnes of carbon dioxide equivalent.
- In the decade between 2010 and 2019, the global emissions grew by over one per cent on an average. This is significantly slower than the growth in the previous decade, of about 2.6 per cent, but for meeting climate targets, is not good enough.
- Moreover, even if the growth in emissions is halted immediately, or is made to decline, it does not solve the problem. This is because the warming of the planet is the result of accumulated emissions in the atmosphere and not the current emissions.
- Carbon dioxide, the main greenhouse gas, remains in the atmosphere for about 100 years, so that the effect of any immediate decline in emissions would have an impact only after several decades.
- As a result, the average global temperatures have risen faster in the last one decade than anytime earlier. This trend is only likely to accelerate in the coming years.
- Recent data suggest that the annual mean temperature of the world is already higher by more than one degree Celsius from pre-industrial times.
- Some of the monthly means are higher by over 1.1 degree Celsius.

Response inadequate

- The response in terms of emission cuts has been inadequate.
- The rich and industrialised countries, which were the main polluters and hence mainly responsible to bring down emissions, have not met their collective targets.
- Developing countries like China or India, which were not major emitters till sometime back, have seen their emissions rise steeply.
- As a bloc, the European Union has done relatively better on climate goals, with the United Kingdom, which is struggling with an economic downturn right now, halving its emissions from 1990 levels, UN data shows.
- The United States, the world's leading emitter till it was overtaken by China in the mid 2000s, has been a major laggard, cutting its emissions by only about 7 per cent from 1990 levels.
- China's emissions have risen by almost four times, and India's by about three times, during this period.
- Current global emissions are more than 50 per cent higher than in 1990.

World headed to 2.8-degree warming

- The overall climate objective is to ensure that the rise in global temperatures does not go beyond 2 degrees compared with pre-industrial times.
- Preferably, it needs to be restricted within 1.5 degree Celsius.
- Latest assessments suggest that if climate action is not immediately scaled up, the world is likely to become warmer by about 2.8 degree Celsius by the end of the century.
- For a realistic chance to keep global warming within 1.5 degree Celsius, annual emissions would need to drop from the current level of about 50 billion tonnes of CO₂ equivalent to about 33 billion tonnes by 2030 and 8 billion tonnes by 2050, according to the newest Emissions Gap Report.
- Even for meeting the 2-degree target, emissions have to come down to about 41 billion tonnes by 2030 and 20 billion tonnes by 2050.
- This would require drastic action from all the major emitters, and looks unlikely right now. In the last one year, just about 25 countries have strengthened their 2030 climate action plans, with minimal potential to bend the emission curve.

Impact of Ukraine War

- The energy and economic crisis caused by the Ukraine war is threatening to undo even the small gains made. Already, the consumption of fossil fuels has gone up.

- Countries have begun to secure more and more of traditional fossil fuels to deal with the uncertainty in the energy markets.
- The impact of the war – which shows no signs of ending – is likely to be felt for a long time, slowing down progress on climate action by several years.

COP26- A year later

National emissions plans

- Nearly 200 countries agreed at last year's COP26 summit to improve their emissions-cutting pledges, called Nationally Determined Contributions or NDCs, in time for COP27, but only two dozen countries have so far done so.
- The world remains on a path to overshoot 2 degrees of warming beyond the pre-industrial average.
- Those to upgrade since COP26 include Indonesia and South Korea as well as Australia, which pledged a 43% emissions cut by 2030 from 2005 levels.
- Brazil submitted a plan in March that actually allows for higher emissions than under its 2016 pledge, though Sunday's election victory by Luiz Inacio Lula da Silva raises hopes of more ambitious action to combat Amazon deforestation.
- The 27-country EU, the world's third-biggest polluter, plans to upgrade its target in 2023. China has resisted pressure to improve its pledge to peak emissions before 2030 – a goal that doesn't address the deep emissions cuts needed to avert disastrous global warming.

Deforestation

- More than 100 countries pledged last year to end deforestation by 2030. Supporters included Brazil, Indonesia and Congo, which together contain more than 80% of the world's remaining tropical forests.
- To achieve that goal, however, the area deforested would need to shrink by 10% each year from the 2020 cover.
- Instead, deforestation fell last year by just 6.3%, according to the Forest Declaration Platform which tracks progress on the goal.
- Amazon deforestation last year hit its highest level since 2006, and preliminary government data suggests it rose a further 23% in the first nine months of 2022.
- Indonesia has seen deforestation slow since 2016. But Congo, which had promised to improve forest safeguards after COP26, instead announced plans to open up areas of pristine rainforest and carbon-rich peatlands to oil and gas drilling.

Methane pledge

- To date, 119 countries and blocs including the United States and the European Union have joined the COP26 pledge to slash methane emissions 30% from 2020 levels by 2030.
- But only 15 of them have come up with concrete plans to do so, according to a report this month by the World Resources Institute.
- Several countries are expected to provide methane strategies in time for the Egypt conference. And China could also give an update on its plan to begin monitoring methane emissions – a promise made under the U.S.-China agreement announced in Glasgow.
- The focus on methane comes as the World Meteorological Organization warned of the biggest year-on-year jump in methane concentrations in 2021 since record-keeping began nearly 40 years ago.

Quitting fossil fuels

- Around 20 countries including Germany, the United States, Canada, Britain and France pledged last November to stop public financing for fossil fuel projects abroad by the end of 2022, except in "limited" circumstances that comply with climate goals.
- COP27 is expected to see a handful of new countries make the pledge. Signatories are also under pressure to translate the non-binding commitment into concrete policy, which some including France have done.
- Others such as Germany and the United States have yet to publish such policies, and questions remain about how strict those plans will be. Germany this year called for new investments in gas, as it scrambles to replace its Russian gas supply with alternatives – which campaigners say could violate the commitment.
- A fledgling international alliance to halt new oil and gas drilling also hopes to announce new members at COP27. Launched by Denmark and Sweden at last year's climate talks, the Beyond Oil and Gas Alliance counts France and Sweden among its members, but has yet to win support from any major fossil fuel producers.

\$100 billion by 2023

- Rich countries' failure to deliver promised finance to poorer nations has eroded trust at recent climate talks and made collective progress harder.
- At the heart of the issue is a 2009 pledge from developed countries to transfer \$100 billion per year by 2020 to vulnerable states. The amount has become symbolic, even as it falls far short of the actual sums needed for poor nations to cope with severe climate impacts.
- Rich countries fell \$16.7 billion short of the target in 2020 and have signalled that it won't be met until 2023. Analysis by the German and Canadian governments suggests wealthy countries will deliver more than \$100 billion in the years after 2023.

Greening business

- Launched ahead of last year's U.N. talks, the Glasgow Financial Alliance for Net Zero – known by its acronym GFANZ – acts as the umbrella group for financial services firms looking to reach net-zero emissions across their portfolios. The group now counts more than 550 members, including most of the world's leading banks, insurers and asset managers, with collective assets of more than \$150 trillion.
- Since joining, 118 asset managers, 44 asset owners and 53 banks have set shorter-term targets to cut emissions, and more are expected to do so in coming months.
- GFANZ, led by former Bank of England governor Mark Carney, also launched a series of projects to accelerate change in the real economy, including those helping to set standards and frameworks for disclosure and setting targets.
- Despite that, the group and some of its members have been criticised for not going fast enough, particularly on the provision of financing to companies expanding production of fossil fuels. And last week, climate activists criticized GFANZ for dropping a requirement that its members sign onto a U.N. emissions reduction campaign.

Data reporting standards

- Announced during COP26, the International Sustainability Standards Board (ISSB) was set up to establish baseline standards for the reporting of environmental data from companies globally, amid complaints from investors and companies that disclosures were hard to compare.
- Since then, the group has announced Emmanuel Faber, the former head of French yogurt maker Danone, as its chair and appointed a high-profile leadership group to hammer out guidelines in time to launch them in 2023.
- Despite that, the European Union and U.S. regulators have moved to launch their own rules, all with slight differences that companies fear could raise the cost of compliance and end up with even less clarity.

BIOSPHERE FOOTPRINT

GS-III ENVIRONMENT & ECOLOGY

Context

- November 3 is the first 'The International Day for Biosphere Reserves', to be celebrated beginning 2022.

Details

What are Biosphere Reserves?

- **Biosphere Reserve (BR)** is an international designation by UNESCO for representative parts of natural and cultural landscapes extending over large area of terrestrial or coastal/marine ecosystems or a combination thereof.
- Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located.

World Network of Biosphere Reserves:

- **The World Network of Biosphere Reserves (WNBR)** was formed in 1971, as a backbone for biodiversity conservation, ecosystem restoration, and living in harmony with nature.
- The World Network of Biosphere Reserves of the MAB Programme consists of a dynamic and interactive network of sites of excellence.
- There are now 738 properties in 134 countries, including 12 in India, four in Sri Lanka, and three in the Maldives.
- The best concept for 'Living in Harmony with Nature' that exists in the United Nations system, is the WNBR, making these places more important today than ever before, where humans are thriving and relearning how to live with nature.

South Asia scenario:

- Bangladesh, Bhutan, and Nepal do not have biospheres as yet, but help is on its way: The 'South and Central Asia MAB Reserve' Networking Meeting (where MAB stands Man and the Biosphere) is planned for 2023, to advance biosphere reserve establishment, and management.
- In addition, an expert mission has been planned for spring 2023 – to Bhutan, India's north-east and the Sundarbans in Bangladesh.
- If these pockets of hope can expand, with at least one biosphere reserve per country in Bangladesh, Bhutan and Nepal until 2025 (with additional biosphere reserves in India's North-East and along the coasts) it will give realisation to millions of people that a better future is truly possible – one where we will truly live in harmony with nature.
- In South Asia, over 30 biosphere reserves have been established. The first one was the **Hurulu Biosphere Reserve**, in Sri Lanka, with 25,500 hectares of tropical dry evergreen forest.
- In India, the first biosphere reserve was designated by UNESCO in 2000, namely, the **blue mountains of the Nilgiris stretching over Tamil Nadu, Karnataka and Kerala**.
- Considering the massive long-term threats to human survivability (besides pandemics and armed conflicts), such as biodiversity loss, climate change, pollution and population dynamics, accelerated by the blind belief in technological solutions for all problems, we need many more biosphere reserves globally. South Asia offers countless options.

- India is a vast sub-continent, an emerging superpower of unlimited opportunities. It has become an important global player on environmental sustainability issues. India is likely to become the world's most populated country in 2023.
- Some of the countries in South Asia do not yet have any or enough biosphere reserves. In most, if not all cases, the political will is certainly there, but there is a lack of know-how and financial resources.
- Of course, more financial support from the richer nations and the private sector would be desirable to advance biosphere reserves in these countries.

AIR QUALITY INDEX

GS-III ENVIRONMENT & ECOLOGY

Context

- Based on the levels, the governments in areas like Delhi announce measures. As the AQI in NCR dipped to the 'severe' category, stage 4 of the Graded Response Action Plan was set in motion.

Details

- AQI is a number, which is a measure of air quality. The higher the AQI, the worse the air.
- The colour-coded AQI index was launched in India in 2014, and it helps the public and the government understand the condition of the air and what subsequent measures are to be taken to combat the situation, based on its severity.
- There are six categories of AQI, namely 'Good' (0-50), 'Satisfactory' (50-100), 'Moderately polluted' (100-200), 'Poor' (200-300), 'Very Poor' (300-400), and 'Severe' (400-500).

What is the AQI and how does it calculate pollution?

- **Launched as part of the Swachh Bharat campaign, the AQI was to help simplify the common understanding of pollution.**
- According to the Central Pollution Control Board, part of the Ministry of Environment, Forests and Climate Change, the AQI transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.
- **The pollutants measured include PM 10, PM 2.5, Nitrogen Dioxide, Ozone, Carbon, etc.**
- There are six or eight pollutants in the affected air and each of these pollutants is given a weight based on a formula. That weight depends on the kind of impact it has on human health.
- The worst of these weights is given as composite air quality, so instead of giving you six different numbers, and six different colours, it throws up one single colour, one single number to denote the overall impact.
- Monitoring stations across the country assess these levels.

What is the impact of these pollutants?

- Among the more harmful pollutants are those of a smaller size, such as particulate matter (PM) 2.5, which is an atmospheric particulate matter of diameter smaller than 2.5 micrometres (or around 3 per cent of the diameter of a human hair).
- It causes respiratory problems and reduces visibility.
- The particles can only be detected with the help of an electron microscope because they are so small.
- Due to their size, the PM 2.5 particles can easily bypass the nose and throat and can easily enter the circulatory system.
- The particles can also lead to cause chronic diseases such as asthma, heart attack, bronchitis and other respiratory problems.

How does the AQI influence government policy?

- Based on the levels, the governments in areas like Delhi announce measures.
- The GRAP has specifically been instituted for emergency measures that kick in to prevent further deterioration of air quality in Delhi-NCR.
- A central panel directed authorities to prohibit the use of diesel four-wheelers that are not BS-VI compliant, as well as the entry of trucks in Delhi. Petrol cars can continue to ply as usual.

GREENWASHING

GS-III ENVIRONMENT & ECOLOGY

Context

- **The use of unfair practices in climate action is not new. Corporations, and sometimes even countries, attempt to exaggerate the actions they are taking to help the fight against climate change, and also the impacts of these actions. In the process, they provide misleading information, make unverifiable claims, and sometimes plainly lie about their products or processes.**
- In the first official acknowledgment of 'greenwashing', UN Secretary General Antonio Guterres warned private corporations to desist from such practices and mend their ways within a year. There will be **zero tolerance for greenwashing**, he said at the ongoing climate meeting in Sharm el-Shaikh.

Details

Greenwashing

- There is a growing tendency among firms and governments to **mark all kinds of activities as climate-friendly**, as something that would lead to emissions reduction, or avoidance of emissions.
- Many of these claims are unverifiable, misleading, or dubious. While they help in boosting the image of the entity, sometimes even helping them garner benefits, they do nothing in the fight against climate change.
- **The Volkswagen scandal, in which the German car company was found to have been cheating in emissions testing of its supposedly green diesel vehicles, was a case of greenwashing. Several other multinational corporations, including oil giants like Shell and BP, and Coca Cola have faced accusations of greenwashing**
- Greenwashing presents a false picture of the progress being made on the climate change front, thereby pushing the world towards disaster, while at the same time rewarding entities for irresponsible behaviour.

Reasons:

- The processes and products that can potentially cut emissions are so many that it is practically impossible to monitor and verify all.
- There is a lack of regulation and standardisation in most of these spaces.
- The processes, methodologies and institutions to measure, report, create standards, verify claims and grant certifications are still being set up.
- In the meanwhile, large number of organisations have sprung up claiming expertise in these areas and offering their services for a fee.
- Many of these organisations lack integrity and robustness, but their services are still availed by corporations because it makes them look good.

Credits and offsets

- There was a carbon market under the Kyoto Protocol, and a new one is being created under the Paris Agreement as well.
- But the scope of carbon markets has increased manifold since it was first conceptualised.
- Informal carbon markets also exist.
- There are now credits available for all kinds of activities — for growing trees, for planting a certain kind of crop, for installing energy-efficient equipment in office buildings. Basically, any activity that has the potential to reduce or avoid emissions can earn credits.
- The credits are often certified by unofficial third party companies and sold to others.
- Such transactions, particularly in informal, bilateral or voluntary markets, have been flagged for lack of integrity and double counting.
- Even the official market is not immune to charges of double counting and greenwashing.
- Countries like India or Brazil had accumulated huge carbon credits under the Kyoto Protocol and wanted these to be transitioned to the new market being set up under the Paris Agreement.
- But many developed countries resisted this, questioning the integrity of the credits and claiming they did not accurately represent reductions in emissions. Carbon offsets from forests are one of the most controversial.

The way forward

- An expert group formed by the UN Secretary General last year to suggest remedial actions on this front submitted its report.
- Among other things, **it recommended that corporations pursuing net zero targets must not be allowed to make fresh investments in fossil fuels, must be asked to present short-term emission reduction goals on the path to achieving net zero, and must bring an end to all activities that lead to deforestation.**
- In addition, the corporations have been advised not to use offset mechanisms at the start of their journey to net-zero status.
- The expert group has also recommended the **creation of regulatory structures and standards as soon as possible.**

MANGROVE ALLIANCE FOR CLIMATE

GS-III ENVIRONMENT & ECOLOGY

Context

- Union Minister for Environment Forest and Climate Change Shri Bhupender Yadav spoke at the Launch of the Mangrove Alliance for Climate (MAC). This event was held on the side-lines of the ongoing COP 27 at Sharm El-Sheikh, Egypt.

Details

- India has demonstrated expertise in mangrove restoration for nearly five decades and can contribute to the global knowledge base due to its extensive experience, Union Environment Minister Bhupender Yadav said at the launch of the “Mangrove Alliance for Climate”

- He said mangroves were the best option to fight the consequences of climate change and can help countries meet their nationally determined contributions. NDCs are national plans to limit global temperature rise to well below two degrees Celsius, preferably to 1.5 degrees Celsius.
- **The UAE and Indonesia launched the alliance on the sidelines of the UN climate summit COP27, being held in Sharm El Sheikh in Egypt from November 6 to 18. The alliance aims to strengthen conservation and restoration of mangrove ecosystems worldwide. India, Australia, Japan, Spain and Sri Lanka have joined it as partners.**
- Creating a new carbon sink from mangrove afforestation and reducing emissions from mangrove deforestation are two feasible ways for countries to meet their NDC targets and achieve carbon neutrality, he said.
- **As part of this alliance, an international mangrove research centre will be established in Indonesia which will conduct studies on mangrove ecosystem services such as carbon sequestration and ecotourism.**
- **India believes COP27, themed 'Together for Implementation', should turn out to be the 'COP for Action' in terms of climate finance, technology transfer and capacity building.**

What is a mangrove?

- A mangrove is a small tree or shrub that grows along coastlines, taking root in salty sediments, often underwater.
- The word '**mangrove**' may refer to the habitat as a whole or to the trees and shrubs in the mangrove swamp.
- Mangroves are flowering trees, belonging to the families Rhizophoraceae, Acanthaceae, Lythraceae, Combretaceae, and Arecaceae.

Why mangroves matter?

- The upper trunk, including the branches and leaves, of a mangrove tree lives completely above the waterline, while the lower trunk and the large root system are partly covered by seawater.
- Many species have roots diverging from stems and branches and penetrating the soil some distance away from the main stem (like banyan trees).

What are some of the special features of mangroves?

- **Saline environment:** A speciality of mangroves is that they can survive under extreme hostile environment such as high salt and low oxygen conditions. Mangrove trees contain a complex salt filtration system and complex root system that filter out 90% of the salt when come into contact with saline and brackish water.
- **Low oxygen:** In a mangrove environment, the oxygen in soil is limited or nil. Hence the mangrove root system absorbs oxygen from the atmosphere. Mangroves have special roots for this purpose called **breathing roots or pneumatophores**. These roots have numerous pores through which oxygen enters the underground tissues.
- Mangroves, like desert plants, store fresh water in thick succulent leaves. A **waxy coating on the leaves** seals in water and minimises evaporation.
- **Viviparous:** their seeds germinate while still attached to the parent tree. Once germinated, the seedling grows into a propagule. The mature propagule then drops into the water and gets transported to a different spot, eventually taking root in a solid ground.

How do mangrove forests help protect against strong cyclones?

- Mangrove forests **act as natural barriers against storm surge, coastal flooding and sea level rise**. Their intricate root system **stabilises the coastline, reducing erosion from storm surges**. Together with the tree trunks, they work like **speed-breakers to slow down the tides**.
- They **protect shorelines from damaging winds and waves**.
- Mangroves also help prevent erosion by stabilising sediments with their tangled root systems.

What are the other benefits to the environment?

- Mangrove thickets **maintain water quality by filtering pollutants and trapping sediments originating from land**.
- They **provide habitat for a diverse array of terrestrial organisms**. Their branches provide homes for lizards, snakes and nesting birds. Many species of coastal and offshore fish and shellfish rely exclusively on mangroves as their breeding, spawning, and hatching grounds.
- Mangroves also have a big impact on climate. Mangroves are **powerhouses when it comes to carbon storage**. Mangroves can sequester (lock away) greater amount of carbon than other trees in the peat soil beneath. They store this carbon for thousands of years.
- Many people living in and around mangroves depend on them for their The trees are a source of wood for construction and fuel. The ecosystem provides local fishermen with a rich supply of fish, crabs and shellfish. The ecosystem also **supports tourism**.

Where are mangrove ecosystems found?

- Mangroves can be found in the **tropical and subtropical regions of the world**.
- **Asia has the largest coverage of the world's mangroves**, followed by Africa, North and Central America, Oceania and South America.

In India

- The deltas of the **Ganges, Mahanadi, Krishna, Godavari, and the Cauvery** rivers contain mangrove forests.
- The backwaters in Kerala have a high density of mangrove forest.
- The **Sundarbans in West Bengal is the largest mangrove region in the world and a UNESCO World Heritage Site**. It spans from the Hooghly River in West Bengal to the Baleswar River in Bangladesh.
- The **Bhitarkanika mangrove system in Odisha** is India's second largest mangrove forest. **Pichavaram in Tamil Nadu** has a vast expanse of water covered with mangrove forests. It is home to many aquatic bird species.

What are the threats to mangroves?

- At least **one third of all mangrove forests has been lost** during the last few decades.
- **Coastal development, including construction of shrimp farms, hotels, and other structures**, is the primary threat to mangroves.
- Mangrove forests are **cleared to make room for agricultural land and human settlements**.
- Mangrove trees are used for firewood, construction wood, charcoal production, and animal fodder. In some parts of the world, there has been overharvesting which is no longer sustainable.
- Overfishing, pollution, and rising sea levels are the other threats to mangrove forests and their ecosystem.

CLIMATE CHANGE PERFORMANCE INDEX

GS-III ENVIRONMENT & ECOLOGY

Context

- **India climbed two spots to bag eighth position out of 63 in the Climate Change Performance Index (CCPI) 2023.**

Details

Index:

- The report was published by three environmental non-governmental organisations that track climate performance of the **European Union** and 59 countries, which together account for over 92 per cent of the greenhouse gas (**GHG**) emissions in the world.
- The rankings by **Germanwatch**, **New Climate Institute** and the **Climate Action Network** are based on how well the countries are doing to halve their emissions by 2030 -- an essential aspect to keep the 1.5-degree Celsius goal within reach and prevent dangerous climate change.
- The CCPI, which has been published since 2005, aims to enhance transparency in international climate politics and it enables comparison of individual countries' climate protection efforts and progress.

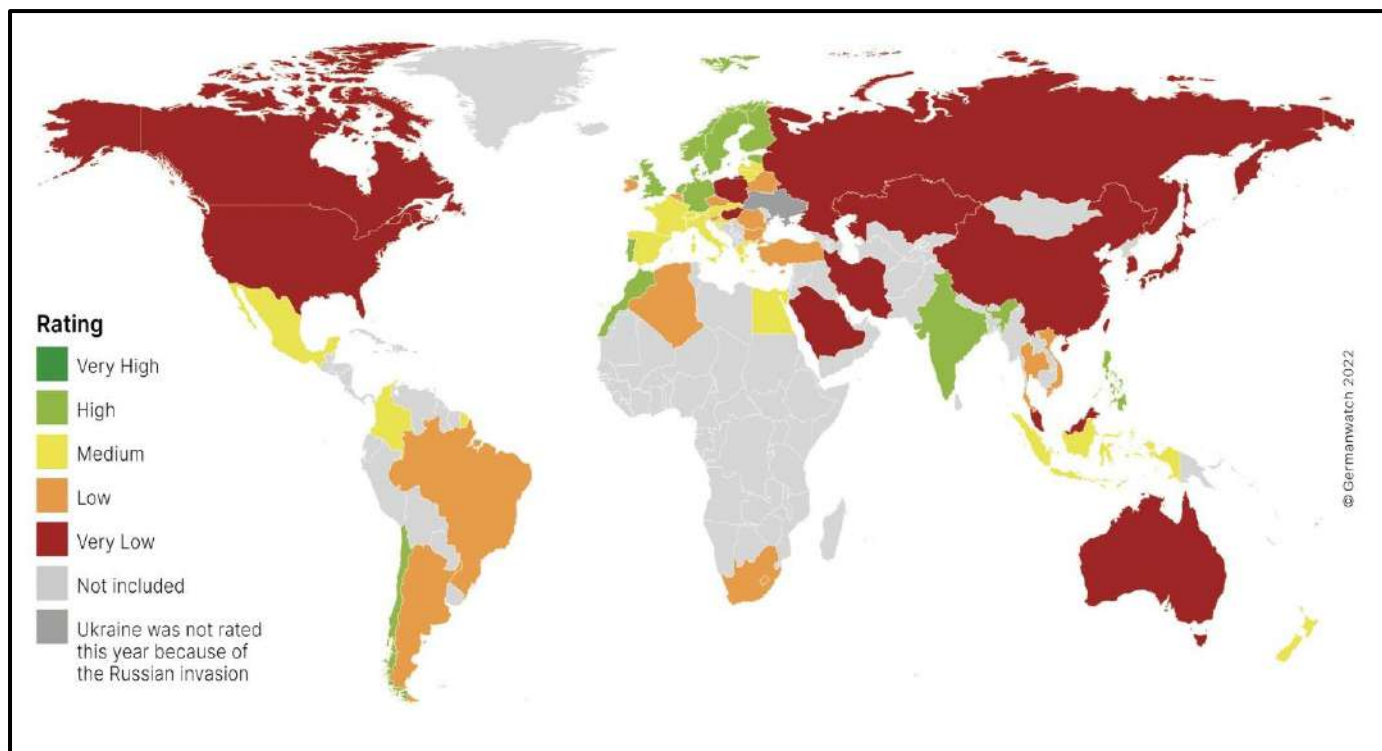
Findings:

- The report leaves the first three places empty as "no country performed well enough in all index categories to achieve an overall very high rating". It puts Denmark in fourth place, followed by **Sweden** and Chile.
- China, which is the world's biggest polluter now, fell 13 places to 51st in this year's CCPI and received an overall very-low rating due to plans for new coal-fired power plants.
- The US rose by three ranks to the 52nd place. Iran (63rd), Saudi Arabia (62nd) and Kazakhstan (61st) fared the worst.

Indian Scenario:

- The jump can be attributed to India's low emissions and the increasing use of renewable energy.
- India earned a high rating in the **GHG Emissions and Energy Use** categories, while it got a medium rating in Climate Policy and Renewable Energy sections.
- The report said India is "on track" to meet its 2030 emissions targets, compatible with a well-below 2-degree-Celsius scenario. "However, the renewable energy pathway is not on track for the 2030 target," it said.
- The report noted that India is among the nine countries responsible for 90 per cent of global coal production and it also plans to increase its oil, gas, and oil production by over 5 per cent by 2030. This is incompatible with the 1.5 degree Celsius target.

Overall Results CCPI 2023



GLOBAL SHIELD FINANCING FACILITY

GS-III ENVIRONMENT & ECOLOGY

Context

- The World Bank Group has announced a **Global Shield Financing Facility** to help developing countries access more financing for recovery from natural disasters and climate shocks.

Details

- This facility will support the Global Shield Against Climate Risks, a joint initiative launched today at COP27 by the G7 and V20 to better protect poor and vulnerable people from disasters by pre-arranging more financing before disasters strike.

Need:

- World Bank estimates that by 2040, over 130 million people could be pushed into extreme poverty by climate change.
- Access to disaster risk finance and insurance solutions for low-income countries is part of the World Bank's strategy for helping them adapt to the growing risks of natural disasters.

Features:

- The Global Shield Financing Facility will channel grants to developing countries through World Bank projects or through projects prepared by other participating partners, including UN agencies and multilateral development banks.
- It will also work closely with key stakeholders, such as civil society organizations, risk pools, private sector and humanitarian partners.
- The Global Shield Financing Facility will finance integrated financial protection packages that offer coordinated and consolidated financial support to those vulnerable to climate shocks and disasters.
- These financial packages will complement investments in climate adaptation and disaster risk reduction.
- Such packages will also enable and mobilize private capital for improved financial resilience, by offering private financial solutions, including insurance and other risk transfer instruments such as catastrophe bonds.

Background:

- The World Bank has been a longstanding partner to Germany and the U.K. in risk finance and has brought strong experience to the development of the Global Shield Against Climate Risks.
- The Global Shield Financing Facility builds on the earlier Global Risk Financing Facility, established in 2018, which has supported country operations in Africa, Asia, and Small Island Developing States.
- The program has been paired with \$3 billion in World Bank lending and helped to mobilize more than \$1bn in private sector capital.

NATIONAL BIO ENERGY PROGRAMME

GS-III ENVIRONMENT & ECOLOGY

Context

- The Ministry of New and Renewable Energy (MNRE), Government of India has notified the **National Bioenergy Programme** on November 2, 2022. MNRE has continued the National Bioenergy Programme for the period from FY 2021-22 to 2025-26. The Programme has been recommended for implementation in two Phases. The Phase-I of the Programme has been approved with a budget outlay of Rs. 858 crore.

Details

- The National Bioenergy Programme will comprises of the following sub-schemes:
- Waste to Energy Programme** (Programme on Energy from Urban, Industrial and Agricultural Wastes /Residues) to support setting up of large Biogas, BioCNG and Power plants (excluding MSW to Power projects).
- Biomass Programme** (Scheme to Support Manufacturing of Briquettes & Pellets and Promotion of Biomass (non-bagasse) based cogeneration in Industries) to support setting up of pellets and briquettes for use in power generation and non-bagasse based power generation projects.
- Biogas Programme** to support setting up of family and medium size Biogas in rural areas.
- To utilize huge surplus biomass, cattle dung, industrial and urban biowaste available in the country for recovery of energy, the MNRE has been promoting bioenergy in India since 1980s. One major support extended by MNRE has been Central Financial Assistance provided for setting up of Bioenergy projects such as Biogas, BioCNG, Power from urban, Industrial and Agricultural Waste / Residues for reducing their capital cost/ interest on loan therefore increase project viability.

Biofuels

- Biofuels are **liquid or gaseous fuels primarily produced from biomass —that is, plant or algae material or animal waste.**
- Biofuels can be used to replace or can be used in addition to diesel, petrol or other fossil fuels for transport, stationary, portable and other applications.
- Ethanol and biodiesel are the two main transport biofuels. These fuels can be produced from a variety of biomass.

Categories of biofuels

- First generation biofuels-** First-generation biofuels are made from sugar, starch, vegetable oil, or animal fats using conventional technology. Common first-generation biofuels include Bioalcohols, Biodiesel, Vegetable oil, Bioethers, Biogas.
- Second generation biofuels** -These are produced from non-food crops, such as cellulosic biofuels and waste biomass (stalks of wheat and corn, and wood). Examples include advanced biofuels like biohydrogen, biomethanol.
- Third generation biofuels-** These are produced from micro-organisms like algae.
- Fourth generation biofuels-** These are produced from genetically modified (GM) algae to enhance biofuel production.

Note: The prices of both sugarcane and bio-ethanol are set by the central government.

India's Biofuel Economy

- India is one of the fastest growing economies and the **third largest consumer of primary energy in the world after the US and China.**
- India's fuel energy security will remain vulnerable until alternative fuels are developed based on renewable feedstocks.
- The government of India targets reducing the country's carbon footprint by 30-35% by the year 2030.
- These targets will be achieved through a **five-pronged strategy which** includes:
 - Increasing domestic production
 - adopting biofuels and renewable
 - implementing energy efficiency norms
 - improving refinery processes and
 - achieving demand substitution.
- The government of India has proposed a target of **20% blending of ethanol in petrol and 5% blending of biodiesel in diesel by 2030** and introduced multiple initiatives to increase indigenous production of biofuels.

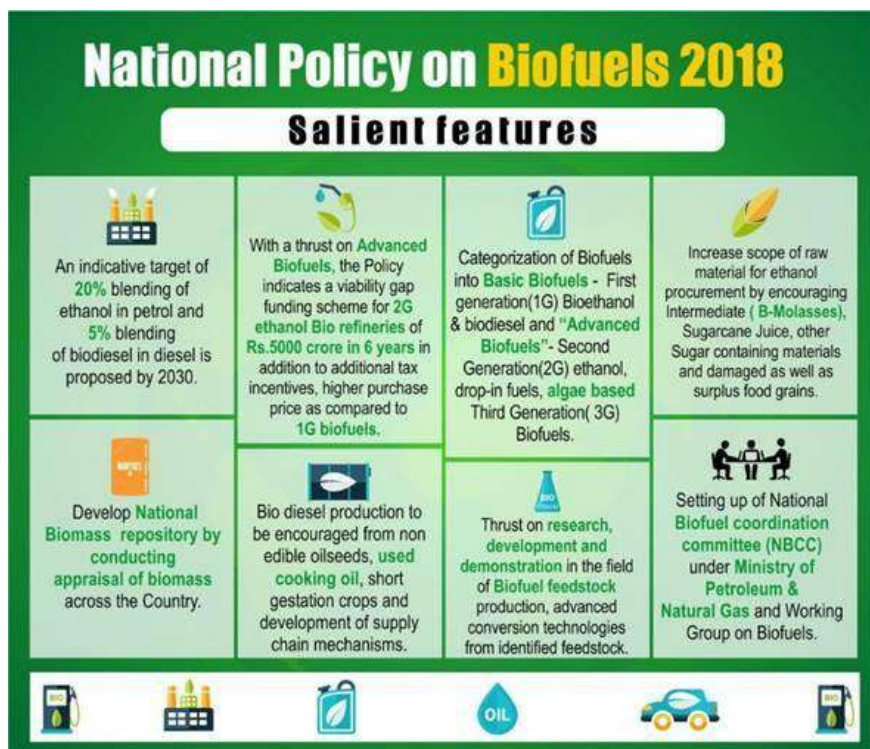
Major programs supporting the development of biofuels production and use in India include

- Viable gap funding (VGF)** for commercial scale 2G ethanol plants under **Pradhan Mantri JI-VAN Yojana**
- Financial assistance for demonstration scale 2G integrated bioethanol under **Pradhan Mantri JI-VAN Yojana.**

- Grants for research and development from DBT to 5 Centres for Excellence in the Bioenergy area.
- The **National Policy on Biofuels 2018** specifically promotes advanced biofuels to achieve a target of 20% blending of biofuels with fossil-based fuels by 2030.

Measures that can improve Bio-fuel economy

- Currently in India, Biofuel development is centered around the cultivation of Jatropha plant seeds. There is **need to develop new feedstock for biofuels**.
- To facilitate the blending of biofuels with conventional fuels, there is need to set up advanced biorefineries.
- Research and development should be promoted to support generation of bio-fuel from waste. As it will ensure realizing the goal of waste management and waste to energy.



INDIA'S LONG-TERM CLIMATE ACTION STRATEGY

GS-III ENVIRONMENT & ECOLOGY

Context

- India submitted its Long-Term Low Emission Development Strategy to the United Nations Framework Convention on Climate Change (UNFCCC), during the 27th Conference of Parties (COP27)

Details

- The **two themes of "climate justice"** and "**sustainable lifestyles**", alongside the principles of Equity and Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC), in the light of national circumstances, that India had emphasized at Paris, are at the heart of a low-carbon, low-emissions future.
- Similarly, the LT-LEDs has been prepared in the framework of India's right to an equitable and fair share of the global carbon budget, which is the practical implementation of India's call for "climate justice." This is essential to ensure that there are no constraints on realizing India's vision of rapid growth and economic transformation, while protecting the environment.
- The LT-LEDs is **also informed by the vision of LiFE, Lifestyle for the Environment**, that calls for a world-wide paradigm shift from mindless and destructive consumption to mindful and deliberate utilization.

India's road to 'net zero'

At COP-27, India announced its long-term strategy to transition to a 'low emissions' pathway to become carbon neutral by 2070

KEY MILESTONES

- The National Hydrogen Mission, launched in 2021, aims to make India a green hydrogen hub
- At least a three-fold increase in nuclear capacity by 2032
- Achieving an ethanol blending target of 20% by 2025
- Maximising the use of electric vehicles, increase public transport
- Increased climate finance to be provided by developed nations
- The long-term strategy aims at keeping global temperatures well below 2 degrees Celsius and, ambitiously, 1.5 degrees Celsius by the century-end



Environment Minister Bhupender Yadav at the COP-27 summit in Egypt on Monday. REUTERS

The salient features of the strategy

- The focus will be on the **rational utilization of national resources** with due regard to energy security. The transitions from fossil fuels will be undertaken in a just, smooth, sustainable and all-inclusive manner.
 - The National Hydrogen Mission launched in 2021 aims to make India a green hydrogen hub. The rapid expansion of green hydrogen production, increasing electrolyser manufacturing capacity in the country, and three-fold increase in nuclear capacity by 2032 are some of the other milestones that are envisaged alongside overall development of the power sector.

- **Increased use of biofuels**, especially ethanol blending in petrol, the drive to increase electric vehicle penetration, and the increased use of green hydrogen fuel are expected to drive the low carbon development of the transport sector. India aspires to maximise the use of electric vehicles, ethanol blending to reach 20% by 2025, and a strong modal shift to public transport for passenger and freight.
- While urbanisation will continue as a strong trend from our current relatively low base, **future sustainable and climate resilient urban development will be driven by smart city initiatives, integrated planning of cities for mainstreaming adaptation and enhancing energy and resource efficiency, effective green building codes and rapid developments in innovative solid and liquid waste management.**
- India's industrial sector will continue on a strong growth path, in the perspective of 'Aatmanirbhar Bharat' and 'Make in India'. Low carbon development transitions in the sector should not impact energy security, energy access and employment. **The focus will be on improving energy efficiency by the Perform, Achieve and Trade (PAT) scheme, National Hydrogen Mission, high level of electrification in all relevant processes and activities, enhancing material efficiency and recycling leading to expansion of circular economy, and exploring options for hard-to-abate sectors, such as steel, cement, aluminium and others.**
- India has a strong record of enhancing forest and tree cover in the last three decades alongside high economic growth. India's forest fire incidence is well below global levels, while its forest and tree cover are a net sink absorbing 15% of CO₂ emissions in 2016. India is on track to fulfilling its NDC commitment of 2.5 to 3 billion tonnes of additional carbon sequestration in forest and tree cover by 2030.
- The transition to low carbon development pathway will entail several costs pertaining to the development of new technologies, new infrastructure, and other transaction costs. While several estimates exist, varying across studies, they all fall generally in the range of trillions of dollars by 2050. **Provision of climate finance by developed countries will play a very significant role and needs to be considerably enhanced, in the form of grants and concessional loans, ensuring scale, scope and speed, predominantly from public sources, in accordance with the principles of the UNFCCC.**

India's approach is based on the following four key considerations that underpin its long-term low-carbon development strategy

- India has contributed little to global warming, its historical contribution to cumulative global GHG emissions being minuscule despite having a share of ~17% of the world's population.
- India has significant energy needs for development.
- India is committed to pursuing low-carbon strategies for development and is actively pursuing them, as per national circumstances
- India needs to build climate resilience.

NAGOYA PROTOCOL

GS-III ENVIRONMENT & ECOLOGY

Context

- Mexican indigenous groups are yet to benefit under Nagoya Protocol.

Details

The Convention on Biological Diversity (CBD):

- Informally known as the Biodiversity Convention, it is a multilateral treaty.
- The Convention has three main goals:
 - the conservation of biological diversity (or biodiversity);
 - the sustainable use of its components; and
 - the fair and equitable sharing of benefits arising from genetic resources.
- Objective: To develop national strategies for the conservation and sustainable use of biological diversity.
- The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993.
- It has two supplementary agreements, the Cartagena Protocol and Nagoya Protocol.

Cartagena Protocol on Biosafety

- It is an international treaty governing the movements of living modified organisms (LMOs) resulting from modern biotechnology from one country to another.
- It was adopted on 29 January 2000 as a supplementary agreement to the CBD and entered into force on 11 September 2003.

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS)

- It is another supplementary agreement to the CBD.

- It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources.
- The Nagoya Protocol was adopted on 29 October 2010 in Nagoya, Japan and entered into force on 12 October 2014.
- 2010 was the International Year of Biodiversity
- UN declared 2011 to 2020 as the United Nations Decade on Biodiversity.
- The Convention's Strategic Plan for Biodiversity 2011-2020, created in 2010, including the Aichi Biodiversity Targets
- India signed the Nagoya Protocol in 2011 and ratified it in October 2012.
- The ratification by India was done at the 11th Conference of Parties (COP) to the CBD, which was conducted in Hyderabad.

CHAMPIONS OF EARTH AWARD

GS-III ENVIRONMENT & ECOLOGY

Context

- Indian wildlife biologist Dr Purnima Devi Barman was recently awarded with Champions of the Earth award in the Entrepreneurial vision category, UN's highest environmental honour. She is the founder of the Hargila Army and senior project manager of the Avifauna Research and Conservation Division, Aaranyak.

Details

- The Champions of the Earth is an appreciation for innovative ways implemented by the awardees across the world to support nature's extraordinary capacity for renewal.
- Earlier, Prime Minister Narendra Modi was conferred with United Nation's Champions of the Earth Award 2018. PM Modi was the third Indian to receive this award after Tulsi Tanti, Chairman of the Suzlon Group, and Afroz Alam, a lawyer who led the clean-up at Mumbai's Versova beach.

Why is Burman's work important?

- The greater adjutant stork is the second-rarest stork species in the world.
- Their population has dropped to 1,200 today, less than 1 per cent of what they numbered a century ago, due to the destruction of their natural habitat.
- The urbanisation of rural areas is speeding up and wetlands where the storks thrive have been drained, polluted and degraded, replaced by buildings, roads and mobile phone towers.
- Barman had to change perceptions of the bird as a bad omen, bad luck or a disease carrier among people in Assam.
- She assembled a group of village women to help her and named the group as the 'Hargila Army' after the stork, known as 'hargila' in Assamese (meaning 'bone swallower').
- In 2017, Barman began building tall bamboo nesting platforms for the endangered birds to hatch their eggs and a couple of years later the first greater adjutant stork chicks were born.
- The Hargila Army has helped communities plant 45,000 saplings near stork-nesting trees and wetland areas to support future stork populations and they are planning to plant 60,000 saplings next year.
- The Hargila Army also works to reduce pollution in rivers by organising cleaning drives on the banks of rivers and in wetlands.
- Barman has helped the women become self-sufficient by weaving looms and yarn. They now create and sell textiles decorated with motifs of the 'hargila'. This entrepreneurship is creating awareness about the birds and also making women financially independent.

About Champions of the Earth award

- **UNEP's Champions of the Earth** honours individuals, groups, and organizations whose actions have a transformative impact on the environment.
- The annual Champions of the Earth award is the **UN's highest environmental honour**.
- It recognizes outstanding leaders from government, civil society, and the private sector.
- Since its **inception in 2005**, the annual Champions of the Earth award has been awarded to trailblazers at the forefront of efforts to protect our natural world.
- The Champions of the Earth award will celebrate visionaries in three categories: Inspiration and action, Entrepreneurial vision, Science and innovation

IVORY TRADE

GS-III ENVIRONMENT & ECOLOGY

Context

- For the first time since joining the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) in 1976, India did not vote against a proposal seeking to re-open the ivory trade.

Details

- That proposal, to allow a regular form of controlled trade in ivory from Namibia, Botswana, South Africa and Zimbabwe, was defeated 83-15 at the 19th meeting of the CITES Conference of the Parties (CoP19) in Panama City.
- **India's abstention — a break from its past stand — was in tune with what Namibia had asked for when it agreed to transfer cheetahs this summer.**
- Under that agreement signed, the two countries committed to promoting “sustainable utilisation and management of biodiversity” by supporting each other “at international forums including meetings” of the CITES.
- While the word “ivory” was not mentioned, Namibia sought India's backing, under the commitment to support “sustainable management” at CITES, for its longstanding proposal to allow trade in ivory.

Background

- For over three decades, India has opposed the international ivory trade.
- In fact, India designed the iconic CITES logo in the form of an elephant way back in 1981.
- The ivory trade was globally banned in 1989 when all African elephant populations were put in CITES Appendix I.
- The populations of Namibia, Botswana and Zimbabwe were transferred to Appendix II in 1997 and South Africa's in 2000.
- No trade is allowed in species listed in CITES Appendix I while trade is strictly regulated in those under Appendix II.
- In 1999 and 2008, Namibia, along with Zimbabwe and, later, Botswana and South Africa, was permitted by CITES to conduct one-off sales of ivory stockpiled from natural elephant deaths and seizures from poachers.
- Subsequently, Namibia's proposal for allowing a regular form of controlled trade in ivory by delisting the elephant populations of the four countries from CITES Appendix II was rejected at the CoP17 (2016) and CoP18 (2019). At CoP19, the proposal was moved by Zimbabwe but met the same fate yet again.
- Namibia and other southern African countries argue that their elephant populations have bounced back and that their stockpiled ivory, if sold internationally, can generate much-needed revenue for elephant conservation and incentivizing communities.
- Opponents of the ivory trade counter that any form of supply stokes demand and that sharp spikes in elephant poaching were recorded across the globe after one-off sales were allowed by the CITES in 1999 and 2008.

About the CITES

- Also known as the Washington Convention, CITES is an international agreement (Secretariat - Geneva, Switzerland) between governments to ensure that international trade in wild animals and plants does not threaten the survival of the species.
- It was drafted at a meeting of members of the International Union for Conservation of Nature (IUCN) in 1963.
- The convention was opened for signature (in Washington D.C.) in 1973 and CITES entered into force on 1 July 1975.
- With 184 Parties today (India since 1976), CITES is one of the conservation treaties with the most members.
- Although CITES is legally binding on the Parties (meaning they must implement the Convention), it does not replace national legislation.
- Under CITES, plant and animal specimens are classified into three categories (Appendices) based on the threat to their extinction.
- The Convention requires countries to regulate the trade of all listed specimens of wild animals and plants through permits and also seeks to regulate the possession of live animal specimens.



MOUNT MAUNA LOA

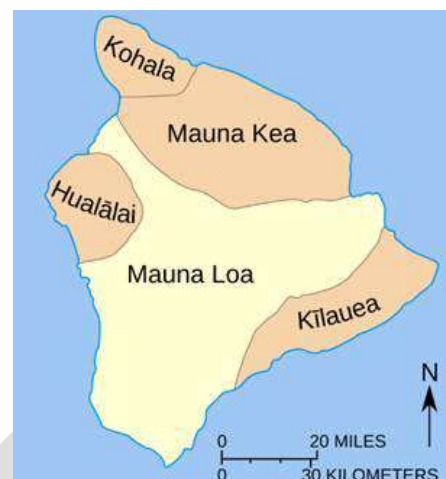
PLACES IN NEWS

Context

- The ground is shaking at Mauna Loa, the largest active volcano in the world, indicating that it could erupt.

Where is Mauna Loa?

- Mauna Loa is **one of five volcanoes that together make up the Big Island of Hawaii**.
- It is the southernmost island in the Hawaiian archipelago in the Pacific Ocean.
- It is **an active shield volcano** with relatively gentle slopes.
- It's not the tallest (that title goes to Mauna Kea) but it's the **largest and makes up about half of the island's land mass**.
- It **sits immediately north of Kilauea volcano**, which is currently erupting from its summit crater.
- Kilauea erupted in 2018 and destroyed 700 homes and sent rivers of lava spreading across farms and into the ocean. Mauna Loa last erupted 38 years ago. In written history, dating to 1843, it's erupted 33 times.



SUKHATAL LAKE

PLACES IN NEWS

Context

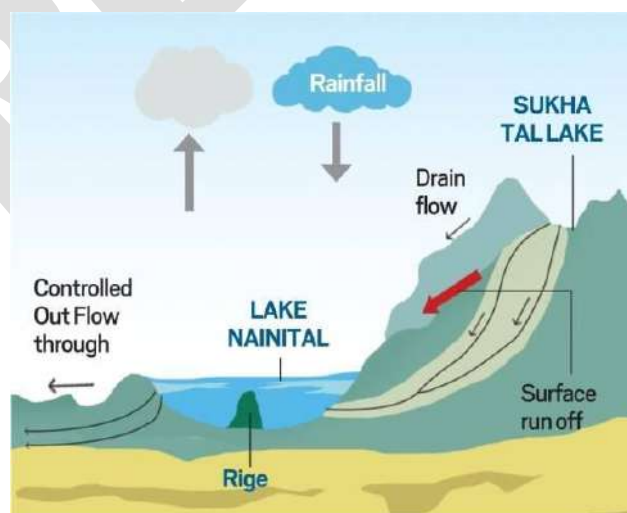
- The plans of the Nainital administration to beautify Sukhatal lake, the main recharge zone of Nainital lake, has led to concerns among residents. Sukhatal, which was spread across 44,000 sqm over a decade ago, has shrunk to approximately 23,000 sqm now.

Sukha Tal Lake in Nainital, Uttarakhand

- It is a freshwater lake having a length of 150 metres and 10 metres deep. It is situated 50 metres above the Nainital lake.
- The lake is **surrounded by dense pine and oak forests**.
- These verdant forests are home to a number of migratory birds who visit this place from all over the globe.

Important wetland

- The wetland has a unique function. It acts like a sponge absorbing monsoon water and percolating it down its porous limestone rocks into its aquifer.
- During non-monsoon, when Nainital lake's level falls for not receiving any rainfall, Sukhatal gradually releases down the stored groundwater towards the lake.
- A primary recharge zone of Nainital lake by hydrology reports, Sukhatal supplies more than 50 per cent of water to the Nainital lake. The lake, in turn, meets water requirements of 90% of Nainital residents.
- The wetland soaking torrential rain and runoffs from its surrounding drains also helps in significant flood control for the eco-sensitive area of Nainital.
- Despite serving a crucial role, Sukhatal is not officially granted a 'wetland' status and hence given 'no protection'.



SHORT NEWS ARTICLES

GS-I

CULTURE & HISTORY

Wangala Dance

Context

- Members of the Garo tribal community recently performed Wangala dance on the occasion of 'The Rising Sun Water Fest-2022' on the banks of Umiam Lake in Meghalaya.

Details

- Wangala Festival of Meghalaya is a most popular festival among the Garos of Meghalaya, India.
- Wangala Festival is a harvest festival held in honour of Saljong, the Sun-god of fertility.
- The celebration of the Wangala Festival marks the end of a period of toil, which brings good output of the fields. It also signifies the onset of winter.
- The ceremony performed on first day is known as "Ragula" is performed inside the house of the chief. On the second day is known as "Kakkat".
- The popular dance forms are performed during the festival, itself has certain subtle variations, the main motif being a queue of two parallel lines - one of men and other of women clad in their festive fineries. Young and old join the festivities with equal enthusiasm.
- While the men beat the drums, the line moves forward in rhythmic accord.
- The 'orchestra' of men includes drums, gong and flutes, punctuated by the sonorous music of an primitive flute made of buffalo horn.
- Basically, the Wangala Festival is a way to preserve and promote the cultural identity of Garos in Meghalaya.

Megalithic Burial Sites

Context

- According to recent findings, Andhra Pradesh has the largest anthropomorphic burial site collection in Tirupati district. Anthropomorphic sites are those marked by a representation of human form above the megalithic burials.

Details

- Megaliths were constructed either as burial sites or commemorative (non-sepulchral) memorials.
- The former are sites with actual burial remains, such as dolmenoid cists (box-shaped stone burial chambers), cairn circles (stone circles with defined peripheries) and capstones (distinctive mushroom-shaped burial chambers found mainly in Kerala).
- The urn or the sarcophagus containing the mortal remains was usually made of terracotta.
- Non-sepulchral megaliths include memorial sites such as menhirs.
- Taken together, these monuments lend these disparate peoples the common traits of what we know as megalithic culture, one which lasted from the Neolithic Stone Age to the early Historical Period (2500 BC to AD 200) across the world.
- In India, archaeologists trace the majority of the megaliths to the Iron Age (1500 BC to 500 BC), though some sites precede the Iron Age, extending up to 2000 BC.
- Megaliths are spread across the Indian subcontinent, though the bulk of them are found in peninsular India, concentrated in the states of Maharashtra (mainly in Vidarbha), Karnataka, Tamil Nadu, Kerala, Andhra Pradesh and Telangana.
- Around 2,200 megalithic sites can be found in peninsular India itself, most of them unexcavated.
- Even today, a living megalithic culture endures among some tribes such as the Gonds of central India and the Khasis of Meghalaya.
- Megaliths were not built for commoners. They signify the emergence of a ruling class or elite who presided over a surplus economy.
- The very idea of burying the dead along with burial goods indicates strong belief in life after death and possibly rebirth among megalithic people.
- The respect accorded to the buried individual ensured that the grave and the goods contained within were not subjected to vandalism and theft.
- Paddy husk has been found in burial sites, further proof of the megalithic peoples' commitment towards ensuring their dead a

comfortable afterlife. They also believed in some idea of a soul.

- Sangam literature has a few mentions of the soul reaching the upper world out of three worlds.
- In concordance with their belief in life after death, the megalithic people were in the habit of interring burial goods along with mortal remains. These can be broadly categorized as "ceramic, iron and copper artefacts, beads of various raw materials, gold & silver ornaments, terracotta objects, objects of art and miscellaneous objects", according to Chakrabarti.

Patan Patola

Context

- At the G20 summit, Prime Minister Narendra Modi gifted traditional artworks from Gujarat and Himachal Pradesh to world leaders.
- **PM Modi presented US President Joe Biden with Kangra miniature paintings; UK PM Rishi Sunak with 'Mata Ni Pachedi', a handmade Gujarat textile offered in temples; 'Pithora', a tribal folk art from Chhota Udaipur, to Australian leader Anthony Albanese; agate bowls from Kutch to the leaders of France, Germany and Singapore; and a 'Patan Patola' scarf to his Italian counterpart Giorgia Meloni.**

Details

What is Patan Patola?

- The ancient art of double ikat or Patola woven in pure silk **dates back to the 11th century.**
- The Patola fabrics bear an equal intensity of colours and design on both sides.
- This peculiar quality has its origins in an intricate and difficult technique of dyeing or knot dyeing, known as 'bandhani', on the warp and weft separately before weaving.
- One of the major practitioners of the dwindling art form is the Salvi family from North Gujarat.
- **Patola is woven on primitive hand-operated harness looms made out of rosewood and bamboo strips. The loom lies on a slant. The other commonly worn Patola is the Rajkot Patola, woven on a flat loom.**
- While possessing and wearing a Patola is considered a matter of pride, the fabric has largely remained inaccessible to common people because of its high price.

The weaving process

- The process involves warp and weft silk threads that are tied with cotton thread on portions marked with the proposed design. This tied portion then remains unexposed to colours while dyeing, which is followed by tying, untying, redyeing and dyeing in different shades.
- Traditionally, only pure silk and natural and chemical dyes were used, but since the last century, they have been replaced by fast-to-bleach and easy-to-dye chemical colours.
- The product designs based on traditional motifs called "bhat", which include "narikunj", "paan", "phulwadi", "rasbhat", flowers, animals birds, human figures, etc.
- In 1342 AD, the traveller Ibn Batuta had carried patolas as gifts to many kings. They were amply used in the 17th and 18th centuries as precious gift items.
- Ikat weaves are also found in Odisha's famous Sambalpuri sarees, which, unlike Patola, are woven in cotton yarn too, as is the Pochampally saree from Andhra Pradesh.

Lachit Barphukan

Context

- The 3-day long celebrations of 400th birth anniversary of Ahom commander Lachit Barphukan began in New Delhi. Union Finance minister Nirmala Sitharaman has inaugurated exhibition on this occasion highlighting the life and achievement of Ahom dynasty and Lachit Barphukan among others.

Details

Who was Lachit Barphukan?

- **Lachit Barphukan is a 17th Century commander of the Ahom forces. Born on 24 November 1622, Barphukan is renowned for the 1671 battle of Saraighat.**
- His father Momai Tamuli Borbarua was the commander-in-chief of the Ahom army.
- Ahom kings ruled what is now called Assam and parts of other neighbouring states for nearly 600 years between the 13th and 19th centuries.
- The kingdom witnessed many threats between 1615 and 1682 from the Mughals – first Jahangir and later Aurangzeb
 - The Ahom rulers made significant counterattacks between 1667 and 1682 to regain their occupied territories. Barphukan was a major part of the battles fought during this period.
 - Barphukan was well-versed in humanities, military skills, and the scriptures.
 - He also held various positions in the kingdom including 'Soladhara Barua' (scarf-bearer of the Ahom king), 'Ghora Barua' (manager of the royal stable), commander of Simulgarh Fort and 'Dolakaxaria Barua' (superintendent of royal household)

guards) of king Chakradhwaj Singha, as per *India Today*

- Barphukon was appointed as the commander of the Ahom army in August 1667 by Ahom king Singha.
- Following the heavy losses, Mughal king Aurangzeb sent a large army headed by Raja Ram Singh I to recapture the lost territories.
- In August 1669, Barphukon and his army trounced the Mughal cavalry in the battle of Alaboi which was fought in the Alaboi Hills near Dadara in North Guwahati. 10,000 Ahoms had lost their lives in the battle.
- The Alaboi war memorial is being built at Dadara in Assam's Kamrup district which will feature Barphukon's statue and a 100-feet-long 'Hengdang' (Ahom sword).

Battle of Saraighat

- **The greatest naval battle ever fought on a river.**
- In Saraighat, Barphukon was able to coax a naval battle with the Mughals on the waters of the Brahmaputra by "feigning an attack with a few ships from the front".
- Barphukon was seriously ill during the battle but when he heard of the Mughal fleet was making advances, he forgot about his illness and led his soldiers from the front.
- Barphukon died in Kaliabor on 25 April 1672 at the age of 50.
- To commemorate Lachit Barphukon, the best cadet officer of every batch graduating from the National Defence Academy (NDA) is awarded the Lachit Barphukon Gold Medal. His bust can also be found at the NDA's entrance.

Gandhi Mandela Award 2022

About

- Recently, the **14th Dalai Lama was honoured with the Gandhi Mandela Award 2022 by the Governor of Himachal Pradesh.**
 - **Dalai Lama** is the recipient of the 1989 Nobel Peace Prize.
 - Dalai Lama has developed his philosophy of peace from a great reverence for all things living and upon the concept of universal responsibility embracing all mankind as well as nature.
- **The Gandhi Mandela Foundation is a government of India registered Trust.**
 - It is a non-profit organisation, formed with the motive to promote Mahatma Gandhi's and former President of South Africa Nelson Mandela's values of non-violence.
 - It has constituted an international prize, the Gandhi Mandela Award.
 - The foundation instituted the award on the 150th birth anniversary of MK Gandhi.
- The **award is given to the personalities who have carried forward the legacies of Gandhi and Mandela** by making significant contributions in the fields of Peace, Social Welfare, Culture, Environment, Education, Healthcare, Sports and Innovation.

Nyingma Sect

Context

- In a significant development in the Tibetan Buddhist circles, the Nyingma sect has identified a boy from Spiti in Himachal Pradesh as the reincarnation of the late Taklung Setrunga Rinpoche, a scholar known for his knowledge of Tibetan Tantric school.

Details

- **Nyingma or Ancient school of Tibetan Buddhism is the name given to the followers of those original translations of the teachings of the Buddha into Tibetan which were carried out up until the time of the Indian translator Smrtijñanakirti in the late tenth century.**
- They are known as the 'Earlier Translation School', Ngagyur Nyingma, distinguishing them from the 'New Schools', Sarma, such as the Kadam, Kagyü, Sakya, and eventually Gelug, which followed the later translations made from the time of the great translator Rinchen Zangpo (958-1055) onwards.
- The Nyingmapa order has the longest history establishment history of transmitting all the four major traditions of Tibetan Buddhism
- This is reflected in the name Nyingma, which literary means "Old Order".
- The Other three main Tibetan Buddhism schools, Sakya, Kagyu, and Gelug, collectively refer to New Order (Sarma).

Padmasambhava

- Padmasambhava was a tantric Buddhist master from India who is central to the lineage of the Nyingma tradition.
- Padmasambhava was invited to Tibet by King Trisong Detsen in the eighth century, and he is said to have stayed in Tibet for more than half a century.
- Padmasambhava, together with King Trisong Detsen and the abbot Shantarakshita, founded the first monastic university of Samye, where many Indian panditas, such as Vimalamitra, came together with Tibetan translators to translate texts from India into the Tibetan language.

Teachings of the Nyingma School

- The Nyingma teachings are divided into the Long Transmission of Kama and the Short Transmission of Terma; other teachings were received by masters directly in Pure Visions from deities or gurus, in experiences or in dreams.
- Particular to the Nyingma school is the division of the teachings into nine yanas (nine vehicles).

Literature

- The special tantras of the Nyingmapas are the three inner tantras of Mahayoga, Anuyoga and Atiyoga or Dzogchen.
- Some of these appear in the Tibetan Kangyur, but most of the Nyingma tantras are included in a separate collection, known as the Nyingma Gyübum.
- The Nyingma Gyübum was first compiled by the great tertön Ratna Lingpa (1403–78) after similar compilations of texts made in the 14th century, such as the Kangyur and the Tengyur, had omitted many of the Nyingma tantras.

GEOGRAPHY

Fujiwhara Effect

Context

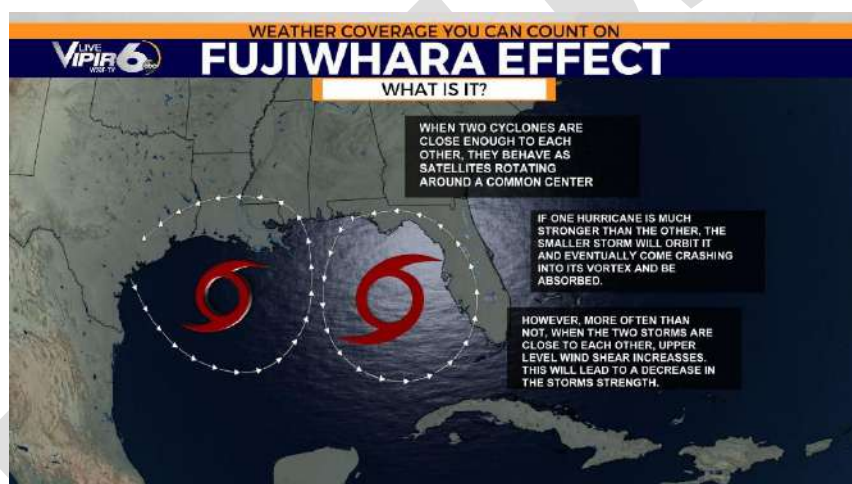
- On September 1, 2022, super typhoon Hinnamnor, the strongest tropical cyclone of the year, was hurtling towards Taiwan from the western Pacific Ocean. Another tropical storm called Gardo was moving towards Hinnamnor from its southeast.
- As the two approached each other, they started a dance around the central line between them, showcasing a textbook example of what is known as the Fujiwhara Effect.

Fujiwhara Effect

- The Fujiwhara effect, is a phenomenon that occurs when two nearby cyclonic vortices move around each other and close the distance between the circulations of their corresponding low-pressure areas. The effect is **named after Sakuhei Fujiwhara**, the Japanese meteorologist who initially described the effect.
- Binary interaction of smaller circulations can cause the development of a larger cyclone, or cause two cyclones to merge into one.
- Extratropical cyclones typically engage in binary interaction when within 2,000 kilometres of one another, while tropical cyclones typically interact within 1,400 kilometres of each other.

Description

- When cyclones are in proximity of one another, their centers will circle each other cyclonically (counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere) about a point between the two systems due to their cyclonic wind circulations.
- The two vortices will be attracted to each other, and **eventually spiral into the center point and merge**. It has **not been agreed upon** whether this is due to the divergent portion of the wind or vorticity advection.
- When the two vortices are of unequal size, the larger vortex will tend to dominate the interaction, and the smaller vortex will circle around it.



GS-II POLITY

Civil Air Navigation Services Organisation

About

- Goa hosted the Civil Air Navigation Services Organization (CANSO) Conference from 1st to 3rd November 2022.
 - “Think Global, Collaborate Regional, and Accomplish Local” was the theme of the conference.
- The delegates discussed and collaborated on the key issues that will support the future of Asia’s aviation industry and turn the

Complete Air Traffic System (CATS) Global Council's vision for the skies of 2045 into a reality.

- The Conference also covered digitalization and automation as key enablers in delivering CANSO's vision for future skies.
- **The Civil Air Navigation Services Organization (CANSO)** is the global voice of the air traffic management (ATM) industry.
 - Its members support over 90% of the world's air traffic and include air navigation service providers, airspace users and operators, manufacturers and aviation industry suppliers.
 - The organization looks at global Air Traffic Management performance by connecting the industry to share knowledge, expertise and innovation.

About Airports Authority of India

- The Airports Authority of India (AAI) is responsible for the provision of Air Navigation Services over the Indian continental airspace and bordering oceanic airspace.
- AAI also functions as the major airport operator in India, responsible for the management of 133 Airports which include 24 International Airports, 78 Domestic Airports, 10 Customs Airports and 21 Civil Enclaves.

Electoral Bond Scheme Amendment

In News

- The Union Government has amended the Electoral Bond Scheme to grant itself the power to allow the sale of electoral bonds for an extra fortnight in a year and has used the power to open a fresh one-week window for issuing electoral bonds.

Electoral Bond Scheme

- The Electoral bonds were introduced with the Finance Bill (2017).
- **The Union Government has notified the detailed guidelines about the Electoral Bonds Scheme in January 2018**, intending to cleanse the system of political funding in the country.
- The Electoral Bond is a bearer instrument like a Promissory Note and an interest-free banking instrument.
 - **A bearer instrument** is a document that authorises the holder with the right of ownership or title of the property, such as Currency, shares or bonds.
 - Unlike normally registered instruments, no record is kept about the owners of bearer instruments or the transfer of ownership.
 - Whoever physically holds the bearer document is assumed to be the owner of the property.
- **Electoral bonds may be purchased by a person, who is a citizen of India or established in India.**
 - An individual can buy electoral bonds either singly or jointly with other individuals.
 - The Electoral Bond does not carry the name of the payee.
- **Electoral bonds would be issued / purchased for any value, in multiples of Rs 1,000 from the specified branches of the State Bank of India (SBI).**
 - Electoral Bonds have a validity of 15 days.
- **Political parties** registered under Section 29A of the Representation of the People Act, 1951 and also **secured a minimum of 1% of voters polled in the last general election to the House of the People or the Legislative Assembly of the State is eligible to receive electoral bonds.**
- The Electoral Bonds shall be available for purchase for 10 days each in January, April, July and October, as may be specified by the Central Government.
 - An additional period of 30 days shall be specified by the Central Government in the year of the General election to the House of People.
- **Electoral Bonds can be encashed by an eligible political party only through their bank accounts with the authorized bank.**
 - The bonds do not have the name of the donor or the receiving political party.
 - It only carries a unique hidden alphanumeric serial number as an in-built security feature.
- **Electoral bonds protect the identity of political donors and parties receiving contributions.**
 - Donors who contribute less than Rs 20,000 to political parties through the purchase of electoral bonds need not provide their identity details such as PAN, etc.

Armed Forces Tribunals

In News

- The Appointments Committee of the Cabinet headed by the Prime Minister (PM) has approved appointments to fill the Armed Forces Tribunal (AFT) vacancies.
- Traditionally only retired Army, Navy and Air Force officers were appointed as administrative members of the AFT, but for the 1st time, a retired officer from the Indian Defence Accounts Service (IDAS) has been appointed as an administrative member of the AFT.

Armed Forces Tribunal

- It is a statutory body under the Armed Forces Tribunal Act 2007.

- The **main bench is located in New Delhi and 10 regional benches across the country.**
 - Regional Benches at Chandigarh, Lucknow, Kolkata, Guwahati, Chennai, Kochi, Mumbai, Jabalpur, Srinagar and Jaipur.
- **Each Bench includes judicial members and Administrative members.**
 - Judicial Members are to be retired High Court Judges.
 - Administrative Members are retired Members of the Armed Forces who have held the rank of Major General or equivalent or above for 3 years or more.
- **Only a retired Supreme Court judge or a retired Chief Justice of the High Court can become the chairperson of the Tribunal.**
- The Tribunal has the power to **adjudicate disputes and complaints related to commission, appointments, enrolments and conditions of service concerning;**
 - The Army Act, of 1950
 - The Navy Act, of 1957
 - The Air Force Act, of 1950
- The Tribunal functions according to the Armed Forces Tribunal (Procedure) rules, 2008.
- All proceedings of the tribunal are in the English language.
- **The Tribunal normally follows the procedure practised in High Courts.**

Places of Worship Act 1991

In News

- **The Supreme Court of India allowed the Union government more time to file an affidavit on the petition against the Places of Worship Act of 1991.**
 - The Act prohibits the “conversion of any place of worship” and states places like churches, temples, mosques, etc. cannot be changed from as they stood on August 15, 1947.

The Places of Worship Act, 1991

- The Places of Worship Act 1991 was passed by parliament during the Ram Janmabhoomi movement.
- The Act **was introduced to promote peace, harmony and brotherhood.**
- The main objective of the Act is to **maintain the religious character of any such place as it existed on the 15th day of August 1947 (at the time of Independence).**
- The act **prohibits conversion of any place of worship or changing the religious character of any place from its status at the time of Independence.**
- The main purpose behind the Act was to check and control communal hatred and promote peace and harmony in the country.
- The 1991 Act covered all disputed sites to which religious groups had raised a claim.
 - **The Ram Janmabhoomi-Babri case was excluded from the provision of the Act.**
- Section 4(2) of the Act says that any legal proceeding concerning the conversion of the religious character of any place of worship existing on August 15, 1947, pending before any court, shall be dropped and no fresh suit or legal proceeding shall be initiated.

Way Forward

- India was not a constitutional democracy before August 15, 1947. **There was no rule of law during the medieval period when a temple was allegedly destroyed.**
- In the past, the rule of law did not exist and the polity was characterized by an expansionist attitude.
 - The medieval polity was quite different from the modern Indian political entity.
 - **But today, we live in a modern democracy with constitutional values and follow rule of law.**
- The recent incidents appear to be a **part of an agenda to create deep communal divides and serious injuries to peace and harmony and undermine the country's social and political fabric.**
- The Supreme Court in the demolition of the Babri Masjid case has described it as a criminal act.
 - The court said that “the **State has a constitutional commitment and constitutional obligations to uphold the equality of all religions and secularism which is a part of the basic features of the Constitution**”.
 - The Court concluded that the **Places of Worship Act 1991 is necessary for upholding our commitment to secularism under the Indian Constitution.**
- The **Government, Administration and Courts must decide the case based on law and constitutional values instead of emotions and Majoritarianism political pressure.**

GOVERNANCE

National Suicide Prevention Policy

In News

- The Union Ministry of Health and Family Welfare has announced a National Suicide Prevention Strategy.
- The main objective is to provide time-bound action plans and multi-sectoral collaborations to achieve a reduction in suicide mortality by 10% by 2030.

Details

- The strategy is in line with the WHO's South East-Asia Region Strategy for suicide prevention.
- **Key points of the strategy;**
 - Establish an effective surveillance mechanism for suicide prevention within the next 3 years.
 - Establish psychiatric outpatient departments in all districts within the next 5 years to provide suicide prevention services through the District Mental Health Programme.
 - Integrate a mental well-being curriculum in all educational institutions within the next 8 years
 - Develop guidelines for responsible media reporting of suicides, and restricting access to means of suicide.
 - Developing community resilience and societal support for suicide prevention.

Way Forward

- **In India, more than one lakh lives are lost every year to suicide, and it is the top killer in the 15-29 years category.**
 - In the past three years, the suicide rate has increased from 10.2 to 11.3 per 1, 00,000 population.
 - The most common reasons for suicide include family problems and illnesses, which account for 34% and 18% of all suicide-related deaths.
- Suicides impact all sections of society and thus require concerted and collaborative efforts from individuals and the community at large.

Performance Grading Index

In News

- The Performance Grading Index (PGI) for States/UTs for 2020-21, released by the Department of School Education and Literacy, Ministry of Education.
 - It is an index for evidence-based comprehensive analysis of the school education system across India.
 - The indicator-wise PGI score shows the areas where a State needs to improve.

About Performance Grading Index for Districts

- The index analyses the performance of the school education system at the States/UTs level.
- The **Indian Education System;**
 - One of the largest in the world.
 - Nearly 15 lakh schools.
 - Approx 95 lakh teachers.
 - About 26.5 crore students from varied socioeconomic backgrounds.
- The **data for the assessment is filled in by the institution through the online portal.**
- The **index structure contains 1000 points across 70 indicators that are grouped into 2 categories; Outcomes and Governance Management.**
 - These categories are further sub-divided into 5 domains;
 - ✓ Learning Outcomes
 - ✓ Access
 - ✓ Infrastructure and Facilities
 - ✓ Equity
 - ✓ Governance Process.
- The **index also includes the following criteria to measure the performance;**
 - Learning Outcomes and Quality.
 - Access Outcomes.
 - Teacher Availability and Professional Development Outcomes.
 - Learning Management.
 - Learning Enrichment Activities.
 - Infrastructure, Facilities, Student Entitlements.

LEVEL 2 (901-950 points)	
Kerala	928
Maharashtra	928
Punjab	928
Chandigarh	927
Gujarat	903
Rajasthan	903
Andhra Pradesh	902

- School Safety and Child Protection.
- Digital Learning.
- Funds convergence and utilization.
- Enhancing CRCs Performance.
- Attendance Monitoring Systems.
- School Leadership Development.
- **In 2020-21, a total of 7 States and UTs; Kerala, Punjab, Chandigarh, Maharashtra, Gujarat, Rajasthan, and Andhra Pradesh have attained Level II (score 901-950) as compared to 4 in 2019-20.**
 - In 2020-21; Gujarat, Rajasthan and Andhra Pradesh achieved Level II.
- **No state has been able to attain Level 1 (score 950-1000).**

Way Forward

- The main objective of the Performance Grading Index (PGI) is to promote evidence-based policy-making and also suggest measures to ensure quality education for all.
- The Index would **help in identifying the gaps at the district level** and improve their performance in a decentralized manner.
- It will encourage educational institutions to perform better and raise the quality of education.

Back to the Village Program

About

- **In 2018, the state government of Jammu and Kashmir launched the 'Back to Village' initiative.**
 - The main objective of the initiative is to take the administration to people's doorsteps to address their problems.
- This is an action-packed, deliverable-oriented programme with a focus on youths, skill and self-employment, good governance and Panchayati raj, and Nasha-Mukti-rozgar-yukt J&K.
- **Recently, some activists criticized the program due to the inefficiency of service delivery.**
 - The Officials said that all complaints by people cannot be resolved immediately; because many issues related to infrastructure, water, electricity, and roads are currently being implemented in a phase-wise manner.
- From this year, the administration requires each officer to be a panchayat prabhari, or a mentor, who will be the point of contact for the villagers throughout the year. He will be responsible for addressing their concerns.

INTERNATIONAL RELATIONS

India-GCC Free Trade Agreement (FTA)

Context

- **India and the Gulf Cooperation Council (GCC) member countries are expected to start negotiations for a free trade agreement next month with an aim to boost economic ties between the two regions, an official said.**

Details:

- India has already implemented a free trade pact with the UAE in May this year.
- According to experts, the GCC region holds huge trade potential and a trade agreement would help in further boosting India's exports to that market.
- GCC market is unexploited by domestic exporters and it holds huge potential
- GCC is a major import dependent region. We can increase our exports of food items, clothing and several other goods. Duty concessions under a trade agreement will help in tapping that market. It will be a win-win situation for both sides.
- Sectors such as chemicals, textiles, gems and jewellery and leather will get a major impetus by this agreement
- India imports predominately crude oil and natural gas from the Gulf nations like Saudi Arabia and Qatar.

About GCC:

- The Cooperation Council for the Arab States of the Gulf, also known as the Gulf Cooperation Council (GCC) is a regional,



intergovernmental, political, and economic union comprising Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

- The council's main headquarters is located in Riyadh, Saudi Arabia.
- The Charter of the GCC was signed on 25 May 1981, formally establishing the institution.

Biological Weapons Convention (BWC)

Context

- India has abstained on yet another resolution involving Ukraine, this time a motion sponsored by Russia at the UNSC that sought to establish a commission to investigate claims by Moscow that the US and Ukraine are carrying out “military biological activities” in laboratories in Ukraine in violation of the biological weapons convention.

Details:

- The resolution failed to get adopted as only two Council members – Russia and China – voted in its favour, while the US, the UK and France voted against it and the other Council members, including India, abstained.
- India attaches high importance to the Biological Weapons Convention (BWC), which is the first non-discriminatory disarmament treaty banning a complete category of weapons of mass destruction.
- India also reiterates the need to negotiate a comprehensive legally binding protocol providing for an effective, universal and non-discriminatory verification mechanism to strengthen the implementation of the Convention.

India's stand:

- India said any matters relating to obligations under the Biological and Toxin Weapons Convention should be addressed through consultation and cooperation between the parties concerned.
- All parties must ensure full and effective implementation of the BTWC in letter and spirit.

Biological and Toxin Weapons Convention (BTWC)

- It is a disarmament treaty that **effectively bans biological and toxin weapons** by prohibiting their **development, production, acquisition, transfer, stockpiling and use**.
- Having entered into force on 26 March 1975, the BWC was the **first multilateral disarmament treaty** to ban the production of an entire category of weapons of mass destruction.
- The convention is of **unlimited duration**.
- **Membership:** As of January 2022, 183 states have become party to the treaty. India has signed and ratified this treaty.
- Convention's effectiveness has been limited due to insufficient institutional support and the absence of any formal verification regime to monitor compliance.

Cross-Border Electricity Trade

Context

- While electricity trade was already taking place through long-term bilateral contracts between the South Asian countries, the **Central Electricity Regulatory Commission (CERC) introduced the Cross Border Electricity Trade (CBET) Regulations in 2019 to facilitate this in an efficient and transparent manner through energy exchange platforms.**

Details:

- CBET Rules were notified in 2021 by the Central Electricity Authority, India.
- Pursuant to this, **Inter-country power trade through the Exchange Market can help in discovery of competitive prices and optimal power procurement.**

Nepal:

- Nepal started optimally meeting its dry season demand by trading in India's day-ahead market since April 2021.
- Nepal Electricity Authority (NEA) started selling surplus monsoon electricity through competition in the day-ahead market since June 2022.
- The NEA has stated that IC 4.50 billion has entered Nepal from the sale of electricity during the period of 4 months in electricity trade with India, till August.
- According to the NEA, between May and August, over 780 million of electricity have been sold in the Indian market, earning about ₹7.2 billion.

Bhutan:

- Similarly, Bhutan started trading on Indian Day ahead market in January 2022, importing power for a maximum of 400 megawatt (MW) for import during the lean season.
- Bangladesh, too stands to benefit from CBET with India when it participates in India's power market.
- Through CBET, Bangladesh can import power from India, with the pricing of this energy being optimized through the country's participation in spot markets.
- By importing green power from across the border, Bangladesh's current reliance on fossil fuel-fired power plants can decrease, and in time may usher more investments and efforts into growing the contribution from RE in its own energy mix. This will

also drastically reduce its own carbon emissions.

Analysis:

- As more of India's neighbouring countries begin to participate in CBET, a South Asian power market will emerge which will allow for a price discovery that will be unique for the region.
- CBET will prove to be mutually beneficial for all participating countries and usher in economic and sustainable development to the entire region.

Blue Diamond Affair

Context

- Saudi Crown Prince Mohammed bin Salman met Thailand's prime minister in Bangkok and signed agreements to expand diplomatic relations between the two countries.

Details:

- The relations were restored only earlier this year, three decades after a high-profile jewellery theft, also known as the Blue Diamond Affair, snapped ties between the two nations.
- In January this year, Thai Prime Minister Prayut Chan-ocha's landmark visit to Saudi Arabia marked the highest level of contact between the two countries after the \$20-million heist controversy, resuming full diplomatic ties.

What is the Blue Diamond Affair?

- It all started with the theft of jewellery and other valuable gems from the palace of Prince Faisal bin Fahd, the eldest son of King Fahd of Saudi Arabia, in 1989.
- Kriangkrai Techamong, a Thai worker employed as a servant at the palace, stole precious gems worth \$20 million from Prince Faisal's home, which also included a rare 50-carat blue diamond, which is still missing.
- The ensuing diplomatic repercussion was thus named after the gem.
- He hid the loot in a large cargo delivery he was sending home to Thailand, and left the country by the time the theft was discovered.
- Amidst all this, the investigations took a bloody turn with a series of murders in Thailand. Three Saudi diplomats were killed by gunmen in Bangkok.
- And then began the souring of ties as Saudi Arabia downgraded its relations with Thailand, resulting in loss of jobs for thousands of Thai migrant workers.
- Amid pressure from Saudi Arabia, investigations by the Thai authorities revealed the involvement of then police chief Chalor Kerdthies in the saga.
- Chalor, who was given the responsibility of retrieving the stolen loot, was found to have embezzled the confiscated jewellery, extorted the Bangkok gem dealer who brought the jewels from Kriangkrai, and killed the dealer's wife and son in 1994.
- Lieutenant-General Chalor was sentenced to death by the Supreme Court of Thailand, but ended up serving 20 years in prison.

India-Israel Defence Cooperation

Context

- Avi Bleser, vice-president of marketing for India at Israel Aerospace Industries (IAI), says he is working closely with the Indian Army and Indian Air Force to tailor solutions for their defence needs.

Details:

- **Induction of Heron MK II**, a state-of-the-art UAV that can fly at a height of 35,000 feet, cover a radius of 1000 km, see through dense clouds, work in bad weather and fly for 45 hours. It's learnt that MK IIs are being deployed in Leh.
- Last year, the Indian Army had also taken on lease **Heron TPs, a Medium Altitude Long Endurance (MALE) Unmanned Aerial System (UAS) for all-weather missions**, from IAI. Heron TP drones are one of the two drones made in Israel that can be armed, if needed.
- **The IAI and Hindustan Aeronautics Limited (HAL) have signed a joint venture whereby IAI will not only offer UAVs to India, but also help HAL in manufacturing them in India.**
- In 2018, the Adanis joined hands with Israeli company Elbit Systems to inaugurate a facility for manufacturing the **Hermes 900 UAV in Hyderabad**.
- Earlier, after Prime Minister Narendra Modi's visit to Israel in 2017, the IAI had signed an agreement with Elcom Systems and Dynamatic Technologies for the manufacture of UAVs in India.
- Earlier this year, HAL signed a memorandum of understanding with IAI to convert civil passenger aircraft into a **multi-mission tanker transport (MMTT) for air refuelling with cargo and transport capabilities**. The MoU also covers conversion of passenger planes into freighter aircraft.

China-Pakistan Economic Corridor (CPEC)

Context

- The 21st Meeting of SCO Council of Heads of Government (CHG) was held on 01 November 2022 in the virtual format. **Will unlock the economic potential of this region in which Chabahar port and the International North South Transport Corridor could become enablers. Connectivity projects should respect the sovereignty and territorial integrity of Member States and respect international law. — Dr. S. Jaishankar**

Details:

- Jaishankar's statement is seen as a reference to the Belt and Road Initiative (BRI), a massive multinational, multi-modal connectivity infrastructure project promoted by China. India does not support the BRI, and has declined to join the project.
- A joint communique issued at the end of Tuesday's meeting said Kazakhstan, Kyrgyz Republic, Pakistan, Russia, Tajikistan, and Uzbekistan reaffirmed their support for China's BRI and to work jointly to implement the project.
- The major reason India opposes BRI is because it passes through Indian territory that is illegally held by Pakistan.**
- The arm of the BRI project that links mainland China to the Arabian Sea runs from Kashgar in China's Xinjiang Uighur Autonomous Region to Gwadar port in southwestern Baluchistan in Pakistan. The project enters Indian territory occupied by Pakistan in Gilgit Baltistan, and traverses the entire length of Pakistan from north to south before reaching the Arabian Sea.
- This arm of the BRI is called the China-Pakistan Economic Corridor, or CPEC, and consists of multiple modern highway and railway projects.
- It involves the planned rebuilding and upgradation of Pakistan's National Highway 35 — the Karakoram Highway or China-Pakistan Friendship Highway — that goes from the Khunjerab Pass on the Xinjiang border to Hasan Abdal to the northwest of Islamabad via Gilgit and Mansehra, and the upgradation of the highway that links Gilgit with Skardu to the north of the Line of Control (LoC).

Indian stand:

- On May 13, 2017, the official spokesperson of the Ministry of External Affairs had said: "Regarding the so-called 'China-Pakistan Economic Corridor', which is being projected as the flagship project of the BRI/OBOR, the international community is well aware of India's position. No country can accept a project that ignores its core concerns on sovereignty and territorial integrity."
- In October 2021, speaking at the UN Sustainable Transport Conference hosted by Beijing, Priyanka Sohoni, Second Secretary at the Indian Embassy in China, said: "There have been some references to the Belt and Road Initiative or BRI at this conference. Here, I wish to say that as far as China's BRI is concerned, we are uniquely affected by it. It's inclusion of the so-called China Pakistan Economic Corridor (CPEC) as a flagship project impinges on India's sovereignty."
- As far back as in 1994, India's Parliament had resolved unanimously that the entire former princely state of Jammu and Kashmir belongs to India, and that India's position has been clear and consistent in this regard.
- On March 11, 2020, the government told Parliament that India's "consistent and principled position, as also enunciated in the Parliament resolution adopted unanimously by both Houses on 22 February 1994, is that the entire Union Territories of Jammu & Kashmir and Ladakh have been, are and shall be an integral part of India".

India-Kyrgyz Intergovernmental Commission

Context

- Union commerce minister Piyush Goyal has called for boosting bilateral trade and deepening cultural relations between India and Kyrgyz Republic.**

Details:

- He was addressing the 10th Session of the India-Kyrgyz Republic Inter-Governmental Commission on Trade, Economic, Scientific and Technological Cooperation (IKIGC)
- The 10th session of IKIGC was held in a virtual format. It was co-chaired by Piyush Goyal and Imanov Talantbek Oruskulovich, Minister of Digital Development of the Kyrgyz Republic.
- Goyal noted that India and Kyrgyz Republic share warm and friendly ties. He said that **India was among the first countries to establish diplomatic relationship with Kyrgyz Republic in March 1992 and observed that 2022 marked the 30th anniversary of diplomatic ties between the two nations.**
- The minister said that the **visit of Prime Minister Narendra Modi to the Kyrgyz Republic in June 2019 had elevated the relationship between two nations to the level of strategic partnership.**

Background of relations:

- Historically, India has had close contacts with Central Asia, especially countries which were part of the ancient Silk Route, including Kyrgyz Republic.
- During the Soviet era, India and the then Kyrgyz Republic had limited political, economic and cultural contacts. Former Prime Minister Rajiv Gandhi visited Bishkek and Issyk-Kul Lake in 1985.
- After the independence of Kyrgyz Republic on 31 August, 1991, India was among the first to establish diplomatic relations on

18 March 1992; and the resident Mission of India was set up on 23 May 1994.

- Political ties with the Kyrgyz Republic have been traditionally warm and friendly. Kyrgyz Republic supported India in securing full membership in the Shanghai Cooperation Organization (SCO) and also supports India's bid for permanent seat at UNSC.
- Both countries share common concerns on threats of terrorism, extremism and drug-trafficking.
- Since the establishment of diplomatic relations in 1992, the two countries have signed several framework agreements, including on Culture, Trade and Economic Cooperation, Civil Aviation, Investment Promotion and Protection, Avoidance of Double Taxation, Consular Convention etc.
- Connectivity remains one of the biggest challenges for trade between India and Kyrgyz Republic. Air Manas (Pegasus Asia Airline) had started direct flight on Bishkek-Delhi-Bishkek sector since 20 February 2015. The flight operates thrice a week, and has contributed significantly to growth of tourism.
- Technical assistance under the Indian Technical and Economic Cooperation (ITEC) Program, particularly in terms of human resources development, is an important component of India's economic involvement in Kyrgyz Republic.
- Agreement on Defence Cooperation, signed during the visit of Prime Minister Modi in July 2015, has been an important milestone that has laid the framework for defence cooperation between the two sides.
- Joint Special Forces Exercise KHANJAR has now become an annual affair.
- There are about 100 Indian nationals apart from 8000 students in Kyrgyz Republic.

HEALTH

Mycobacterium leprae

Context

- A group of researchers has found that armadillo livers grew substantially when infected with Mycobacterium leprae. The surprise doesn't end there — the pathogen was able to maintain liver function and keep its exquisite architecture intact, giving rise to something that looked like stem cells.

Armadillo

- Armadillos are New World placental mammals in the order Cingulata. Armadillos are characterized by a leathery armor shell and long, sharp claws for digging.

Mycobacterium leprae

- Mycobacterium leprae (also known as the leprosy bacillus or Hansen's bacillus), is one[a] of the two species of bacteria that cause Hansen's disease (leprosy).
- Leprosy is a chronic but curable infectious disease that damages the peripheral nerves and targets the skin, eyes, nose, and muscles.
- Mycobacterium leprae is an **acid-fast, Gram-positive, rod-shaped bacterium** and an **obligate intracellular parasite**, which means it cannot be grown in cell-free laboratory media.
- It has a narrow host range and **apart from humans**, the only other natural hosts are **nine-banded armadillo and red squirrels**.
- The species was discovered in 1873 by the Norwegian physician Gerhard Armauer Hansen, and was the first bacterium to be identified as a cause of disease in humans.

Measles

Context

- Mumbai is currently witnessing an outbreak of measles.

Measles

- Measles is a highly contagious **infectious disease caused by measles virus**.
- It mostly affects children. It is one of the leading causes of death and disability among young children.

Symptoms

- Initial symptoms typically include fever, cough, runny nose, and inflamed eyes. Small white spots known as **Koplik's spots** may form inside the mouth two or three days after the start of symptoms.
- Common complications include **diarrhea, middle ear infection, and pneumonia**.
- Less commonly seizures, blindness, or inflammation of the brain may occur.

Transmission

- Measles is an airborne disease that spreads easily by coughing and sneezing, close personal contact or direct contact with infected nasal or throat secretions.

Prevention

- The measles vaccine is effective at preventing the disease.

Treatment

- There is **no specific treatment for measles** but there is a vaccine to stay protected from the disease, which is both safe as well as cost effective.
- Treatment includes providing comfort measures to relieve symptoms, such as rest, and medications like antibiotics, fever reducers and Vitamin A.

GS-III ECONOMY

Currency Monitoring List of USA

Context

- India is **among the few countries** removed from the United States' Currency Monitoring List, released by the Department of Treasury. In its biannual report to Congress, the US' Treasury Department announced that it had also removed Italy, Mexico, Vietnam and Thailand from the list.

Details:

- Interestingly, the report was released on the same day Secretary of the Treasury Janet Yellen met Finance Minister Nirmala Sitharaman in New Delhi.
- The two leaders vowed to strengthen business-to-business links between India and the US.
- The ninth India-US economic and financial partnership meeting came just ahead of India assuming G20 Presidency.**

What is the US' Currency Monitoring List?

- The report reviews the policies of the US' trading partners during the last four quarters ending in June 2022.
- The report also includes a review of the Treasury's 'Monitoring List'. As its name suggests, the list closely monitors the currency practices and policies of some of the US' major trade partners.
- The report states that economies that meet two or three criteria in the 2015 Act are placed on the list.
- Under this legislation, the Treasury Department has to assess the macroeconomic and exchange rate policies of the US' trading partners for three specific criteria:
 - A significant bilateral trade surplus with the United States is a goods and services trade surplus that is at least \$15 billion
 - A material current account surplus is one that is at least 3% of GDP, or a surplus for which Treasury estimates there is a material current account "gap" using Treasury's Global Exchange Rate Assessment Framework (GERAF).
 - Persistent, one-sided intervention occurs when net purchases of foreign currency are conducted repeatedly, in at least 8 out of 12 months, and these net purchases total at least 2% of an economy's GDP over a 12-month period.
- Once on the list, an economy will remain there for at least two consecutive reports so that the Treasury can assess whether any improvements in performance is durable and not due to temporary factors.
- Why was India removed from the list?**
- India and four other countries were removed from the Monitoring List as they now only met one of the three criteria for two consecutive reports. India has been on the list for about two years.**

Cash Deposit Ratio

Context

- The banking system has witnessed a lower growth of 4.9 per cent in deposits in the current financial year so far. Credit offtake surged by 8.1 per cent since April 2022.

Note: Banks give credit off-takes to help businesses acquire financing for future projects through the promise of future income and proof of an existing market.

Details:

Region-wise:

- Credit-Deposit (CD) ratio of the Northern and Western Regions declined in 2022 even as that of the North-Eastern, Eastern, Central and Southern Regions improved, as per the latest Reserve Bank of India (RBI) data.**
- This ratio indicates how much of each rupee of deposit goes towards credit markets in a particular region.
- As per RBI's data on State-wise C-D ratio of scheduled commercial banks according to place of utilisation, the Northern Region's (NR) ratio declined from 78.2 per cent to 77.7 per cent.
- An interesting feature of the C-D ratio of NR is that Union Territories (UTs) of Jammu & Kashmir and Ladakh have shown good improvement with this ratio going up to 52.2 per cent (48.9 per cent in 2021) and 36.9 per cent (35.4 per cent), respectively.

- As per a 1992 RBI staff studies paper, while interpreting such a broad indicator as C-D ratio for measuring the inter-State disparities in banking development and the role of banking in economic activity, it is necessary to take cognisance of a number of factors such as the historical base in banking in different regions, the policies and programmes to reduce regional disparities and their achievements and the profiles of agricultural, industrial and infrastructural development in various States.

Status

- On a year-on-year basis, credit offtake rose by 17.9 per cent as against 6.5 per cent a year ago. On the other hand, deposits rose by 9.6 per cent as compared to 10.2 per cent on a year-on-year basis.
- The lower growth in deposit, when compared to the higher credit offtake, indicates that competition will hot up among banks to garner deposits at a time when interest rates are on the rise.

Change in the pattern of deployment of financial savings

- RBI's recent report on financial assets of households show that there has been a shift in pattern, where mutual funds and equity witnessed sharp increase in FY22 with shares of 6.3 per cent and 1.9 per cent in overall financial assets respectively (ratio was 2.6 per cent and 1.1 per cent in FY20), while share of bank deposits declined to 25.5 per cent in FY22 from 34.4 per cent in FY20.
- But the quantum of bank deposits is much larger, about 4.1 times than that of mutual funds denoted by AUM (assets under management).
- A secure interest rate regime and risk averse sentiment have worked in favour of garnering bank deposits at a faster pace.

Suspension Bridge

Context:

- The bridge that collapsed in Gujarat's Morbi killing at least 134 people, was a suspension bridge — a type in which the deck is hung below suspension cables on vertical suspenders.

Details:

- The basic structural components of a suspension bridge system include stiffening girders, two or more main suspension cables, and towers and anchorages for cables at either end of the bridge
- The main cables are suspended between the towers and are connected to the anchorage or the bridge itself. The vertical suspenders carry the weight of the deck and the commuter load on it.
- The design ensures that the load on the suspension cables is transferred to the towers at the two ends, which transfer them further by vertical compression to the ground by way of the anchorage cables.
- Suspension bridges depend on the balance of the forces of compression and tension
- Even as an investigation into the accident is pending, the visuals and purported footage prior to the incident seem to suggest that both these preconditions were possibility tested.
- The core design of a bridge determines how it distributes the internal forces of tension, compression, torsion, bending, and sheer. Suspension bridges are among the most robust structures, starting from the earliest ones made of twisted grass. When Spanish conquistadors made their way into Peru in 1532, they discovered an Incan empire connected by hundreds of suspension bridges spanning deep mountain gorges.
 - The Golden Gate Bridge and Brooklyn Bridge in the US are examples of suspension bridges.
- India's longest single-lane motorable suspension bridge — the 725-metre Dobra-Chanti suspension bridge built over the Tehri lake — was inaugurated in November 2020.
- Besides suspension, bridges can be arch bridges, beam bridges, cantilever bridges, truss bridges and tied-arch bridges. While beam bridges are among the simplest and oldest bridges, the reason for the enduring design of the suspension bridge is that the supporting cables running horizontally between the two far-flung anchorages provide the counterweight and effectively pass on the entire tensional force to the anchorages.
- As a result, suspension bridges can easily cross distances of well over 2,000 metres, beyond the scope of other bridge designs. The Morbi bridge was on the smaller side in terms of span, and was pedestrian-only.

Unemployment Rate in India

Context

- The unemployment rate in urban areas for persons aged above 15 eased to 7.2% in July-September 2022 from 9.8% a year ago, according to the Periodic Labour Force Survey (PLFS) released by the National Statistical Office (NSO).

Findings of the recent PLFS

- The unemployment rate was 6.6% for men and 9.4% for women. It was 9.3% and 11.6%, respectively, in July-September 2021. The unemployment ratio is defined as the percentage of persons unemployed among the persons in the labour force.
- The worker-population ratio (WPR) also witnessed a marginal increase compared with last year's. The WPR is defined as the percentage of employed persons in the population.
- The WPR in urban areas for persons aged 15 and above stood at 44.5% in July-September 2022, an increase from 42.3% in the

corresponding period in 2021. It was 43.9% in April-June 2022. The WPR among men was 68.6% and 19.7% among women. It was 66.6% and 17.6%, respectively, in 2021.

- The labour force participation rate (LFPR), defined as the percentage of persons in the labour force who are working or seeking or available for work in the population, in urban areas for persons aged 15 and above, increased to 47.9% in July September 2022, from 46.9% in the corresponding period in 2021. It was 47.5% in April-June 2022.
- The LFPR among men was 73.4% and 21.7% among women. In 2021, it was 73.5% and 19.9%, respectively.

PLFS

- The **National Statistical Office (NSO)** under the Ministry of Statistics of Programme and Implementation (MoSPI) conducts the PLFS for rural and urban areas.
- The Periodic Labour Force Survey (PLFS) was designed with two major objectives for the measurement of employment and unemployment. The first was **to measure the dynamics in labour force participation** and employment status in the short time interval of three months for only the urban areas in the Current Weekly Status (CWS). The second one was, for both rural and urban areas, to measure the labour force estimates on key parameters in both usual status (ps+ss) and Current Weekly Status.

Cryptocurrency

Context

- After the U.S. and Turkey, India has the third highest number of registered downloads of crypto exchange apps, according to a working research paper* published in the Bank for International Settlements.

Details

App downloads

- As of June 2022, there were over 30 million crypto exchange app downloads in India.
- But in terms of downloads per capita, India features among the countries with the lowest number of downloads.
- **This is because of its vast population and crypto awareness being mostly limited to urban pockets.**

Average monthly app usage

- India also features among those countries with the lowest average monthly app usage per 1 lakh people.
- In India, the number of daily active users in June 2022 was less than 150 per 1 lakh population. Active users are those who had at least one session on an app over a month.

Investors

- Only a few of the investors made large gains. A majority likely lost money (73%-81% of the users)
- As prices were rising, smaller users were buying Bitcoin, the largest holders were selling Bitcoin, making returns at the smaller users' expense.
- Bitcoin prices and user numbers moved in tandem.
- 40% of the investors were men under the age of 35 – commonly identified as risk takers.

Must read: <https://www.iasgyan.in/daily-current-affairs/cryptocurrency-8>

SCIENCE & TECHNOLOGY

Coronal Holes

Context

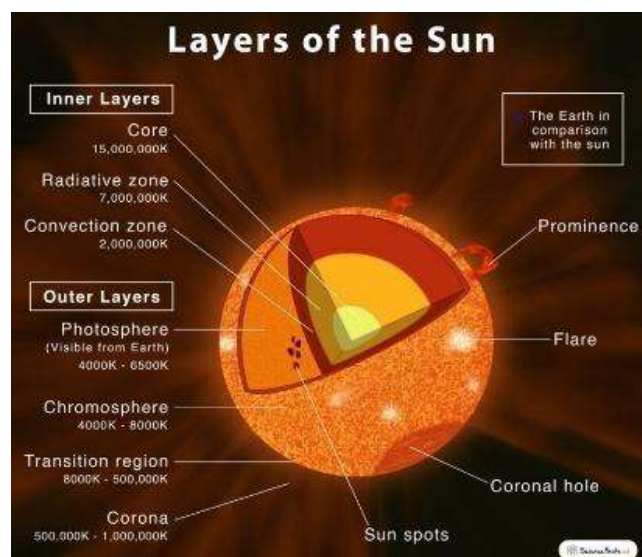
- Recently, a phenomenon called "coronal holes" was spotted on the sun by NASA.

Sun's corona

- The Sun's corona is the outermost part of the Sun's atmosphere.
- It emits ultraviolet and X-ray wavelengths of the electromagnetic spectrum.
- Corona consists of ionized gas at temperatures exceeding one million Kelvin, which is much higher than the photospheric temperature of 6000K, the visible surface temperature of the Sun.

Coronal Hole

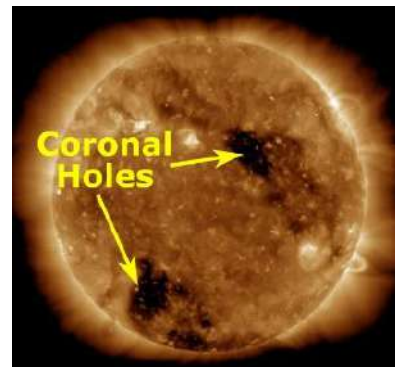
- Coronal holes appear as **dark areas in the solar corona in extreme ultraviolet (EUV) and soft x-ray solar images.**



- The plasma (electrified gas) in these regions of the Sun's corona is cooler and denser than in other parts of the corona. Hence, they appear dark.
- Plasma particles can escape along the magnetic field from the solar surface into interplanetary space. The escaping particles form high-speed solar wind streams that can eventually hit Earth, **causing geomagnetic storms**.
- Coronal holes can last between **a few weeks to months**.

Significance of studying Coronal Holes

- The appearance and location of these holes on the Sun vary in dependence on solar activity, giving information on the long-term evolution of the Sun.
- 'Coronal holes' are important to understanding the space environment around the earth through which our technology and astronauts travel.



Aceclofenac

Context

- Indian Veterinary Research Institute (IVRI) has demanded a ban on using aceclofenac in cattle. A new study showed that the drug metabolizes into diclofenac in water buffaloes — as it does in cows.

About

- Aceclofenac is a nonsteroidal anti-inflammatory drug (NSAID). It is a prodrug of diclofenac.
- It is used for the relief of pain and inflammation in rheumatoid arthritis, osteoarthritis, and ankylosing spondylitis.

Concern

- Aceclofenac almost immediately converts to diclofenac inside cattle and buffalo. It **severely threatens vultures that feed on the carcasses of any recently treated animals**.

Note: Diclofenac — an anti-inflammatory drug — was banned for veterinary use by the Government of India **in 2006**. Vultures die from kidney failure within days of exposure to diclofenac-contaminated tissues. It was found to be the main cause of a dramatic decline (99 percent) of the vulture population across Asia.

Mengtian Module

Context

- China launched the final component — the Mengtian module — of its permanent space station- Tiangong Space Station.

Tiangong Space Station

- Tiangong is a space station being constructed by China **in low Earth orbit between 340 and 450 km** above the surface.
- Being China's first long-term space station, it is the goal of the "Third Step" of the China Manned Space Program.
- Once completed, The T-shaped Tiangong space station, will have a mass of about 460 tonnes on earth roughly one-fifth the mass of the International Space Station.

Mengtian

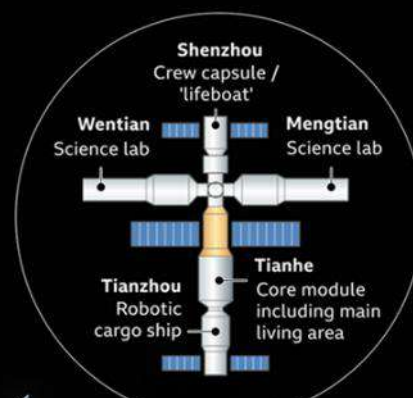
- Mengtian is the second of the two modules that will house science labs for carrying out experiments. The other lab module Wentian was sent in July 2022. Together, they will complete the two arms of China's space station Tiangong, which means 'Palace in the Sky'.
- Mengtian (literal meaning: Dreaming of the Heaven) was sent to the earth's lower orbit, over 380 kilometres above the surface, aboard the Long March-5B Y4 carrier rocket. After docking onto the core module Tianhe within hours of lift-off, it will finish the T-shaped structure of the space station.

Modules of Tiangong Space Station

1. Tianhe – the core module of the Tiangong space station was launched on 29 April 2021. This module consists of **three sections**: a habitational quarter where taikonauts (Chinese astronauts) can live, a non-habitable service section, and a docking hub – somewhere for arriving spacecraft to join to.
2. Wentian -The first of two lab modules – it will also act as the backup of the core Tianhe module to control and manage the space station. Its airlock will serve as the main exit for future spacewalks, and it has a mechanical arm that will be used to help spacecraft relocate and re-dock.
3. Mentian – This second lab module will have an airlock of its own for the transportation of equipment.
4. Xuntian Space Station Telescope – planned for launch in 2023, the two-meter mirrored telescope is expected to image up to 40% of the

China's space station

How it will look when fully assembled



entire sky over ten years. It will orbit with the space station in a slightly different position, allowing it to periodically dock with Tiangong for refuelling and repair.

Cordy Gold Nanoparticles

Context

- Cordy gold nanoparticles (Cor-AuNPs), the outcome of a collaborative experiment by scientists from four Indian institutions, have earned an international patent from Germany.

Cordyceps militaris

- Cordyceps militaris is a species of fungus in the family Cordycipitaceae, and belongs to the genus Cordyceps.
- Cordyceps mushroom is **found in the eastern Himalayan belt**. It has **antimicrobial, antidiabetic, and antioxidant properties**.

The Research

- Cordy gold nanoparticles (Cor-AuNPs), derived from the synthesis of the extracts of Cordyceps militaris and gold salts - could make drug delivery in the human body faster and surer. **Penetration in the cells is more when the drug particles are smaller.**
- Cordyceps militaris, called super mushroom because of its tremendous medicinal properties, adds bioactive components to the synthesis of gold nanoparticles for better penetration.

Final Thought

- Biosynthesised nanogold particles indicate a new application of nanoparticles in the development of therapeutic drugs which can be delivered as **ointments, tablets, capsules, and in other forms**.



BeiDou Navigation Satellite System

Context

- China successfully launched 20th new generation satellite for the **BeiDou Navigation Satellite System (BDS)**.

Details

- The BeiDou Navigation Satellite System (BDS), is **China's second-generation satellite navigation system** that will be capable of providing positioning, navigation, and timing services to users on a continuous worldwide basis similar to the GPS, GLONASS, or Galileo systems.
- The idea to develop the **BeiDou system was conceived in the 1980s**.
- The BDS system also has a range of applications such as **communications, hydrological monitoring, surveying, mapping, geological survey, forest-fire prevention, time synchronization for communication systems, power dispatch, search-and-rescue (SAR), and disaster mitigation and relief operations**.

Mastodon

Context

- Mastodon, a decentralised, open alternative from privacy-obsessed Germany, has seen a flood of new users.

Details

- Mastodon is free and open-source software for running self-hosted social networking services. It has microblogging features similar to the Twitter service.
- But while Twitter and Facebook are controlled by one authority – a company – Mastodon is installed on thousands of computer servers, largely run by volunteer administrators who join their systems together in a federation.
- People swap posts and links with others on their own server – or Mastodon “instance” – and also, almost as easily, with users on other servers across the growing network.

Mission Prarambh

Context

- In a first, a privately made rocket Vikram-S, was launched by Indian space-tech start-up Skyroot Aerospace.

Details

- The Prarambh mission and the Vikram-S rocket has been developed by the Hyderabad-based startup Skyroot Aerospace with extensive support from ISRO and IN-SPACe (Indian National Space Promotion and Authorisation Centre).
- Vikram-S under Mission Prarambh is **India's first privately developed rocket**. Vikram-S rocket is a **single-stage suborbital launch vehicle** that carried three customer payloads. It will help test and validate the majority of the technologies in the Vikram series of space launch vehicles.
- Launched from Indian Space Research Organisation's (ISRO) launchpad in Sriharikota, under the mission 'Prarambh', Vikram-

S crossed Mach-5 in twenty seconds, while the peak altitude of 88 kilometres was reached in 155 seconds. The six-metre tall rocket successfully reached the thermosphere, lying between 50-400 kilometres of the Earth's atmosphere.

- Vikram-S is **powered by the solid-fuelled propulsion**, cutting edge avionics and **all carbon fibre core structure**.
- Vikram-S has 3D-printed solid thrusters for spin stability. The vehicle is equipped with telemetry, tracking, GPS, on-board camera, data acquisition and power systems.

Vikram

- Vikram is a **series of modular space launch vehicles** especially crafted for the small satellite market. It is expected to enable the launch of more than 20,000 small satellites in the coming decade. The launch vehicles have unique capabilities like **multi-orbit insertion** and **performing interplanetary missions**.

Note: Skyroot's launch vehicles are named 'Vikram' as a tribute to the founder of the Indian space program and renowned scientist Vikram Sarabhai.

IN-SPACe

To facilitate private sector participation, the government has created the Indian National Space Promotion and Authorisation Centre (IN-SPACe). It is a single-window, independent, nodal agency which functions as an autonomous agency in Department of Space (DOS). Established as a single window agency for all space sector activities of private entities, IN-SPACe plays an important role in boosting the private space sector economy in India.

IN-SPACe, is responsible to promote, enable authorize and supervise various space activities of the NGEs. These include the building of launch vehicles & satellites and providing space-based services; sharing of space infrastructure and premises under the control of DOS/ISRO; and establishment of new space infrastructure and facilities.

Challenger Spaceship

Context

- NASA's Kennedy Space Center has announced the recovery of debris from the Challenger spaceship that exploded 73 seconds after lift-off killing all seven astronauts aboard 37 years ago.

Details

- Space Shuttle Challenger was the **second orbiter of NASA's Space Shuttle program put into service after Columbia**.
- Challenger began its maiden flight on April 4, 1983. It was responsible for taking the first American woman into space. It also carried three Spacelab missions, enabled the **first astronaut-run satellite repair**, and **performed the first night launch and night landing of a Space Shuttle**.
- Over a period of 3 years, the orbiter successfully launched and landed nine times before becoming the victim of a disaster, where it disintegrated after being 73 seconds into its tenth mission.
- During its tenth mission, the shuttle carrying seven crew members was scheduled to deploy a communications satellite and study Halley's Comet while they were in orbit during its closest approach to the Sun.

Indian Biological Data Center

Context

- Ministry of Science and Technology **dedicated to the nation India's first national repository for life science data-'Indian Biological Data Center' (IBDC) at Faridabad, Haryana.**

IBDC

- The 'Indian Biological Data Centre (IBDC)' is the **first national repository for life science data in India**.
- IBDC is **mandated to archive all life science data generated from publicly funded research in India**.
- The data center is supported by the Government of India (GOI) through the Department of Biotechnology (DBT).
- It is being established at the Regional Centre of Biotechnology (RCB), Faridabad in the national capital region **in collaboration with the National Informatics Centre (NIC)**.
- Due to the heterogeneity of life science data, IBDC is being developed in a modular nature wherein different sections would typically deal with particular type/s of life science data.
- Further, besides archiving life science data, IBDC shall also develop highly curated data sets in order to facilitate knowledge discovery in various domains of life sciences. It would also **provide infrastructure and expertise for biological data analysis**.
- Fundamentally, IBDC is committed to the spirit of data sharing as **per FAIR (Findable, Accessible, Interoperable, and Reusable) principles**.
- While IBDC would act as the major repository for life science data emerging from India, it will constantly strive to serve the requirements of the global scientific community.

NIC

The National Informatics Centre (NIC) is a **department under the Ministry of Electronics and Information Technology (MeitY)**. The NIC provides infrastructure, IT Consultancy, IT Services including but not limited to architecting, design, development and implementation of IT Systems to Central Government Departments and State Governments thus enabling delivery of government services to Citizens and pioneering the initiatives of Digital India.

Narco Test

In News

- A district court in New Delhi has allowed the Police to conduct a Narco test on an accused of killing his live-in partner.

Details

- In a 'narco' or narcoanalysis test, a drug called sodium pentothal is injected into the body of the accused, which transports them to a hypnotic or sedated state, in which their imagination is neutralized.
 - Sodium pentothal or sodium thiopental is a fast-acting, short-duration anaesthetic, which is used in larger doses to sedate patients during surgery. **It acts on the central nervous system.**
- In this hypnotic state, the accused is understood as incapable of lying and is expected to reveal information that is true.
 - It is sometimes referred to as a "truth serum".
- Investigating agencies use the tests in the investigation, which are seen as being a "softer alternative" to torture or "third degree" to extract the truth from suspects. However, the method has not been proven scientifically to have a 100% success rate.
- If any information or material is subsequently discovered with the help of the test; the statement of the accused will not be treated as evidence, but the physical evidence will be treated as such.

Google's 1,000 language AI model

Context

- Large tech firms are competing to develop and implement AI-based language models. Google is developing a model that can support the 1,000 most spoken languages of the world.
- Google's plan is to build one gigantic model for the 1,000 languages so that both widely used and rarer languages can co-exist, interact, and grow together.

What are AI language models used for?

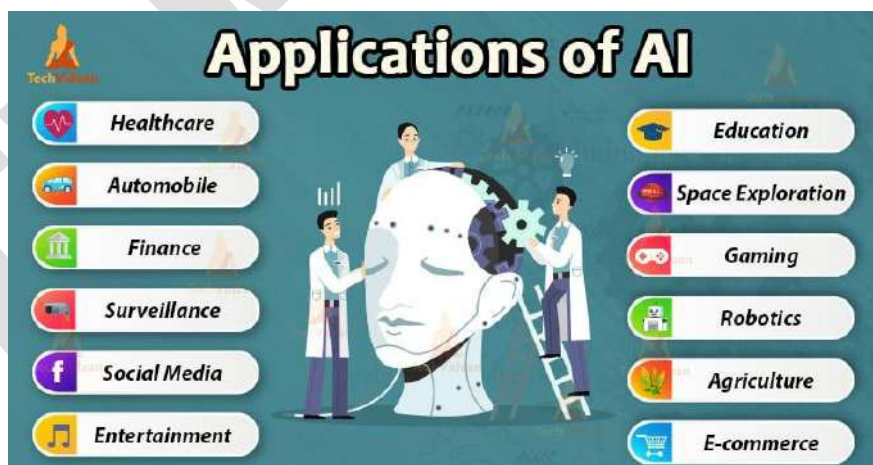
- Through AI language models, companies aim to automate manual processes, generate new insights based on existing data, and reduce reliance on human labour in fields like translation, customer service, or computation.

What is the purpose of the new language model?

- Google doesn't have a specific use case for the language model. However, the end goal is to enable Google users to experience better searches, more accurate auto-generated captions, natural online translation, and faster calculations, according to a report by The Verge, a tech outlet.
- The project is under development and researchers are now collecting linguistic data to train the model.

Other language models existing today

- AI research firm, OpenAI built the GPT-3 (Generative Pre-trained Transformer 3) set of models named Davinci, Curie, Babbage, and Ada that can generate "natural" text responses and perform tasks like classification, simple summaries, address correction, answering questions, and more.



Vikram S Rocket

Context

- India's first privately built rocket - Vikram-suborbital (VKS)- was launched by the ISRO.

Background

- The Prarambh mission and the Vikram-S rocket has been developed by the Hyderabad-based startup Skyroot Aerospace with

extensive support from ISRO and IN-SPACe (Indian National Space Promotion and Authorisation Centre). The launch took place from an ISRO launchpad.

Details

- The Parambh mission is aimed at carrying three payloads into space.
- The rocket, named Vikram-S, is carrying three customer payloads.
- Skyroot Aerospace is the **first private space company in India** to launch a rocket into space.

Vikram

- Vikram is a series of modular space launch vehicles especially crafted for the small satellite market. It is expected to enable the launch of more than 20,000 small satellites in the coming decade. The launch vehicles **have unique capabilities like multi-orbit insertion and performing interplanetary missions.**
- Vikram-S is **India's first privately developed rocket.** Vikram-S rocket is a **single-stage suborbital launch vehicle.**

Note: Skyroot's launch vehicles are named 'Vikram' as a tribute to the founder of the Indian space program and renowned scientist Vikram Sarabhai.

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To facilitate private sector participation, the government has created the Indian National Space Promotion and Authorisation Centre (IN-SPACe). It is a single-window, independent, nodal agency that functions as an autonomous agency under the Department of Space (DOS). Established as a single window agency for all space sector activities of private entities, IN-SPACe plays an important role in boosting the private space sector economy in India.

IN-SPACe is responsible to promote, authorize and supervise various space activities of the NGEs. These include the building of launch vehicles & satellites and providing space-based services; sharing of space infrastructure and premises under the control of DOS/ISRO; and establishment of new space infrastructure and facilities.

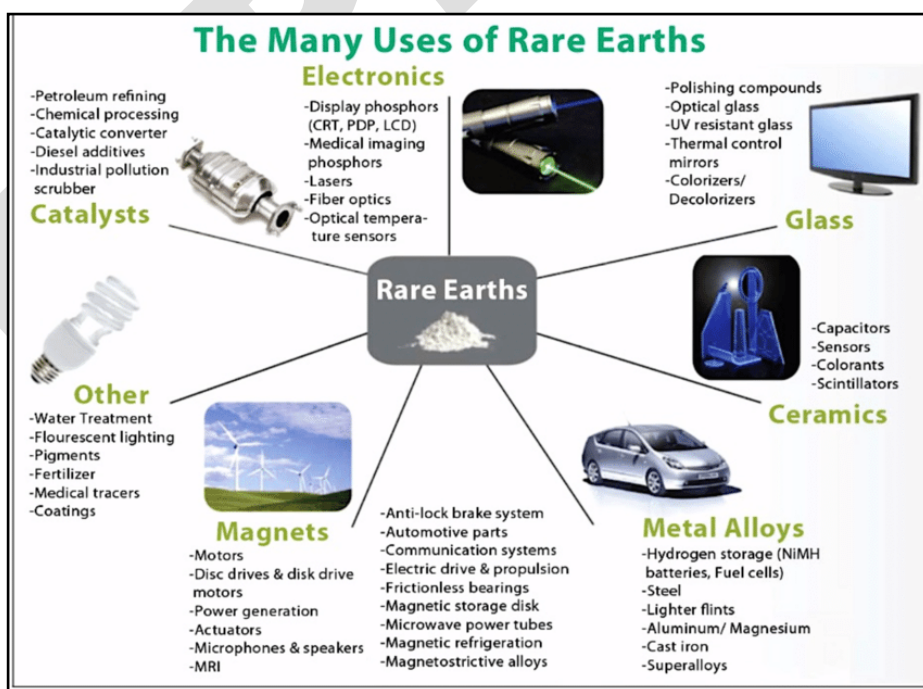
Rare Earth Metals

Context

- To counter India's reliance on China for imports of critical rare earth minerals, industry has urged the government to encourage private sector mining in the sector and diversify sources of supply for these strategic raw materials.

What are Rare Earths?

- Rare Earth Elements or Rare Earth Metals are a **set of 17 chemical elements** in the periodic table – the **15 lanthanides, plus scandium and yttrium**, which tend to **occur in the same ore deposits as the lanthanides**, and have **similar chemical properties.**
- The 17 Rare Earths are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).
- Despite their classification, most of these elements are not really "rare". **One of the Rare Earths, promethium, is radioactive.**



Saras Telescope

Context

- Using SARAS Telescope scientists have determined properties of radio luminous galaxies formed just 200 million years post the Big Bang, **a period known as the Cosmic Dawn** thus providing an insight to the properties of the earliest radio loud galaxies that are usually powered by supermassive black holes.

About SARAS 3

- SARAS 3 is an **indigenously invented and built radio telescope** that can detect extremely faint radio wave signals from the

depths of time.

- It can detect faint cosmological signals, especially radiation emitted by hydrogen atoms at the 21-cm wavelength (1.4 GHz) arising from the depths of the cosmos.

Note: Detecting a faint signal from such an early period of the Universe is extremely difficult. The celestial signal is exceptionally faint - buried in sky radio waves that come to us from the gas in our own Galaxy, the Milky Way, which are a million times brighter.

Radio Waves

- Radio waves are a **type of electromagnetic radiation with the longest wavelengths** in the electromagnetic spectrum, **typically with frequencies of 300 gigahertz (GHz) and below.**
- Like all electromagnetic waves, radio waves in vacuum travel at the speed of light, and in the Earth's atmosphere at a close, but slightly lower speed.
- Radio waves are generated by charged particles undergoing acceleration, such as time-varying electric currents.
- Naturally occurring radio waves are **emitted by lightning and astronomical objects**, and are **part of the blackbody radiation emitted by all warm objects.**
- Radio waves are generated artificially by transmitters and received by radio receivers, using antennas.
- Radio waves are very widely used in modern technology for fixed and mobile **radio communication, broadcasting, radar and radio navigation systems, communications satellites, wireless computer networks and many other applications.**

Semi-Automated Offside Technology

News

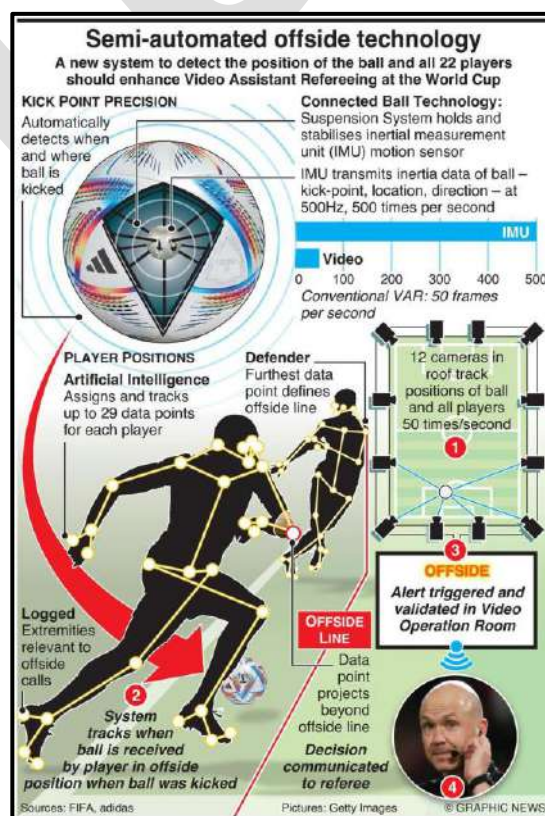
- FIFA World Cup 2022 will have several new additions in Qatar, with the semi-automated offside technology being one of them.

About

- Semi-automated offside technology is **an evolution of the VAR systems** that have been implemented across the world.
- The **video assistant referee (VAR)** is a **match official in association football** who reviews decisions made by the referee.
- This technology has been in development for over three years by the football governing body.

Working

- The new technology uses 12 dedicated tracking cameras mounted underneath the roof of the stadium to track the ball and up to 29 data points of each individual player, 50 times per second, calculating their exact position on the pitch. The 29 collected data points include all limbs and extremities that are relevant for making offside calls.



Blue Bugging

Context

- Cybersecurity experts note that apps that let users connect smartphones or laptops to wireless earplugs can record conversations, and are vulnerable to hacks. Through a process called bluebugging, a hacker can gain unauthorised access to these apps and devices and control them as per their wish.

What is bluebugging?

- It is a form of hacking that lets attackers access a device through its discoverable Bluetooth connection. Once a device or phone is bluebugged, a hacker can listen to the calls, read and send messages and steal and modify contacts. It started out as a threat for laptops with Bluetooth capability. Later hackers used the technique to target mobile phones and other devices.
- Wireless earplug apps are vulnerable to hacks.

How does bluebugging hack devices?

- Bluebugging attacks work by exploiting Bluetooth-enabled devices. The device's Bluetooth must be in discoverable mode, which is the default setting on most devices. The hacker then tries to pair with the device via Bluetooth.
- Once a connection is established, hackers can use brute force attacks to bypass authentication. They can install malware in the

compromised device to gain unauthorised access to it.

- Bluebugging can happen whenever a **Bluetooth enabled device is within a 10-metre radius of the hacker**. However, according to a blog by VPN service provider NordVPN, hackers can use booster antennas to widen the attack range.

How can one prevent Bluebugging?

- Turning off Bluetooth and disconnecting paired Bluetooth devices when not in use, updating the device's system software to the latest version, limiting the use of public Wi-Fi, and using VPN as an additional security measure are some of the ways to prevent bluebugging.

PSLV-C54

Context

- PSLV-C54 lifted off carrying an Earth Observation Satellite (EOS-06) or Oceansat as its primary payload and eight **Thybolt nanosatellites**. These are expected to be placed into sun-synchronous orbits.

PSLV-C54

- The PSLV-C54 is the **56th mission of the Indian Space Research Organisation's Polar Satellite Launch Vehicle (PSLV)**.
- The PSLV C54 rocket has four stages; each one was self-contained, with its own propulsion system, thereby capable of functioning independently. The **first and third stages used composite solid propellants, while the second and fourth stage use earth-storable liquid propellant**.

EOS-06

- EOS-06 is **third generation satellite in the Oceansat series**, which provides continued services of Oceansat-2 with enhanced payload capability. The satellite onboard carries four important payloads viz.
 1. Ocean Colour Monitor (OCM-3),
 2. Sea Surface Temperature Monitor (SSTM),
 3. Ku-Band Scatterometer (SCAT-3) - Scatterometers are **active remote sensing instruments for deriving wind direction and speed from the roughness of the sea**.
 4. ARGOS- unique worldwide location and data collection system dedicated to studying and protecting the environment.

Objective

- The EOS-06 is **envisaged to observe ocean color data, sea surface temperature and wind vector data** to use in Oceanography, climatic and meteorological applications.
- The satellite also supports value-added products such as **potential fishing zone using chlorophyll, SST and wind speed and land based geophysical parameters**.

DEFENSE & SECURITY

C-295 Aircraft

Context

- The Prime Minister laid the foundation stone of a C295 aircraft manufacturing plant in Vadodara, Gujarat, of the Tata-Airbus consortium that will manufacture the transport aircraft for the Indian Air Force (IAF).
- **It is the first project of its kind in which a military aircraft will be manufactured in India by a private company.**
- **It is also the first time that the C295 aircraft will be manufactured outside of Europe.**
- The manufacturing unit will cater to the export of the transport aircraft and for additional orders by the IAF.

Details:

- **Where is the C295 produced and by whom?**
- The C295 was originally produced by a Spanish aircraft manufacturer named Construcciones Aeronauticas SA.
- This company is now part of Airbus and the aircraft's manufacturing takes place at Airbus's plant in Spain.
- **In September 2021, India signed a Rs 21,935 crore deal with Airbus Defence and Space to procure 56 C295 aircraft to replace the IAF's ageing Avro-748 planes, which entered service in the early 1960s.**
- **Under the agreement, Airbus will deliver the first 16 aircraft in 'fly-away' condition from its final assembly line in Seville, Spain within four years, and the subsequent 40 aircraft will be manufactured by Tata Advanced Systems Ltd (TASL) in India as part of an industrial partnership between the two companies.**
- The 16 fly-away aircraft are scheduled to be delivered to the IAF between September 2023 and August 2025.
- The first Made-in-India aircraft will be rolled out of the manufacturing facility in September 2026 and the remaining 39 will have to be produced by August 2031.
- After the completion of the delivery of 56 aircraft to the IAF, Airbus Defence and Space will be allowed to sell the aircraft manufactured in India to civil operators and export to countries which are cleared by the Government of India.

C-295 MW:

- **C-295 MW is a transport aircraft of 5-10 tonne capacity** with contemporary technology that will replace the ageing Avro aircraft of IAF.
- It can carry around 40-45 paratroopers or around 70 passengers.
- **Short take-off/land from semi-prepared surfaces** is another of its features.
- The aircraft will strengthen the logistic capabilities of the IAF.
- As per Airbus, the C295 operates in the Brazilian jungles and Columbian mountains in South America, the deserts of Algeria and Jordan in the middle east and the cold climates of Poland and Finland in Europe. The aircraft has also flown in military operations in Chad, Iraq and Afghanistan.
- **As a tactical transport aircraft, the C295 can carry troops and logistical supplies from main airfields to forward operating airfields of the country.**
- It can also operate on short unprepared airstrips as it is capable of Short Take-off and Landing (STOL).
- It can operate from short airstrips just 2,200 feet long and can fly low-level operations for tactical missions flying at a low speed of 110 knots, says Airbus.
- The aircraft can additionally be used for casualty or medical evacuation, performing special missions, disaster response and maritime patrol duties.

Ballistic Missile Defence

Context

- The Defence Research & Development Organisation (DRDO) conducted the **maiden flight-test of Phase 2** of the ballistic missile defence (BMD) interceptor missile successfully

Details:

- **The AD-1 is a long-range interceptor missile designed for both low exo-atmospheric and endo-atmospheric interception of long-range ballistic missiles as well as aircraft.**
- It is propelled by a two-stage solid motor and equipped with an indigenously developed advanced control system, navigation and guidance algorithm to precisely guide it to the target
- India has a double-layered ballistic missile defence (BMD) system capable of tracking and destroying hostile missiles both outside (exo) and inside (endo) the earth's atmosphere.
- **The BMD consists of two interceptor missiles, Advanced Area Defence (AAD) missile for endo-atmosphere or lower altitudes and Prithvi Defence Vehicle for exo-atmospheric ranges.**
- The DRDO expects deployment of BMD shield by 2022. India will be fourth country in the world after the US, Russia and Israel to successfully built effective anti-ballistic missile system.
- It is being developed in two phases:
 - Phase I : The first phase BMD system is capable of killing enemy missiles fired from 2,000 km away.
 - Phase II : The second phase BMD system is capable of destroying enemy missiles fired from 5,000 km away.

Make II Projects

Context

- The Army has **approved five Project Sanction Orders (PSOs) for development of niche technology by the Indian industry under Make-II route of defence procurement.**

Details:

- The projects include High Frequency Man Packed Software Defined Radios (HFSDR), drone kill systems, Infantry Training Weapon Simulator (IWTS), Medium Range Precision Kill Systems (MRPKS) and 155mm Terminally Guided Munitions (TGM).
- **Make II projects are essentially industry funded projects involving design, development and innovative solutions by Indian vendors for development of prototypes. An assurance of order is given after successful prototype development.**
- The Army is already progressing 43 projects under the Make II procedure of capital acquisition
- **HFSDR radio sets will replace the existing HF radio sets in the inventory, which have limited data handling capability and obsolete technology**
- **Drone kill systems project is reserved for start-ups and Micro, Small and Medium Enterprises (MSMEs).** Drone kill system is a hard kill anti-drone system against low Radio Cross Section drones.
- **The IWTS is the first triservice Make-II project with the Army as the lead service.**
- **The MRPKS, once launched, can 'loiter' in the air for up to two hours and can acquire, designate and engage real-time high value targets up to 40 km.**

'Make' Category of Capital Acquisition:

- The 'Make' category of capital acquisition is the cornerstone of the Make in India initiative that seeks to build indigenous

capabilities through the involvement of both public and private sector.

- 'Make-I' refers to government-funded projects while 'Make-II' covers industry-funded programmes.
- Make-II category involves prototype development of military hardware or its upgrade for import substitution for which no government funding is provided
- 'Make-III' covers military hardware that may not be designed and developed indigenously, but can be manufactured in the country for import substitution, and Indian firms may manufacture these in collaboration with foreign partners.

Garuda-VII Air Exercise

Context:

- The chiefs of Indian and French Air Forces on Tuesday joined the Air Exercise Garuda-VII in Jodhpur.

Details:

- Ex Garuda-VII is also the first occasion for the light combat aircraft (LCA) Tejas and the light combat helicopter (LCH) Prachand to participate in any international exercise.
- **Garuda VII is the seventh edition of the bilateral air exercise between India and France that is taking place after a gap of two years.**
- Air Exercise Garuda provided a unique opportunity for both Air Forces to learn and imbibe each other's best practices during operations while also highlighting the growing interoperability between the two Air Forces.
- **The first, third and fifth editions were conducted in India in 2003, 2006 and 2014 at Air Force Stations Gwalior, Kalaikunda and Jodhpur, respectively.**

Twin Engine Decks Based Fighter

Context:

- **As indigenous aircraft carrier INS Vikrant gears up for aviation trials, the project to develop a Twin Engine Deck Based Fighter (TEDBF), to operate from carriers in the near future is taking shape.**

Details:

- The project under development is expected to get approval from the Cabinet Committee on Security (CCS) by mid-2023 and TEDBF could be inducted into the Navy by 2031-32, according to officials from the Aeronautical Development Agency (ADA).
- **The TEDBF is a replacement for the Mig-29K fighters in service and should be inducted with the Navy by 2031-32**
- The TEDBF is envisaged as a twin-engine medium weight fighter with an all-up weight of 26 tonnes and wing folding.
- In January 2020, DRDO had demonstrated successful arrested landing of Naval LCA on INS Vikramaditya and subsequently, 18 take-offs and landings were conducted in five days. The TEDBF is being taken up from the experience of the Naval LCA.
- **In 2017, the Navy had floated Request For Information (RFI) to procure 57 twin-engine carrier fighter which is now set to be downsized to around 26 including a few twin-seater trainer variants, with the TEDBF in the pipeline.**
- The Navy had contracted 45 Mig-29K aircraft from Russia for INS Vikramaditya, few of which have been lost in crashes and given the availability rates, there won't be enough aircraft to operate from both the carriers.

Sea Vigil-22

Context

- The third edition of the 'Pan-India' Coastal Defence Exercise 'Sea Vigil-22' will be conducted on 15-16 Nov 22.

Details:

- **This National Level Coastal Defence Exercise was conceptualised in 2018 to validate various measures that have been instituted towards enhancing maritime security since '26/11'.**
- Coastal Security being a major sub-set of Coastal Defence construct, the concept of 'Sea Vigil' is to activate the Coastal Security apparatus across India and assess the overarching Coastal Defence mechanism.
- **The exercise will be undertaken along the entire 7516 km coastline and Exclusive Economic Zone of India** and will involve all the Coastal States and Union territories along with other maritime stakeholders, including the fishing and coastal communities.
- The exercise is being conducted by the Indian Navy in coordination with the Coast Guard and other ministries entrusted with the task of maritime activities.
- The scale and conceptual expanse of the exercise is unprecedented in terms of the geographical extent, the number of stakeholders involved, the number of units participating and in terms of the objectives to be met.
- **The exercise is a build up towards the major Theatre Level Readiness Operational Exercise (TROPEX), which the Indian Navy conducts every two years.**
- Sea Vigil and TROPEX together will cover the entire spectrum Maritime Security challenges.
- Assets of the Indian Navy, Coast Guard, Customs and other maritime agencies will participate in Ex Sea Vigil.

- In addition to the Ministry of Defence, the conduct of this exercise is also being facilitated by the Ministries of Home Affairs, Ports Shipping and Waterways, Petroleum and Natural Gas, Fisheries Animal Husbandry and Dairying, Customs, and other agencies of Centre/ State.
- While smaller scale exercises are conducted in Coastal States regularly, including combined exercises amongst adjoining states, the conduct of exercise *Sea Vigil* at the national level is aimed to serve a larger purpose.
- It provides opportunity, at the apex level, to assess our preparedness in the domain of Maritime Security and Coastal Defence.
- Exercise *Sea Vigil-22* will provide realistic assessment of our strengths and weaknesses and thus will help in further strengthening Maritime and National Security.

HWASONG-17

Context

- North Korea said it test fired its massive new Hwasong-17 intercontinental ballistic missile (ICBM), in what analysts said may be the first successful launch of the system after doubts were raised about earlier claims.

Details:

- **The Hwasong-17 is nuclear-armed North Korea's biggest missile yet, and is the largest road-mobile, liquid-fuelled ICBM in the world.**
- Its diameter is estimated to be between 2.4 and 2.5 metres, and its total mass, when fully fuelled, is likely somewhere between 80,000 and 110,000 kg, according to 38 North, a U.S.-based programme that monitors North Korea.
- Unlike North Korea's earlier ICBMs, the Hwasong-17 is launched directly from a transporter, erector, launcher (TEL) vehicle with 11 axles.
- **Japanese Defence Minister Yasukazu Hamada said the weapon could travel as far as 15,000 km, enough to reach the continental United States.**
- North Korea has made preparations to resume nuclear testing for the first time since 2017, South Korea and the United States say, and officials say new tests could help develop warheads for MIRV systems.

Iron Dome

Context

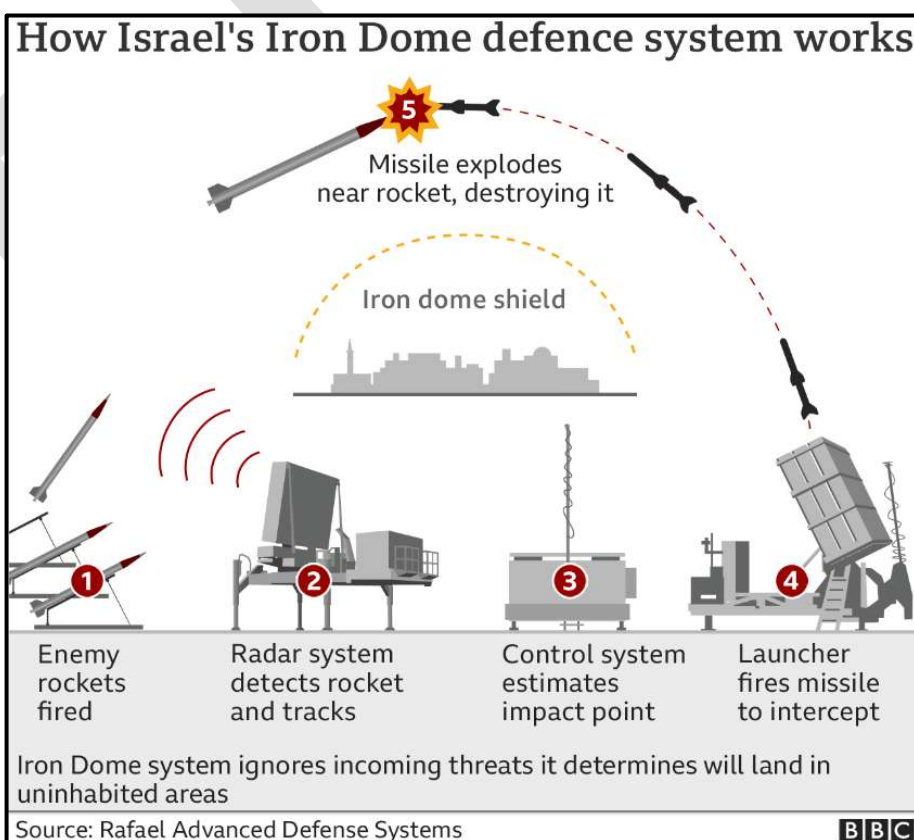
- According to some Israeli military diplomats, the Iron Dome air defence system, developed by Israel Aerospace Industries and Rafael Advanced Defense Systems, has intercepted over 3,000 projectiles in the last 10 years.

What is Iron Dome?

- Iron Dome is a **multi-mission system** capable of **intercepting rockets, artillery, mortars and Precision Guided Munitions** like very short range air defence (V-SHORAD) systems as well as aircraft, helicopters and Unmanned Aerial Vehicles (UAV) **over short ranges of up to 70 km.**
- It is an **all-weather system** and can **engage multiple targets simultaneously** and can be deployed **over land and sea.**
- Iron Dome is **jointly manufactured by Rafael Advanced Systems** and has been in service with Israeli Air Force since 2011.

How does it work?

- An Iron Dome battery consists of a **battle management control unit, a detection and tracking radar and a firing unit** of three vertical launchers, with 20 interceptor missiles each.
- The interceptor missile uses a proximity fuse to detonate the target warhead in the air.



- One of the system's important advantages is **its ability to identify the anticipated point of impact of the threatening rocket**, to calculate whether it will fall in a built-up area or not, and to decide on this basis whether or not to engage it.
- This prevents unnecessary interception of rockets that will fall in open areas and thus not cause damage.
- The **I-DOME is the mobile variant with all components on a single truck** and **C-DOME is the naval version for deployment on ships**.

What are the limitations of the system?

- The system has a '**saturation point**'.
- It is capable of engaging a certain (unpublished) number of targets at the same time, and no more.
- One of the possible limitations is the **system's inability to cope with very short range threats** as estimates put the Iron Dome's minimum interception range at 5-7 kilometres.

ENVIRONMENT & ECOLOGY

Melocanna Baccifera

Context

- A study conducted by Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Thiruvananthapuram spanning 13 years has shed interesting light on flowering in *Melocanna baccifera*.

Details:

- The study was funded by the Science and Engineering Research Board (SERB), the Department of Science and Technology, the Government of India, and the Kerala State Council for Science, Technology and Environment (KSCSTE) under the Kerala government.
- **Melocanna baccifera is a tropical bamboo species known for its association with the occurrence of 'bamboo death,' 'rat floods' and famines in northeast India.**
- Researchers detected a correlation between the sugar content in the fruit of *Melocanna baccifera* and the frenzied feeding and population boom in rats during 'Mautam', the cyclical, mass bamboo flowering that occurs once in 48 years.
- Called 'Muli' in northeast India, *Melocanna baccifera* is the largest fruit-producing bamboo and is native to the northeast India-Myanmar region.
- During its gregarious flowering, the bamboo produces large fruits which draw animal visitors/predators.
- During this period, they also multiply rapidly, a phenomenon dubbed as 'rat flood.'
- Earlier, it was presumed that 'high protein in fruits/seeds' was attracting the rats. However, a JNTBGRI study in 2016 that was part of the research found that the fruit actually contains very little protein. The predation is mainly due to the high content of sugars.

Methane Alert and Response System (MARS)

Context

- In keeping with the relatively new focus on cutting methane emissions, the UN has decided to set up a satellite-based monitoring system for tracking it and alerting governments and corporations to respond.

Details:

- **The Methane Alert and Response System, or MARS, will integrate data from a large number of existing and future satellites that have the ability to detect methane emission events anywhere in the world, and send out notifications to the relevant stakeholders to act on it.**
- It would feed into the recently formed International Methane Emissions Observatory of the UN Environment Programme.
- To start with, MARS will track the large point emission sources, mainly in the fossil fuel industry, but with time, would be able to detect emissions from coal, waste, livestock and rice fields as well, a UN statement said.

About Methane:

- In the last few years, there has been a lot of emphasis on reducing methane emissions.
- **Methane is the second-most common of the six major greenhouse gases, but is far more dangerous than carbon dioxide in its potential to cause global warming.**
- Accounting for about 17 per cent of the current global greenhouse gas emissions, methane is blamed for having caused at least 25 to 30 per cent of temperature rise since the pre-industrial times.
- **However, unlike carbon dioxide, methane is largely a sectoral gas, and there are only a few sources of emission.** It is possible, therefore, to cut down on methane emissions without having widespread impact on the economy. Because its global warming potential is about 80 times that of carbon dioxide, a reduction in methane emissions also brings big benefits in a short time.

Methane Pledge:

- At the Glasgow climate conference last year, nearly 100 countries had come together in a voluntary pledge — now referred to as the Global Methane Pledge — to cut methane emissions by at least 30 per cent by 2030 from the 2020 levels.
- More countries have joined in this initiative since then, bringing the total to nearly 130.
- A 30 per cent reduction in methane emissions by 2030 is expected to result in avoiding 0.2 degree rise in temperature by the year 2050, and is considered absolutely essential in the global efforts to keep the temperature increase below the 1.5 degree Celsius target.
- US President Joe Biden announced, among other things, a proposal to strengthen domestic standards with the aim of reducing methane emissions from the oil and gas sector by 87 per cent from 2005 levels.

Pseudohelice Annamalai

Context:

- Researchers have discovered a new species of estuarine crab at the mangroves of Parangipettai near the Vellar River estuary in Cuddalore district.

Details:

- **The species has been named Pseudohelice annamalai in recognition of Annamalai University's 100 years of service in education and research.**
- So far, only two species — Pseudohelice subquadrata and Pseudohelice latreilli — have been confirmed within this genus.
- The species discovered is distributed around the Indian subcontinent and the eastern Indian Ocean.
- **Pseudohelice annamalai is distinguished by dark purple to dark grey colouring, with irregular light brown, yellowish brown, or white patches on the posterior carapace with light brown chelipeds.**
- The new species is small and has a maximum width of up to 20 mm
- The species inhabits muddy banks of mangroves, and the burrows were located near the pneumatophores of *Avicennia* mangroves.
- Burrows have a depth of 25-30 cm and are branched, with larger pellets around the entrance. This species is not aggressive and can move fast like other intertidal crabs.
- As many as 17 species of intertidal crabs have been recorded in the same region.
- **The occurrence of Pseudohelice in India links the distribution gap between the western Indian Ocean and the western Pacific Ocean.**
- The new species provides additional evidence of the geographic isolation of the eastern Indian Ocean for some marine organisms.

Harlequin Frogs

Context:

- Once a species is classified as extinct, odds are it isn't coming back. Ecologists at Michigan State University (MSU) and collaborators in Ecuador have found 32 species of an amphibian genus — Atelopus or harlequin frogs — still surviving in the wild.

Details:

- A recent report by international non-governmental organisation World Wide Fund for Nature (WWF). *Living Planet Report 2022* painted a grim picture of the status of wildlife conservation and called for urgent action to reverse nature loss.
- The WWF report linked the loss of wildlife populations of mammals, birds, amphibians, reptiles and fish with the climate crisis and highlighted the broken relationship of humans with nature. The highest decline (94 per cent) was in the Latin America and the Caribbean region, while the least was in Europe and central Asia (18 per cent).
- But there are other threats to biodiversity as well. Since the 1980s, a fungus called Bd — short for Batrachochytrium dendrobatidis — has been killing off members of more than 500 species of amphibians.
- The harlequin frog genus was hit exceptionally hard by the fungus, according to the MSU research team. Over the past four decades, experts believed that upwards of 80 per cent of its species were driven to extinction.

Indian Black Honeybee

Context

- A new species of endemic honeybee has been discovered in the Western Ghats.

Details:

- The new species has been named **Apis karinjodian** and given the common name **Indian black honeybee**.
- It is **after a gap of more than 200 years that a new species of honeybee has been spotted in the Western Ghats.**
- The last honeybee described from India was *Apis indica* in 1798 by Fabricius. Although Fabricius named the Indian bee *Apis indica*, it was not considered a valid species till now.

- The research team restored the status of *Apis indica* based on a new measure for species discrimination in honeybees termed 'Radio-Medial Index (RMI)'.
- *Apis karinjodian* has evolved from *Apis cerana* morphotypes that got acclimatised to the hot and humid environment of the Western Ghats.
- **The distribution of *Apis karinjodian* ranges from the central Western Ghats and Nilgiris to the southern Western Ghats, covering the States of Goa, Karnataka, Kerala and Tamil Nadu.**

Invasive Species

Context

- **An invasive species, *Senna spectabilis*, an exotic tree, has taken over between 800 hectares and 1,200 hectares of the buffer zones of the Mudumalai Tiger Reserve (MTR) in the picturesque Nilgiris hill district.**

Details:

- Introduced as an ornamental species and for use as firewood from South and Central America, the species has become highly invasive in the Sigur plateau in both the core and buffer zones of the MTR.
- Over the last few years, its bright yellow flowers have become more visible across the Tiger Reserve.
- Conservationists say the invasive weed has a negative effect on local biodiversity, crowding out native species and limiting food availability for wildlife.
- *Senna spectabilis*, along with *Lantana camara*, is among five major invasive weeds that had taken over vast swathes of the Nilgiris, with wattle being the other major invasive species.
- Eucalyptus and pine, though exotic, do not spread as quickly as the other species and are considered easier to manage.

Arrippatti Biodiversity Heritage Site

Context

- The Tamil Nadu Government issued a notification declaring Arrippatti and Meenakshipuram villages in Madurai district the first biodiversity heritage site in the State.

Details:

- The site comprising 139.63 hectares in Arrippatti village (Melur block) and 53.8 hectares in Meenakshipuram village (Madurai East taluk) will be known as **the Arrippatti Biodiversity Heritage site.**
- **Arrippatti village, known for its ecological and historical significance, houses around 250 species of birds including three important raptors - birds of prey, namely the Laggar Falcon, the Shaheen Falcon and Bonelli's Eagle.**
- It is also home to wildlife such as the Indian Pangolin, Slender Loris and pythons
- The area is surrounded by a chain of seven hillocks or inselbergs that serve as a watershed, charging "72 lakes, 200 natural springs and three check dams," the notification said.
- The Anaikondan tank, built during the reign of Pandiyan kings in the 16th century is one among them.
- Several megalithic structures, rock-cut temples, Tamil Brahmi inscriptions and Jain beds add to the historical significance of the region.
- To prevent the loss of biodiversity and to preserve the cultural and architectural heritage of bygone times, the State government, upon the recommendation of the Tamil Nadu Biodiversity Board has declared Arrippatti a biodiversity heritage site.
- **The declaration of the site, has been made under the Section 37 of the Biological Diversity Act, 2002.**

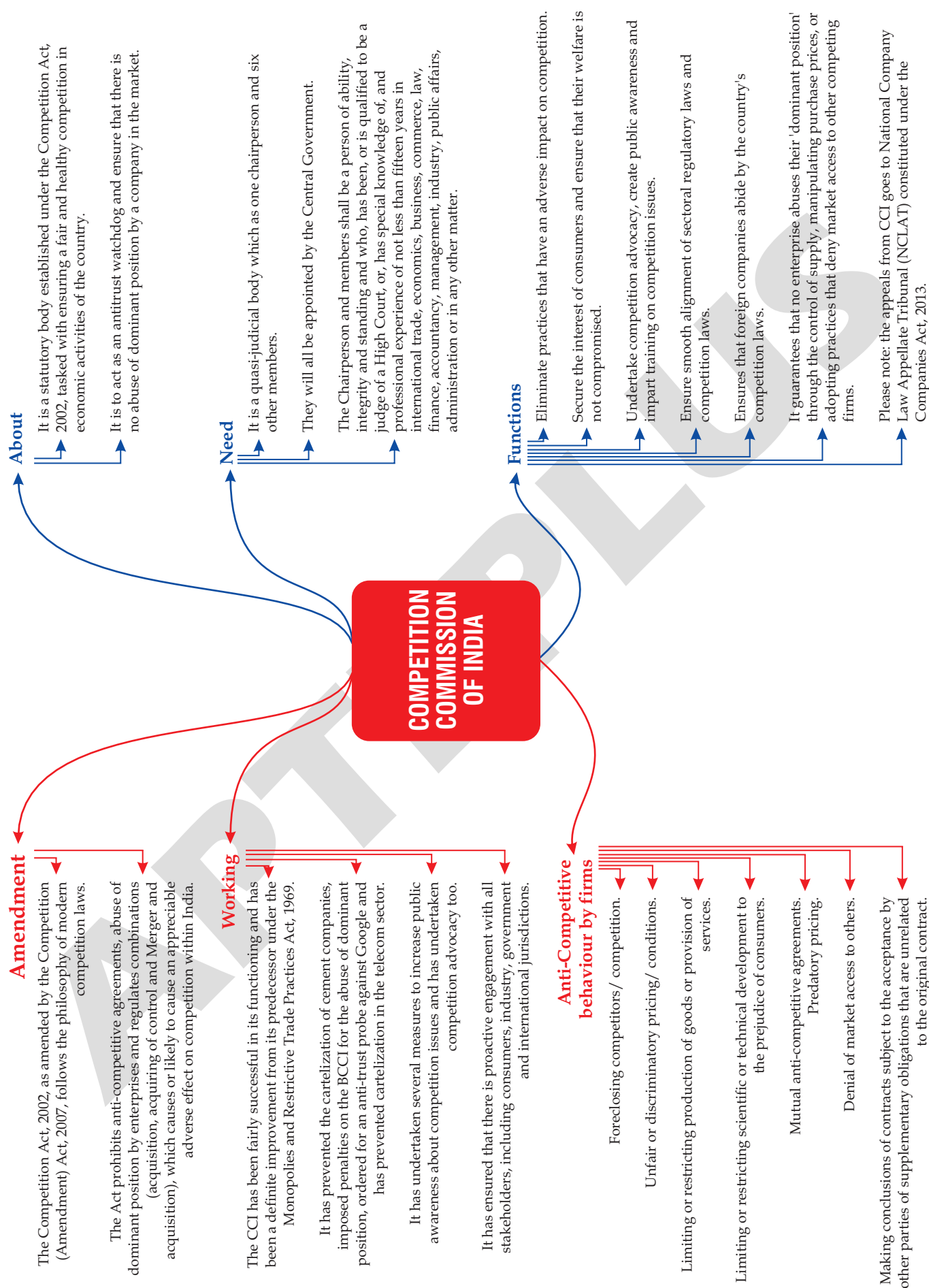
Black Corals

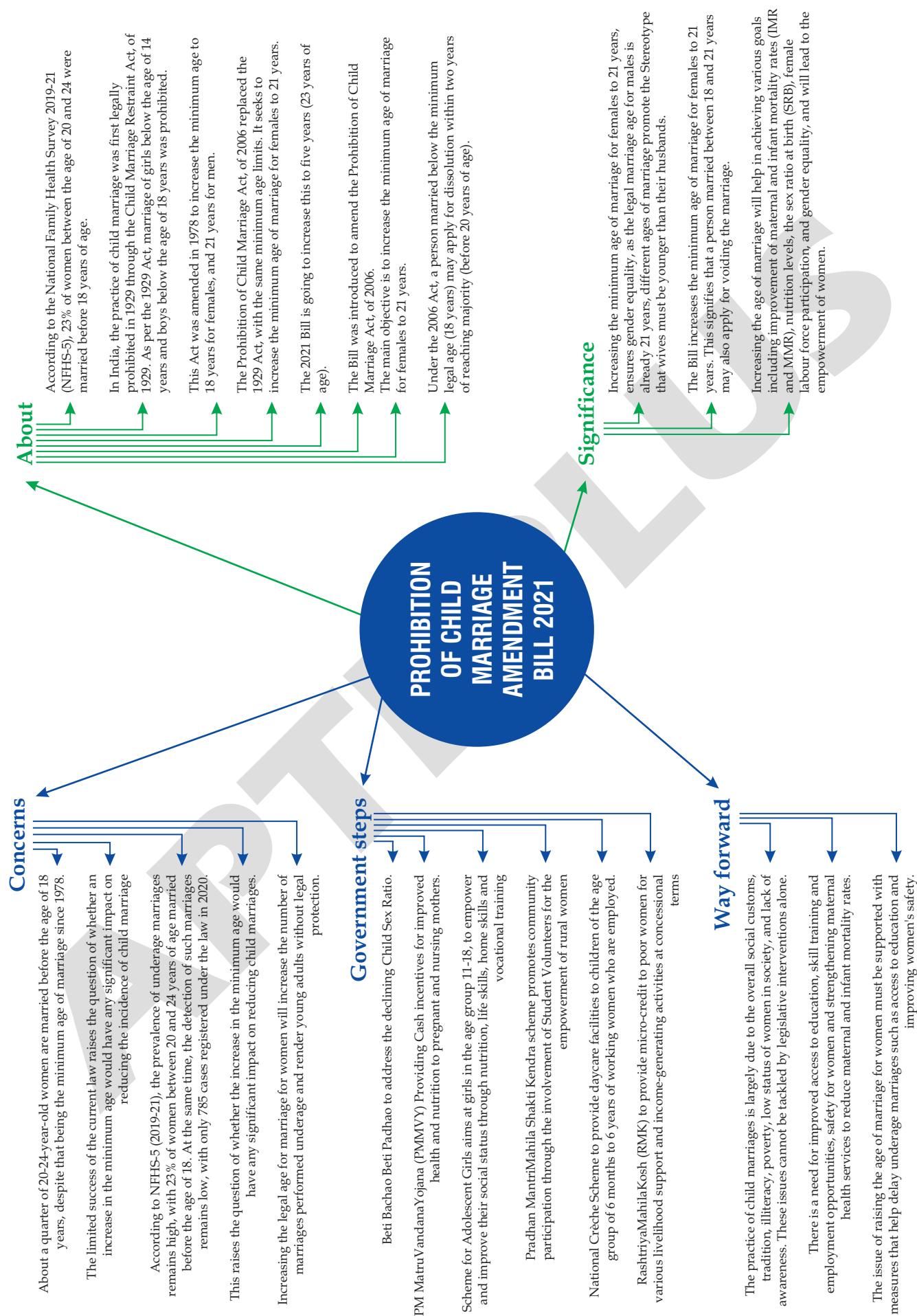
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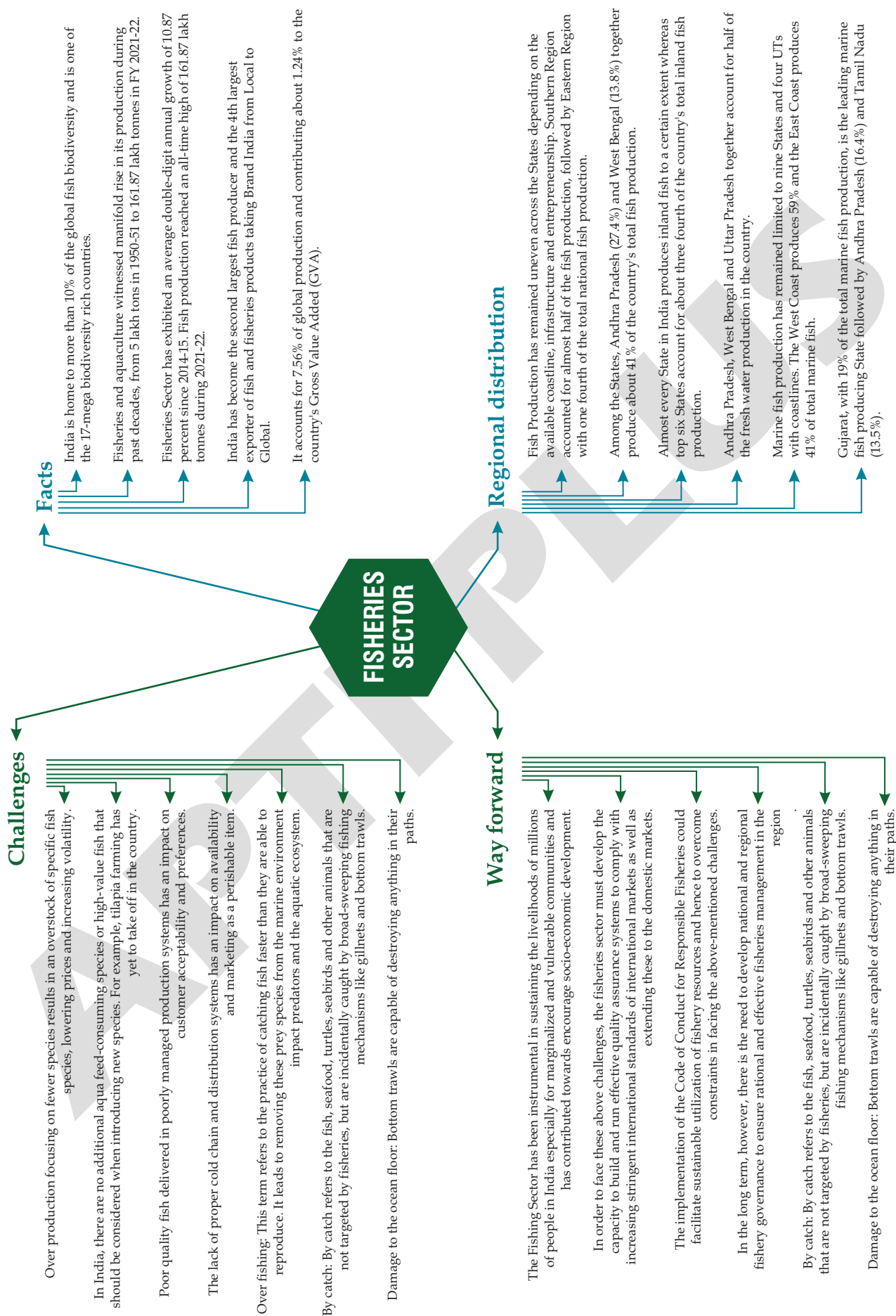
- Using a remote-controlled submarine, researchers at Smithsonian Institution, Washington, discovered five new species of black corals living as deep as 2,500 feet (760 metres) below the surface in the Great Barrier Reef and Coral Sea off the coast of Australia.

Details:

- **Black corals can be found growing both in shallow waters and down to depths of over 26,000 feet (8,000 metres), and some individual corals can live for over 4,000 years.**
- Many of these corals are branched and look like feathers, fans or bushes, while others are straight like a whip.
- **Unlike their colourful, shallow-water cousins that rely on the sun and photosynthesis for energy, black corals are filter feeders and eat tiny zooplankton that are abundant in deep waters.**
- In the past, corals from the deep parts of this region were collected using dredging and trawling methods that would often destroy the corals.
- Among the many interesting specimens were five new species – including one that was found growing on the shell of a nautilus more than 2,500 feet (760 metres) below the ocean's surface.
- **Similarly to shallow-water corals that build colourful reefs full of fish, black corals act as important habitats where fish and invertebrates feed and hide from predators in what is otherwise a mostly barren sea floor.**
- For example, a single black coral colony researchers collected in 2005 off the coast of California, United States, was home to 2,554 individual invertebrates.







Strategic importance

Gilgit-Baltistan is the only territorial frontier, and thus a land route, that connects Pak. with China, where it meets the Xinjiang Autonomous Region.

To G-B's west is Afghanistan, to its south is Pakistan-occupied Kashmir, and to the east J&K.

For India, the region represents the continuity with the past of Jammu and Kashmir, which included Gilgit-Baltistan at the time of Partition of 1947.

The ongoing stand-off with China at the Line of Actual Control in Eastern Ladakh has a Gilgit-Baltistan connection as the Darbuk-Shiyok-DBO road of India is viewed as a tactical roadway to access the Karakoram Pass, which provides China crucial access to Gilgit-Baltistan and Pakistan.

Demands in G-B Region

The people of G-B have been demanding for years that it be made a part of Pakistan, they do not have the same constitutional rights Pakistanis have.

There is virtually no connect with India, the people of G-B have no real connect with Kashmir either.

They belong to several non-Kashmiri ethnicities, and speak various languages, none of these Kashmiri.

A majority of the estimated 1.5 million G-B residents are Shias, with the predominant sentiment that their conditions will improve once they are part of the Pakistani federation.

There is a small movement for independence, but it has very little traction.

India's stand

India reiterated its territorial sovereignty over the region.

Ministry of External Affairs stated that the Pakistani move to change the status of the region will "have no legal basis whatsoever".

India has consistently opposed Pakistan's activities in Gilgit-Baltistan.

It also opposed the announcement of the commencement of the Diamer-Bhasha dam in July.

There have been local and international concerns as reports suggest priceless Buddhist heritage will be lost once the dam is built.

India has objected to the use of Gilgit-Baltistan to build and operate the China Pakistan Economic Corridor (CPEC), which cuts through the region before heading to the Arabian Sea coastline of Balochistan's Gwadar port.

Background

The British sold it, along with the rest of Jammu and Kashmir, to the Dogra ruler of Jammu, Gulab Singh, after defeating the Sikh army in 1846, but retained controlled over the area through a lease extracted from the Maharaja.

On November 1 1947, after J&K ruler Hari Singh had signed the Instrument of Accession with India and the Indian Army had landed in the Valley to drive out tribal invaders from Pakistan, there was a rebellion against Hari Singh in Gilgit.

Pakistan did not accept G-B's accessional though it took administrative control of the territory.

After India went to the UN and a series of resolutions were passed in the Security Council on the situation in Kashmir, Pakistan believed that neither G-B nor PoK should be annexed to Pakistan, as this could undermine the international case for a plebiscite in Kashmir.

Special status

Though both PoK and GB are ruled directly from Islamabad, both are "autonomous territories".

During the first Indo-Pak war of October 1947, Pakistan occupied 78,114 sq km of the land of Jammu and Kashmir, including the 'Northern Areas'.

The Northern Areas is the other name of Gilgit-Baltistan that Pakistan has used for administrative reasons because it was a disputed territory.

Pakistan initially governed the region directly from the central authority after it was separated from 'Azad Jammu and Kashmir' on April 28, 1949.

Under Prime Minister Zulfikar Ali Bhutto, the name of the region was changed to the Federally Administered Northern Areas (FANA).

Pakistan passed the Gilgit-Baltistan Empowerment and Self Governance Order in 2009, which granted "self-rule" to the 'Northern Areas'.

The local situation altered considerably with Pakistan signing an agreement with China for mega infrastructure and hydel power projects in September 2009.

»»» Introduction

The world order that came about in the aftermath of World War II was a western-oriented construct that has become obsolete in many ways.

The changes underway offer India an opportunity to participate in the crafting of political and economic institutions that are more pertinent to the emerging geopolitical equations.

India will officially become the world's fifth largest economy, overtaking Britain, Germany and Japan. According to several global financial institutions, India's GDP will be the world's third largest by the end of this decade.

Present global status

Drift in world order: We are neither in a bipolar Cold War nor in a multipolar world, though perhaps tending towards a world of several power centres. We are in a world between orders.

Ineffective cooperation: The lack of a coherent international response to the Covid-19 pandemic is proof of an absence of international order and of the ineffectiveness of multilateral institutions.

Emerging threats: We are entering a new polarised information age, and face ecological crises of the Anthropocene, making climate change an existential threat.

Rise of China and retreat of globalisation: A retreat from globalisation, the regionalisation of trade, a shifting balance of power, the rise of China and others, and structural China-United States strategic rivalry have shifted the geopolitical and economic centres of gravity from the Atlantic to Asia.

»»» India's foreign policy

Internal security: Both India's security concerns and its relationships to the region and beyond have to be viewed within two global contexts: hegemony and globalization. India was brought up on the concept of "balance of power", and this no longer applies today.

Government System: India has a democratic governance system that inspires many countries of the world to accept Indian ideology.

Cultural factors: History and culture can be seen as important in the formulation of India's foreign policy. Kautilya's theory of a powerful kingdom with the ideals of Buddha and Gandhi shows the path of India.

INDIA IN THE EMERGING WORLD ORDER

Challenges

Growing Russia-China Axis: Russia is beginning to display more significant interest in its periphery's affairs. Moreover, the sanctions imposed on Russia after Crimea's annexation in 2014 has pushed Russia towards a tighter embrace of China.

Self-Imposed Isolation of India: Currently, India remains isolated from two important supranational bodies of which it used to be a founding member, viz., the Non-Aligned Movement (NAM) and the South Asian Association for Regional Cooperation (SAARC).

Weakening Ties with Neighbours: This can be seen from instances like China's Cheque Book Diplomacy vis-a-vis Sri Lanka, strain in relation with Bangladesh on NRC issue and recent border controversy with Nepal due to the release of the new map.

Challenges in middle east: The US-brokered rapprochement between Israel and four Arab countries the UAE, Bahrain, Morocco and Sudan reflected the changing landscape in the region. Despite the hype surrounding Abraham Accords, the situation remains fluid and has not reduced the risk of a confrontation between Iran and Israel.

Way forward

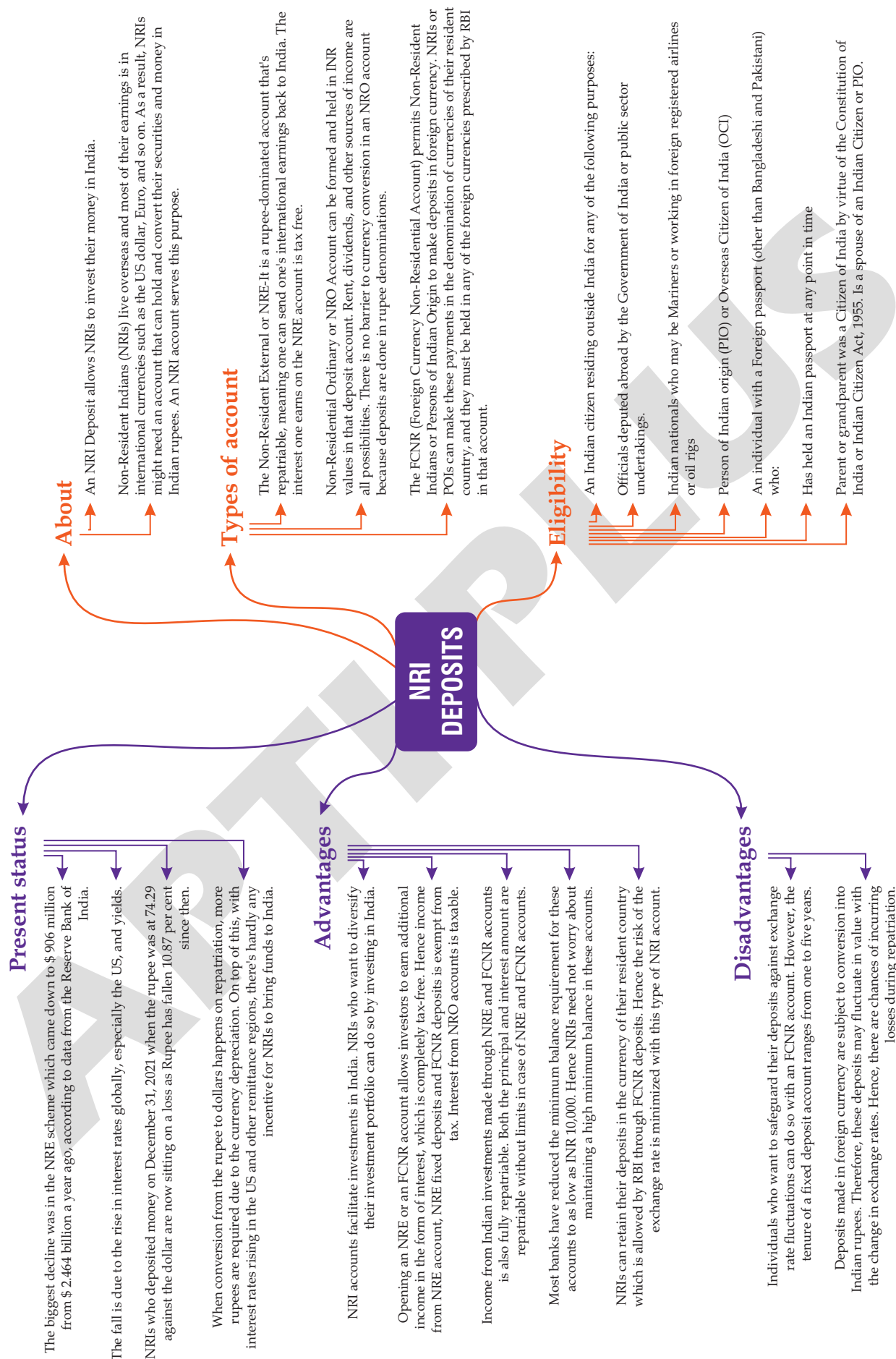
Increasing security congruence with the U.S. could enable growing cooperation in fields significant for India's transformation: energy, trade, investment, education and health.

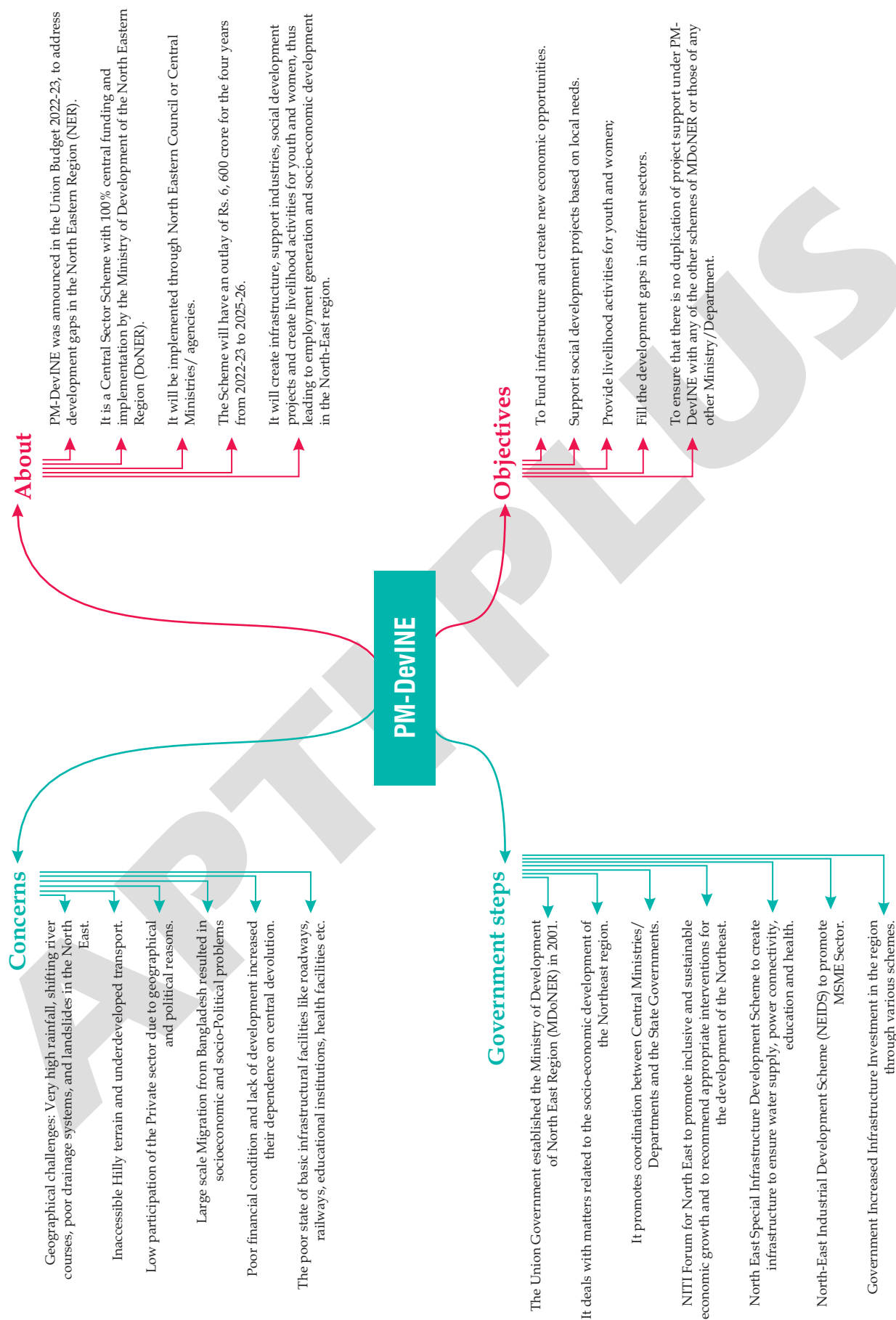
Self-strength is key: Several steps that India can take in ensuring its role and influence abroad continue to serve the task of transforming India. Economic policy must match political and strategic engagement.

External Aid in Adequate Measure: The current standoff with China has reinforced J.L. Nehru's belief in 1963 that India needs "external aid in adequate measure".

Revive SAARC: India could be the primary source of both prosperity and security in the neighbourhood — the subcontinent and the Indian Ocean Region.

India's potential to play a global economic, political and security role depends on developments in the international structure and regimes, regional stability and its own domestic economic growth and internal political stability.





Global TB Report

This is the first time in many years an increase has been reported in the number of people falling ill with TB and drug resistant TB.

TB services are among many others disrupted by the COVID-19 pandemic in 2021, but its impact on the TB response has been particularly severe.

Many people with TB were not diagnosed and treated. The reported number of people newly diagnosed with TB fell from 7.1 million in 2019 to 5.8 million in 2020. There was a partial recovery to 6.4 million in 2021, but this was still well below pre-pandemic levels.

The number of people provided with treatment for RR-TB and multidrug-resistant TB (MDR-TB) has also declined between 2019 and 2020.

The report notes a decline in global spending on essential TB services from US\$6 billion in 2019 to US\$5.4 billion in 2021, which is less than half of the global target of US\$13 billion annually by 2022.

Concerns

India has set a target to eliminate TB by 2025. Experts believe that to reach this goal, the country must go beyond the medical aspects.

Undernutrition is a major risk factor that drives TB, acknowledges the World Health Organization. The condition accounts for nearly 34 per cent of all cases.

Way forward

The government needs to take stock of where the bottlenecks are. There is no point in pouring more money into a failing system.

Drug-resistant tuberculosis remains a public health crisis, and ongoing surveillance of the burden is essential to mounting an effective response. Accurate diagnosis and treatment of tuberculosis, including drug-resistant forms, should be available and accessible to all who need it.

Closing gaps in the detection of drug-resistant tuberculosis requires investment in laboratory capacity, sample transport systems, and data connectivity solutions. To improve detection requires a multistep process, first requiring improved bacteriological confirmation among presumptive cases of pulmonary tuberculosis.

Efforts are needed to minimise the emergence of resistance to the first new drugs to be made available for the treatment of tuberculosis. Early detection of resistance relies on investment in research and development of new molecular tools.

About

Tuberculosis (TB) is a potentially serious infectious disease that mainly affects the lungs.

The 'Mycobacterium tuberculosis' bacteria that cause TB are spread when an infected person coughs or sneezes.

Most people infected with the bacteria that cause tuberculosis don't have symptoms. When symptoms do occur, they usually include a cough (sometimes blood-tinged), weight loss, night sweats and fever.

Treatment isn't always required for those without symptoms. Patients with active symptoms will require a long course of treatment involving multiple antibiotics.

As in the previous 10 years, most of the funding used in 2021 (79%) was from domestic sources. In other low- and middle-income countries, international donor funding remains crucial.

Present status in India

Tuberculosis is one of India's major public health problems. According to World Health Organisation (WHO) estimates, India has the world's largest tuberculosis epidemic.

In 2020, India accounted for 26% of the incident TB cases across the globe.

India has an incidence rate of 192 cases per 100,000 of population.

India accounted for 38% of global TB deaths among HIV-negative people and for 34% of the combined total number of TB deaths in HIV-negative and HIV-positive people.

Further in 2020, India accounted for 24% of the global gap between estimated TB incidence and the number of people newly diagnosed with TB and reported.

Global targets

In 2014 and 2015, all Member States of WHO and the UN adopted the UN Sustainable Development Goals (SDGs) and WHO's End TB Strategy. The SDGs and End TB Strategy both include targets and milestones for large reductions in TB incidence, TB deaths and costs faced by TB patients and their households.

In 2018, countries convened at the United Nations (UN) high-level meeting on TB committed to speed up work towards ambitious targets to treat an additional 40 million people with TB and provide preventive treatment to at least 30 million people at risk of developing the disease by 2022.

TUBERCULOSIS



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