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The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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SECTION: A
(MAINS)

CURRENT AFFAIRS

AHOM WARRIOR LACHIT BORPHUKAN AND THE BATTLES OF ALABOI & SARAIGHAT

CONTEXT:

Chief Minister of Assam had announced a number of projects in connection with the 400th birth anniversary of Lachit Borphukan.

⊙ ANALYSIS

Who was Lachit Borphukan?

- Borphukan was known for his **leadership in the Battle of Saraighat, 1671** in which an attempt by Mughal forces to capture Assam was thwarted.

- He single-handedly led a vastly outnumbered Ahom force to victory over a numerically superior Mughal Army.

- Lachit Barphukan's victory is honoured with a gold medal given every year to the best cadet graduating from the **National Defence Academy (NDA).**

About Ahom Kingdom:

- The **Ahom dynasty (1228–1826)** ruled the Ahom kingdom in present-day Assam, India for nearly 598 years.

- The dynasty was established by **Sukaphaa, a Shan prince of Mong Mao** who came to Assam after crossing the **Patkai Mountains**.

- The rule of this dynasty ended with the Burmese invasion of Assam and the subsequent annexation by the British East India Company following the **Treaty of Yandabo in 1826.**

- In external medieval chronicles the kings of this dynasty were called Asam Raja, whereas the subjects of the kingdom called them Chaopha, or Swargadeo

The Battles

- **Battle of Alaboi (1669):**

- In 1669, Aurangzeb dispatched the Rajput Raja Ram Singh I to recapture territories won back by the Ahoms.

- The battle of Alaboi was fought between the Ahom armed force and Mughals trespassers on August 5, 1969 in the **Alaboi Hills near Dadara** in North Guwahati.

- **Battle of Saraighat (1671):**

- The battle of Sarai Ghat was one of the most significant warfares in medieval India.

- The Battle of Saraighat was a **naval battle fought in 1671** between the Mughal Empire (led by the Kachwaha king, **Raja Ram Singh** I), and the Ahom Kingdom (led by **Lachit Borphukan**) on the Brahmaputra river at Saraighat, Guwahati, Assam.

- Although weaker, the Ahom Army defeated the Mughal Army by brilliant uses of the terrain, clever diplomatic negotiations to buy time, **guerrilla tactics**, psychological warfare, **military intelligence** and by exploiting the sole weakness of the Mughal forces (navy).

- The Battle of Saraighat was the last battle in the last major attempt by the Mughals to extend their empire into Assam.

Though the Mughals managed to regain Guwahati briefly later after a Borphukan deserted it, the Ahoms wrested control in the **Battle of Itakhuli in 1682** and maintained it till the end of their rule.

THE REFUGEE CRISIS

CONTEXT:

Model laws on asylum and refugees that were drafted by the National Human Rights Commission (NHRC) decades ago but not implemented by the government needs to be revised by an expert committee.

The issue also assumes significance in the wake of 'Ukraine Crisis' and the flood of refugees.

Understanding Refugee, Asylum – Seeker and Migrant:

⊙ **Refugee:** Refugees are persons who are outside their country of origin for reasons of feared persecution, conflict, generalized violence, or other circumstances that have seriously disturbed public order and, as a result, require international protection.

➤ The refugee definition can be found in the **1951 Convention** and regional refugee instruments, as well as UNHCR's Statute.

- India has welcomed refugees in the past, and on date, nearly 300,000 people here are categorised as refugees.
- The bulk of the refugee population in India originates from **Sri Lanka, Tibet, Myanmar and Afghanistan.**

⊙ **Migrant:** While there is no formal legal definition of an international migrant, most experts agree that an international migrant is someone who changes his or her country of usual residence, irrespective of the reason for migration or legal status.

➤ Generally, a distinction is made between short-term or temporary migration, covering movements with duration between three and 12 months, and long-term or permanent migration, referring to a change of country of residence for duration of one year or more.

⊙ **Asylum-seeker:** An asylum-seeker is a person who has left their country and is seeking protection from persecution and serious human rights violations in another country, but who hasn't yet been legally recognized as a refugee and is waiting to receive a decision on their asylum claim.

➤ Seeking asylum is a human right.

➤ This means everyone should be allowed to enter another country to seek asylum.

What are the Legal Framework present in India?

- India is neither a signatory to the **1951 UN Refugee Convention** relating to refugee status nor of its **1967 Protocol.**

- India is not a signatory to the **1951 United Nations Convention** and **1967 Protocol Relating to the Status of Refugees**, and it does not currently have a national law on refugees.
- The refugees and asylum seekers were entitled to the rights in **Articles 14, 20 and 21 of the Constitution.**

⊙ In India, all foreign nationals including refugees, asylum seekers and stateless persons are governed by the provisions contained in the

➤ Foreigners Act 1946

➤ Registration of Foreigners Act, 1939

➤ Passport Act 1920

➤ Citizenship Act 1955

⊙ **Foreigners Act, 1946:** The **Foreigners Act, 1946**, gives the central government the right to deport a foreign national.

⊙ **Passport Act, 1920:** According to the Passport Act, 1920, it is mandatory for anyone entering India through water, land or air to possess their passport and also prohibits the entry of the person not possessing the document.

⊙ As the **Citizenship Act 1955,** an illegal immigrant can be:

➤ Foreign national who enters India on valid travel documents and stays beyond their validity, or

➤ Foreign national who enters without valid travel documents.

⊙ While law and order is a **State subject** under the **Indian Constitution**, international relations and international borders are under the exclusive purview of the Union government.

⊙ This has resulted in a variety of agencies, both of the Central as well as the State governments, having to deal with refugee matters connected with law enforcement.

⊙ **Article 51** states that the state shall endeavour to foster respect for international law and treaty obligations in the dealings of organized people with one another.

- In 2011, the Union government circulated to all states and Union Territories a Standard Operating Procedure to deal with foreign nationals who claimed to be refugees.

- So, in a nutshell, India does not have on its statute book a specific and separate law to govern refugees.

What are the challenges faced by refuges?

- Limited access to quality education

- Compromised mental health and the threat of 'lost' childhoods

- Separation from families and greater vulnerability

- Shifting family dynamics and responsibilities

- Isolation in host community

- Concern's work with refugee children

Why India needs a Refugee Law?

- **Easy and effective management:** A sustainable refugee policy is a necessary step to intelligently manage population movements and ensure transparency and predictability in our administrative actions.

- **Managing leadership:** A national refugee management law will be in keeping with India's leadership role in the region and amongst developing nations.

- **Coordination for betterment:** The legislation will clarify the roles of different agencies — governmental, judicial, UN — involved in refugee protection and lay down the procedures of coordination amongst them.

- **Avoiding friction:** It would also help avoid friction between the host country and the country of origin.

- **Setting example:** Other states would recognise the move to grant asylum as a peaceful, humanitarian and legal act, and not an arbitrary political gesture.

- **Platform for dialogue:** It will also provide a platform for dialogue on sharing responsibility and aid the search for durable solutions to the root causes of a refugee problem.

Finding the right balance: Some countries provide initial help to refugees, after which they are expected to fend for themselves. A few countries have treated refugees like charity cases. Finding the right balance between the two is what a national refugee law can help achieve.

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INDIA-UAE FREE TRADE AGREEMENT AND ITS SIGNIFICANCE

CONTEXT:

India and the United Arab Emirates have signed the Comprehensive Economic Partnership Agreement (CEPA).

◉ BACKGROUND:

- India and UAE have entered into a **Free Trade Agreement (FTA)** by signing the CEPA in February, 2022.

- The above deal was signed in a virtual summit headed by Indian Prime Minister Narendra Modi and the Crown Prince of Abu Dhabi Sheikh Mohammed bin Zayed Al Nahyan.

- This agreement will boost bilateral trade between the two countries and benefit both the economies.

◉ ANALYSIS:

About the CEPA between India and UAE:

- It is a Free Trade Agreement that will take effect from 1st June, 2022.

> **What is a Free Trade Agreement?**
> - It is an agreement between two or more nations to eliminate tariffs and non-tariff barriers on a significant amount of imports from partner countries. Services, investment, and economic cooperation may all be covered by the agreement.
> - Comprehensive Economic Partnership Agreement is one of the types of Free Trade Agreement.

- It is **India's First Free Trade Agreement in the last 10 years** and first such deal after Narendra Modi became the Prime Minister of India.

> The last major FTA India signed was with Japan in 2011.

- India-UAE qualifies as an **"early harvest agreement".**

> Under an early harvest agreement, **two trading partners significantly reduce or eliminate customs duties on a limited number of goods** and relax norms for promoting trade in services.

- This FTA is the **fastest trade deal** to have been negotiated (88 days) till now.

- The abovementioned agreement not only covers goods and services traded between the two countries but also many other products. Hence this deal has been termed **as 'new-age FTA'.**

> - This CEPA is one of India's 'new-age FTAs', because it covers topics that have formerly been unexplored. These contain chapters on government procurement, digital trade, and intellectual property rights, all of which are extensive and separate.
> - It also accommodates provision for cooperation, cross-border data transfer, and harmonisation of digital standards with the focus being on digital trade.

- For the first time in a FTA, **separate chapter on small and medium enterprises** has also been incorporated that recognises the fundamental role of SMEs in maintaining dynamism and enhancing the competitiveness of respective economies of both the countries.

- Thus, this CEPA also reaffirms the importance of incorporating an SME perspective into economic and trade issues.

How will this deal help India?

- From Day 1 of the agreement coming into force, **90 percent of India's current exports to the UAE will have immediate market access at zero duty.**

- **Duties on an additional 9 percent of India's exports are set to reduce to zero within the next 5 to 10 years,** according to CEPA provisions.

- The CEPA is likely to benefit about $26 billion worth of Indian shipments that are currently subjected to 5 percent import duty by the UAE.

- The **major beneficiaries** of this would **be gems and jewellery, apparel, engineering products, and pharmaceuticals exports.**

- A **separate Annex on Pharmaceuticals** has been incorporated to facilitate early access of Indian pharmaceuticals to the UAE market.

The above provision includes automatic registration and marketing authorization within 90 days for Indian products approved by developed countries such as the US, UK, European Union and Japan.

- With respect to imports from UEA, as per the provisions of the CEPA, **India has set lower tariff rate quotas (TRQs) for select imports from UAE,** most important among which is gold, one of India's largest imports.

- This in actuality means that the **TRQ will allow a lower tariff rate on imports** of a gold **within a specified quantity.**

UAE is the second largest source of gold for India. Lowering of tariff on gold coming from UAE will boost the gems and jewellery sector in India and also disincentives smuggling of the yellow metal into India.

- On the interest expressed by the UAE government, India has provided such TRQs for other products also. Examples of such product are copper, polyethylene, certain chemicals and metal items.

- Review of these TRQs will happen after 10 years.

Provision in the FTA to protect Indian producers:

- The CEPA is also the first of its kind in India's stable of FTAs given that it comes with **an in-built safeguard mechanism.**

- It is important to note that the government has criticised the lack of safeguards in previously negotiated FTAs that left domestic industry vulnerable to import surges.

- The CEPA with the UAE incorporates a **permanent safeguard mechanism** that can be **resorted to** by either nations, **in case of a sudden surge in imports.**

- Both countries have also prepared separate **exclusion lists, detailing the products that they want to keep out of the ambit of the FTA,** owing to sensitivities.

- To protect domestic industry, **India has decided to keep a range of agri-products outside the deal. This includes dairy, tea, coffee, rubber, spices, sugar and tobacco products.**

- Manufactured items such as pharmaceuticals, certain chemicals including azo dyes, aluminium and copper scrap, certain categories of steel, helicopters and aeroplanes have also been kept out.

Provisions related to rules of origin:

- This FTA contains strict rules related to **rules of origin norms.**

- **Stringent monitoring of trade** from both countries will be done **to scrutinise the origin of product** traded between the two countries.

- Thus, **other countries circumventing the FTA route** by showcasing product to be originating from one of the two countries and exporting it to the second, **can be stopped.**

A case in point is the entry of Chinese goods that are shipped to Vietnam, Thailand, or Malaysia and then re-exported to India. Since these countries are India's FTA partners, the final import duty on the goods in question remains relatively low, while the government loses revenue and the market is flooded.

- This **mandates stringent norms for value addition, or the minimum amount of economic value** that has to be added to the product if it is not originally made in the UAE, for it to be allowed for export to India under the CEPA.

Why is UAE important for India?

- **UAE is the third largest trading partner** of India after China and USA.

- The **UAE has established itself as a major economic hub** not just in the Middle East/West Asia region, but also globally.

- As a **part of Gulf Cooperation Council,** UAE can help in finalising the FTA between Indian and the GCC.

- India-UAE relations have become a **focal point of India's Extended Neighbourhood and Look West policies in the region.** This deal will further boost the relation between the two countries.

- **India's Extended Neighbourhood:** In 2004 the Indian government affirmed that "the concept" of an "extended neighbourhood for India" included the **region from the Suez Canal to the South China Sea and includes within it West Asia, the Gulf, Central Asia, South East Asia, East Asia, the Asia Pacific and the Indian Ocean Region.**

- **Look West Policy:** In the year 2005, the government of India launched its Look West Policy which focused on India **improving its relations with West Asian countries.**

- The **three main axes** of India's Look West Policy are- The **Arab Gulf countries, Israel and Iran.**

With which other countries/groups is India negotiating FTAs?

⊙ United Kingdom

⊙ European Union

⊙ Australia

⊙ Canada

⊙ Israel

⊙ GCC

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POSITIVE SECULARISM IN INDIA

CONTEXT:

Argument made in the Supreme Court of India by Senior Advocate Devdatt Kamat stating that India's secularism is 'positive' in nature.

◉ BACKGROUND:

- Petition has been made in the Supreme Court of India against the decision of colleges in Karnataka banning Hijab.

- Councilor for the petitioners stated in the Supreme Court that because India follows positive version of secularism, it is important for the state to protect the religious right of the citizens.

◉ ANALYSIS

- The Preamble of Indian Constitution aims to constitute India a **Sovereign, Socialist, Democratic Republic.**

- The terms Socialist and Secular were added to it by the 42nd amendment.

- The whole constitution is summarized in the preamble.

- It is the mirror to the spirit of the constitution.

- The arrangement of the words in the preamble is also very significant. Indian society is a multi – religious society, it is having different caste, religion along with several religion diversification.

- So, all these are the divisive factor in some way or the other and if not handled carefully then can cause a threat to the unity and integrity of the nation.

What is secularism?

- The definition of secularism that came up after the **French revolution** essentially meant that the State (politics) will maintain distance from religion.

- This was the result of people of Europe and more specifically the people of France not wanting to be governed by the dictates of the Church in all aspects of life including politics.

- In the western societies therefore religion is an 'independent aspect' of life which is considered to be outside the influence of politics.

- This is idea of secularism is termed as negative secularism.

India's version of secularism:

- Indian version of secularism on the other hand believes in the **vedic concept** called **Sarva Dharma Samubhav.**

- The above concept literally means that the state will be at equidistance from religion.

- It also means that Indian state is not atheists and believes in existence of religion though it does not favor any particular religion.

- Indian Constitution, following to the concept of **Sarva Dharma Samubhav**, places the responsibility of defending the religious rights of the citizens of India on the Indian State.

- The above is termed as positive version of secularism.

Is the concept 'static' in nature?

- The concepts of secularism are not static; it is elastic in connotation.

- In this area, flexibility is most desirable as there cannot be any fixed views in this concept for all time to come.

- The courts decide from time to time the contours of the concepts of secularism and enforce it in practice.

How is the above debate relevant to the current petition?

- In the current petition, revocation of order banning Hizab is colleges is sought.

- According to petitioners, wearing hizab is an essential religious practice whose defense falls upon the Indian State including the Supreme Court.

Freedom of Religion in Indian Constitution

- The **Preamble of the Indian Constitution** mentions India to be a Secular State.

- **Article 14 to 16** prohibit discrimination against any Indian citizen on the grounds of religion.

- **Articles 25 to 28** of the Indian Constitution mention grant the Indian Citizen Freedom of Religion.

NEW INDIA LITERACY PROGRAMME: THE CHANGING NEED OF EDUCATION IN INDIA

CONTEXT:

Recently, the Government approved a new scheme "New India Literacy Programme" for the period FYs 2022-2027 to cover all the aspects of Adult Education to align with National Education Policy 2020.

The government has also decided to use the term "Education For All" in place of "Adult Education."

This is because the terminology "Adult Education" is not appropriately incorporating all non-literates of 15 years and above age group.

⊙ BACKGROUND

- As per Census 2011, the absolute number of non-literates in the country, who are 15 years and above, is 25.76 crore.

- It is estimated that currently, around 18.12 crore adults are still non-literate.

> **"State of the Education Report (SOER) -2021 of India-" No Teachers, No Class"**
>
> **Key-points**
>
> - This report is published annually by UNESCO. This is the third edition of the Education Report.
>
> - This year, the report focuses on the theme "teachers, teaching and educating teachers", highlighting the challenge of teaching.
>
> - The report seeks to provide insight into key aspects of the teaching profession and provides a profile of 9.6 million teaching staff.
>
> - The report also highlights the challenges of a complex system of teaching and their professional development.
>
> - The findings of this report were prepared on the basis of the data obtained from:
>
> - Periodic Labor Force Survey (PLFS)
>
> - Unified District Information System for Education (UDISE)
>
> **Key-findings**
>
> - As per the report, there are close to 1.2 lakh schools in India. It accounts for 7.15 percent of 11.51 lakh schools. Of this, 89 percent are in rural areas.
>
> - 51% of total schools are employing 95 lakh teachers.
>
> - According to the Report's findings, India needs 11.16 more teachers to address the current shortage.

> - Countries with the highest percentage of schools with single teachers are
> - Arunachal Pradesh (18.22%)
> - Goa (16.08%)
> - Telangana (15.71%)
> - Andhra Pradesh (14.4%)
> - Jharkhand (13.81%)
> - Uttarakhand (13.64%)
> - Madhya Pradesh (13.08%)
> - Rajasthan (10.08%)

⊙ ANALYSIS

What is the New India Literacy Programme (NILP)?

- **The New India Literacy Programme is** implemented by the **Ministry of Education in convergence with various Ministries and Departments to implement the scheme.**

- **It is a Centrally Sponsored Scheme.**

- The scheme will be implemented **through volunteerism through online mode.**

  > **The training, orientation, workshops of volunteers, maybe organised through face-to-face mode.**

- The Objective of this Programme to impart **not only foundational literacy and numeracy but also to cover other components which are necessary for a citizen of the 21st century.** Such as-

  > **Critical life skills** (financial literacy, digital literacy, commercial skills, health care and awareness, child care and education, and family welfare)

  > **Vocational skills** (with a view towards obtaining local employment);

  > **Basic education** (including preparatory, middle, and secondary stage equivalency) and

➤ **Continuing education** (including engaging holistic adult education courses in arts, sciences, etc and recreation, as well as other topics of interest or use to local learners).

◉ The scheme **will cover non-literates of the age of 15 years and above in all states/UTs.**

◉ T**he target for Foundational Literacy and Numeracy for FYs 2022-27 is 5 crore learners at one crore per year by using "Online Teaching, Learning and Assessment System (OTLAS)."**

Status of Adult illiteracy in India

◉ **As per Census 2011,** the absolute number of **non-literates of the country in 15 years and above age group is 25.76 crore.**

➤ About 7.64 crore persons are certified as literates under the **Saakshar Bharat programme.**

➤ Hence, it is estimated that currently, **around 18.12 crore adults are still non-literate in India.**

Important Constitutional provisions

Education was sole responsibility of state till 1976 but constitutional amendment made it concurrent subject.

Fundamental Rights

• **Article 21A:** Right to Education

• **Article 28:** Freedom as to attendance at religious instruction or religious worship in certain educational institutions.

• **Article 29:** Equality of opportunity in educational institutions.

• **Article 30:** Right of minorities to establish and administer educational institutions.

Directive Principles:

• **Article 41:** Right to work, to education and to public assistance in certain cases

• **Article 45:** Provision for free and compulsory education for children and Provision for early childhood care and education to children below the age of six years

• **Article 46:** It provides for special care to the promotion of education and economic interests of the scheduled caste, scheduled tribes and the weaker sections of society.

Government initiatives promoting online education in India:

Digital India initiative in mind, the government is aiming to give online education a big push, in an attempt to widen the reach of higher education. Following are the major initiatives taken by the government to promote online education in India:

How Government is promoting online education?

◉ **SWAYAM:** The 'Study Webs of Active Learning for Young Aspiring Minds' (SWAYAM) is an integrated platform for offering online courses and covering school (9th to 12th) to Post Graduate Level.

◉ **SWAYAM Prabha:** SWAYAM Prabha is an initiative to provide 32 High Quality Educational Channels through DTH (Direct to Home) across the length and breadth of the country on 24X7 basis.

◉ **National Digital Library (NDL):** The National Digital Library of India (NDL) is a project to develop a framework of virtual repository of learning resources with a single-window search facility.

◉ **Free and Open Source Software for Education (FOSSEE):** FOSSEE is a project promoting the use of open source software in educational institutions.

◉ **E-Yantra**: e-Yantra is a project for enabling effective education across engineering colleges in India on embedded systems and Robotics.

◉ **Other major initiatives include:**

➤ **UG/PG MOOCs** for non-technology courses

➤ **e-PG** Pathshala or e-content containing modules on social science, arts, fine arts, natural and mathematical science

➤ **CEC-UGC** YouTube channel

➤ **Vidwan –** a database of experts who provide information to peers and prospective collaborators,

➤ **NEAT –** an initiative by AICTE based on the PPP model to enhance the employability skill among students, in collaboration with Education Technology Companies and National Digital Library (NDL), a repository of learning resources with single window facility.

➤ Many noteworthy initiatives have been taken up like Spoken Tutorial, Google Classroom and so on.

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GENDER JUSTICE: REQUIREMENT OF POLICING, FOR POLICING

CONTEXT:

Parliamentary Standing Committee on Home Affairs has recently made an observation that the representation of women in India's police force is abysmally low.

⊙ ANALYSIS

What has the Parliamentary Standing Committee on Home Affairs observed?

- The Committee has observed that the **representation of women in India's police forces is at 10.3%.**

- This, the committee said, **is way low than the target of 33%** women in police force set by the Government of India in 2009.

How do the different states fair on employing women in their police forces?

- **States with lower socio-economic indicators have better representation** of women (percentage wise) in their police force.

> Bihar, for example, has the highest representation of women in the police force at 25%. Himachal Pradesh comes second with 19%.

- It is also important to note that all southern states, which have better social indicators and are considered to be economically advanced, have a representation lower than the national average, except for Tamil Nadu where it is 18%.

Statistics of women in Central Police Forces:

- Reality of representation of women in Central Police Forces is worse than what it is in the state police forces.

- The number of **women employed in the central armed police force,** widely known as the paramilitary force, is 29,249, accounting for **just 2.98%** of the total number of 9,82,391 personnel.

What are the reasons for low representation of women in police forces?

- **Structural and attitudinal issues** work against the entry of women in police force.

- **Policing is still considered to be a male job** that demands physical strength for which women are considered to be unfit.

- Many a times the logistics in the **police department do not support the inclusion of women in the force.** Prime example of this is limited number of police stations in India having separate toilets for women personnel.

Why are more women need in police force?

- **Data by report United Nations Women,** titled Progress of the World's Women: In Pursuit of Justice, categorically shows that there is **positive correlation between presence of women in police force and reporting of sexual assault.**

- More women in police force therefore is an **important development towards gender justice.**

- According to the Status of Policing 2019 report. Policewomen are **less likely to have allegations of excessive force** against them, and their presence can reduce the use of force by other police officers.

- Studies have consistently found that women possess a number of traits that make them **trusted partners to their communities,** ultimately helping to **improve police-community relations.**

- Beyond a gender dichotomy, research shows that **diverse workforces are more effective, creative and resilient** than homogenous workforces, and that teams with broad perspectives are better at making decisions and solving problems.

- Hence including more women to the police force and **giving the force more diversity would be an intelligent step.**

- It is also important to understand that all institutions like the government and its agencies, occupations like the police and public spaces like classrooms in **a democratic society should be inclusive and representative of the society.**

- Entry of women in police force should also be encouraged because this job will **not only financially empower but also socially uplift them.**

Recommendations of Parliamentary Committee for increasing the number of women in police forces:

◉ Setting up at least **one all-woman police station in one district,**

◉ **Appointing at least three women sub-inspectors and 10 women constables in one station**

◉ **Recruitment of women for additional posts rather to fill existing posts** and assignment of important duties to women police personnel.

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IS INSURGENCY REVIVING IN MANIPUR?

CONTEXT:

IED blast in Manipur on 20th February, 2022 injured two jawans of ITBP.

⊙ BACKGROUND:

- Manipur, since September 2021, has seen **steep rise in militancy.**
- Increased instances of violence has caused death on some occasions including the one in which an **Indian Army Colonel, his family and soldiers were killed.**
- **Defence Minister Rajnath Singh** in an election rally on 14th February, in Imphal, **called upon the militant groups in Manipur to shun violence** and have dialogue with the Central Government for bringing peace in the state.

⊙ ANALYSIS

What is the genesis of violence in Manipur?

- **Historically speaking,** anti-India attitude and insurgency groups in Manipur rose because-
  - ➤ **Manipur's merger with India in 1949** is considered by separatist in state to be forced and without the assent of Manipuri people.
  - ➤ **Delay in granting full-fledge statehood** to Manipur, which happened only in 1972.
- **Secessionist movement by Naga militants** in the neighboring state of Nagaland and their demand for creation of **Nagalim (Greater Nagaland)** has created an atmosphere of hate in the hill regions of Manipur.
- Geographically Manipur is divided into **Hill regions and the Imphal Valley.**
- In the **Imphal Valley the Meitei community** dominates while it is in the **hills of Manipur that the Naga tribes live in majority alongwith Kukis.**
- **Tensions amongst these three tribes** has added new chapters of violence in the state.

Which insurgent groups are active in Manipur?

- United National Liberation Front (It is the oldest and the most active insurgent group in Manipur)
- People's Liberation Army
- People's Revolutionary Army of Kangleipak
- Kangleipak Communist Party
- Kanglei Yawol Kanna Lup
- National Socialist Council of Nagaland-IM
- Zeliangrong United Front
- People's United Liberation Front (PULF)

What are the demands of these Insurgent Groups?

- There is **no one single specific demand** of the insurgent groups and there are differences on what each group and each fraction within a particular groups want.
- Most of the insurgent groups operating in Manipur have been **demanding cessation of the state from Union of India.**
- Though this demand today is **only rhetorical** and used to start from higher position in negotiation with the Indian and the Manipuri government.
- **Increased decentralization of power** with more authority and subjects to be transferred from Central Government to the state government and the Hill Councils of Manipur.
- **The Kukis** tribe wants creation of **more Hill Councils** in the state with their political dominance in them.
- The Naga insurgent groups, as discussed earlier, are fighting for the creation of Nagalim (Greater Nagaland).

> Naga militant groups want **Nagalim consisting of Nagaland, hill regions of Manipur and bordering regions of Myanmar were this groups are in majority.**

What has been the response of the Indian Government?

- After taking into consideration the rising instances of violence in the state, the Government of India declared the whole of Manipur to be a **'disturbed area'** and brought it under the application of **Armed Forces Special Powers Act (AFSPA) in the year 1980.**

> **What is AFSPA?**
> - Armed Forces Special Powers Act (AFSPA), 1958 is an act of the Parliament of India that grants special powers to the Indian Armed Forces to maintain public order in "disturbed areas".

- Armed Forces in "disturbed areas" have the authority to prohibit a gathering of five or more persons in an area, can use force or even open fire after giving due warning if they feel a person is in contravention of the law.

- If reasonable suspicion exists, the army can also arrest a person without a warrant; enter or search a premises without a warrant; and ban the possession of firearms.

- **Military operations by the Indian defence forces and out- reach efforts** made by the Indian and Manipuri Government caused the graph of violence in the state to dip since the mid-1990s.

- Successive Central Governments have offered peace talks **within the framework of Indian Constitution.**

Talks between Central Government and the insurgent groups:

- The NSCN-IM entered a ceasefire agreement with the Government of India (GoI) in 1997, even as peace talks between them have still been continuing.

- Kuki outfits under two umbrella groups, the Kuki National Organisation (KNO) and United People's Front (UPF), also signed the tripartite Suspension of Operation (SoO) pacts with the GoI and Manipur on August 22, 2008.

- Many of their smaller outfits have entered the SoO agreement with the state government, which has launched rehabilitation programmes for militants of such groups.

- Although major valley-based militant outfits (Meitei groups) such as the UNLF, PLA, KYKL etc. are yet to come to the negotiating table.

The way Forward:

- Insurgent groups that have not come to table and are still creating problems need to know that talks are the only way ahead.

- Negotiation within the framework of Indian Constitution, as offered by the Indian Government, is the only way in which peace can be achieved and sustained in Manipur.

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MRNA TECHNOLOGIES FOR VACCINE PRODUCTION

CONTEXT:

The World Health Organization has announced that six African countries will be given the revolutionary mRNA technology to set up their own vaccine production centers helping the continent acquire self-reliance against the Covid pandemic.

⦿ BACKGROUND:

- Researchers have been studying and working with **mRNA vaccines for decades**.

- Interest has grown in these vaccines because they can be developed **in a laboratory** using readily available materials.

- This means vaccines can be developed and produced in **large quantities** faster than with other methods for making vaccines.

- mRNA vaccines have been studied before for flu, Zika, rabies, and cytomegalovirus (CMV). As soon as the necessary information about the virus that causes COVID-19 was available, scientists began designing the **mRNA instructions for cells** to build the unique spike protein into an mRNA vaccine.

- **Future mRNA vaccine technology** may allow for one vaccine to provide protection against **multiple diseases**, thus decreasing the number of shots needed for protection against common vaccine-preventable diseases.

⦿ ANALYSIS:

What are vaccines?

- Vaccines help prepare the body to **fight foreign invaders** (pathogens such as bacteria or viruses), to prevent infection.

- All vaccines introduce into the body a **harmless piece of** a particular bacteria or virus, triggering an immune response.

- Most vaccines contain a weakened or dead bacteria or virus.

What are mRNA vaccines and how do they work?

- Scientists have developed a new type of vaccine that uses a **molecule called messenger RNA (mRNA)** rather than part of an actual bacteria or virus.

- Messenger RNA is a type of RNA that is necessary for **protein production**.

- In cells, mRNA uses the information in genes to create a **blueprint for making proteins**.

- Once cells finish making a protein, they quickly **break down** the mRNA.

- mRNA from vaccines does not enter the nucleus and **does not alter DNA**.

- mRNA vaccines work by introducing a piece of mRNA that corresponds to a viral protein, usually a small piece of a protein found on the **virus's outer membrane**. (Individuals who get an mRNA vaccine are **not exposed to the virus**, nor can they become infected by the vaccine)

- Using this mRNA blueprint, cells produce the **viral protein**. As part of a normal immune response, the immune system recognizes that the protein is foreign and produces **specialized proteins called antibodies.**

- Antibodies help protect the body against infection by recognizing individual viruses or other pathogens, attaching to them, and **marking the pathogens for destruction**.

- Once produced, **antibodies remain in the body**, even after the body has rid itself of the pathogen, so that the **immune system can quickly respond if exposed again**.

Risks of the mRNA Vaccine:

- Some mRNA-based vaccine platforms **induce potent interferon type I responses**, which have been associated not only with **inflammation** but also potentially with **autoimmunity**.

- Thus, the identification of individuals at an **increased risk of autoimmune reactions** before mRNA vaccination may allow reasonable precautions to be taken.

- The **risks associated** with mRNA strands that did not manage to pass into a human cell are considered to be **low**, as the **fragile mRNA molecule should be quickly broken down** inside the body once its drug delivery system has eroded.

- mRNA vaccines are new, and before 2020, no mRNA technology platform had ever been authorized for human use, and thus there is the **risk of unknown effects**, both short and longer-term.

Advantages:

- As mRNA vaccines are not constructed from an **active pathogen** (or even an inactivated pathogen), they are **non-infectious**.

- mRNA vaccines can be produced **faster, cheaper, and in a more standardized fashion** which improves responsiveness to outbreaks.

◉ WAY AHEAD:

- Researchers are studying how mRNA might be used to develop vaccines for **additional infectious diseases.**

- **Moderna** is developing an **HIV vaccine** based on similar technology, which will enter early clinical trials, with preliminary results expected in 2022.

- **Biontech** is developing a **malaria vaccine** based on messenger RNA technology, with clinical trials expected to start in 2022.

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SYNTHETIC BIOLOGY

CONTEXT:

The Centre is working on a national policy on synthetic biology, an emerging science that deals with engineering life forms for a wide range of applications from making designer medicines to foods.

⊙ BACKGROUND:

- As part of the 12th Five-Year Plan, India had set up a **task force** on systems biology and synthetic biology research in 2011.

- This body underlined the **potential benefits** from synthetic biotechnology in biofuels, bioremediation, biosensors, food and health and made a strong case for a push for the technology.

- It highlighted that India could be a world leader as a protector and supporter of "**open source biological platforms**".

⊙ ANALYSIS:

What is Synthetic Biology?

- Synthetic biology, field of research in which the main objective is to create **fully operational** biological systems from the **smallest constituent parts** possible, including DNA, proteins, and other organic molecules.

- The synthetic systems created may be used to generate products ranging from ethanol and **drugs** to complete **synthetic organisms** such as complex bacteria that can digest and neutralize toxic chemicals.

- Ideally, these customized synthetic biological systems and organisms would be much **safer** and less complicated than approaches based on the manipulation of naturally occurring biological entities.

Applications of synthetic biology:

- **Redesigning organisms** so that they produce a substance, such as a medicine or fuel, or gain a new ability, such as sensing something in the environment, are common goals of synthetic biology projects.

- Some examples of what scientists are producing with synthetic biology are:

Application in pharmaceuticals:

- For instance, researchers have been working on the synthetic manufacture of the **antimalarial drug**

artemisinin, which is produced naturally in the sweet wormwood plant, a slow-growing species.

- Scientists have been trying to create new forms of bacteria that **can destroy tumors**.

- U.S. Department of Defense has experimented with the creation of **biological computers**, and other military scientists are trying to engineer proteins and gene products from scratch that will act as **targeted vaccines or cures**.

Application in Biofuels:

- In the area of biofuels, scientists at numerous companies are trying to create **microbes** that can **break down dense feedstocks** to produce biofuels.

- Modify the genes of microbes to **secrete oil**. If successfully scaled up for commercial production, these organisms could serve as valuable sources of **renewable energy**.

Other Applications:

- Microorganisms harnessed for **bioremediation** to clean pollutants from our water, soil and air.

- **Rice modified** to produce beta-carotene, a nutrient usually associated with carrots, that prevents vitamin A deficiency.

- **Yeast engineered** to produce rose oil as an eco-friendly and sustainable substitute for real roses that perfumers use to make luxury scents.

Risk assessment of synthetic biology:

- Synthetic biology is not without its risks. However, there is some debate as to whether synthetic biology represents categorically **different risks** from those posed by other forms of biological research and genetic engineering.

- Both genetically engineered and synthetic organisms are capable of reproducing, mutating, evolving, and spreading through the environment, which **makes them riskier** than hazardous chemicals.

- There is concern over so-called **emergent properties**, which could arise unexpectedly when genes with **no natural lineage** enter the environment and interact with one another.

What are the ethical and social implications?

◎ Projects that propose to synthesize entire genomes raise important ethical questions about **potential harms and benefits** to society.

◎ Many of the ethical questions relevant to synthetic biology are similar to ethical discussions related to genome editing.

➤ Are humans crossing **moral boundaries** by redesigning organisms with synthetic biology techniques?

➤ If synthetic biology yields **new treatments** and cures for diseases, who in our society will have **access** to them?

➤ What are the **environmental impacts** of introducing modified organisms into the ecosystem?

◎ Such ethical questions have been the subject of research since the beginning of the **Human Genome Project** and will continue to be researched as technology evolves and changes.

◎ Most scientists, ethicists and policymakers agree that entire societies must discuss and weigh the potential harms and benefits of synthetic biology in order to answer these questions.

◉ **WAY FORWARD:**

◎ Synthetic biology is seen as one of the top 10 **breakthrough technologies** as part of the **new industrial revolution** that are most likely to change the world.

◎ The regulatory challenge is how to leverage its anticipated benefits while guarding against its potential risks. The **laws and regulations** framework governing traditional tools and products of biotechnology can be applicable to this relatively nascent field in some ways, but most often it fails to fully adapt to the evolving possibilities of synthetic biology.

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INDIA'S MISSING STRETCHES OF GREEN

CONTEXT:

A total of 25.87 million hectares of recorded forest area — forest land under the control of state government's forest department—is not accounted for in the India State of Forest Report 2021.

⊙ **ANALYSIS:**

It just does not exist anywhere in the report. There is no assessment in terms of its coverage.

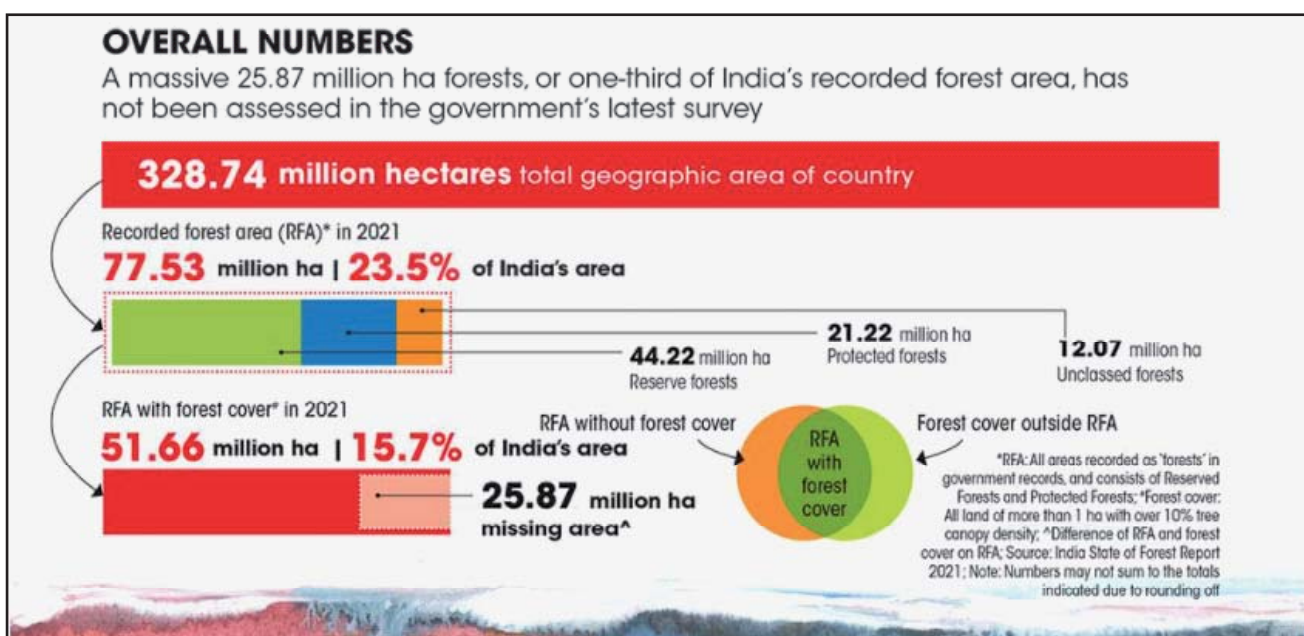There are pressing questions related to this missing land:

- ◉ Does this land exist?
- ◉ Is it encroached upon?
- ◉ Is it just degraded?

◉ So degraded that no forest can be counted here?

The Recorded Forest area (RFA) in 2021 report is **77.53 million ha**

RFA with forest cover in 2021 report is **51.66 million ha**

This means there is **25.87 million ha** area under recorded forest which has no forest worth counting under forest cover.

OVERALL NUMBERS

A massive 25.87 million ha forests, or one-third of India's recorded forest area, has not been assessed in the government's latest survey

328.74 million hectares total geographic area of country

Recorded forest area (RFA)* in 2021
77.53 million ha | **23.5%** of India's area

44.22 million ha Reserve forests

21.22 million ha Protected forests

12.07 million ha Unclassed forests

RFA with forest cover* in 2021
51.66 million ha | **15.7%** of India's area

RFA without forest cover

25.87 million ha missing area^

Forest cover outside RFA

*RFA: All areas recorded as 'forests' in government records, and consists of Reserved Forests and Protected Forests; *Forest cover: All land of more than 1 ha with over 10% tree canopy density; ^Difference of RFA and forest cover on RFA; Source: India State of Forest Report 2021; Note: Numbers may not sum to the totals indicated due to rounding off

How 25.87 million hectares got lost:

- ◉ There is no explanation provided in ISFR 2021 on this massive discrepancy — and only in passing reference does it say that **this is recorded forest without forest cover**.

- ◉ This lack of attention to the state of forests under the forest department is **inexplicable**.

- ◉ This is when the Forest Survey of India (**FSI**) has received **digital boundaries of recorded forests** from 24 states and Union Territories.

- ◉ An analysis of this from the very first State of Forest Report in 1987 shows for last three decades, the area in **state forest records has remained constant** — 23 per cent of the land. But what has changed is the analysis of how much of the forest cover is inside and outside this recorded forest.

- ◉ In 2015 this changed, when the report added a new category of "**forest cover outside recorded forest area**". Then the covered area under the recorded forests dropped to 15 per cent of the country's land and the balance area of forest cover was shifted to outside. The sum remained the same — roughly **21.6** per cent of India's area.

State's share in loosing forest:

- ◉ There are states where 30-50% of land classified as forest is missing from State of Forest Report 2021.

- ◉ **Madhya Pradesh** has lost nearly **3 million ha**, in other states the gap between recorded forest and the forest cover in recorded area is as big as 50%.

Missing forest cover* as % of the state's recorded forest area*
00 Missing forest cover (in hectare) from recorded forest area

-51.10%	Jharkhand	1,283,600 ha
-55.03%	Gujarat	1,203,500 ha
-55.83%	Uttarakhand	2,121,500 ha
-61.78%	Rajasthan	2,030,300 ha
-64.83%	Sikkim	378,700 ha
-71.95%	Himachal Pradesh	2,730,400 ha
-74.45%	Punjab	229,600 ha
-75.14%	Chandigarh	2,630 ha
-76.01%	Haryana	118,500 ha
-92.31%	Puducherry	1,200 ha

*Missing forest cover is the difference of recorded forest area (RFA) and the forest cover on RFA; Forest cover: All land of more than 1 ha with over 10% tree canopy density; #RFA: All areas recorded as "forests" in government records, and consists of Reserved Forests and Protected Forests;
Source: Down To Earth analysis based on India State of Forest Report 2021

Issue at hand:

- Till now, the debate on India State of Forest report 2021 has been about the counting of trees outside recorded forests.

- But it has not focused on what is happening to forest inside, on lands controlled by the state forest department and set aside for conservation.

- The biggest take away from ISFR 2021 is that massive areas of forests with forest department are missing and unaccounted. Possibly degraded to the point that they are not even classified as scrub.

What needs to be done?

- The urgent agenda is to **reinvent forest management** for the future, so that we build a wood based future and still protect the **ecologically fragile areas**.

- **Protect the high quality forests** for ecological security, biodiversity conservation, carbon sequestration. We must do this so that **communities** living near these forests get true value based **ecosystem payments** for their role in protection.

- **Focus on lands with forest department**. The missing 25.87 million ha must be **regenerated**.

- **End license raj on trees outside forests**. In the highly restrictive condition today, it is literally a crime to fell a tree even if you have planted it on your land.

- **Forest regeneration** is not possible without active involvement of local **communities**. People must get **rights not just over grass and minor forest produce** but also the right to cut and sell the trees when they are ready to harvest.

⊙ CONCLUSION:

The bottom line is Indian forests aren't in good shape. The increase in forest cover is miniscule considering our green goals. And what's not said is **1/3rd of land under forest department is missing** from ISFR 2021. This missing land which is bigger than Uttar Pradesh in area, is the real issue we must focus on. Otherwise our forests will be only **paper forests- forests on paper and not real**.

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GREEN HYDROGEN POLICY

CONTEXT:

The launch of the green hydrogen policy puts in place a sturdy foundation for developing a competitive green hydrogen sector in India.

India has become the 18th country to release a comprehensive green hydrogen policy, a watershed moment in India's energy transition journey.

The policy — envisaging a tangible strategy for developing a green hydrogen economy — sets in motion the process of decarbonization of 'hard to abate' sectors such as steel, cement industries, and long-haul transportation.
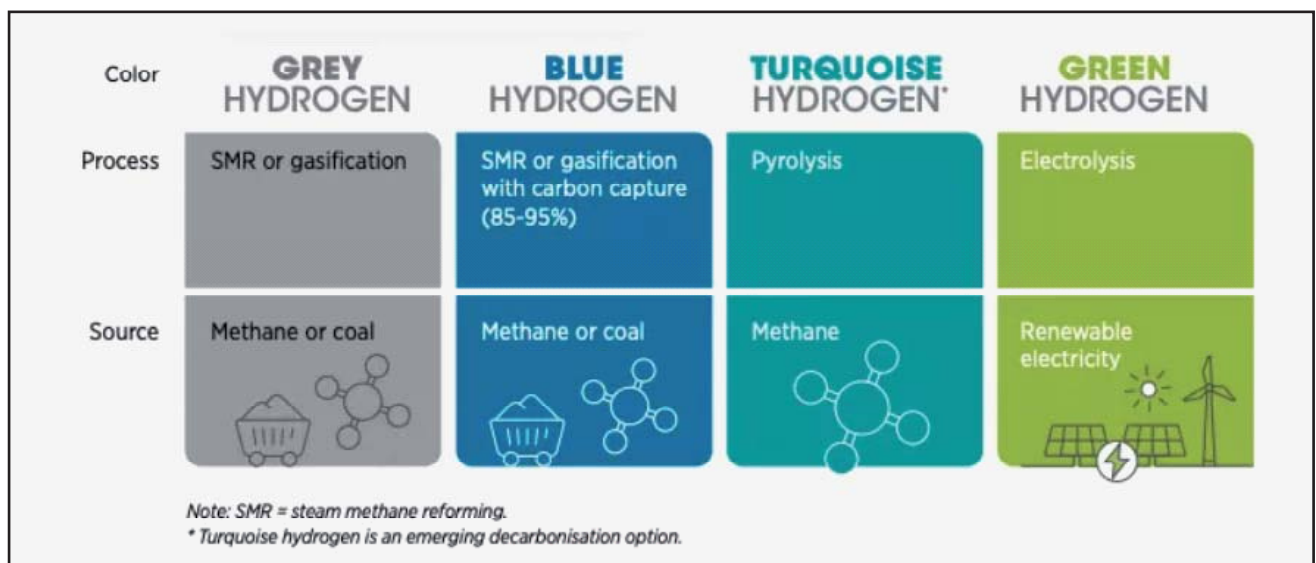
⊙ BACKGROUND:

- India has its commitment to achieve net zero carbon emissions by 2070

- Revised renewable energy addition target of 500 GW which primarily aims at decarbonisation of the power sector.

- With its cross-sectoral applications and decarbonisation potential, green hydrogen is poised to become one of the most disruptive feedstock-cum-fuels that can catalyze India's transition from oil and coal.

⊙ ANALYSIS:

What is Green Hydrogen?

- The definition for green hydrogen/green ammonia as products obtained through electrolysis of water using renewable electricity or electricity from biomass is an essential step in categorizing a low carbon pathway for their production.

Color	GREY HYDROGEN	BLUE HYDROGEN	TURQUOISE HYDROGEN*	GREEN HYDROGEN
Process	SMR or gasification	SMR or gasification with carbon capture (85-95%)	Pyrolysis	Electrolysis
Source	Methane or coal	Methane or coal	Methane	Renewable electricity

Note: SMR = steam methane reforming.
* Turquoise hydrogen is an emerging decarbonisation option.

Incentives for a Green Hydrogen Economy:

- Besides the **capital investment** required for electrolysers, purchase of renewable energy (RE) accounts for a significant share in its total cost of production.

- Acknowledging this, the policy focuses on enabling **access to low cost RE power** for green hydrogen/ammonia production.

- The policy offers a bouquet of incentives to green hydrogen producers for RE power procurement:

  ➤ Wavier of **interstate transmission system** (ISTS) charges for 25 years for projects commissioned before June 30, 2025

  ➤ Access to renewable energy through State utilities with 30 days of banking facility (mechanism to store and withdraw surplus renewable power)

  ➤ Priority access to **connectivity** with the ISTS network.

- **Multiple modes for procuring RE** for green hydrogen production have also been announced, including purchase of RE from power exchanges, and expedited access to open access mechanism.

- **Distribution utilities** have also been directed to procure and supply RE power to hydrogen and ammonia producers at nominal wheeling charges.

- The policy also states that green hydrogen producers can **avail land in solar parks** across states for establishing their production units.

- They would also be allowed to establish bunkers near ports for use by the maritime sector and export.

- To streamline the procurement process and ensure competitive pricing, the Ministry of New and Renewable Energy (**MNRE**) has been directed to **consolidate demand** from various sectors, and procure green hydrogen through the **competitive bidding route**.

Issues Left Unaddressed:

- While most of the incentives announced in the policy **cater to the supply side**, the policy does not specify mechanisms or incentives for **demand creation**.

- Currently, the cost of **grey hydrogen** produced from natural gas is nearly **one-fourth** the cost of green hydrogen.

- Bulk consumers of hydrogen, especially industrial sectors including fertilizers, steel, chemicals, and refineries are **unlikely to transition** to low carbon alternatives because of the higher associated costs.

- With no incentives to reduce emissions, such industries might not find the transition **viable** for themselves.

- **Federal issues**: some of the measures announced under the policy such as renewable electricity through open access, banking, and wheeling are **concurrent subjects** that necessitate consensus and buy in from the states and Centre.

  - For instance, the open access mechanism for RE procurement is already facing issues across certain states, where **public sector electricity utilities are unwilling** to let go of their monopoly in power distribution.

◉ CONCLUSION:

While the first step towards developing a green hydrogen economy has now been taken, it is crucial that the Government of India retains this momentum with further policy initiatives to address key challenges. The policy must evolve to also address other key factors that are essential for establishing a green hydrogen economy, such as measures to establish a domestic value chain, and, most importantly, financing the transition cost.

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INABILITY OF SEBI TO SAFEGUARD THE INVESTORS

CONTEXT:

The Securities and Exchange Board of India (Sebi) had shared information sought by the Central Bureau of Investigation (CBI) related to the National Stock Exchange (NSE) as far back as 2018, when the federal agency registered an FIR in the co-location matter.

The case involves Ms. Chitra Ramakrishnan.

⊙ BACKGROUND:

- National Stock Exchange (NSE)'s former Managing Director (MD) and Chief Executive Officer (CEO) Chitra Ramkrishna has been accused of
  - ➤ sharing confidential information about and from the Exchange to an unknown person
  - ➤ appointing a high ranking NSE official, Anand Subramanian, in an arbitrary manner
- The regulator states that her unknown spiritual guru influenced her decision making.

⊙ ANALYSIS

What is SEBI?

- The Securities and Exchange Board of India is a legal administrative body set up on the 12th of April, 1992.
- The main purpose of SEBI is to manage and regulate the securities and commodity market of India while forming guidelines and rules.
- The administrative center of SEBI is in Bandra Kurla Complex, Mumbai.
- SEBI has a corporate structure involving different divisions, each oversaw by an office head.
- **Key-functions:** SEBI is basically set up to ensure the interests of financial backers in the protections market.

How the issue is of 'Corporate governance'?

- There is never a dull moment with issues of corporate governance in India.
- Boardrooms and living rooms have been equally spell-bound by the latest revelations emerging from the country's premier bourse, National Stock Exchange (NSE), that an ascetic was said to have guided its management with business counsel and regulatory advice.
- The NSE is expected to act as our stock market's first point of control, a preliminary regulator before the legal oversight exercised by the **Securities and Exchange Board of India (Sebi).**
- Yet, forensic reports on the NSE's operations and governance offer disturbing evidence of multiple breaches, raising the spectre of a first-stage regulator in need of close supervision.
- Infractions at the NSE—which was accused in 2015 of an alleged split-second early-data edge given to some traders—go beyond the misdeeds of one person and implicate board members who had the **fiduciary responsibility of monitoring, fixing and reporting lapses and violations.**
- With a long rope granted to the exchange's top executives, its board apparently betrayed the trust of shareholders whose interests they had to protect.
- Three points are worth raising here.
  - ➤ **One**, the idea itself seemed a bit inappropriate in the context of corporate structures where family-owned firms **dominate our business arena**, especially with such a long record of entrepreneurs who run their own businesses.
  - ➤ **Two**, with the split idea floating around for four years, space was opened for political rent-seeking as corporate groups lobbied for relaxation. Sebi, in that sense, could be viewed as having wittingly or unwittingly worsened crony capitalism.
  - ➤ **But**, finally, the proof of the pudding lies in the empirical evidence of offences occurring in companies even where those posts had been separated, with **NSE** a prime example.

All this raises another question: Will this rule now be reversed for banks, where role-separation has been in force for some time but failed to prevent scandals like those at Yes Bank and ICICI Bank?

⊙ CONCLUSION

As self-regulatory organisations, stock exchanges have a front-line responsibility for regulation of their markets and for controlling compliance by members of rules to which they are subject," the order read. Organizations must work to ensure that stocks are reliably traded and that issuers meet standards of corporate governance. Stock exchanges as institutional mechanisms have an important role to play in ensuring the stability of the financial and economic system.

FISCAL FEDERALISM IN INDIA

CONTEXT:

Fiscal federalism refers to the financial relations between Union Government and the state governments.

It focus on how expenditure and revenue are allocated across different vertical layers of the government administration.

Article 246 and Seventh Schedule of the Indian Constitution distributes powers and allots subjects to the Union and the states with a threefold classification.

⦿ ANALYSIS

Taxation power of Centre and State Government:

◉ Both the Union and State lists include the powers of taxation. The main source of income for the Union are direct taxes, mainly income tax. However, they are also entitled to collect various other taxes such as customs and corporate tax.

◉ States normally derive their income from indirect taxes, most commonly from sales tax. Besides this, State List also includes land revenue, excise on alcoholic liquor, estate duty, tax on vehicles and more.

◉ The Concurrent List does not comprise any tax power. The distribution of revenues and approaches for determining grants between the States and Union are legislated by various Articles of the Indian Constitution.

Recent Changes to the Indian Fiscal Federalism Structure

◉ In recent years, fiscal relations between the union and state governments have undergone significant changes.

◉ The three landmark changes include:

➤ The abolition of the Planning Commission in January 2015 and the subsequent creation of the NITI Aayog;

➤ Fundamental changes in the system of revenue transfers from the centre to the states through the provision of higher tax devolution to the states based on the recommendations of the Fourteenth Finance Commission (henceforth, "14th FC"); and

➤ The Constitutional amendment to introduce the Goods and Services Tax (henceforth, GST) and the establishment of the GST Council for the central and state governments to deliberate and jointly take decisions.

◉ These changes and their implementations have far-reaching consequences for the provision of public services and the union-state fiscal relations.

Fifteenth Finance Commission:

◉ In light of constitution of the Fifteenth Finance Commission and the formulation of its Terms of Reference, there have been rising concerns centring on the following:

➤ The Finance Commission's role in providing conditional and unconditional transfers to the states;

➤ The use of the transfer system to achieve development and policy outcomes; and

➤ The future framework of state government borrowing.

Issues Under the Current Fiscal Federalism Structure

Given the recent changes, there is a serious need for redefining India's current fiscal federalism structure.

There has been a resurgence of horizontal and vertical imbalances in the structure, which will be further discussed below.

● **Horizontal Imbalances**

◉ Finance commissions, post 1990s, have essentially grown to become a vehicle for pushing states to implement fiscal reforms as part of economic liberalisation.

◉ This has been exacerbated by the replacement of the Planning Commission with the NITI Aayog. This move has reduced the policy outreach of the government as they now solely rely on the finance commission, which may in turn, leads to a serious problem of increasing regional and sub-regional inequities.

◉ It has caused an unfortunate surge in horizontal imbalances because of the differing levels of attainment by the states, resulting from the differential growth rates and their developmental status in terms of the state of social or infrastructure capital.

◉ The Terms of Reference of the 15th FC has exacerbated this process which, if implemented along with the Fiscal Responsibility and Budget Management Bill review committee recommendations, may potentially reduce the states' capacity to intervene in economic and social sectors.

- A "fragmented" transfer system is a prime feature of the Indian fiscal federal arrangements between the union and the states.

- The transfer of financial resources from the union to the states flow through various streams which fall in either of the following categories:

  ➤ General purpose transfers (i.e. states can spend these resources on their respective priorities which can be drawn up by them; or

  ➤ Conditional transfers (i.e. the centre only transfers resources upon the condition that the states must use it for particular programs and schemes drawn up by the centre)

- The Twelfth Financial Commission had placed emphasis on the fact that to achieve equalisation among states, grants provided for a more effective mechanism as compared to tax devolution.

- Therefore, there was a higher degree of importance given to transfers through grants, thereby, increasing the share of grants in total transfers.

- These were known as conditional grants.

- In the Thirteenth Financial Commission, the opposite movement took place, where the share of tax devolution rose again, and further increased in the 14th FC.

- However, this has changed to some extent in the 15th FC.

- Momentarily, approximately 40% of the total transfers are still linked to conditional transfers, which are largely linked to the Centrally Sponsored Schemes.

- However, transfers made under the CSS are, in actuality, outside the Finance Commission's purview.

- These transfers are used by the central government to improve development outcomes in specific sectors, primarily economic and social services.

- In light of this institutional reality, the Finance Commission's role in relation to conditional transfers, if the related transfers are not in their ambit, is questionable.

- On one hand, it could be accurate to interpret "measurable performance-based incentives" as an effort to introduce conditionality-driven transfers through the Finance Commission.

- However, this brings forth two issues, namely, the availability of fiscal space with the Finance Commission for making conditional grants after tax devolution, and the desirability of such grants as well as their effectiveness.

- This requires a serious review of the conditional transfers provided by the Finance Commissions, their relative importance in total transfers, the design of conditional transfers and their impact on spending as well as the outcomes in delivery of services by the states.

- In all likelihood, if a large share of Finance Commission transfers are set aside for conditional transfers, it will fundamentally change the way resources flow to the states.

- Additionally, the transfer of resources by the mechanism of grants would also affect the freedom and manoeuvrability of the states with regards to setting priorities.

- The volume of conditional grants provided by the Finance Commission may eventually alter the states' spending behaviour. This would have a detrimental effect because it suggests that the Finance Commission has been granted the authority to restrain democratically elected governments from implementing promises made to people in the election manifestos, for instance, the provision of welfare pensions, food, subsidies, etc., this, in turn, strikes the root of democratic polity.

- Besides, it has proliferated discriminatory practices. This is denoted by the fact that the implementation of central flagship schemes is incentivised, whereas the state schemes are being controlled by classifying them as populist.

- This approach goes against the federal spirit and fails to abide by the Directive Principles of State Policy enshrined by the Indian Constitution.

- Moreover, the ToR also mandates the 15th FC to assess and monitor the performance of GST implementation and various other governance indicators.

- The added functionality of the Finance Commission as a monitoring agency of the states' performance goes against its constitutional role.

- **Vertical Imbalances**

- The creation of vertical imbalances is a result of the fiscal asymmetry in powers of taxation vested with the different levels of government in relation to their expenditure responsibilities prescribed by the Indian Constitution.

- The central government is given a much greater domain of taxation, with a collection of 60% of the total taxes, despite their expenditure responsibility only amounting to 40% of the total public expenditure.

- These imbalances are further exacerbated in cases of third tiers, comprising elected local bodies and panchayats.

- Vertical imbalances can have a hostile impact on India's urbanisation, the quality of local public goods, which thereby, would further aggravate the negative externalities for climate change and the environment.

- The introduction of the GST is a demonstrative example of the working of cooperative federalism. However, it is questionable as to how far this conforms to actual practice.

- Under article 279A of the Indian Constitution, two-thirds of the voting rights belong to the states while the centre has one-third voting rights at the GST Council.

- Nonetheless, passing a resolution required three fourths majority.

- In effect, this confers a veto power for the centre, even when states jointly propose a change.

- The states should be able to adopt a change in their tax structure without the centre's consent, given that each state is governed differently based on local legislations.

- Furthermore, the GST's apportionment has raised some concerns. The suggested apportionment between the states and the centre by the committee on revenue neutral rates of the central government was a 60:40 ratio, as almost 44% of the states' own tax revenue was subsumed under the GST as compared to 28% for the centre.

- The centre still retains their power to levy additional excise duty on, for instance, tobacco products, even though it has been brought under the GST.

- States, on the other hand, have no such right.

- This deprives the state of their main source of income, being indirect taxes, thereby slowly causing the state government to fail in upholding their end of the bargain in relation to their responsibilities.

Recommendations

- In a framework of cooperative federalism, it is important to have provisions for a higher devolution to the state governments in order to fiscally empower them to achieve the goals of the national development programme of New India-2022, which expresses goals that pertain to the subjects in the State List.

- In fact, all tiers should be fiscally empowered to achieve state-specific targets of fiscal deficit, rather than adopting a top-down approach.

- Future legislations issued by the Central Government in relation to states should enact more provisions for cost-sharing to aid them in fulfilling their duties.

⊙ CONCLUSION

- In light of the recent changes, it appears that India has deviated rather far from what cooperative federalism envisages. One can only hope that these changes bring forward the absence of a framework for non-Finance Commission grants.

- Given the replacement of the Planning Commission, there is more clarity necessitated in relation to the treatment of grants outside the Commission's purview.

- States need to be able to fulfil their promises upon which they were democratically elected, otherwise this can have detrimental effects not just on the fiscal federalism principles, but on the social and economic state by and large. For this, the division of direct and indirect taxes needs to be considered, especially after the implementation of the GST.

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SECTION: B
(PRELIMS)

CURRENT AFFAIRS

48ᵀᴴ KHAJURAHO DANCE FESTIVAL

⊙ **CONTEXT:**   **Madhya Pradesh Governor,** has inaugurated the **48th 'Khajuraho Dance Festival-2022'** at **world-famous tourist destination Khajuraho on the occasion of 'Azadi Ka Amrit Mahotsav'.**

About Khajuraho dance festival

- **The Khajuraho dance festival was started in 1975** from the temple premises itself.

- **It was not allowed to be performed in the temple premises only after two-three years,** as a result, this **ceremony was performed outside the temple premises.**

- Last year, **the Culture Department's effort to organise this program in the temple premises was successful** and this year also this function is being done in the temple premises itself.
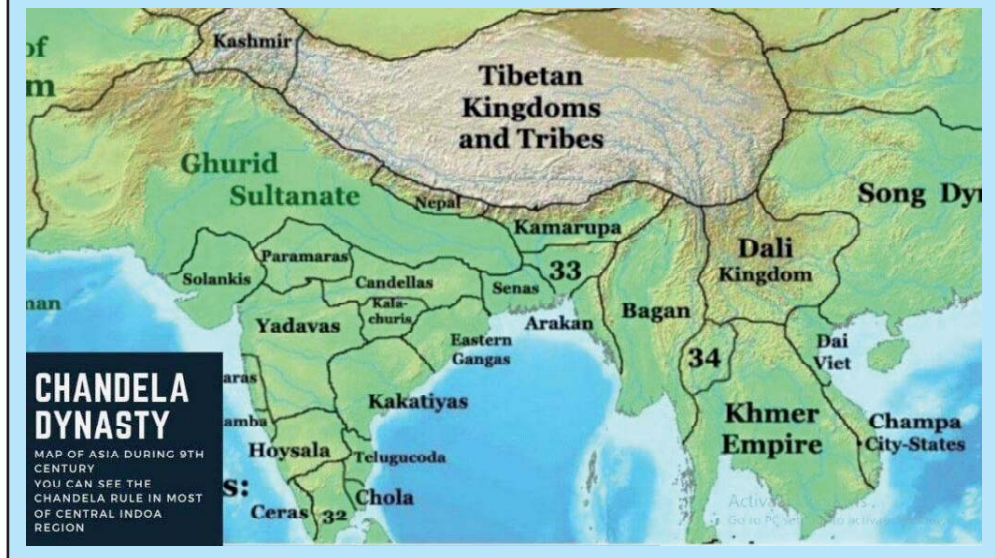
Important facts about Khajuraho

- **Khajuraho** is an ancient city known for **magnificent temples and its intricate sculptures located in the Chhatarpur district** of **Madhya Pradesh.**

- It was built in the **medieval century by the Chandela Dynasty.**

- The UNESCO site of **'Khajuraho Group of Monuments'** is famous for its **Nagara-Style architecture and graceful sculptures of nayikas and deities.**

- **The splendour of the intricate statues** is one of the reasons that make it a popular site to visit among tourists.

- **Built between 950-1050 AD by the Chandela Dynasty,** these temples represent various forms like **meditation, spiritual teachings, relationship, through stimulating art.**

- Some of the prominent temples that have stood the test of time here are **Kandariya Mahadeva, Chaunsath Yogini, Lakshmana, Devi Jagadamba, Chitragupta and Parsvanath.**

  ⊙ **The Kandariya Mahadeva temple is the largest of them all** and consists of **872 statues.**

- **The Chaunsath Yogini temple is the oldest one in Khajuraho** and as the name suggests, it once had **64 cells dedicated to yoginis or female attendants.**

The Chandela dynasty

- Chandela's were Rajpoot Dynasty who ruled over central India from the 8th to 13th centuries.

- Chandela dynasty was founded by Nannuka (r. c. 831-845 CE)

- Chandela kings were also known as The Chandelas of Jejakabhukti as they ruled much of the Bundelkhand region (then called Jejakabhukti).

- They have left a huge impact on our history and culture and left behind a great heritage that is standing tall even after 800 years.

- Khajuraho was the capital during Chandela's rules, earlier it used to be Mahotsav Nagar, which is currently known as Mahoba.

- It is also written in some historic literature that Chandela's considered 3 Capitals.
  - ➤ **Mahoba** was the **cultural capital**
  - ➤ **Khajuraho** was the **spiritual capital**
- **Kalinjar** was their **Army capital**

Key-points

- This dance festival is being organised with the **joint effort of Ustad Alauddin Khan Sangeet and Kala Akademi Madhya Pradesh Sanskriti Parishad of Culture Department, Madhya Pradesh Tourism Board, Archaeological Survey of India and District Administration Chhatarpur**.
  - ◉ **It is the topmost festival of the country focusing on Indian classical dance forms, and is well known nationally and internationally.**
- **Ambassadors and High Commissioners of 8 countries** attended the family function to witness the performances of the **48th Khajuraho Dance Festival.**
  - ◉ These include **ambassadors and high commissioners from Korea, Argentina, Vietnam, Brunei, Finland, Malaysia, Thailand and Lao.**

CONFERENCE ON INDIAN TEMPLE ARCHITECTURE 'DEVAYATANAM' AT HAMPI

◉ **CONTEXT:** Archaeological Survey of India of Ministry of Culture organized a two-day international conference **'Devayatanam - An odyssey of Indian temple architecture'** at Karnataka's Hampi.

About the conference:

- The conference aims to deliberate upon the philosophical, religious, social, economic, technical, scientific, art and architectural aspects of temple.
- It also intends to initiate a dialogue on the evolution and development of the various styles of temple architecture such as the **Nagara, Vesara, Dravida, Kalinga** and others.

- The conference will have eminent scholars discussing on the various facets of the great temples of India.
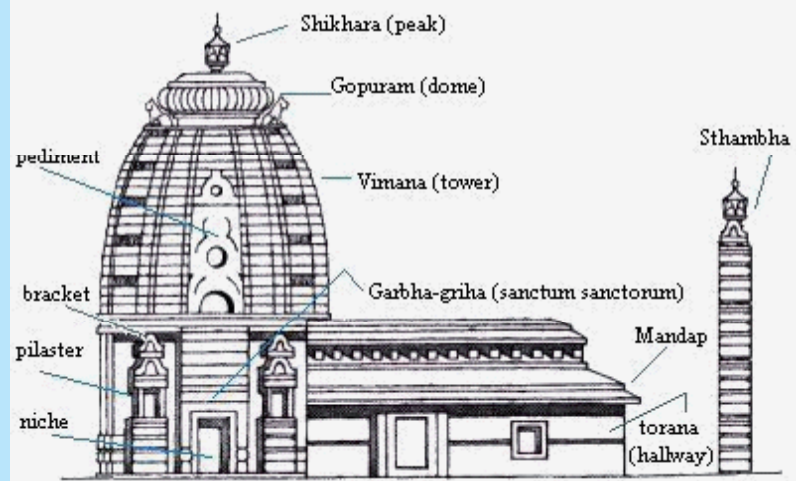
Significance of Temples:

- Temple being an integral part of the Indian life and its ecosystem in its own ways since the time immemorial is perceived as the manifestation of Purush and Prakriti both and is seen as the mirror of the cosmos.

- Temple construction was practiced as a pious act not only in the subcontinent but the idea also travelled to the nearest neighborhood such as south-east and East Asia.

- The art and technique of temple architecture spread from India to other regions and how this art was modified; to suit the local requirements and it in turn inspired the development of new architectural styles.

- For centuries, temples have been central to society and culture, to science and technology, to art and economy, to rituals and traditions, to devotion and spirituality, to the past and future.

About Hampi:

- Hampi is a **UNESCO World Heritage Site** in India located near **Hospet town in the Karnataka** state, India.

- This historic town is also the "**World's Largest Open-air Museum**" and covers an area of nearly 29 sq km.

- Site of Hampi comprise mainly the remnants of the Capital City of **Vijayanagara Empire** (14th-16th Cent CE), the last great Hindu Kingdom.

- Hampi's spectacular setting is dominated by **river Tungabhadra**, craggy hill ranges and open plains, with widespread physical remains.

- Dravidian architecture flourished under the Vijayanagara Empire and its ultimate form is characterised by their **massive dimensions, cloistered enclosures, and lofty towers** over the entrances encased by decorated pillars.

- The **Vitthla temple** is the most exquisitely ornate structure on the site and represents the culmination of Vijayanagara temple architecture.
  - It is a fully developed temple with associated buildings like **Kalyana Mandapa** and **Utsava Mandapa** within a cloistered enclosure pierced with three entrance **Gopurams.**

- In addition to the typical spaces present in contemporary temples, it boasts of a **Garuda shrine** fashioned as a **granite ratha** and a grand bazaar street.
  - This complex also has a **large Pushkarani** (stepped tank) with a **Vasantotsava mandapa** (ceremonial pavilion at the centre), wells and a network of water channels.

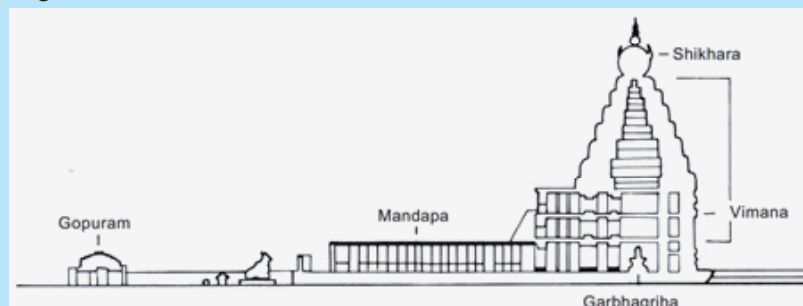**Different style of Indian Temple Architecture:**

- The Nagara or north Indian temple style
  - In North India it is common for an entire temple to be built on a stone platform with steps leading up to it.
  - Further, unlike in South India it does not usually have elaborate boundary walls or gateways
  - There are many subdivisions of Nagara temples depending on the shape of the shikhara.

The Dravida or south Indian temple style

- The dravida temple is enclosed within a compound wall and the front wall has an entrance gateway in its centre, which is known as a gopuram.

- In the South Indian temple, the word 'shikhara' is used only for the crowning element at the top of the temple which is usually shaped like a small stupika or an octagonal cupola— this is equivalent to the amlak and kalasha of North Indian temples.

- It is common to find a large water reservoir, or a temple tank, enclosed within the complex.

- Subsidiary shrines are either incorporated within the main temple tower, or located as distinct, separate small shrines beside the main temple.

- There are subdivisions also of dravida temples. These are basically of five different shapes:

  ➤ square, usually called kuta, and also caturasra;

  ➤ rectangular or shala or ayatasra;

  ➤ elliptical, called gaja-prishta or elephant backed, or also called vrittayata,

  ➤ circular or vritta;

  ➤ Octagonal or ashtasra

Vesara temple style

- It is a hybridised style of Nagara and Dravida style that became popular after the mid-seventh century in the southern part of the Deccan, i.e., in the region of Karnataka.

- Perhaps the most characteristic feature of these temples is that they grow extremely complex with so many projecting angles emerging from the previously straightforward square temple, that the plan of these temples starts looking like a star, and is thus known as a stellate plan.

- Since they are made out of soapstone which is a relatively soft stone, the artists were able to carve their sculptures intricately.

Vesara style

A RARE GLIMPSE OF THE GOLDEN PERIOD OF NATHDWARA PAINTING

⊙ **CONTEXT:**   Recently, a new book features 60 miniature works from the collection of the late Gokal Lal Mehta.

About Nathdwara paintings:

- **Nathadwara** is a small town some 40 kilometres north of the **Udaipur city in Rajasthan**.

- The Nathdwara School of Painting is a subset of **Mewar School** and is seen as an important school in 17th and 18th century.

- Nathadwara is the present **headquarters of the Pushti Margiya Vaishnavite cult**.

  - ⊙ The art practice includes haveli-painting traditions like pichhvais—textile wall hangings as the backdrop of Srinathji, and other embroidered designs and murals

- Nathdwara paintings are of different **sub-styles of which Pichhwai** paintings are the most popular.

  - ➤ The word Pichhwai derives from the Sanskrit words pich meaning back and wais meaning hanging.

  - ➤ These paintings are cloth paintings hung behind the image of the **Hindu god Shrinathji.**

Styles of Rajasthani Painting:

Starting from the 16th century, when the Rajasthani Painting originated, the main schools emerged, including:

- **Mewar School**: Chavand, **Nathdwara**, Devgarh, Udaipur and Sawar

- **Marwar School**: Jodhpur, Kishangarh, Bikaner, Nagaur, Pali and Ghanerao styles

- **Hadoti School**: Kota, Bundi and Jhalawar styles

- **Dhundar School**: Amber, Jaipur, Shekhawati and Uniara styles

About Pushtimarg:

- **Pushtimarg** is a **form of Krishna worship** or adoration as founded by **Shri Vallabhacharya** (1479–1531 AD), a Telugu Vaidiki Brahmana, who was also the **propounder of Shuddha-Advaita or pure nondualism.**

- Vallabhacharya was a **contemporary of Sri Krishnadeva Raya** of the **Vijayanagara Empire**, and attended his court to participate in a prolonged debate on the merits and demerits of Dvaita and Advaita philosophies.

- Pushtimarg is a variant of the **Bhaktimarg or the path of devotion**, which is mentioned in the Bhagavadgita as the direct and the simplest approach to achieve liberation.

- It centers around pushti bhakti.

  - ⊙ **Pushti means nourishing and bhakti means devotion.**

  - ⊙ Pushti bhakti means nourishing the soul with divine love and happiness through devotion and selfless service to Lord Krishna, the supreme deity.

- Unlike the nondualism (**Advaita) of Shankaracharya**, Vallabhacharya's pure nondualism (Shuddha Advaita) regards the world as the **creation of Krishna are real**, not an illusion.

  ◎ It is the physical or material aspect of Krishna himself.

  ◎ All the deities who are part of God's creation arise in him and exist in him.

  ◎ Therefore, as suggested in the Bhagavadgita, one should worship Krishna only to attain him rather than worshipping the lower gods, demi-gods, etc.

WORLD NGO DAY: ASSESSING 'ROLE' OF NGOS

◉ **CONTEXT:**   World NGO Day is annually observed on **February 27** to celebrate, commemorate and collaborate with various NGOs around the world

What is NGO?

A Non-Governmental Organisation, better known as an NGO, is an association that is registered with the government and works for the upliftment of society.

Role of NGOs in India

- India has over three million non-governmental organisations (NGO).

- NGOs work across a range of arenas and play important roles of facilitator, catalyst or partner in bringing social transformation.

- They have been dynamic in almost all sectors: Health, education, livelihood in rural and urban areas to name a few.

- Another major achievement of NGOs includes influencing the Indian government to formulate various developmental laws and policies, which include

  ◎ Right to Information

  ◎ Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)

  ◎ Juvenile Justice

  ◎ Integrated Child Protection Scheme (ICPS).

- NGOs also partnered with the government to successfully implement major campaigns like **Swachh Bharat Abiyaan and Sarva Siksha Abiyaan.**

Which associations can sign up as NGO?

- **Trust:** A Trust composed of one or more people can sign up as an NGO, as per the Indian Trusts Act, 1982.

- **Company/Association:** Any company, club or association consisting of professionals can act as an NGO by registering under the Companies Act, 1956.

- **Society:** It is to be noted that any society of people that aims to better society can sign up as an NGO as per the Societies Registration Act, 1860 by approaching the Registrar of the Societies.

- **Charitable Trust:** Also, any Charitable Trust can sign up as an Non-Governmental Organisation under the Charitable Endowments Act, 1920.

Any other group, society or association that aims to uplift the society.

INDIA AND OMAN BEGINS EASTERN
BRIDGE-VI AIR EXERCISE

⊙ **CONTEXT:** The **Indian Air Force (IAF)** and **Royal Air Force of Oman (RAFO)** have organised a **bilateral air exercise named Eastern Bridge-VI from February 21 to 25, 2022** at **Air Force Station Jodhpur in Rajasthan.**

● This would be the **sixth edition** of the exercise.

About the Exercise

● In this Exercise, **Oman has deployed its F-16 Fighters** whereas the **Indian Air Force has fielded its Sukhoi-30 MKIs, Jaguars and Mirage-2000s.**

● **The last combat Air Force Exercise** between the two countries, i.e. **Eastern Bridge – V was conducted in Masirah, Oman.**

Significance

● The exercise aims to provide an opportunity **to enhance operational capability and interoperability between the two Air Forces.**

● **Participation of IAF and RAFO** in this exercise promoted **professional interaction, exchange of experiences and enhancement of operational knowledge, besides strengthening bilateral relations between the two countries.**

● Both the countries also agreed to **work together to combat the issue of drug trafficking prevalent in the North Arabian Sea.**

India – Oman Relations over the years

● **The two countries across the Arabian Sea** are linked by **geography, history and culture and enjoy warm and cordial relations**, which are attributed to **historical maritime trade linkages.**

● **While people-to-people contact between India and Oman can be traced back 5000 years, diplomatic relations were established in 1955** and the relationship was upgraded to **Strategic partnership in 2008.**

  ⊙ Oman has been a key pillar of India's West Asia Policy.

● **The Sultanate of Oman is a strategic partner of India in the Gulf** and an important interlocutor at the **Gulf Cooperation Council (GCC), Arab League and Indian Ocean Rim Association (IORA) fora.**

● **For Oman, India was the 3rd largest (after UAE and China) source for its imports and 3rd largest market (after UAE and Saudi Arabia) for its non-oil exports in 2018.**

● **Since 2008, Oman** has been extending its support to **Indian Navy's anti-piracy missions and Indian Naval Ships** are regularly welcomed by Oman for Overseas Deployments.

> **Other Exercises**
> ● **Naseem Al-Bahr is the naval exercise** conducted between both the countries.
> ● **AL Nagah is the joint bilateral exercise** between the armies of two countries.

EXERCISE COBRA WARRIOR 22

⊙ **CONTEXT:**

Indian Air Force will participate in a **multi-nation air exercise named 'Exercise Cobra Warrior 22' at Waddington, in the United Kingdom from March 06 to 27, 2022.**

Key-points

- The Cobra Warrior Exercise is one of the largest annual **Royal Air Force exercises** and aims to train both pilots and other air specialists in planning and executing complex airborne missions.

- **India will be participating in the exercise for the first time.**

  ◎ Other countries participating are the **United Kingdom, Sweden, Saudi Arabia and Bulgaria.**

- **IAF Light Combat Aircraft (LCA) Tejas** will participate in the exercise along with **fighter aircraft of the UK and other leading Air Forces.**

  ◎ **Five Tejas aircraft will fly to the United Kingdom.**

  ◎ **IAF C-17 aircraft** will provide the **necessary transport support for induction and de-induction.**

  ◎ The Indian Tejas jets will be stationed at the **RAF Waddington air base.**

- The exercise will **involve air-to-air operations such as aircraft interceptions and mock dogfights and simulated ground attacks.**

- This will be the first-ever outing of LCA-Tejas in the International air exercise.

Objective

- **The Cobra Warrior exercise** is aimed at **providing operational exposure and sharing best practices amongst the participating Air Forces.**

- It will help **enhance combat capability and forge bonds of friendship between the participating Air Forces.**

- The exercise will **serve as a platform for LCA Tejas to demonstrate its manoeuvrability and operational capability.**

About Light Combat Aircraft Tejas

- **LCA Tejas is a single-engine multirole light combat aircraft.**

- **The Light Combat Aircraft (LCA) programme** was started by the **Government of India in 1984 when they established the Aeronautical Development Agency (ADA) to manage the LCA programme.**

- LCA Tejas was **designed and developed by India's HAL (Hindustan Aeronautics Limited).**

- It replaced the **ageing Mig 21 fighter planes.**

- It is the **second supersonic fighter jet that was developed by HAL (the first one being HAL HF-24 Marut).**

- It is the **lightest and smallest multi-role supersonic fighter aircraft in its class.**

- **It is designed to carry a range of air-to-air, air-to-surface, precision-guided, and standoff weaponry.**

About the Organisations

Hindustan Aircraft Limited (HAL):

- It was started way back in December **1940** at **Bangalore** by industrialist **Seth Walchand Hirachand** with the support of an American aviation expert, William Douglas Pawley, who was the director of the erstwhile **Harlow Aircraft Company, California.**

- It was a quantum jump for India at a time when it was not even manufacturing an automobile or a bicycle.

- In January **1951, Hindustan Aircraft Limited was placed under the administrative control of Ministry of Defence, Government of India.**

- The government-owned company mainly engages in aerospace activities and is presently **involved in the fabrication & production of aircraft, design, helicopters, jet engines** & their replacement parts.

- It has many facilities scattered throughout India including Bangalore, Kanpur, Nasik, Koraput, Korwa, Lucknow, Kasaragod and Hyderabad.

About Aeronautical Development Agency:

- Aeronautical Development Agency (ADA) is a **Society under the Department of Defence Research and Development, Ministry of Defence**, Government of India.

- To undertake, **aid, promote, guide, manage, co-ordinate and execute research** in aeronautical science, design and development of various types of aircraft and rotorcraft.

- ADA is responsible for:

- Co-ordinated management of full range activities leading to development of advance technology flight vehicles.

- Promoting development of a national base in Aeronautics.

'EX DHARMA GUARDIAN-2022'

⊙ **CONTEXT:**   **The third edition of the joint military exercise "EX DHARMA GUARDIAN-2022" between India and Japan** is to be conducted from 27 February to 10 March 2022, **at Belagavi (Belgaum), Karnataka.**

What is Exercise Dharma Guardian?

- **Exercise DHARMA GUARDIAN** is an annual joint military exercise conducted between **India and Japan since 2018.**

- The exercise aims to share experience gained during **various Counter Terrorism Operations in respective Countries.**

- The exercise will include **house interventions drills, raid on terrorist hideouts in semi urban terrain, unarmed combat & close quarter combat firing** where both sides will jointly train, plan and execute a series of well-developed tactical drills for neutralisation of likely threats.

About "EX DHARMA GUARDIAN-2022"

- **The 15th Battalion the Maratha Light Infantry Regiment of the Indian Armyand 30th Infantry Regiment of Japanese Ground Self Defence Forces (JGSDF)** are participating in this 12 days long joint exercise.

- The military exercise will **focus on operations in Jungle & Semi-Urban/Urban terrains.**

- **The exercise aims at enhancing the interoperability and fostering mutual understanding between the two Armies.**

- **Exercise DHARMA GUARDIAN** is an **annual military training event, being conducted in India since 2018.**

Other exercises between India and Japan

- **SHINYUU Maitri–** It is a bilateral exercise between the **Indian Air Force and the Japanese Air Self Defence Force (JASDF).**

- JIMEX- It is a bilateral maritime exercise between India and Japan.

- **Sahayog-Kaijin –** Joint bilateral exercise between the **Indian Coast Guard and the Japan Coast Guard.**

A GASIFYING LANTANA, AN INVASIVE WEED, HAS POSITIVE SPIN-OFFS

⊙ **CONTEXT:**   Recently, Centre for Social and Environmental Innovation (CSEI) launched Gasification, a lantana-focused initiative.
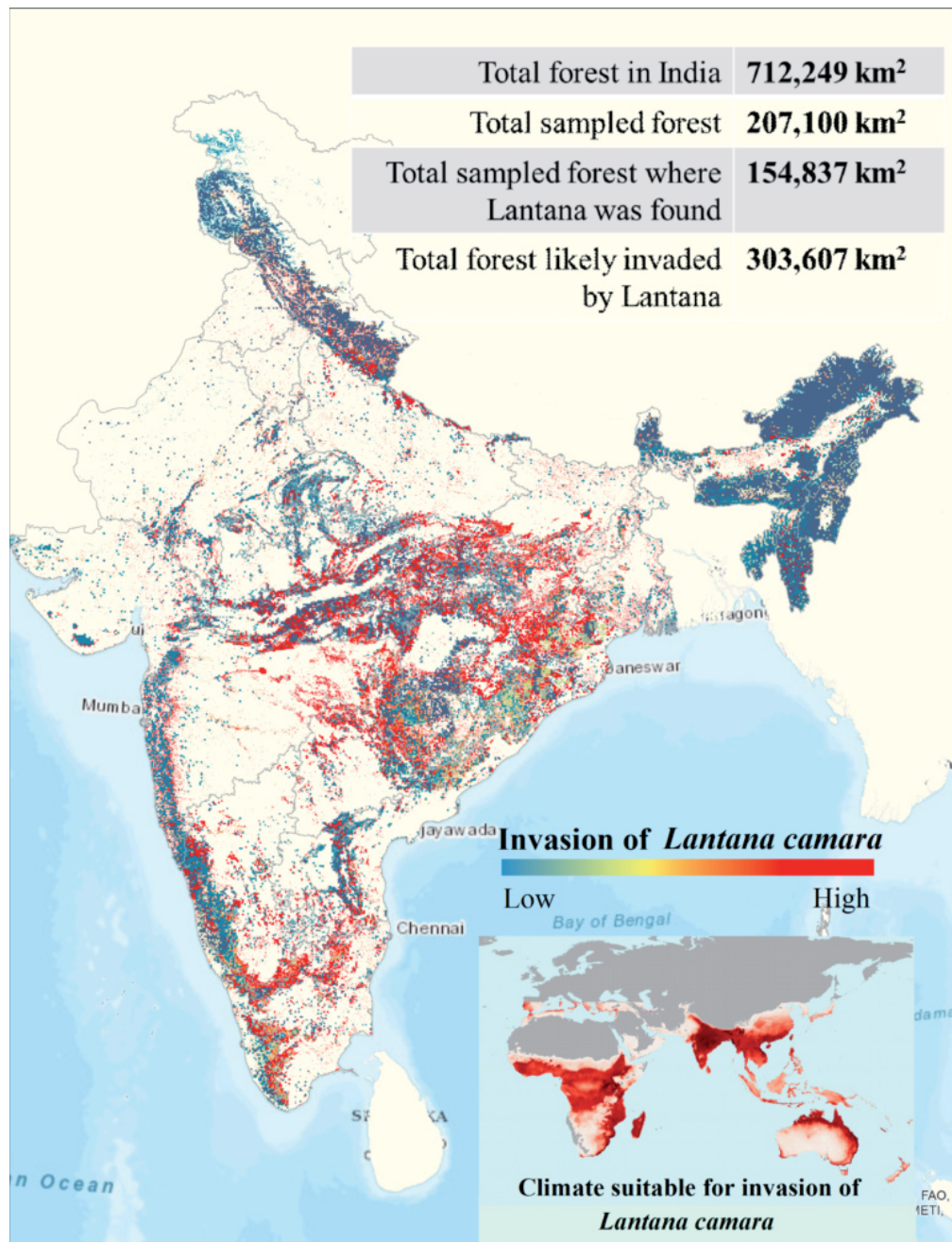
About Lantana camara:

- Lantana camara was first introduced in **1807**, had spread to wildlife reserves, river banks and the Project Tiger areas where it had obliterated native grass and reduced biodiversity.

- Lantana (Lantana camara) has become one of the **world's most invasive weeds.**

- It competes with native plants for space and resources, and also **alters the nutrient cycle** in the soil.

  ⊙ This invasion has resulted in the scarcity of native forage plants for wild herbivores.

- Lantana occupies 154,000 sq.km forests (**more than 40% by area**) in India's tiger range.

  ⊙ Among forests, Shivalik Hills in the North, fragmented deciduous forests of Central India, and Southern western Ghats are worst hit by its invasion.

> **Invasive Species:**
> - An invasive species is an organism that is not indigenous, or native, to a particular area and causes harm.
> - They are capable of causing extinctions of native plants and animals, reducing biodiversity, competing with native organisms for limited resources, and altering habitats.
> - They can be introduced to an area by ship ballast water, accidental release, and most often, by humans.

Total forest in India	712,249 km²
Total sampled forest	207,100 km²
Total sampled forest where Lantana was found	154,837 km²
Total forest likely invaded by Lantana	303,607 km²

Invasion of *Lantana camara*

Low — High

Climate suitable for invasion of *Lantana camara*

The lantana gasification trial:

- CSEI-ATREE teamed up with BioTherm to explore the possibility of using lantana as the fuel in a gasifier.

- The sun-dried lantana wood chips were placed in a gasifier of 50 kg per hour capacity for eight hours.

- This process generated 1.2 million Kcal (kilocalories) of energy, and produced a blue flame indicating that the gas produced was clean and devoid of any particulate matter or tar.

- The eight-hour trial also produced 30 kg of biochar from the 400 kg of lantana gasified.

DUGONG RESERVE IN PALK BAY

⊙ **CONTEXT:**   Marine biologists have welcomed the Tamil Nadu government's recent decision to go ahead with the establishment of a conservation reserve for the elusive **dugong (*Dugong dugon*).**

About the species

- Dugong (*Dugong dugon*) is a sirenian species native to parts of the Indian littoral.

- Dugongs are cousins of manatees and share a similar plump appearance, but have a dolphin fluke-like tail.

- And unlike manatees, which use freshwater areas, the dugong is strictly a marine mammal.

- Commonly known as "sea cows," dugongs graze peacefully on sea grasses in shallow coastal waters of the Indian and western Pacific Oceans.

- Dugongs as a **Schedule I** animal under the **Wildlife (Protection) Act, 1972.**

- **Declining population:** The dugongs are on the verge of extinction.

  ⊙ In the **Andaman and Nicobar Islands**, their population is less than 100.

  ⊙ There are very few left in the **Gulf of Mannar.**

  ⊙ In the **Gulf of Kutch**, there are very few sporadic records.

  ⊙ They were present in **Lakshadweep** but now are locally extinct.

The plan

- The plan included to set up a dugong conservation reserve in the Gulf of Mannar, Palk Bay between India and Sri Lanka, for the conservation of the animals.

HIMACHAL PRADESH GETS 1ST BIODIVERSITY PARK AT MANDI

⊙ **CONTEXT:**   **Recently, Himachal Pradesh got the first biodiversity park** to make its contribution towards the **conservation of endangered Himalayan herbs.**

About

- This park is set to come up at **Mandi's Bhulah valley.**

- The biodiversity park is set up under the **National Mission on Himalayan Studies (NMHS) by HP's forest department.**

- The aim of the park is to **link tourism activities along with extending new opportunities for researchers to conduct in-depth exploration of various medicinal herbs** found in the Himalayas that are on the verge of extinction.

- A herbal nursery to conserve herbs that are about to be extinct in the mountains has also been set up in the park, which has **Trillidium Govanianum (Nagchhatri), Dhoop, Picrorhiza kurroa (Kadu), Sarpagandha, Swerlia Chiryita (Chirayita), Barbari, Angelica glauca (Chaura), Coleus gromalicus (Pathanbel), Pathar chata, Selinum vaginatum (Bhutkesi), Nyar, Valeriana Wallichi (Mushkwala), Thymus Linearis (Van Ajwain), Kuth, Acorus Calamus (Barre), Asparagus (Sansarpali), Potentilla Nepalensis (Dori Ghass), Ratan Jot, Aconitum heterophyllum (Atish Patish), Padophyllumhexandrum (Van Kakdi), Dioscorea delloidea (Shingli Mingli), Jangli Lahsun, Adiantum lunulatum (Dungtuli)** and many similar herbs and shrubs on display.

- **Two log huts, a water harvesting structure, an internal tank, a 5KW power generation project, bird nests, and a sales center** have also been set up at the park.

- In this herbal nursery, about **1,200 plants of different species are available.**

- **Amphitheatres have been built in the park** for the convenience of researchers and tourists.

What are Biodiversity parks?

- Biodiversity is the variety of **plant and animal life in the world or in a particular habitat.**

- Biodiversity is measured by **two major components: species richness, and species evenness.**

- Biological diversity is a precious resource intended for the continued existence of mankind, and hence, conserving biodiversity is concerned **with restoring the equilibrium between humans & the atmosphere.**

- **Important role of Biodiversity Parks include-**

  - A nature reserve for the conservation of the natural heritage of the city.

  - Enhancing the quality of the urban environment.

  - Serving as a hub for education, cultural and conservation activities.

  - Connecting biodiversity to the city and people.

  - Promoting eco-tourism.

  - Creating livelihood for local communities.

  - Preserving the rare endemic and threatened plant and animal species of the area.

3D MANUFACTURING POLICY

⊙ **CONTEXT:** The **Ministry of Electronics and Information Technology (MeitY)** aims to increase India's share in global additive manufacturing to 5 per cent within the next three years.

About 3D Printing:

- 3D printing or additive manufacturing uses computer-aided designing to make prototypes or working models of objects by laying down successive layers of materials such as plastic, resin, thermoplastic, metal, fiber or ceramic.

- With the help of software, the model to be printed is first developed by the computer, which then gives instructions to the 3D printer.

- This technology makes use of **CAD (Computer-Aided Design)** or 3D object scanners to take precise measurements of the product to be custom designed.

- Additive Manufacturing has its applications in several industries like defence, automotive industry, surgical equipment's' design segment, etc.
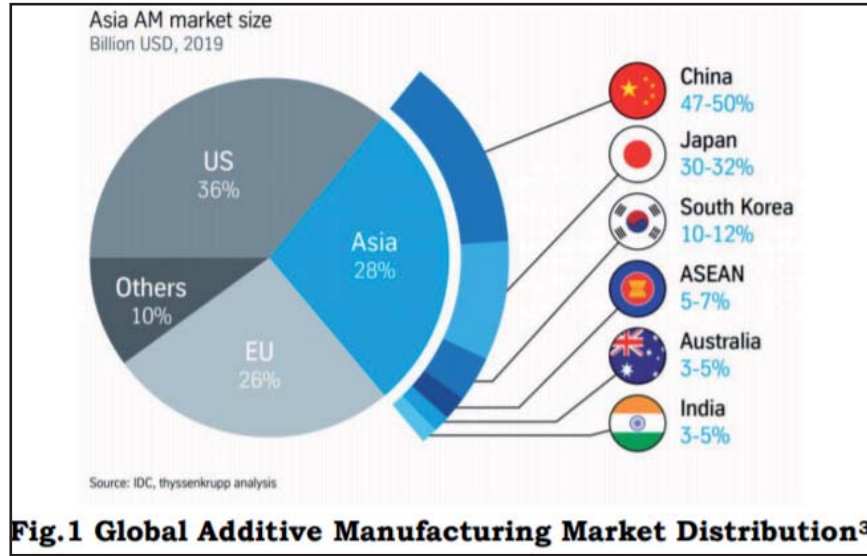
Types of 3D Printing:

- **Binder Jetting:**

  - Binder jetting, also known as material jetting or inkjet powder printing is among the most common additive manufacturing types.

  - This method works similarly to your run-of-the-mill office printer except it prints three-dimensional objects.
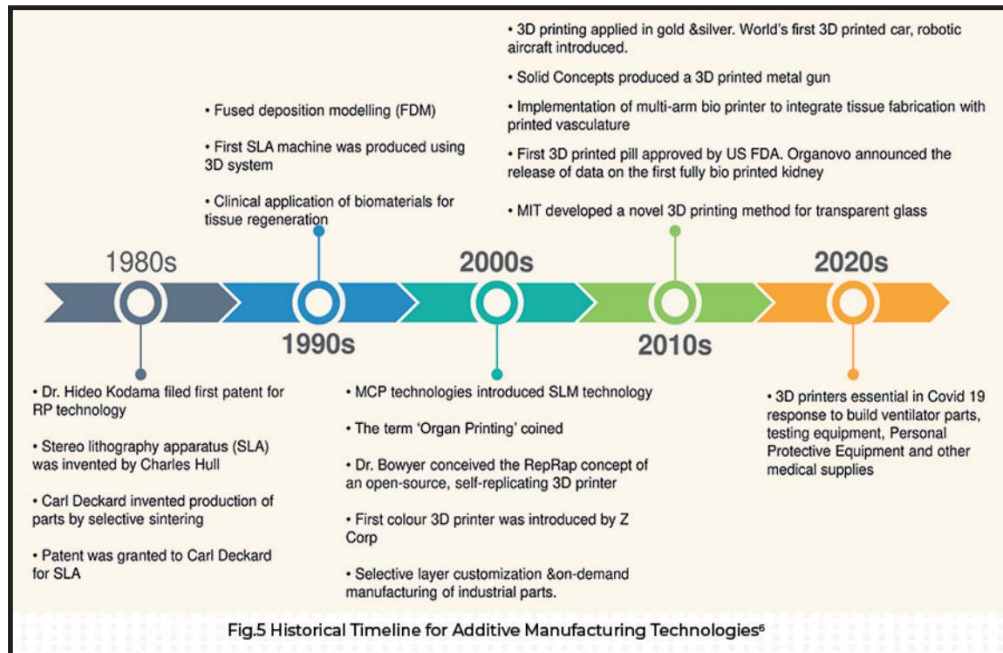
- **Directed Energy Deposition (DED):**
  - Directed energy deposition (DED) utilizes welding principles to create three-dimensional objects.
  - The material typically metal wire or powder is melted by a focused energy source like a laser or electron beam.
  - The liquid material is then precisely poured onto the build platform, where it quickly hardens, forming a layer. This process repeats until the object is finished printing.

- **Material Extrusion:**
  - Material extrusion works similarly to a hot glue gun.
  - The material feeds into the printer from a coil.
  - The tip of the nozzle heats and melts the material.
  - The liquid material is then placed layer by layer on the build platform, where it can cool and solidify, forming the object.

- **Powder Bed Fusion (PBF):**
  - Powder bed fusion, otherwise known as electron beam melting (EBM), starts with a large bed of powdered material, typically plastic, metal, sand, or ceramic powders mixed with sand.
  - The powder is selectively fused together using a laser or electron beam.
  - Once a layer of material is fused, the working area moves down, and the new layer is built on top using the same process.

- **Sheet Lamination:**
  - Sheet lamination, otherwise known as ultrasonic additive manufacturing (UAM) or laminated object manufacturing (LOM) is an additive manufacturing process that stacks thin sheets of material and bonds them together through ultrasonic welding, bonding, or brazing.

- **Vat Polymerization:**
  - Vat polymerization is similar to powder bed fusion, except instead of a bed of powder, it uses a vat of photopolymer resin, which is hardened in layers by an ultraviolet laser.

- **Material Jetting:**
  - Similar to binder jetting, material jetting layers material to construct an object.
  - However, instead of layering adhesive on a bed of powder, material jetting melts wax-like materials and precisely deposits droplets onto the build platform.

Global Market Scenario:

- The global market revenue generated by this sector accounts for **USD 12 Billion in the year 2020** and it is anticipated to reach around **USD 78 Billion by the year 2028.**
- The market growth dynamics accounts for around **CAGR of 26%- 32%** during the forecast period, 2020-2028.
- **North America** dominates the global market with a market value of **USD 24 Billion** owing to the increasing R&D investment in this sector coupled with an infrastructure that supports the same.
- **Europe is the second-largest segment**; this is due to the growing industrialization of this market coupled with the low production cost of additive manufacturing.
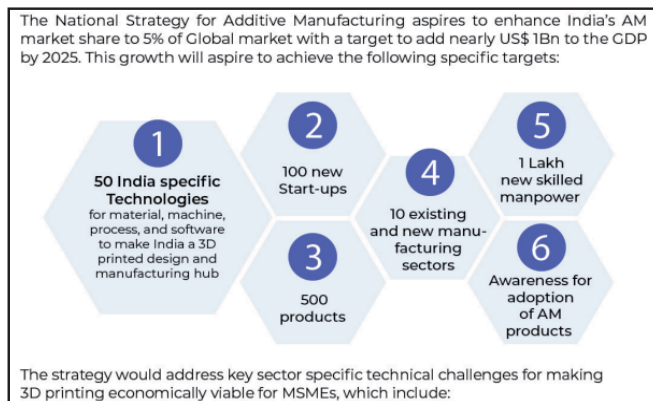
Fig.1 Global Additive Manufacturing Market Distribution[3]

Historical Timeline of Additive Manufacturing (AM) Technology:

Fig.5 Historical Timeline for Additive Manufacturing Technologies[6]

Potential in India:

- Additive Manufacturing (AM) has immense potential to revolutionize India's manufacturing and industrial production landscape through digital processes, communication, imaging, architecture and engineering.

- It could likely **add $ 1 billion** to the GDP by 2025.

The National Strategy for Additive Manufacturing aspires to enhance India's AM market share to 5% of Global market with a target to add nearly US$ 1Bn to the GDP by 2025. This growth will aspire to achieve the following specific targets:

1 — **50 India specific Technologies** for material, machine, process, and software to make India a 3D printed design and manufacturing hub

2 — 100 new Start-ups

3 — 500 products

4 — 10 existing and new manufacturing sectors

5 — 1 Lakh new skilled manpower

6 — Awareness for adoption of AM products

The strategy would address key sector specific technical challenges for making 3D printing economically viable for MSMEs, which include:

- The Strategy aspires to achieve **5% of Global AM market share.**

Goals of National Strategy for Addictive Manufacturing:

- The key goals include positioning India as a global hub for Additive Manufacturing development and deployment, create and protect the integrity of India's AM intellectual properties.
- Our goal is to have 50 India specific technologies, 100 new startups, 500 products, 10 new manufacturing sectors, 1 lakh skilled manpower."

Aim and Objective of the National Strategy on Additive manufacturing (AM):

- The National Strategy on Additive manufacturing (AM) aims
  - to create a conducive ecosystem for design, development, and deployment, and
  - to overcome technical and economic barriers for Global AM leaders to set up their operations with supporting ancillaries in India,
  - facilitating development of the domestic market and enhancement of global market share
- The mission is to ensure creation of a sustainable ecosystem for the AM industry
  - to compete globally,
  - encourage AM transformation and driving capabilities in the country for developing core competencies,
  - position India as a global Innovation and Research hub for Additive Manufacturing,
  - ensure AM manufactured end-user functional components for domestic and export markets,
  - promote creation of Indian IPR and
  - Ensure adequate measures for the protection of AM technology.
- The use of smart manufacturing processes to develop products and the predominant role of 3D printing in Industry 4.0 is one of the upcoming applications of this technology.
  - Industry 4.0 is a rising trend that is anticipated to shift the global market dynamics and bring a radical change to manufacturing processes.

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SECTION: C
(QUICK FACTS)

MAHARISHI DAYANAND SARASWATI JAYANTI

⊙ **CONTEXT:**   Maharishi Dayanand Saraswati Jayanti is celebrated on **26th February every year to mark the birth anniversary of the Maharishi Dayanand Saraswati.**

About Dayanand Saraswati

- Dayanand Saraswati was the founder of Hindu reform organisation called **Arya Samaj.**
- He was born on **February 12, 1824 in Gujarat.**
- His original name was **Mool Shankar Tiwari.**
  - ⊙ He was named Mool because he was born when the **Mool Nakshatra prevailed.**
- He wandered as an ascetic for fifteen years (1845-60) in search of truth.
- He was born to **Karshanji Lalji Kapadi, and Yashodabai.**
- He was a **social leader, Indian philosopher, and reform movement of the Vedic dharma.**
- He was the first to give the call for Swaraj **"India for Indians" in 1876, which was later taken up by Lokmanya Tilak.**
- He took inspiration from the Vedas and considered them to be **'India's Rock of Ages', the infallible and the true original seed of Hinduism.**
  - ⊙ He gave the slogan **"Back to the Vedas".**

About Arya Samaj

- **Arya Samaj is a monotheistic Indian Hindu reform movement** that promotes practices and values based on the **belief in infallible authority of the Vedas.**
- It was founded by **Dayanand Saraswati on April 10, 1875.**
- It was the **first Hindu organisation to introduce proselytization in Hinduism.**
- It has worked towards the **growth of the civil rights movement across India since the 1800s.**

WORLD THINKING DAY OBSERVED ON 22ND FEBRUARY

⊙ **CONTEXT:**   **World Thinking Day, originally known as Thinking Day,** is celebrated annually on **22 February by all Girl Scouts, Girl Guides and other girl groups worldwide.**

- The theme for World Thinking Day 2022 is **'Our World: Our Equal Future: The Environment and Gender Equality'** which highlights the **significance of the environment in the context of gender equality.**

About the day

- World Thinking Day is a celebration of ten million girls worldwide that has taken place on every 22 February since 1926.
- It remains a day for all Guides and Girl Scouts to think of each other and celebrate their sisters all around the world.

Brief history of the day

- In 1926, delegates from guide and girl scout organisations across the world met in the USA for the 4th world conference.

- They decided to create a day for Guides and Girl Scouts to celebrate being part of an international movement.

- Delegates chose to hold the first celebration on the joint birthday of Lord Baden-Powell, founder of the scout and guide movement, and his wife Olave, who served as World Chief Guide.

About WAGGGS

- The World Association of Girl Scouts and Girl Guides (WAGGGS) is a global association.

- It supports the female-oriented and female-only Scouting and Guiding organisations in 152 countries around the world.

- WAGGGS was established in 1928 in Hungary.

- It has its headquarters in London, United Kingdom.

- The World Association of Girl Scouts and Girl Guides is organised into five regions and it operates five international guiding centres.

  ➤ WAGGGS also holds full member status in the European Youth Forum.

INDIA'S 1ST E-WASTE PARK

⊙ **CONTEXT:** The Delhi government will build **India's first electronic waste eco-park in the national capital.**

About Eco- Park

- **The e-waste park is being planned in Narela industrial area and will be spread across 20 acres.**

- The e-waste eco-part will consist of an authorized refurbishing market as a secondary product sale market for batteries, electronic goods, laptops, chargers, **mobiles and PCs.**

- This facility will **consist of dismantling, refurbishing, segregation, plastic recycling, material wise storage, and testing, and precious metal extraction facilities, from Printed Circuit Boards (PCBs) through high-end technologies.**

  ◉ The activities in the park will be targeted **towards small and medium scale enterprises clusters, which are involved in e-waste recycling.**

- The e-waste eco-park will **provide infrastructure, training and tools to the operators from the informal sector,** in a bid to groom them **as formal recyclers.**

  ◉ The e-waste eco-park shall **engage informal operators involved in this work for a long time and with a sufficient knowledge base** in the collection network.

- There will be **end-to-end processing of e-waste and zero landfill will be ensured.**

- It will provide **integrated and environmentally-safe disposal of e-waste, using innovative technologies.**

  ◉ This will help in **reducing the pollution and adverse impact on the environment.**

- The activities in the park will be targeted **towards small and medium scale enterprises clusters, which are involved in e-waste recycling.**

Present scenario in Delhi

- **Delhi generates about 200,000 tonnes of e-waste annually from electrical appliances, electronic items, computers, accessories and mobile phones,** among others.

● This is potentially hazardous to not only the environment but can, in the **short-term, also harm humans.**

RAZZAZA LAKE, IRAQ'S SECOND LARGEST LAKE DRYING UP

⊙ **CONTEXT:**   Iraq's Razzaza Lake was once a tourist attraction known for its beautiful scenery and an abundance of fish that locals depended on.

● Now, dead fish litter its shores and the once-fertile lands around it have turned into a barren desert.

Important facts about the lake

● Razzaza Lake, also known as Lake Milh, Arabic for Salt Lake, is located between Iraq's governorates of Anbar and Karbala.

● It's the second largest lake in Iraq and is part of a wide valley that includes the lakes of Habbaniyah, Tharthar and Bahr al-Najaf.

● The lake was constructed as a measure to control floods in the Euphrates and to be used as huge reservoir for irrigation purposes. Iraqis and tourists frequented the lake as a recreational spot to cool down during Iraq's hot summers.

● Razzaza Lake is the latest victim of a water crisis in Iraq, known as the **"Land Between the Two Rivers", the Tigris and the Euphrates.**

● Upstream dams in Turkey, Syria and Iran have shrunk the rivers and their tributaries, seasonal rainfall has dropped and infrastructure has fallen into disrepair.

INDIA CELEBRATES 3RD INDIA PROTEIN DAY

⊙ **CONTEXT:**   In India, every year **February 27th** is celebrated as the **National Protein Day.** This year's theme of **India Protein Day is 'Food Futurism'.**

About the day

● The **National Protein Day aims to create awareness about protein deficiency and encourage people to include this macronutrient in their diet.**

● The day urges people **to include this crucial macronutrient in their diet.**

● The day also helps people **to learn more about different sources of plant and animal protein.**

Facts about Protein

● Protein is a macronutrient that is essential to building muscle mass.

● It is commonly found in animal products, though is also present in other sources, such as nuts and legumes.

● Chemically, protein is composed of **amino acids**, which are organic compounds made of **carbon, hydrogen, nitrogen, oxygen or sulfur.**

● Just as amino acids are the building blocks of proteins, proteins are the building blocks of **muscle mass**.

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TOP 100 ALL INDIA RANKING CSE 2020

8, 9, 12, 13, 14, 16, 17, 19, 20
24, 26, 28, 30, 31, 36, 38, 41, 45, 50
51, 52, 55, 56, 58, 59, 67, 68, 70, 71, 73
74, 76, 78, 83, 84, 85, 86, 89, 93, 98, 100

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3, 6, 10, 11, 16, 17, 21, 22, 28
30, 33, 38, 39, 42, 44, 46, 53, 54, 59, 66, 69
70, 72, 77, 78, 80, 82, 84, 86, 87, 94, 97, 98

TOP 100 ALL INDIA RANKING CSE 2018

2, 3, 5, 7, 27, 36, 37, 40, 44, 49
51, 52, 56, 58, 62, 74, 81, 89, 92, 94, 98, 100

TOP 100 ALL INDIA RANKING CSE 2017

3, 10, 19, 31, 33, 35, 40, 41, 44, 45, 48
54, 57, 63, 64, 68, 71, 75, 77, 80, 83, 93, 97, 100