

CURRENT AFFAIRS

WEEKLY

WEEK: 1

APRIL
2022

MAINS

GS-II

- THE CHANGING RELATIONS OF INDIA, MALDIVES
- US MAKES LYNCHING A HATE CRIME
- 5TH BIMSTEC SUMMIT
- ASSAM-MEGHALAYA BORDER DISPUTE PARTIALLY RESOLVED
- DEFINING MINORITIES OF INDIA

GS-III

- THE THREAT OF STAGFLATION IN INDIAN ECONOMY
- THE START UP INDIA INITIATIVE
- SRI LANKA'S ECONOMIC CRISIS
- HOW MITOCHONDRIA ADAPTED TO LIVING WITHIN CELLS
- SPACE DEBRIS
- ENERGY TRANSITION HOLDS KEY TO TACKLE GLOBAL ENERGY AND CLIMATE CRISIS: IRENA

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 - Kozhikode To Vie For Unesco 'City Of Literature' Distinction
- GEOGRAPHY**
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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

THE CHANGING RELATIONS OF INDIA, MALDIVES

CONTEXT:

- ❑ India's External Affairs Minister Dr S Jaishankar visited Maldives after he got an invite from his Maldivian counterpart and held extensive discussion on the bilateral relations between the two.
- ❑ Jaishankar's five-day visit is part of India's attempt to proactively reach out with projects and initiatives to counter China's influence.

◎ BACKGROUND

- India and Maldives share ethnic, linguistic, cultural, religious and commercial links. India was among the first to recognize the Maldives after its independence in 1965 and later established its mission at Male in 1972.
- Maldives' proximity to the west coast of India and its situation at the hub of commercial sea-lanes running through the Indian Ocean, and its potential to allow a third nation's naval presence in the area imbues it with significant strategic importance to India.
- India has a pre-eminent position in the Maldives, with relations extending to virtually most areas.
- India's policy of 'Neighbourhood First' and Maldives' policy of 'India First' seem to be in absolute sync with each other.

Neighbourhood First Policy: It is a core component of India's foreign policy, focuses on peaceful relations and collaborative synergetic co-development with its South Asian neighbors of the Indian subcontinent encompassing a diverse range of topics, such as economic, technology, research and education, connectivity (digital, surface and air transport, energy grid connectivity, logistic chains, etc), space program, defence security, environment and climate challenge.

- It is important to note that the broad bilateral ties between the two countries rest on the foundation of **mutual trust, understanding and sensitivity** to each other's concerns.

Quick facts about Maldives

- The Republic of the Maldives is located in the **Indian Ocean**.
- It is an archipelago comprising approximately **1,200 islands** with a geographical spread over **90,000 sq.km**

- Incorporating some 26 atolls, the Maldives is one of the world's most geographically dispersed countries, and is a **99 per cent water-nation**.
- Maldives is the **lowest-lying country** on the planet. With the highest elevation being just 2.3 metres (7 feet 7 inches) above sea level, the archipelago has the world's lowest naturally-occurring 'highest-point'.



Areas of co-operation between India and Maldives:

● Security Cooperation-

- ▶ Through the decades, India has rushed emergency assistance to the Maldives, whenever sought.
- ▶ In 1988, when armed mercenaries attempted a coup against President Maumoon Abdul Gayoom, **Operation Cactus** was announced where India sent paratroopers and Navy vessels and restored the legitimate leadership.
- ▶ In December 2021, India and Maldives conducted the 11th edition of **Military Exercise EKUVERIN** at Kadhdhoo Island.

This exercise focused on enhancing synergy and inter-operability between Armed Forces of both the nations in terms of understanding transnational terrorism both on land and at sea, conducting Counter-Terrorism and Counter-Insurgency Operations and sharing best military practices and experiences.

- **Disaster Management:**
 - ▶ **The 2004 tsunami and the drinking water crisis** in Male were occasions when India rushed to the assistance of Maldives.
 - ▶ At the peak of the continuing COVID-19 disruption, the **Maldives has been the biggest beneficiary of the Covid-19 assistance** given by India among all of India's neighbouring countries.
 - ▶ In fact, Maldives was the first country to receive Covid-19 vaccines from India when **India gifted 100,000 doses in January 2021**.
 - ▶ When the world supply chains were blocked because of the pandemic, India continued to provide crucial commodities to the Maldives under **Mission SAGAR**.
- **People to people contact-**
 - ▶ **Technology** has made **connectivity easier** for everyday contact and exchanges.
 - ▶ **Maldivian students** attend educational institutions in India and **patients** fly here for super speciality healthcare, aided by a liberal visa-free regime extended by India.
 - ▶ Creation of an Air Travel Bubble to facilitate movement of people from both sides for employment, tourism, medical emergencies etc.
 - ▶ The **Maldives was the first neighbouring country** with which an air bubble was operationalized.

India-Out Sentiments

- India-Maldives relations deteriorated during the Progressive Party (PPM)'s five-year rule (when Abdulla Yameen Abdul Gayoom of the PPM became president in 2013) and the anti-India sentiment was apparent even back then.
- A lot of anti-India rhetoric was used during that time because the Maldivian government was pro-China.

- **Economic Cooperation:**
 - ▶ **Tourism** is the mainstay of Maldivian economy. The country is now a **major tourist destination**

for Indians and a job destination for others.

- ▶ The significant turnaround in India's relations with the Maldives and its height is a prominent example of overcoming adversity in our neighbourhood diplomacy.
- ▶ One of the key areas where India is assisting the Maldives is **connectivity and civilian infrastructure**.
- ▶ Apart from **seven major projects under Indian line of credit (LoC)** of \$800 million, India has announced another LOC of \$400 million.
- ▶ India has also allotted a special grant of \$100 million for the **Greater Male Connectivity Project**.

It is a 6.74 km long bridge, also the biggest new development project by India in its neighbourhood in recent years, signed recently, seeking to link Male to three other islands i.e, Villingli, Gulhifalhu and Thilafushi through a series of bridges, causeways, and roads. The project will provide a major fillip to the Maldivian economy.

- ▶ India and Maldives have recently signed **five agreements that would boost infrastructure** in the island nation.
- ▶ The pact included an Amendatory Agreement to repurpose an older EXIM Bank of India Line of Credit of USD 25 million for Road Development, a Letter of Intent between EXIM Bank and local authorities for **financing a housing project of 2000 units in Hulhumale** and MoU on grant funding USD 0.5 million for a **fish processing plant in Kendhikulhudhoo in northern Maldives**.

Significance of the Maldives for India

- **Strategic Importance:** The Maldives is geographically positioned like a **'toll gate'** between the **western Indian Ocean** chokepoints of the **Gulf of Aden** and the **Strait of Hormuz** on the one hand, and the **eastern Indian Ocean** chokepoint of the **Strait of Malacca** on the other.
- **Economic Value:** It is situated at the hub of commercial sea-lanes running through the Indian Ocean. More than 97% of India's international trade by volume and 75% by value passes through the region. It's potential to allow a third nation's naval presence in the area.

Political and Regional Security:

- ▶ Since China's naval expansion into the Indian Ocean, Maldives significance has steadily grown and now it's at the heart of international geopolitics.

- ▶ Moreover, the Maldives is an important aspect of India's 'Neighbourhood First' policy.
- ▶ 'India First' has been a stated policy of the Government of Maldives.
- ▶ Maldives is a member of the South Asian Association for Regional Cooperation (SAARC) and the South Asia Subregional Economic Cooperation (SASEC).
- **Indian Community In Maldives:** There is a significant Indian diaspora in the Maldives. Innumerable Indians work across the hospitality, education, and health-care sectors of the Maldives economy.
- Significance of the recent visit by S. Jaishankar's to Maldives:
- Both countries have signed **pacts on health and education** besides discussing regional security and maritime safety issues.
- **National College of Policing and Law Enforcement** is going to be inaugurated in April this year. It would be India's largest grant-funded project in Maldives.
- During this visit of India's Foreign Minister **National Knowledge Network** was also inaugurated.

National Knowledge Network

- National Knowledge Network is a **multi-gigabit national research and education network**.
- **Purpose:** To provide a unified high speed network backbone for educational and research institutions in India.

- **Managed by:** The network is managed by the **National Informatics Centre (NIC)**.

- ▶ Both countries also signed the **Peering Agreement**, which will now help over 1,500 Indian institutes and a host of universities and centres of learning from Singapore, Europe and the United States are now connected to Maldives.
- ▶ This was the first occasion when the Foreign Minister of both countries have met in Maldives but not in its capital Male. This time the meeting was held in the city of **Addu**.

◎ THE WAY FORWARD:

- The exemplary bilateral cooperation between India and Maldives could serve as a useful template for developing our ties with other neighbours as part of India's Neighbourhood First policy. India has always supported and developed Maldives.
- **Being able to stay as companions** is vital and both must always realise the part, they play to each other. The recent **infrastructural projects** will also prove to be **important developments** for the economy, trade to trade understanding between the two countries. In accordance with the "Neighbourhood First Policy" of the government, India must remain a committed development partner for stable, prosperous, and peaceful Maldives.

US MAKES LYNCHING A HATE CRIME

CONTEXT:

United States President Joe Biden has signed into law the first federal legislation that makes lynching a federal hate crime in the country after civil rights groups pushed for such a measure for more than a century.

◎ BACKGROUND:

- Assent to Emmett Till Anti-Lynching Bill was given by President of US Joe Biden.
- This law makes lynching a federal hate crime.
- The passing of this Act is significant as the US continues to be rocked by 'black rights matter' movement following the killing of George Floyd by a police officer.

◎ ANALYSIS

What is the Emmett Till Anti-Lynching Bill?

- It makes lynching a federal crime punishable by imprisonment of up to 30 years.

The legislation is named after 14-year-old Emmett Till, who was brutally murdered in a racist attack in Mississippi in 1955.

- This law expressly terms lynching to be a hate crime.
- The abovementioned law was unambitiously passed by the US lawmakers with only 3 Republican legislators opposing it.
- Under this law, an action can be prosecuted as a lynching when a person conspires to commit a hate crime that results in death or serious injury.
- It has to be noted that in the legislative history of United States, the passing of an Anti-Lynching Bill was attempted about 200 times.

In 1900, the first anti-lynching Bill was introduced by George Henry White, who was then the only black man in the Congress.

Lynching in India:

- In recent years India has also faced the problem of mob lynching.
- Most common reason for lynching in India have arisen due to cow vigilantism.
- People getting lynched in most cases are accused of smuggling cattle for slaughtering them.

- Rumors regarding crimes or wrong committed by a person may also become the reason for him being lynched by the mob.
- It has been found that in most cases of lynching, the incident was caused due to spread of rumors through social media.
- People belonging to minority community have mostly been the victims of lynching in India.

Lynching laws in India

- There is no national law made on mob lynching. Mob lynching is not defined in IPC, CrPC, and nor defined in the constitution.
- Though there are certain provisions in the IPC, for example-
 - ▶ **Section 223 (a)** of the Code of Criminal Procedure (CrPC), 1973 states that persons or a mob involved in the same offence in the same act can be tried together.
 - ▶ **Sections 302** (murder)
 - ▶ **Section 304** (culpable homicide not amounting to murder)
 - ▶ **Section 307** (attempt to murder)

Which states have anti-lynching laws?

- **Jharkhand:** In Jharkhand, the Prevention of Mob Violence and Mob Lynching Bill, 2021 envisages imprisonment for those pronounced guilty of mob violence and lynching for periods ranging from three years to life term, besides fine and attachment of property.
- **Rajasthan:** In August 2019, the Rajasthan government passed the 'The Rajasthan Protection from Lynching Bill, 2019' providing for life imprisonment and a fine from Rs 1 lakh to Rs 5 lakh to those convicted in cases of mob lynching leading to victim's death.
- **West Bengal:** In August 2019, the West Bengal Assembly passed 'The West Bengal (Prevention of Lynching) Bill, 2019', proposing a maximum punishment of life imprisonment and fines ranging from Rs 1 lakh to Rs 5 lakh for offences.

5TH BIMSTEC SUMMIT

CONTEXT:

Prime Minister Narendra Modi recently participated in the 5th BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) Summit hosted in virtual mode by Sri Lanka, the current chair of BIMSTEC.

◎ ABOUT 5TH BIMSTEC SUMMIT:

- The Summit's theme "**Towards a Resilient Region, Prosperous Economies, Healthy People**" captures the main current priorities of member states.
- The main outcome of the Summit was the **adoption and signing of the BIMSTEC Charter**, which formalizes the grouping into an organization made up of members' states that are littoral to, and dependent upon, the Bay of Bengal.
- The Summit also saw considerable progress being achieved in the BIMSTEC connectivity agenda with the **adoption of the 'Master Plan for Transport Connectivity'** by Leaders which lays out a guidance framework for connectivity related activities in the region in the future.
- **Three BIMSTEC agreements** were signed which represent progress being achieved in ongoing cooperation activities:
 - ▶ BIMSTEC Convention on Mutual Legal Assistance in Criminal Matters;
 - ▶ BIMSTEC Memorandum of Understanding on Mutual Cooperation in the field of Diplomatic Training and
 - ▶ Memorandum of Association on Establishment of BIMSTEC Technology Transfer Facility.

About BIMSTEC:

- The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a **regional multilateral organisation**.
- Its members lie in the **littoral and adjacent areas of the Bay of Bengal** constituting a contiguous regional unity.
- Headquarter is situated in Dhaka, Bangladesh.
- Out of the 7 members,
 - ▶ Five are from South Asia –
 - Bangladesh
 - Bhutan
 - India
 - Nepal
 - Sri Lanka

- ▶ Two are from Southeast Asia –
 - Myanmar
 - Thailand



- BIMSTEC not only connects South and Southeast Asia, but also the ecologies of the Great Himalayas and the Bay of Bengal.
- It mainly aims to **create an enabling environment for rapid economic development**; accelerate social progress; and promote collaboration on matters of common interest in the region.
- The **ADB (Asian Development Bank)** has **become BIMSTEC's development partner** since 2005, to undertake a study which is designed to help promote and improve transport infrastructure and logistic among the BIMSTEC countries. So far, ADB has already finished the project so called BIMSTEC Transport Infrastructure and Logistic Study (BTILS).

How significant is BIMSTEC for India?

- BIMSTEC provides a new platform for India to engage with its neighbours with the **South Asian Association for Regional Cooperation (SAARC)** becoming dysfunctional because of differences between India and Pakistan.
 - ▶ **BIMSTEC** allows India to pursue three core policies-
 - ▶ **Neighbourhood First** – primacy to the country's immediate periphery;
 - ▶ **Act East** – connect India with Southeast Asia; and
 - ▶ **Economic development of India's north-**

- **eastern states** – by linking them to the Bay of Bengal region via Bangladesh and Myanmar.
- Allows India to counter China's creeping influence in countries around the **Bay of Bengal** due to the spread of its **One Belt and One Road Initiative**.
- It is of utmost significance to India as it is a major support in implementing its **Act East Policy** and the development of its ambitious '**Sagar Mala**' project.

ASSAM-MEGHALAYA BORDER DISPUTE PARTIALLY RESOLVED

CONTEXT:

Signing of Assam-Meghalaya deal to resolve the border dispute between the two countries.

- What was the border dispute between Assam and Meghalaya?
- During the British rule, **Assam consisted of the present-day Nagaland, Arunachal Pradesh, Meghalaya and Mizoram**, which later became separate states.
- The long-standing dispute between Assam and Meghalaya began in 1972 when Meghalaya was carved out of Assam under the **Assam Reorganisation Act, 1971**.
- The border issues came about as a result of **different readings of the demarcation of boundaries** in the initial agreement for the new state's (Meghalaya's) creation.
- The resolution to 70% of border dispute has been found by this deal.
- The position of the remaining 6 areas is likely to be cleared very soon through an amicable settlement between the states.

The Assam-Meghalaya border dispute includes the areas of **Upper Tarabari, Gazang reserve forest, Hahim, Langpih, Borduar, Boklapara, Nongwah, Matamur, Khanapara-Pilangkata, Deshdemoreah Block I and Block II, Khanduli and Retacherra**.

What are the salient features of border agreement between Assam and Meghalaya?

- Through this deal Assam and Meghalaya have partially **resolved** a 50-year-old border dispute **in six of the 12 sectors** along their 885-km boundary.
- The deal was signed by Chief Minister of Assam Himanta Biswa Sharma and his Meghalaya counterpart Conrad Sangma in the presence of Union Home Minister Amit Shah.
- The six disputed sectors whose issue has been resolved are Tarabari, Gazang, Hahim, Boklapara, Khanapara-Pillangkata and Ratacherra under the Kamrup, Kamrup (Metro) and Cachar districts of Assam and the West Khasi Hills, Ri-Bhoi and East Jaintia Hills districts of Meghalaya.
- Out of the total disputed area of 36.79 sq. km land in the above six areas of Assam will get 18.51 sq. km and Meghalaya will get the remaining 18.28 sq.km.

What lays ahead?

Major inter-state disputes in India

Inter-State Border Areas	
Assam & Mizoram	164.6 km
Assam & Meghalaya	884.9 km
Assam & West Bengal	127.0 km
Assam a& Tripura	46.3 km
Assam & Manipur	204.1 km
Assam & Arunachal Pradesh	804.1 Km
Assam & Nagaland	512.1 km

Assam – Nagaland

- Boundary: 434 kilometer
- Area of dispute: Assam districts of Sivasagar, Jorhat, and Golaghat.

Gujarat – Rajasthan

- Area of dispute: Mangadh Hill, located on the border of the two states. Gujarat claims half of the hill, while Rajasthan claims the entire hill is theirs.

Karnataka- Kerala

- Area of dispute: district of Kasaragod

Orissa – West Bengal

- Area of dispute: 82 villages under Jaleswar and Bhogarai blocks in Balasore district

Arunachal Pradesh and Assam:

- Area of dispute: Arunachal Pradesh claims territory in Assam based on history.

Others

- Himachal Pradesh and Uttarakhand:** Himachal Pradesh is contesting Uttarakhand over six places of Dehradun district, adjoining its Shimla district.

- **Bihar and UP:** The inter-state boundary between Bihar and Uttar Pradesh continued to fluctuate due to the frequent change in the course of rivers.
- **Haryana and UP:** Likewise, Haryana and Uttar Pradesh's fluctuating boundary was sought to be solved in the 1970s. But issues are still not resolved.
- **Haryana and Punjab:** Punjab and Haryana are locked over the transfer of Chandigarh to Punjab, and part of the Fazilka sub-district of Punjab to Haryana.
- **Orissa and Andhra Pradesh:** Between Orissa and Andhra Pradesh, the boundary dispute relates to 63 villages falling presently in Orissa. But neither government has asked for Central intervention.
- **Orissa and Jharkhand:** Similarly, Orissa and Jharkhand have a boundary dispute relating to seven villages of the Mayurbhang and Keonjhar districts. Orissa has claimed territories in the former princely states of Seraikela and Kharsuan, now in Jharkhand.
- **Orissa and Chattisgarh:** Orissa is locked with Chhattisgarh over three villages of Naupada district. Orissa and West Bengal are also stalemated over five villages of Balasore and Mayurbhanj districts of Orissa.

How does the Constitution deal with inter-state disputes?

- At the time of independence in 1947, India consisted of 571 disjointed princely states and provinces directly governed by the British.
- The **States Reorganization Commission (SRC)** constituted in 1953 after nearly two years of

study, merged them into 14 states and six union territories (UTs).

- Currently, they have grown into 28 states and eight UTs, making a total of 36 entities.
- The draftsmen of India's constitution had erred grievously in ignoring the problem of interstate disputes, especially interstate boundaries.
- The constitution makes no provision for a swift and binding decision of such disputes.
 - ▶ **Article 262** is on the adjudication of disputes relating to waters of inter-state rivers or river valleys. There is no comparable provision on disputes on land.

How does SC deal with disputes arising between States?

● Article 131

- Article 131 of the Constitution of India vests the Supreme Court with original jurisdiction over any dispute arising between the states or between the center and state.
- SC has original jurisdiction in any dispute:
 - between the Government of India and one or more States
 - between the Government of India and any State or States on one side and one or more other States on the other; or
 - Between two or more States
- (if the dispute involves any question (whether of law or fact) on which the existence or extent of a legal right depends)

DEFINING MINORITIES OF INDIA

CONTEXT:

Petition before the Supreme seeking the identification of Hindus as minority in states and union territories where their numbers are below other communities.

What argument is presented in the abovementioned petition?

- The petition states that according to the numbers of 2011 census, the population of Hindus is less than 50% in the states and union territories of **Lakshadweep, Mizoram, Nagaland, Meghalaya, J&K, Arunachal Pradesh, Manipur and Punjab.**

What does the term 'minority' mean according to the Constitution of India?

- The Constitution of India mentioned the term 'minority' only on two occasions in Article 29 and in Article 30 but it nowhere defines the term.
- Though the Constitution of India **recognizes two types of minorities i.e. religious and linguistic.**

Article 29 — Protection of interests of minorities

- Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same.
- No citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them.

Article 30– Right of minorities to establish and administer educational institutions

- All minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.
- The State shall not, in granting aid to educational institutions, discriminate against any educational institution on the ground that it is under the management of a minority, whether based on religion or language.
- **Section 2(c) of National Commission for Minorities Act, 1992** had granted minority status to five communities based on their national population
- Muslims (largest minority group in India forming 14% of the total population.)

- ▶ Christians
- ▶ Sikhs
- ▶ Buddhists
- ▶ Parsis
- ▶ Jains

Other important minority rights

- **Article 15** prohibits discrimination on grounds of religion race cast sex or place of birth.
- **Article 17** Prohibits untouchability.
- **Articles 25 to 30** preserve the right of minorities on grounds of religion.
- **Article 25** provides the right to practice any religion.
- **Article 26** allows religious institutions to be opened.
- **Article 27** provides that no person shall be forced to pay any taxes which is not mandatory.
- **Article 28** provides that there shall be no religious instruction to be followed in any particular educational institutions.

What has been the opinion of the Supreme Court of India in earlier judgements?

- The Supreme Court has held in the TMA Pai foundation case that the Hindus may be a majority community in India but as they are in minority in the state of Punjab, that are entitled to Constitutional benefits provided to minorities.
- While deciding the above case, the Supreme Court referred DAV College vs State of Punjab and DAV College, Bhatinda vs State of Punjab.

© WHAT NEXT?

The decision of Supreme Court of India in this petition is awaited. Verdict of the Honorable Court in the above matter will have great ramifications on the question of who are minorities in India.

THE THREAT OF STAGFLATION IN INDIAN ECONOMY

CONTEXT:

With rising tensions between Russia and Ukraine, disrupting supply chain, and increasing inflation, there are increasingly warning about stagflation in India.

ANALYSIS

What is Stagflation?

- Stagflation can be understood as a combination of the words
 - ▶ Stagnation
 - ▶ Inflation
- Stagflation is a perfect storm of economic ills:
 - ▶ slow economic growth
 - ▶ high unemployment (economic stagnation)
 - ▶ high prices (inflation)
- Initially, many economists believed stagflation wasn't possible. After all, unemployment and inflation rates generally move in opposite directions.
- However, as the "Great Inflation" period of the 1970s ultimately proved, stagflation is real, and it can have a devastating effect on the economy.

Worst of both worlds

The term appeared as early as 1965, when **British Conservative Party politician Iain Macleod** in a speech to the House of Commons said: "**We now have the worst of both worlds — not just inflation on the one side or stagnation on the other, but both of them together. We have a sort of 'stagflation' situation and history in modern terms is indeed being made.**"

How can stagflation be compared to inflation?

- Stagflation and inflation are related, but they shouldn't be confused.
- **Inflation**
 - ▶ The term inflation refers to a **sustained increase** in the average price level of all goods and services, not just a few of them, in an economy over time.
 - ▶ **Reasons:** Inflation happens when the money supply grows at a faster rate than the economy can produce goods and services.

Stagflation

- ▶ Stagflation happens when inflation exists in tandem with slow economic growth and high unemployment.
- ▶ Typically, these economic conditions don't occur together. Unemployment and inflation tend to be inversely correlated.
- ▶ So, as unemployment rates increase, inflation usually decreases and vice versa.
- ▶ Of course, as the stagflation of the 1970s illustrated, this relationship isn't always stable or predictable.

What are the factors responsible for Stagflation?

- **The two root causes of stagflation economists generally agree upon are**
 - ▶ supply shocks
 - ▶ fiscal and monetary policies
- **Supply Shock**
 - A supply shock is anything that reduces the economy's capacity to produce goods and services at given prices. For example, throughout the pandemic, there have been supply shocks in:
 - ▶ **Labor**, with fewer people working
 - ▶ **Goods**, for example, semiconductor shortages, which started even before the pandemic
 - ▶ **Services**, as people postponed elective surgeries and other health-care procedures
- **Poor fiscal and monetary decisions**
 - ▶ Poor fiscal and monetary decisions also prompt stagflation.

What are the consequences of stagflation?

The trifecta of slow growth, high unemployment, and fast inflation can result into the following:

- Significant pressure on the economy
- Distort investment decisions
- Damaging to-fixed income markets (rising interest rates push bond prices lower and depress equity valuations)
- As consumer spending slows, corporate revenue declines, exacerbating the overall effect on the economy.

THE START UP INDIA INITIATIVE

CONTEXT:

A research paper from Dublin City University in Ireland, reviewing India's entrepreneurial policy Startup India, affirmed its positive impact in reducing regional entrepreneurial disparities.

◎ BACKGROUND

- Title: '*The good, the bad, and the ugly of 'Startup India' — a review of India's entrepreneurship policy*'.
- The paper was published in the Economic and Political Weekly in December 2021.
- The research cited shortcomings in addressing the under-representation of women and marginalised caste groups in the national startup ecosystem.
- **Startup India** was introduced in 2016 as a "clarion call to innovators, entrepreneurs, and thinkers of the nation to lead from the front in driving India's sustainable growth and create large scale employment opportunities."

◎ ANALYSIS

What is a Start-up?

- The term start-up refers to a company in the first stages of operations.
- Start-ups are founded by one or more entrepreneurs who want to develop a product or service for which they believe there is demand.
- These companies generally start with high costs and limited revenue, which is why they look for capital from a variety of sources such as venture capitalists.

Venture Capitalist: is a private equity investor that provides capital to companies with high growth potential in exchange for an equity stake.

- A Start-up with valuation of \$ 1 Billion is termed as Unicorn.

Why is India seeing the rise of start-ups?

- India's demographic dividend has blessed it with population of such age group that has either not entered in the job market or is willing to leave the existing job and start a business.
- Government initiatives such as start-up India, stand-up India etc. These initiatives of the government focus on providing finance, training, market access, tax-breaks etc. to the entrepreneurs.

- Availability of investors, both foreign and domestic, whose purpose of financing start-ups is to gain multi-bagger returns.
- Increasing demand of products and services that can cater the needs of India's expanding middle class.
- Telecom and IT revolution in India has made getting access to new products and services fairly easy and therefore generating customer base through a website or an app is not that difficult for the start-ups.

How can Start-ups help the Indian Economy?

- Start-ups are providing an opportunity to the entrepreneurial youth of India an opportunity to express their idea and grow their finances exponentially.
- Wealth creation has therefore become synonymous with start-ups.
- Establishment of a start-up brings with it growth in employment opportunities.
- Creation of products or services can cater the needs of a section of Indian population and make them economically more potent.

Example of above is the availability of online e-commerce platforms to traditional artisans who can now more easily reach their customers.

- These new business entities in some cases focus their attention on solving a regional or local issue or catering to a local demand.
- This results in creation of economic opportunities in places that are not traditional known for the same hence reducing regional disparity in economy.

Why start-ups are not a complete panacea to India's economic woes?

- Statistically, a large number of start-ups do not make it big and are shut down.
- Closure of start-ups leads to lose of capital invested in them, employment of those working for and in them and also it sets a demotivating example for those willing to take chance by establishing a business entity.

Why do start-ups fail?

- Journey of all the start-ups is not uniform.
- Some Start-ups are run-aways successes, while others meet success after some hustle and many of them end up failing.

Some the reasons why many start-ups do not end up successful are-

- Weak business model followed by start-ups
- Poor planning by the entrepreneurs
- Faulty costumer insights
- Lack in originality of the idea which results in multiple products and services catering to the same demand.
- Lack of focus on the existing product and services under consideration or provided to the customers.

- Employment opportunities in start-ups, especially the ones that are technology and service based, are not proportionate to their valuation.
- Disparities in the salary and working conditions are also known to exist in the start-up ecosystem to a large extend.

- It is important to note that the founders and others in top level management of the start-ups take home huge pay outs that are proportional to valuation of the company but ordinary employees on the other hand receive less the bare minimum in name of optimum utilization of resources.
- The start-up sector being less regulated, has also led to no or minimum labour laws being applied to it.
- Most labourers working for the start-ups are not entitled to worker's welfare legislations and therefore face exploitation.

○ WAY FORWARD:

- Start-ups are the new growth engines and money multipliers in the economy and hence they deserve to be promoted. Though giving them a complete free hand and living their employees out of labour legislation is not feasible. This would only create a situation that will lead to concentration of wealth in the hands of few.
- Complete reliance on Start-ups for economic growth cannot be made as they too are and can be hit by business cycles and face contraction and/or closure.

SRI LANKA'S ECONOMIC CRISIS

CONTEXT:

Refugees arriving in Tamil Nadu from Sri Lanka due to economic crises developing in the island country.

What type of economic crises is Sri Lanka facing?

- Sri Lanka is facing the **Balance of Payment (BoP)** crises.

What does Balance of Payment crises mean?

- **BOP is the difference between all the money that has entered the country during a particular period of time and all the money that has left the country during that same period.**
- It has to be understood that money which enters and moves out of a country **is in foreign currency (mostly US Dollars).**
- Hence, more money moving out of the country than coming in implies **depletion of country's foreign currency reserves.**
- These reserves are important for a country because **payment for imported goods** can only be done through foreign currency.

What are the reasons for Balance of Payments crises surfacing in Sri Lanka?

- Sri Lanka's economy and its foreign currency revenue to large extent depends on **tourism**, which has **received a severe beating** in the recent times.
- **The 2019 serial blast** in Sri Lanka had caused decline in the arrival of foreign tourist in the country.
- **Global pandemic** of Corona has further decimated the tourism industry.
- The pandemic also **did not allow Sri Lankan labourer to travel outside the country** were they are employed (mostly gulf countries), thus impacting the foreign currency earned by Sri Lanka through the way of remittances.

Remittance: It is a non-commercial transfer of money by a foreign worker, a member of a diaspora community, or a citizen with familial ties abroad, for household income in their home country or homeland.

Remittances are transferred to the recipient country in the form of foreign currency and are then converted into local currency before reaching the intended beneficiaries.

They therefore become the source of foreign currency reserve for the recipient country.

- The Sri Lanka Central Bank in its zeal to make its currency stronger vis-à-vis US, **sold off** a major portion of its **foreign currency assets.**
- The above step not only deleted foreign currency reserves of Sri Lanka but it also made the country's **exports uncompetitive** in international market.

- For the purpose of making indigenous currency stronger, countries sell their foreign currency.
- In the world market, goods from one country must compete with those from all other countries. Car makers in America must compete with car makers in Europe and Japan. If the value of the euro decreases against the dollar, the price of the cars sold by European manufacturers in America, in dollars, will be effectively less expensive than they were before. On the other hand, a more valuable currency make exports relatively more expensive for purchase in foreign markets.

- In 2019, after coming to power, President Gotabaya Rajapaksa, **slashed both direct and indirect taxes.**
- This led to the **exchequer suffering from serious loss.**
- It complicated the situation as the Sri Lankan government **did not possess enough money to purchase the foreign currency** and the projection of booming fiscal deficit due to low taxes **scared away the foreign investors.**
- There has been a **drastic reduction in the foreign investment** received by Sri Lanka, which has directly impacted the foreign reserves of the South Asian country.
- Situation compounded even more due to the **spread of Corona and implementation of nationwide lockdown**, the final result these being economic activities coming to standstill.

How grave is the situation in Sri Lanka?

- Sri Lanka is facing its **biggest economic crises** since its independence in 1948.
- It is important to note that Sri Lanka is **heavily dependent on imports** for even the goods of daily usage e.g. petroleum products, dairy product, food items, stationary etc.
- The **supply of imported items has thus being seriously impacted** as the government does not possess enough foreign currency to buy these goods from international market.
- There is **extreme shortage of the goods of daily use** in the country and people are not able to get the products that they need even after having money to pay for them.
- For the first time since the 1970s, Sri Lankan government has resorted to the **rationing of food items** to all its citizens.
- **Death of 2 people**, who fainted while being in queue for purchasing fuel, has been reported.
- Sri Lanka government has also **cancelled exams throughout the country** because it does not have enough paper to print the question papers (very little printing paper is product in Sri Lanka and most of it is imported).
- **Army has been called in** by the government to help the police in tackling the riot like situation that has arose across the country due to lack of availability of essential goods.
- Government is also seeking the help of army to eliminate the instances of **black marketing** of essential items of daily use.

What has the Government of Sri Lanka done to overcome the crises?

- Sri Lankan government has approached **China** and the latter has promised loan of \$ 1 billion and a credit line of \$ 1.5 billion.

- The Foreign Minister of Sri Lanka G. L. Peiris was on a visit to **India** recently where he has succeeded in receiving line of credit worth \$ 1 billion from the Indian Government.

Line of Credit: It is a credit facility extended by a bank or other financial institution or a government to another government, business or individual that enables the it to draw on the facility and use the funds when needed.

- The Central Bank of Sri Lanka was not intending to receive aid from the International Monetary Fund (IMF) as its assistance would have come with conditionalities.
- But the gravity of the situation has caused the Central Bank and the Sri Lanka government to **approach the IMF** for immediate assistance.

What is the way forward?

- In the short term, Sri Lankan government has to **seek aid of foreign currency** from whatever sources it can to tide over the crises and provide immediate relief to its people.
- In the long term, the government of Sri Lanka is required to **diversify its sources of foreign exchange earnings**.
- The South Asian country also needs to produce, to a greater extent, items of daily consumption and public importance which can be produced/ manufactured in Sri Lanka itself.
- **Depreciation of Sri Lankan currency** vis-à-vis US Dollar is necessary to make the exports from the country more competitive in international markets.
- **Promotion of tourism** must be focused on as Sri Lanka has been seeing fall in Covid cases.

HOW MITOCHONDRIA ADAPTED TO LIVING WITHIN CELLS

CONTEXT:

An organism that has been around from 2 billion years ago has given biologists from Centre for Cellular and Molecular Biology, Hyderabad (CCMB), a clue as to how mitochondria became an inseparable part of animal and plant cells.

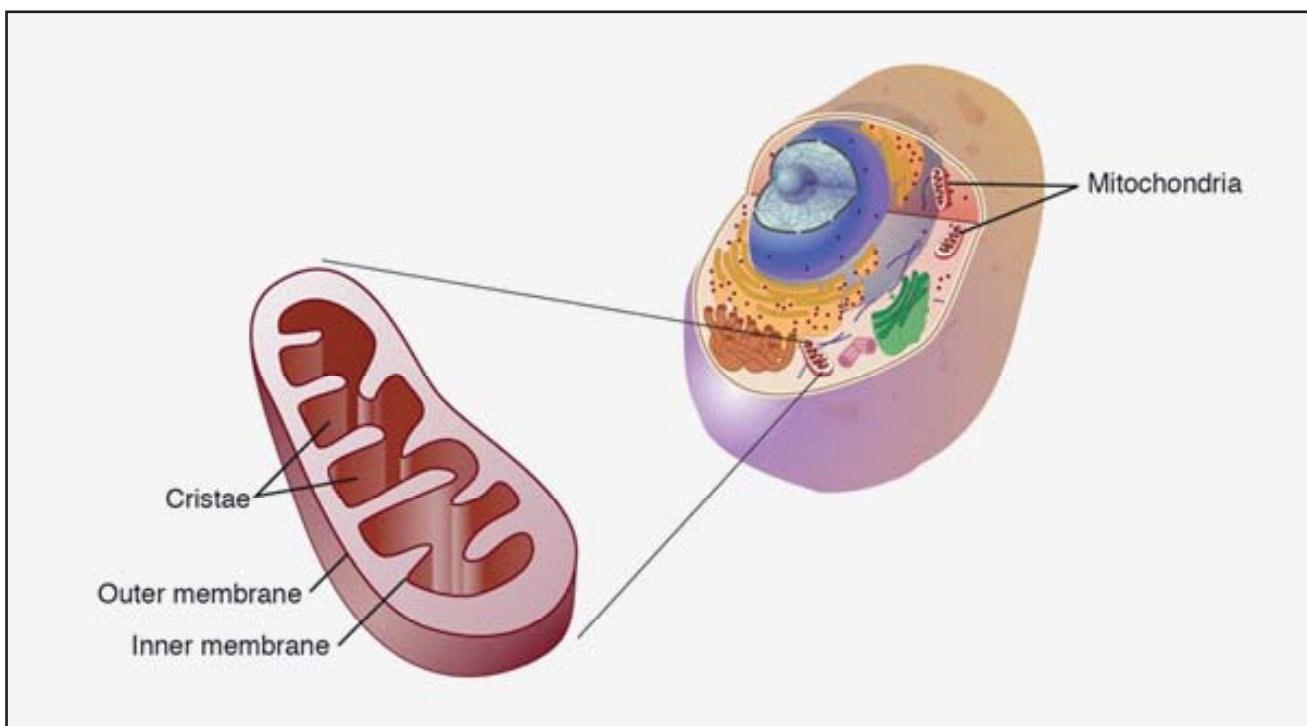
What is Mitochondria?

- Mitochondria are **membrane-bound cell organelles** (mitochondrion, singular) that generate most of the **chemical energy needed to power the cell's biochemical reactions**.
- Chemical energy produced by the mitochondria is stored in a small molecule called **adenosine triphosphate (ATP)**.
- **Mitochondria contain their own small chromosomes**.
- Generally, mitochondria, and therefore **mitochondrial DNA, are inherited only from the mother**.
- Mitochondria are **integral parts of the eukaryotic cell**.
- They are dubbed the **power houses of the cell**.

How Mitochondria became part of animal and Plant cells?

- Mitochondria **were not always part of the animal and plant cells**.

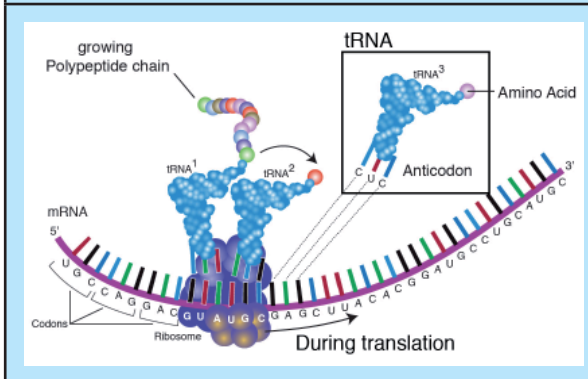
- Once, about two billion years ago, a **prokaryotic organism (without a nucleus) called archaea captured a bacterial cell**.
- **The bacterial cell learnt to live within the archaea as an endosymbiont**.
- In the late 19th century, microscopists observed that organelles like chloroplast and mitochondria undergo division inside eukaryotic cells that resembles bacterial division, which led them to suspect that these organelles might have arisen from bacterial endosymbionts.
- The researchers identified **two key transformations, one in the molecule known as DTD for short and another in the transfer-RNA (tRNA)**.
- The lab worked on a molecule called D-aminoacyl-tRNA deacylase (DTD).
- It has been observed some unexpected biochemistry of eukaryotic DTD that could be explained based on endosymbiotic origin of complex eukaryotic cell organelles.



- ▶ Endosymbiosis is an intense form of symbiosis when one of the organisms is captured and internalized by the other.
- By studying an **organism known as jakobid**, the researchers have identified two adjustments that had to take place to facilitate the integration of the two organisms.
 - ▶ These adjustments were made in the process of optimisation when the two organisms merged together, evidently for compatibility.
 - ▶ The researchers show that these changes, in a protein (DTD) and a tRNA (carrying an amino acid glycine for protein synthesis) are crucial for the successful emergence of mitochondria.

transfer-RNA (tRNA):

- Transfer RNA (tRNA) is a small RNA molecule that participates in protein synthesis.
- Each tRNA molecule has two important areas:
 - ▶ A trinucleotide region called the anticodon and
 - ▶ A region for attaching a specific amino acid.
- During translation, each time an amino acid is added to the growing chain, a tRNA molecule forms base pairs with its complementary sequence on the messenger RNA (mRNA) molecule, ensuring that the appropriate amino acid is inserted into the protein.



About Centre for Cellular & Molecular Biology (CCMB):

- The Centre for Cellular and Molecular Biology (CCMB) is one of the **constituent national laboratories of the Council of Scientific and Industrial Research (CSIR)**, New Delhi, India. The Centre for Cellular & Molecular Biology (CCMB) is a **premier research organization** in frontier areas of modern biology.
- The objectives of the Centre are to conduct high quality basic research and training in frontier areas of modern biology, and promote centralized national facilities for new and modern techniques in the inter-disciplinary areas of biology.
- CCMB was set up initially as a **semi-autonomous Centre in 1977**.
- **During 1981-82**, CCMB was **accorded status of a full-fledged national laboratory** with its own Executive Committee and Scientific Advisory Council.
- The research and development activities at CCMB are grouped under the following key areas:
 - ▶ Developmental Biology
 - ▶ Structural Biology
 - ▶ Cell and Stem Cell Biology
 - ▶ Genomics and Epigenetic Regulation
 - ▶ Microbes and Biology of Infection
 - ▶ Wildlife Conservation and Ecology
 - ▶ Crop Improvement
 - ▶ Innovation & Technology Development
 - ▶ Skill Development Program

SPACE DEBRIS

CONTEXT:

- ❑ ISRO is building up its orbital debris tracking capability by deploying new radars and optical telescopes under the Network for Space Objects Tracking and Analysis (NETRA) project.
- ❑ For protecting its space assets, ISRO was forced to perform 19 collision avoidance manoeuvres (CAM) in 2021, of which 14 were in Low Earth Orbit (LEO) and five in the geostationary orbit.
- ❑ The number of CAMs jumped from just three in 2015 to 12 in 2020 and 19 in 2021.

◎ BACKGROUND

- Since the beginning of the space age in 1957, tonnes of rockets, spacecraft, and instruments have been launched into space.
- Initially, there was no plan for what to do with them at the end of their lives.
- Since then, numbers have continued to increase and explosions and collisions in space have created hundreds of thousands of shards of dangerous debris.

◎ ANALYSIS

What is Network for Space Objects Tracking and Analysis (NETRA) project?

- Project NETRA is an early warning system in space to detect debris and other hazards to Indian satellites.
- ISRO SSA Control Centre, "NETRA", is now set up within the **ISTRAC campus at Peenya, Bangalore.**
- The project is estimated to cost of Rs. 400 crores.
- NETRA's eventual goal is to capture the GEO, or geostationary orbit, the scene at 36,000 km where communication satellites operate.
- Under NETRA, or Network for space object Tracking and Analysis, the ISRO plans to put up many observational facilities:
 - ▶ connected radars, telescopes
 - ▶ data processing units
 - ▶ a control centre
- They can, among others, spot, track and catalogue objects as small as 10 cm, up to a range of 3,400 km and equal to a space orbit of around 2,000 km.

What is Space Junk?

- Space debris is the thousands of fragments from old rocket parts or disintegrated satellites that litter space - principally in Earth's orbit.

- There are more than 23,000 pieces of debris larger than 10cm (4in) and the US Space Surveillance Network tracks most of them, according to Nasa's Orbital Debris Programme Office (ODPO).
- Most of that debris is zipping around within 1,250 miles of the Earth's surface, along with more than 2,000 artificial satellites, as well as the International Space Station.

(see Figure No. 1 on page no. 19)

Reasons for increasing junks

- The biggest contributor to the current space debris problem is explosions in orbit, caused by left-over energy – fuel and batteries – onboard spacecraft and rockets.

How much is India responsible for?

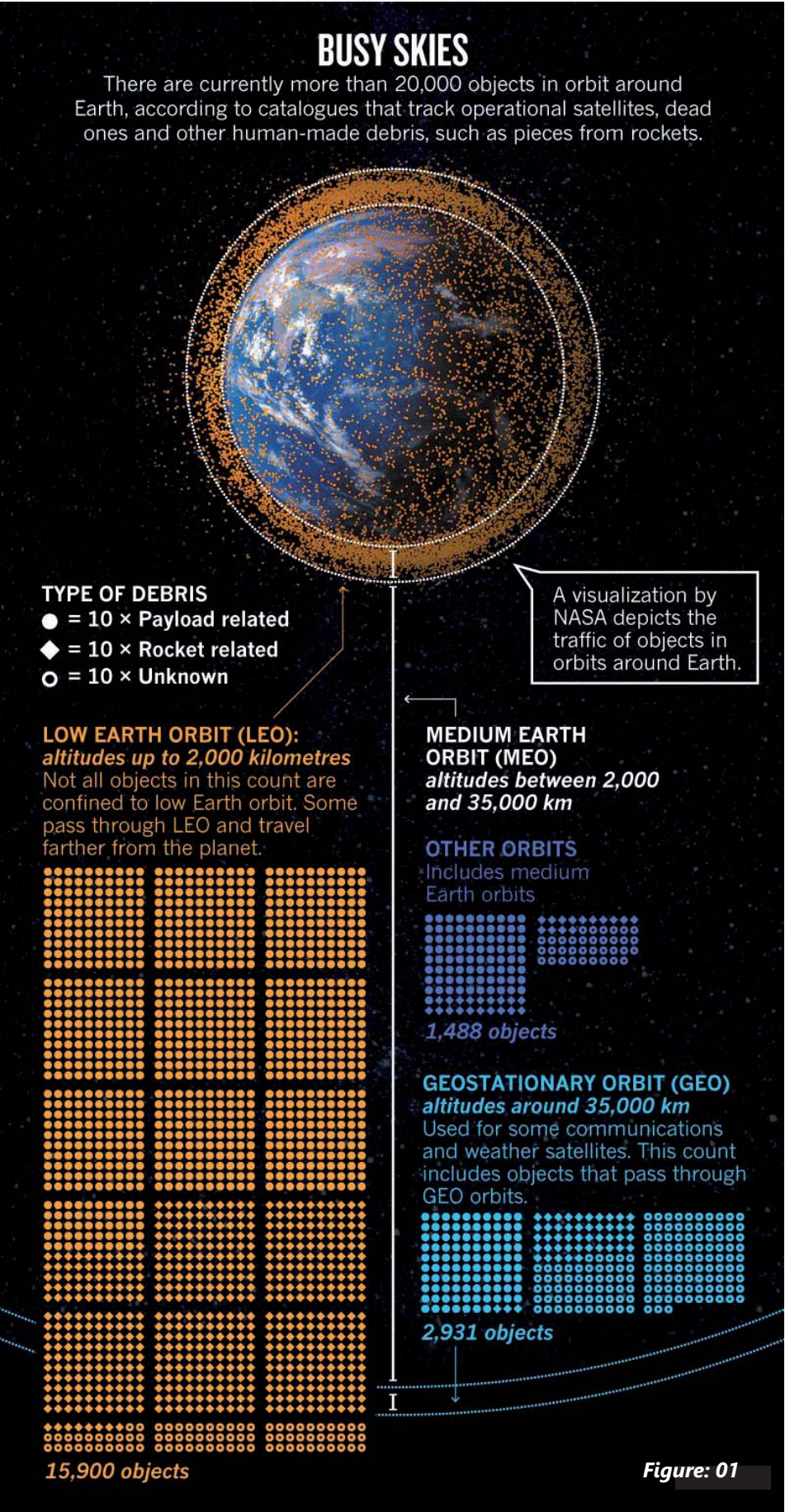
- India still produces much less space junk than the top three polluters: Russia, the US, and China, according to ODPO data.
- Indian-made space debris, however, is on the rise - from 117 pieces in 2018 to 163 in 2019.

(see Figure No. 2 on page no. 20)

What is being done to tackle space debris?

- Earth's orbit is becoming more congested, with thousands of satellites in operation and more launches planned, increasing the likelihood of a collision.
- But there is no regulation against these anti-satellite tests.
- Several countries, and some private companies, are testing new ways to mitigate space debris, ranging from harpoons, giant magnets, and nets.
- And in 2025, the European Space Agency will launch the first space mission to remove debris from Earth's orbit.
- But Nasa says cleaning up the space environment remains a "technical and economic challenge".

(see Figure No. 3 on page no. 20)



TRAFFIC IN ORBIT

The space-junk problem is growing quickly: more than 1,800 new objects joined the crowded skies in 2017.

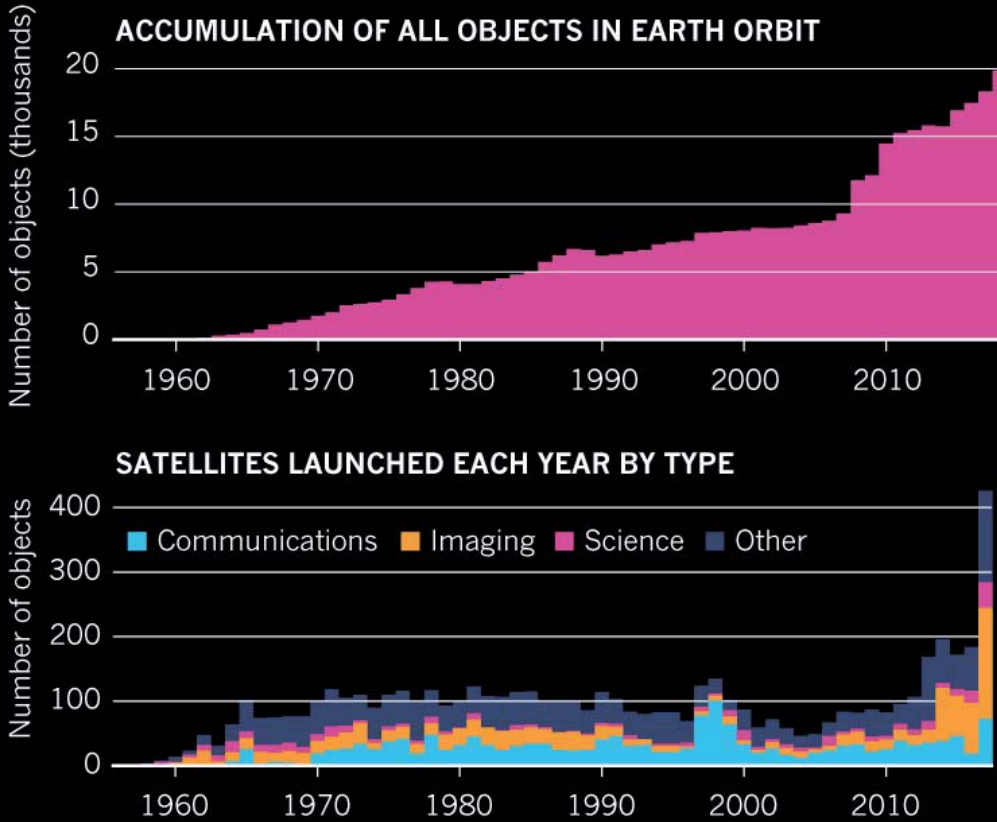
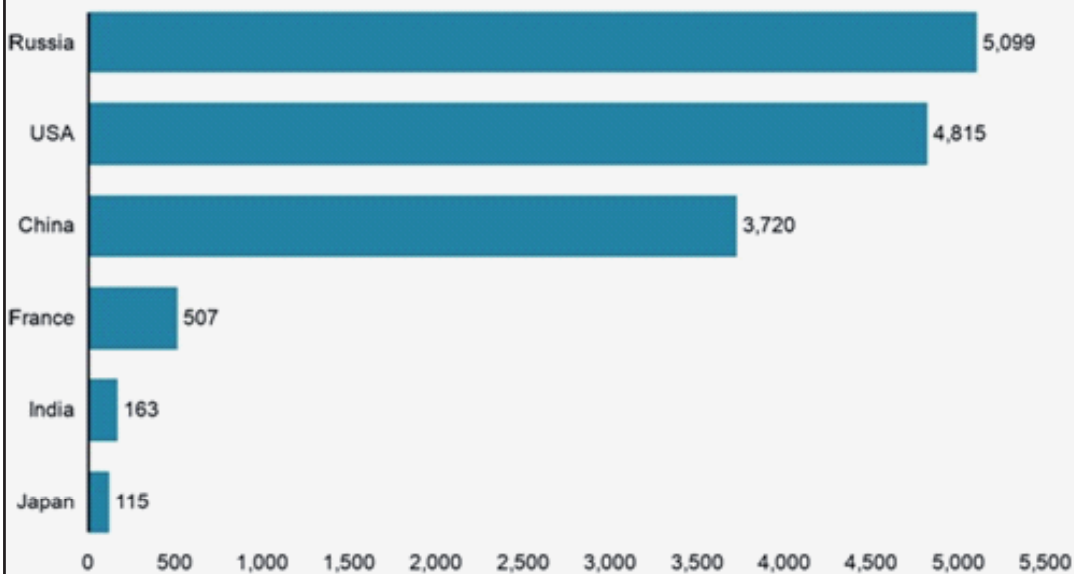


Figure: 02

Top sources of space debris

Number of rocket bodies and pieces of debris as of October 2019



Source: Orbital Debris Quarterly News, Nasa

Figure: 03

What are the current space regulations?

- Space law emerged soon after Sputnik 1 was launched into outer space in 1957.
- Several legally binding international instruments (treaties) governing the use of outer space for peaceful purposes have been adopted within the framework of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), with the 1967 Outer Space Treaty (OST) at its core.

UNCOPUOS (1958):

- The UNCOPUOS was established in 1958 as an ad hoc committee of the UN (later made permanent in 1959) with the UN Office for Outer Space Affairs (UNOOSA) as its secretariat.
- UNCOPUOS oversees the implementation of five UN treaties related to outer space activities, namely,
 - ▶ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies of 1967 (Outer Space Treaty)
 - ▶ Agreement on the Rescue of Astronauts
 - ▶ the Return of Astronauts and the Return of Objects Launched into Outer Space of 1968 (Rescue Agreement),
 - ▶ Convention on International Liability for Damage Caused by Space Objects of 1972 (Liability Convention),
 - ▶ Convention on Registration of Objects Launched into Outer Space of 1976 (Registration Convention)
 - ▶ the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies of 1979 (Moon Treaty)
- It also oversees other related international agreements like the
 - ▶ Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water (NTB) of 1963
 - ▶ the Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite (BRS) of 1979

Outer Space Treaty

- The OST contains the basic rules that define the behavior of States in conducting activities in outer space and has resulted in more than sixty years of peaceful cooperation in space that benefits humankind as a whole.

- The Treaty declares outer space “the province of mankind”.
- This means that its exploration and use shall benefit all countries, be without discrimination, and ensure free access to planets and other celestial bodies.

What is the present scenario of space security?

- Space security issues have potentially serious consequences. The consequences of either a deliberate or even an accidental conflict in space are too horrible to contemplate.
- A day without the utility provided by outer space is difficult to even conceive and yet the actions of states might lead the world in that direction sooner than later.
- Unless states take measures to restrain some kinds of activities in space, access to space will not be safe, secure, or guaranteed.
- Because of the highly competitive and contested nature of major power relations today, even peaceful applications and technological developments such as On-Orbit Satellite Servicing or technologies to tackle space debris are viewed with much suspicion.
- There are also more specific space security threats – the return of anti-satellite (ASAT) testing, and cyber and electronic warfare in space, for example.
- Any satellite service disruption or damage will have a wide-ranging impact, one that cannot be contained to the security or economic sectors alone, and one that cannot be limited geographically either given the significant global dependence on space.
- Space is truly a global commons.

What are the major threats to space?

Space security threats are growing. The major threats to the space are as follow:

- increasing cyber threats to space assets (through hacking and other satellite interference)
- heightened collision probability due to congestion
- the proliferation of space debris
- entry of new players merely to ensure deterrence
- visible early trends of weaponization of space
- Space is becoming more accessible
- the threat of overwhelming radiofrequency waves spectrum by large satellite constellations

ENERGY TRANSITION HOLDS KEY TO TACKLE GLOBAL ENERGY AND CLIMATE CRISIS: IRENA

CONTEXT:

- ❑ IRENA launched the World Energy Transitions Outlook 2022 at the Berlin Energy Transition Dialogue.
- ❑ World Energy Transitions Outlook outlines priority actions till 2030 to keep 1.5°C alive; calls on governments to fast-track energy transition for more energy security, resilience and affordable energy for all.

ANALYSIS:

- Need to move faster to a clean energy system because of
 - ▶ High fossil fuel prices
 - ▶ energy security concerns
 - ▶ the urgency of climate change

- These job gains will largely surpass losses of 12 million jobs in fossil fuel industries.
- More countries will experience greater benefits on the energy transition path than under business as usual.

Key findings by the outlook:

- The Outlook sets out priority areas and actions based on available technologies that must be realized by 2030 to achieve **net zero emissions** by mid-century.
- It also **takes stock of progress** across all energy uses to date, clearly showing that the current pace and scale of the renewables-based transition is inadequate.
- The energy transition is far from being on track and anything short of radical action in the coming years will diminish, even eliminate chances to meet our climate goals.
- Today, governments are facing multiple challenges of **energy security, economic recovery** and the **affordability of energy bills** for households and businesses. Many answers lie in the **accelerated transition**.
- But it's a political choice to put policies in place that comply with Paris Agreement and the Sustainable Development Agenda.

Need for Investment in Transition- Impact on jobs:

- Investing in new fossil fuel infrastructure will only lock-in uneconomic practices, perpetuate existing risks and increase the threats of climate change.
- The Outlook sees investment needs of \$5.7 trillion per year until 2030 including the imperative to redirect \$0.7 trillion annually away from fossil fuels to avoid stranded assets.
- But investing in the transition will bring concrete socioeconomic and welfare benefits, adding 85 million jobs worldwide in renewables and other transition-related technologies between today and 2030.

IRENA (International Renewable Energy Agency):

- It is an intergovernmental organization mandated to facilitate cooperation, advance knowledge, and promote the adoption and sustainable use of renewable energy.
- It is the first international organization to focus exclusively on renewable energy, addressing needs in both industrialized and developing countries.
- It was founded in 2009 & its statute entered into force on 8 July 2010 and is headquartered in Masdar City, Abu Dhabi.
- IRENA is an official United Nations observer.

Key driver for transition:

- The Outlook sees **electrification** and **efficiency** as key drivers of the energy transition, enabled by **renewables, hydrogen**, and sustainable **biomass**.
- **End-use decarbonisation** will take centre-stage with many solutions available through electrification, green hydrogen, and the direct use of renewables.
- Notably **electromobility** is seen as driver of energy transition progress, growing the sales of electric vehicles (EV) to a global EV fleet 20 times bigger than today.

WAY AHEAD:

- Renewables will have to **scale-up massively** across all sectors from **14 per cent** of total energy today to around **40 per cent in 2030**.
- Global annual additions of renewable power will triple by 2030 as recommended by the Intergovernmental Panel on Climate Change. At

the same time, coal power will have to resolutely be replaced, fossil fuel assets phased out and infrastructure upgraded.

◎ **CONCLUSION:**

- Increasing ambition in the **National Determined Contributions** and national energy plans under

the Glasgow Climate Pact must provide certainty and guide investment strategies in line with 1.5°C.

- Particularly the world's largest energy consumers and carbon emitters from the **G20 and G7** must show leadership and implement ambitious plans and investments domestically and abroad. **Climate finance, knowledge transfer** and **assistance** will have to increase for an inclusive and equal world.

SECTION: B

(PRELIMS)

CURRENT AFFAIRS

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GLITTER ATTAINS DIVINITY AT YADADRI

◎ **CONTEXT:** The restored Lord Lakshmi Narasimha Swamy temple has been inaugurated at Yadadri. In the newly inaugurated temple, 'kalashams' (50-year warranty) has been designed using Nano Tech Gold Deposition (NTGD).

About Sri Lakshmi Narasimha Swami temple in Yadadri:

- The **Sri Lakshmi Narasimha Swamy Temple**, also known as **Yadadri** or **Yadagirigutta temple**, is a Hindu temple located on a hill in the remote town of **Yadagirigutta** in the Yadadri Bhuvanagiri district.
- The temple's Gopuram is covered with 125 kg of gold.
- There are Purana and traditional accounts of this Shrine, which are widely popular among the devotees.
 - There is mention about the origin of this temple in the **Skanda Purana**, one of the famous 18 puranas.

Skanda Purana

- Skanda Purana is the largest of the eighteen major puranas containing over 81,000 Sanskrit metrical verses.
- The earliest version of the Skanda Purana probably existed before the 5th century CE

- The temple, which is 65 kilometres from Hyderabad, was rebuilt using **black granite**.
 - The black granite used in construction, **Krushna Sila**, was acquired from Gurujapally in the Guntur district.

■ Architecture style

- It is a **blend of Dravidian, Pallava, and Kakatiyan temple** architecture styles.
- Around the **Mukha Mandapa**, which leads to the sanctum sanctorum, which is 18 feet below ground, statues of the 12 Alwars depicting the **Kakatiyan style of construction** have been erected.



- With all of these sculptures, chandeliers, golden Dhwaja Sthamba, and architectural style, the corridor in front of the sanctum sanctorum evokes the royal splendour found within a king's court.

-
-
- Unlike other temples, which have a **7-foot Garbhalaya entrance**, this temple has an **11-foot Garbhalaya door** with a **golden Nava Narasimha Swami artwork**.

About Nano Tech Gold Deposition (NTGD):

- NTGD (Nano Tech Gold Deposition) is a patented Nano technology that allows for **lesser consumption of gold in Gold plating**.
- NTGD technology effectively increases the affordability of the projects by **decreasing the consumption to about 5 grams per sqft**.
- As opposed to conventional gold coating, the **thickness of the gold layer using this method is reduced to microns**.
 - ▶ This is achieved through electroplating of Gold onto a suitable metal substrate, preferably copper, which is well known for its conductivity.
- The initial copper electroplating ensures a smooth even finish which is evident on our product quality.
 - ▶ The same can be replicated with silver electroplating as well.
- The longevity of the product is also assured as the gold is plated on rather than applied as a coating.
 - ▶ The overall finished product is significantly lighter and easier to handle than products coated through conventional methods.
 - ▶ The cherry on the cake is the fact that the **gold deposited through this method is 100% recoverable** at any given point of time.
- Nano Tech Gold Deposition (NTGD) is a method that is **exclusively used in NASA and ISRO aerospace and defence applications** for the job.

KOZHIKODE TO VIE FOR UNESCO ‘CITY OF LITERATURE’ DISTINCTION

- ◎ **CONTEXT:** Kozhikode has been proposed by the Kerala Institute of Local Administration (KILA) to be branded as a ‘City of Literature’ under the UNESCO Creative Cities Network (UCCN).

Why has Kozhikode been proposed as the City of Literature?

- Kozhikode has a legacy of writers such as **Vaikom Mohammed Basheer, Sanjayan, S.K. Pottekkatt, M.T. Vasudevan Nair, N.N. Kakkad, and U.A. Khader**.
- Adding to this is the presence of literary publications such as the Mathrubhumi weekly, a vast network of libraries and annual literary events such as the Kerala Literature Festival.

About UNESCO Creative Cities Network (UCCN)

- UCCN was created in 2004.
- It aims to “promote cooperation among cities which recognize creativity as a strategic factor in their urban development”.
- Sustainable Development Goal 11 aims for Sustainable Cities and Communities.
- The network covers seven creative fields:
 - Crafts and folk arts
 - Media arts

- Film
- Design
- Gastronomy
- Literature
- Music

Indian Cities on UCCN

- Srinagar - Crafts and Folk Arts (2021)
- Mumbai – Film (2019)
- Hyderabad – Gastronomy (2019)
- Chennai- Creative city of Music (2017)
- Jaipur- Crafts and Folk Arts (2015)
- Varanasi- Creative city of Music (2015)

INDIA TO INVEST IN EXPLORATION OF LITHIUM AND COBALT MINES IN AUSTRALIA

- ◎ **CONTEXT:**
 - India's **KABIL**, a mining joint venture between state-run firms **National Aluminium Co, Hindustan Copper Ltd and Mineral Exploration Corp Ltd**, has signed a preliminary agreement with Australia's **Critical Minerals Facilitation Office (CMFO)**.
 - **The objective is to explore lithium and cobalt mines in Australia.**
- ◎ **ABOUT:**
 - India has committed to jointly invest \$6 million with the Australian government to explore lithium and cobalt mines in Australia over the next six months.
 - India is offering \$2.4 billion of incentives for companies to build battery cells locally for electric vehicles.
 - The agreement also provides for inclusion of any other Indian state-run firm as an investment partner, and envisages the due diligence process will be completed and further investment decisions taken over the next six months.

KABIL

- The Mines Ministry has created a joint venture (JV) company — **Khanij Bidesh India (KABIL)** — with participating interest from **National Aluminium Company (NALCO), Hindustan Copper (HCL) and Mineral Exploration Corporation (MECL)**.
- The equity participation is 40:30:30, respectively.

About Cobalt

- Cobalt is an essential trace element, and forms part of the active site of vitamin B12.
- Cobalt is a hard, brittle metal.
- It is similar in appearance to iron and nickel. Cobalt has a magnetic permeability around 2/3 that of iron.

- Cobalt is found as a mixture of two allotropes over a wide temperature range.

Cobalt in India

Occurrences of cobalt are reported from Singhbhum district, Jharkhand; Kendujhar and Jajpur districts, Odisha; Jhunjhunu district, Rajasthan; Tuensang district, Nagaland; and Jhabua and Hoshangabad districts, Madhya Pradesh.

About Lithium:

- Lithium is a chemical element with symbol **Li** and **atomic number 3**.
- It is a soft, silvery-white alkali metal.
- Under standard conditions, it is the **lightest metal and the lightest solid element**.
- Lithium is highly reactive and flammable, and is stored in mineral oil.
- It never occurs freely in nature, but only in (usually ionic) compounds, such as pegmatitic minerals, which were once the main source of lithium.
- Due to its solubility as an ion, it is present in ocean water and is commonly obtained from brines.
- Lithium metal is isolated electrolytically from a mixture of lithium chloride and potassium chloride.
- Lithium is a key component used in Electric Vehicle batteries. And India, through its ₹ 18,100- crore PLI scheme is offering incentives for companies to build battery cells locally.
- China and Hong Kong are the biggest lithium battery suppliers to India.

Lithium Triangle:

- Lithium Triangle is an intersection of **Chile, Bolivia and Argentina**, known for high quality salt flats.
- Salar de Uyuni in Bolivia, Salar de Atacama in Chile and Salar de Arizaro in Argentina contains over 45% of known global lithium reserves.
- Beneath Salar de Uyuni, the world's largest salt flat lies the world's greatest lithium deposits.
- Bolivia, one of South America's poorest countries, envisions development by harvesting lithium on an industrial scale from underground saltwater brines.
- It can be mined from rock or processed from brine.
- Lithium dissolved in underground saline aquifers called "brine", pumped to surface by wells and then allowed to evaporate in vast knee-deep ponds.



DEMAND FOR 'SEPARATE TIME ZONE'

◎ **CONTEXT:** The demand for a separate time zone for India's northeastern states is once again back in the discussion.

Time Zone in India

- India has only one time zone.
- The country has officially observed **India Standard Time (IST)** since 1947. However, the UTC+5:30 offset has been used as the local standard time in India since 1906.
- Indian Standard Time is calculated on the basis of 82°30' E longitude from the clock tower in **Neni near Prayagraj Uttar Pradesh**, which is situated approximately on the corresponding longitude reference line.
- India is a large country that stretches almost 3000 kilometers (1864 miles) from west to east.
- It spans nearly 30 degrees longitude (68°7'E to 97°25'E).
- If the country were to base its time zones on mean solar time, it would have three time zones, but since it only has one, the Sun rises almost 90 minutes earlier in **Guar Mota** (Gujarat) in the east than in **Dong** (Arunachal Pradesh) in the far west.

Time Zone

- Time Zones are a **geographical world globe division** of 15° each, starting at **Greenwich, in England**, created to help people know what time is it now in another part of the world.
- The local time within a time zone is defined by its offset (difference) from **Coordinated Universal Time (UTC)**, the **world's time standard**.
- UTC time changes 1 hour forward and backward corresponding to a 1-hour difference in mean solar time for every 15 degrees east or west of the prime meridian (0° longitude) in Greenwich, London, United Kingdom.
- The offset is expressed as either UTC- or UTC+ and the number of hours and minutes.

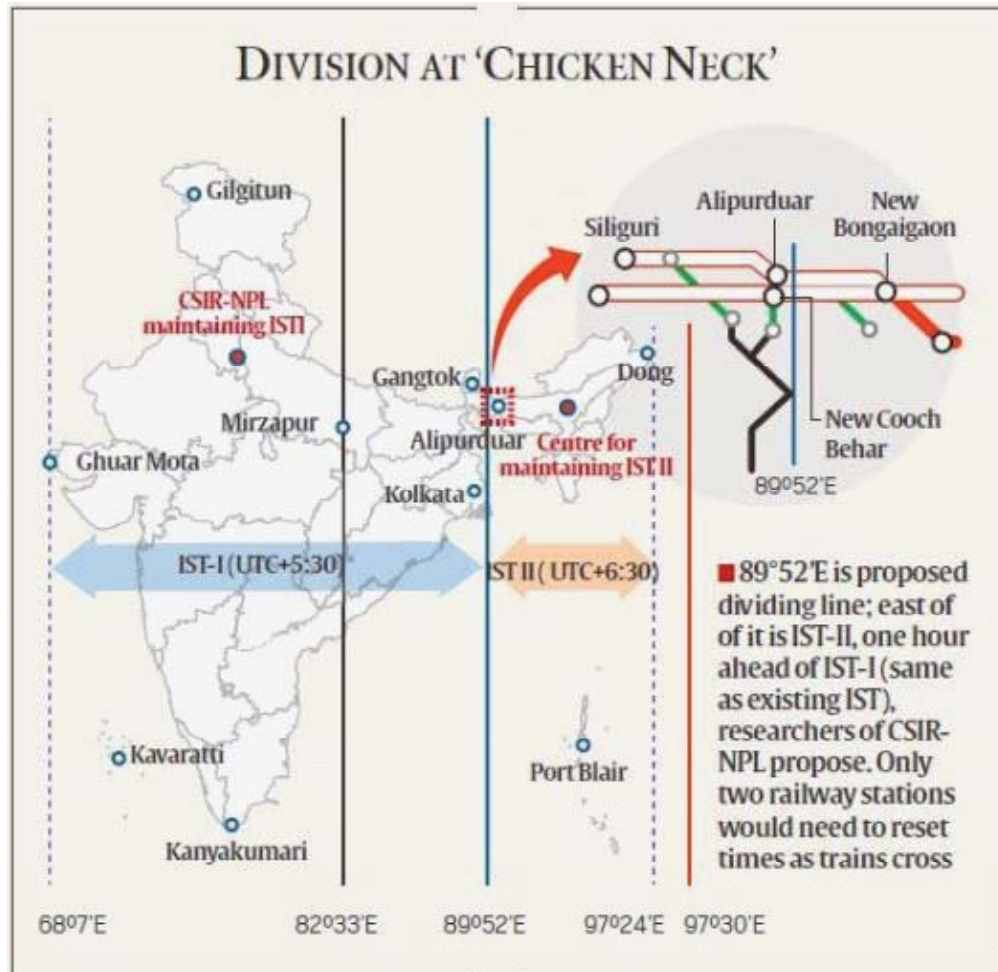
The proposed separate time zone:

- It proposed for two time zones for India:
 - IST-I (UTC + 5.30 h)
 - IST-II (UTC + 6.30 h)
- The proposed line of demarcation is at 89°52'E, the narrow border between Assam and West Bengal also called as "**chicken neck**".
- The States lying west of the demarcation line would continue to follow IST (to be called IST-I) while states lying East of the line — Assam, Meghalaya, Nagaland, Arunachal Pradesh, Manipur, Mizoram, Tripura, Andaman & Nicobar Islands — would follow IST-II.

Why does this northeast need a separate time zone?

- The distance between India's east to west is **2,933 kilometres**, which is equivalent to a **two-hour time difference**.
- In the Northeast, around the summer solstice, sunrise occurs at 4:15 am, and in winter anywhere between 4 pm to 5 pm.
 - **Dong** in the Lohit district of Arunachal Pradesh bordering Assam is where the sun rises first in India.

- That is nearly two hours before dawn at **Guhar Moti** in Gujarat, the westernmost part of the country.
- Every evening the sun sets more than 90 minutes later in the western part of India.
- The reason for the demand is the loss of daylight hours and excess use of electricity. Advancing the time by 30 minutes alone could save 2.7 billion units of electricity every year.



NUMBER OF MIGRANTS CROSSING DANGEROUS DARIEN GAP SOARS: UNHCR

© **CONTEXT:** UN refugee agency says number of people taking Panamanian jungle route (Panama's Darien Gap) tripled so far this year compared with 2021.

About the Darien Gap:

- The Darien Gap, a stretch of mountainous jungle 160km (100 miles) long and 50km (30 miles) wide, is controlled by criminal groups known for acts of violence, including sexual abuse and robbery. To cross, migrants also must tackle natural hazards.
- It sits on the border between **Panama and Colombia**.
- Largely untouched by the modern world, the Darien is one of the least visited places on the planet.

- The Darien National Park and biosphere has been a **UNESCO World Heritage Site** since 1981.



IONS MARITIME EXERCISE 2022 (IMEX 22)

- © **CONTEXT:** The maiden edition of Indian Ocean Naval Symposium (IONS) Maritime Exercise 2022 (IMEX-22) was conducted at Goa recently.

About IONS MARITIME EXERCISE 2022 (IMEX 22):

- The aim of the exercise was to enhance interoperability in Humanitarian Assistance and Disaster Relief (HADR) operations among member navies.
- The exercise witnessed participation of 15 out of the 25 member nations of IONS.
- The participation included warships, Maritime Reconnaissance aircraft and helicopters from the Navies of Bangladesh, France, India and Iran.
- The exercise is seen as a significant stepping stone for regional navies to collaborate and respond collectively to natural disasters in the region and paves way for further strengthening regional cooperation.

About Indian Ocean Naval Symposium (IONS):

- The Indian Ocean Naval Symposium (IONS), established in 2007, is a premier forum for cooperation and collaboration among navies of littoral states of the Indian Ocean Region.
- The forum has enabled discussions on regional maritime issues, promoted friendly relationships, and significantly improved maritime security cooperation in the Indian Ocean Region.

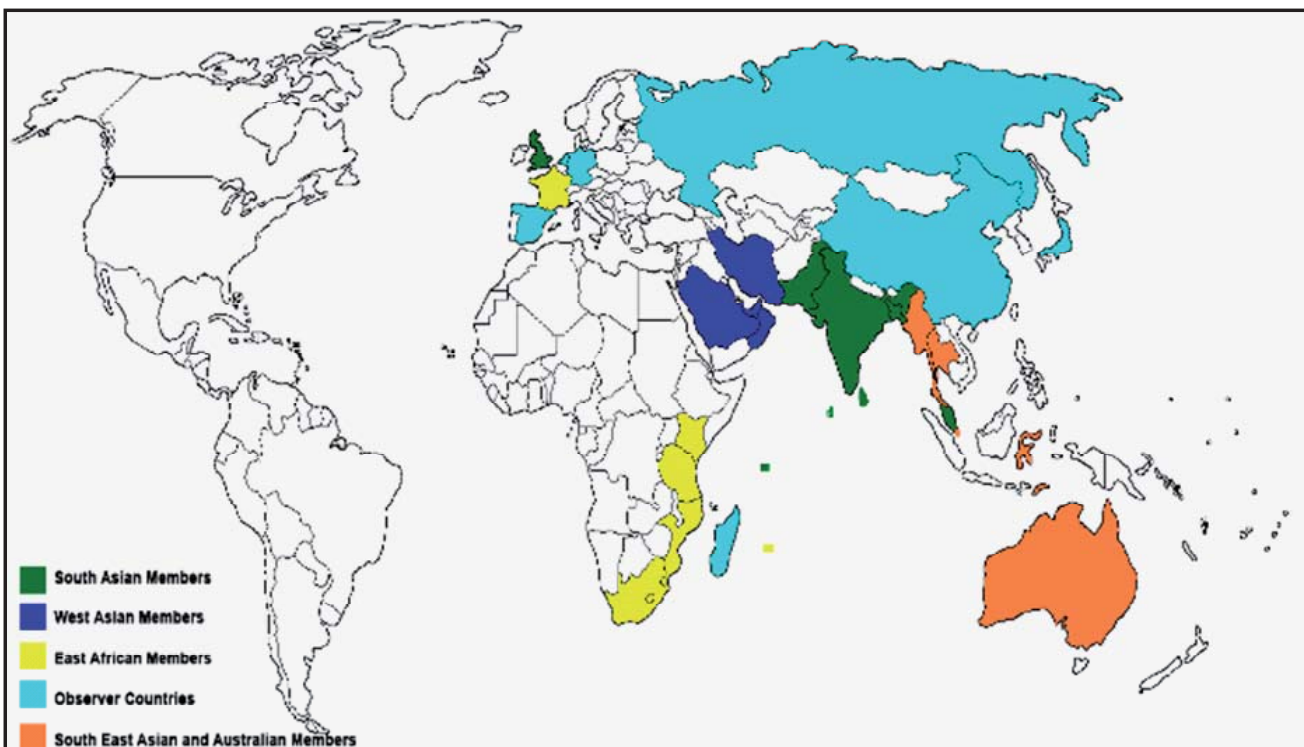
© **OBJECTIVE:**

- It endeavours to generate a flow of information between naval professionals that would lead to common understanding and possibly cooperative solutions on the way ahead.
- The IONS acts as a security construct for the Indian Ocean region and apart from its series of symposiums, it conducts numerous other activities like workshops, essay competitions and lectures to promote its objective.

- The **chairmanship of IONS** has been held by India (2008-10), UAE (2010-12), South Africa (2012-14), Australia (2014-16), Bangladesh (2016-18) and Islamic Republic of Iran (2018-21).
 - France assumed the Chairmanship in June 2021 for two-year tenure.

Members:

- IONS include 24 member nations that touch or lie within the IOR, and 8 observer nations.
- The members have been geographically grouped into the following four sub-regions:
 - **South Asian Littorals:** Bangladesh, India, Maldives, Pakistan, Seychelles, Sri Lanka and United Kingdom (British Indian Ocean Territory)
 - **West Asian Littorals:** Iran, Oman, Saudi Arabia and United Arab Emirates
 - **East African Littorals:** France (Reunion), Kenya, Mauritius, Mozambique, South Africa, and Tanzania.
 - **South East Asian and Australian Littorals:** Australia, Indonesia, Malaysia, Myanmar, Singapore, Thailand and Timor-Leste.



CABINET APPROVES EXTENSION OF PM GARIB KALYAN ANNA YOJANA TILL SEPTEMBER 2022

- © **CONTEXT:** The Union Cabinet, chaired by Prime Minister Narendra Modi, recently approved extension of 'Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)' by six months till September 2022.

Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY)

- PMGKAY is a welfare scheme announced by the government in March 2020 in the wake of the COVID-19 pandemic.
 - Since then, the scheme has been extended multiple times.
- It envisages fulfilling the food requirement of the needy by providing food grains through the public distribution system devised to reach all the priority households (ration cardholders) and Antyodaya Anna Yojana.
- It is a scheme as part of Atmanirbhar Bharat to supply free food grains to migrants and the poor.
- **Benefits:** During the period May - November 2021, more than 80 crore people will be provided 5 kg free wheat/rice per person/month along with 1 kg free whole chana to each family per month. This is over and above the regular monthly entitlements under National Food Security Act, 2013 (NFSA).

Eligibility

- Families belonging to the Below Poverty Line - Antyodaya Anna Yojana (AAY) and Priority Households (PHH) categories will be eligible for the scheme
- Households headed by widows or terminally ill persons or disabled persons or persons aged 60 years or more with no assured means of subsistence or societal support
- All primitive tribal households
- Landless agriculture labourers
- All eligible Below Poverty Line families of HIV positive persons

INDIA SIGNS AGREEMENT TO SET UP WHO GLOBAL CENTRE FOR TRADITIONAL MEDICINE IN GUJARAT

© CONTEXT:

- **The World Health Organisation (WHO) and the government of India signed an agreement to establish a WHO Global Centre for Traditional Medicine at Jamnagar, Gujarat.**
- **The agreement is signed between Ministry of Ayush and World Health Organization (WHO) to establish the WHO-GCTM at Jamnagar, Gujarat.**

About Global Centre for Traditional Medicine:

- The WHO Global Centre for Traditional Medicine (GCTM) is a **knowledge centre for traditional medicine.**
- The global knowledge centre for traditional medicine is supported by an investment of **USD 250 million from the Government of India.**
- It aims to harness the **potential of traditional medicine** from across the world through modern science and technology to improve the health of people and the planet.
- The term traditional medicine describes the **total sum of the knowledge; skills and practices indigenous and different cultures have used over time to maintain health and prevent diagnose and treat physical and mental illness.**
 - Its reach encompasses ancient practices such as acupuncture, ayurvedic medicine and herbal mixtures as well as modern medicines.
- The new centre focuses on **four main strategic areas:**
 - evidence and learning;

- data and analytics;
 - sustainability and equity; and
 - innovation and technology
- Its aim is to **optimize** the **contribution of traditional medicine** to global health and sustainable development.

Why is it needed?

- Around 80% of the world's population is estimated to use traditional medicine, such as herbal medicines, acupuncture, yoga, indigenous therapies and others.
- 170 Member States report the use of traditional medicine, and their priority request to WHO is for evidence and data to inform policies, standards and regulatory frameworks for safe, cost-effective and equitable use.
- Traditional medicine has been an integral resource for health for centuries in communities around the world, and it is still a mainstay for some with inequities in access to conventional medicine.
- The sociocultural practice and biodiversity heritages of traditional medicine are invaluable resources to evolve inclusive, diverse sustainable development.
- Traditional medicine is also part of the growing trillion-dollar global health, wellness, beauty, and pharmaceutical industries.
- Over 40% of pharmaceutical formulations are based on natural products and landmark drugs, including aspirin and artemisinin, originated from traditional medicine.
- The contribution of traditional medicine to national health systems is not yet fully realized, as millions of accredited traditional medicine workers, facilities, expenditures and products are not fully accounted for.

RASHTRIYA GOKUL MISSION

© **CONTEXT:** Recently Minister of Fisheries, Animal Husbandry & Dairying gave a written reply about Rashtriya Gokul Mission (RGM).

About Rashtriya Gokul Mission:

- Rashtriya Gokul Mission (RGM) has been launched in December **2014** with an outlay of Rs2025 crore for **development and conservation of indigenous breeds** through selective breeding in the breeding tract and genetic upgradation of nondescript bovine population.
- The scheme comprises of **two components** namely National Programme for Bovine Breeding (NPBB) and National Mission on Bovine Productivity (NMBP).

Key objectives of the mission:

- To undertake breed improvement programme for indigenous cattle breeds so as to improve the genetic makeup and increase the stock.
- To distribute disease free high genetic merit bulls of indigenous breeds for natural service.
- To upgrade nondescript cattle using elite indigenous breeds like **Gir, Sahiwal, Rathi, Deoni, Tharparkar, Red Sindhi**.

RS PASSES BILL TO REMOVE BHOGTA CASTE FROM SC LIST

- ◎ **CONTEXT:** The Rajya Sabha recently passed a Bill that seeks to remove the 'Bhogta caste' from the list of Scheduled Castes (SCs) in Jharkhand and include certain other communities in the list of Scheduled Tribes (STs) for the state.

Key-highlights

- The Constitution (Scheduled Castes and Scheduled Tribes) Orders (Amendment) Bill, 2022 was passed by a voice vote.
- The Bill amends the Schedule to the ST Order to include communities such as **Deshwari, Ganjhu, Dautalbandi (Dwalbandi), Patbandi, Raut, Maajhia, Khairi (Kheri), Tamaria (Tamadia), and Puran** in the list of STs in Jharkhand.

Jharkhand state reservation for SC and ST-

- The state has 10% reservation for SC and 26% for the ST population of the state.
- The **chairman of national commission of schedule tribes Mr. Rameshwar Oraon** has recommended the inclusion of bhogta caste in Schedule tribe from the schedule caste list.

Who are Scheduled castes?

- Scheduled castes are sub-communities within the framework of the Hindu caste system who have historically faced deprivation, oppression, and extreme social isolation in India on account of their perceived 'low status'.
- Only marginalised Hindu communities can be deemed Scheduled Castes in India, according to The Constitution (Scheduled Castes) Order, 1950.

Important Constitutional Provisions

- **Article 46 of the Constitution**, provides that the State shall promote with special care the **educational and economic interests of the weaker sections** of the society and in particular, of the **Scheduled Castes** and **Scheduled Tribes** and shall protect them from social injustice and all forms of exploitation.
- Under **Article 341(1)**, the **President** of India, after consultation with **the Governor**, may specify, "the castes, races, tribes or parts of groups within castes or races, which shall be deemed to be Scheduled Castes".
- The President has notified the Scheduled Castes in the order called '**Constitution (Scheduled Castes) Order-1950**' and the **Scheduled Castes and Scheduled Tribes List (Modification) Order-1956**.
- **Article 164(1)**, provides that in **the States of Chhattisgarh, Jharkhand, Madhya Pradesh and Odisha** there shall be a **Minister in charge of tribal welfare** who may in addition be in charge of the welfare of the Scheduled Castes and backward classes or any other work.

INITIATIVES TO TACKLE ANAEMIA IN PREGNANT WOMEN

◎ **CONTEXT:** The Government has ascertained the condition of pregnant women in the country and various steps taken by the Government of India, to improve health condition of pregnant women including for anemia, in all States/UTs.

Initiatives taken are as follows:

- **Surakshit Matritva Aashwasan (SUMAN)** provides assured, dignified, respectful and quality healthcare at no cost and zero tolerance for denial of services for every woman and newborn visiting public health facilities to end all preventable maternal and newborn deaths.
- **Janani Suraksha Yojana (JSY)**, a demand promotion and conditional cash transfer scheme for promoting institutional delivery.
- Under **Janani Shishu Suraksha Karyakram (JSSK)**, every pregnant woman is entitled to free delivery, including caesarean section, in public health institutions along with the provision of free transport, diagnostics, medicines, other consumables & diet.
- **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** provides pregnant women a fixed day, free of cost assured and quality antenatal check up by a Specialist/Medical Officer on the 9th day of every month.
- **LaQshya** improves the quality of care in labour room and maternity operation theatres to ensure that pregnant women receive respectful and quality care during delivery and immediate post-partum.
- **Monthly Village Health, Sanitation and Nutrition Day (VHSND)** is an outreach activity at Anganwadi centers for provision of maternal and child care including nutrition in convergence with the ICDS.
- **Delivery Points-** Over 25,000 'Delivery Points' across the country have been strengthened in terms of infrastructure, equipment, and trained manpower for provision of comprehensive RMNCAH+N services.
- **MCP Card and Safe Motherhood Booklet** are distributed to the pregnant women for educating them on diet, rest, danger signs of pregnancy, benefit schemes and institutional deliveries.
- **Reproductive and child health (RCH) portal** is a name-based web-enabled tracking system for pregnant women and new born so as to ensure seamless provision of regular and complete services to them including antenatal care, institutional delivery and post-natal care.

Anemia

- Anemia is defined as a low number of red blood cells. In a routine blood test, anemia is reported as a **low hemoglobin or hematocrit**.
 - ▶ Hemoglobin is the main protein in your red blood cells.
 - ▶ It carries oxygen, and delivers it throughout your body.
- **Symptoms of anemia:** fatigue or shortness of breath.

ODISHA CELEBRATES UTKAL DIWAS 2022

◎ **CONTEXT:** Odisha celebrates the 87th foundation day of the state today, known as 'Utkal Divas', with utmost pride and glory. It is on this day that the state became independent in the year 1936.

About Utkal Divas:

- Utkal Divas, also known as Odisha Day and Utkala Dibasa, is celebrated on April 1 every year in memory of all the struggle that went into gaining a separate identity for the state that was once part of Kalinga ruled by emperor Ashok, and later by Kharavela.
- Odisha became the first independent state on language basis in India on this day 86 years ago.
- The state became a separate province, after a long struggle of over three centuries. The state was carved out of the combined Bengal-Bihar-Orissa province.

Why is Odisha Day important for the people of Odisha?

- The region became part of Kalinga after it was conquered by Magadha King Ashoka in 261 BC to expand his Mauryan rule.
- After Mauryan rule, King Kharavela's rule began in Odisha.
- Kharavela managed to avenge the Mauryan invasion by defeating Magadh.
- Historians credit Kharavela for laying the foundation for Odisha's fame as a land of art, architecture and sculpture. He also managed to establish a powerful political state.
- Gajapati Mukunda Deva was the last Hindu king of Odisha. He was defeated by the Mughals in 1576.
- A few hundred years later, the British took over and divided the state into different parts.
- The northern and western districts of the state became part of what was then called Bengal presidency.

State's struggle for independence

- The new province of Odisha was formed after people's continued struggle, which finally paid off on April 1, 1936.
- Sir John Hubbak was the first governor of the state.
- The state was originally called Orissa but the Lok Sabha passed the Orissa Bill, and Constitution Bill (113rd amendment), in March 2011 to rename it Odisha.

MICROPLASTICS FOUND IN HUMAN BLOOD

◎ **CONTEXT:** **Researchers from Netherlands had found Microplastic constituents in the human blood for the first time**

What are microplastics?

- Tiny particles of plastic measuring less than 5mm in diameter is termed as microplastic.
- They are one of the major pollutants of land and ocean.

Impacts of microplastic

- **On Oceans:** Microplastics are source of pollution in oceans they accumulate by breaking into small constituent particles and settle down inside the ocean residing inside for many years without degrading.
- According to the IUCN, at least 8 million tonnes of plastic end up in the oceans every year and make up about 80% of all marine debris from surface waters to deep-sea sediments.

- As per UNEP, in the last four decades, concentrations of these particles appear to have increased significantly in the surface waters of the ocean.
- **On marine organisms:** Marine organisms such as **fish, crabs, prawns** consume these minute plastic particles and thus add them to the food chain and leads to bioaccumulation.
- **On land: Microplastics are major pollutant of land as they leach in the water bodies such as rivers and lakes through soil.**
 - Agriculture and plant health is affected.
- **On humans:** Human health is a matter of concern as plastic is used by us in our day to day routine and unknowingly we are consuming it in the form of microplastics.
 - Thus it add to human blood and even can accumulate in organs.
- A study conducted by the World Wide Fund for Nature revealed that an average person consumed 5 grams of plastic.

Initiatives taken against microplastics

- Global initiatives: Global Partnership on Marine Litter (GPML): The GPML was launched at the Earth Summit in 2012 in response to a request set out in the Manila Declaration.
 - ▶ Under the Manila Declaration, 65 signatories reaffirmed their **commitment to develop policies to reduce and control wastewater, marine litter and pollution from fertilizers.**
- **Elimination of single use plastic in India:** the use of single use plastic has been banned by the prime minister in 2019.
 - ▶ This has made awareness about the health hazards of thin plastic by us in daily life.
- **Plastic waste management rules, 2016** state that every local body has to be responsible for setting up infrastructure for segregation, collection, processing, and disposal of plastic waste.

MORADABAD 2ND MOST NOISE POLLUTED CITY GLOBALLY: UNEP

- ◎ **CONTEXT:** The city of Moradabad in Uttar Pradesh is the second-most noise polluted city globally, according to a recent report by the United Nations Environment Programme (UNEP).

Noise is classified as an air pollutant under the **Air (Prevention and Control) of Pollution Act, 1981.**

Key-highlights of the Report

- The Frontier 2022 report mentions a total of 61 cities.
- The highest noise pollution of 119 db has been recorded in **Dhaka**, the capital of Bangladesh.
- **Moradabad** has recorded noise pollution of a maximum of 114 decibels (db).
- At third place is Pakistan's capital **Islamabad**, where the noise pollution level has been recorded at 105 db.

- The report identifies 13 noise polluted cities in south Asia. Five of these, including Moradabad, are in India, which have recorded alarming levels of noise pollution:
 - Kolkata (89 db)
 - Asansol (89 db)
 - Jaipur (84 db)
 - Delhi (83 db)

WHO's standard for noise pollution

- The **World Health Organization (WHO)** had recommended a 55 db standard for residential areas in the 1999 guidelines, while for traffic and business sectors, the limit was 70 db.
- The WHO set the limit of noise pollution on the road at 53 db in 2018, taking into account health safety.

What is noise pollution?

- This kind of pollution cannot be seen, but it is present nonetheless, both on land and under the sea.
- Noise pollution is considered to be any unwanted or disturbing sound that affects the health and well-being of humans and other organisms.

- Sound is measured in **decibels**.
- There are many sounds in the environment, from
 - ▶ rustling leaves (20 to 30 decibels)
 - ▶ a thunderclap (120 decibels)
 - ▶ wail of a siren (120 to 140 decibels)
- Sounds that reach 85 decibels or higher can harm a person's ears.
- Sound sources that exceed this threshold include familiar things, such as power lawn mowers (90 decibels), subway trains (90 to 115 decibels), and loud rock concerts (110 to 120 decibels).

Why is it a concern?

- The most common health problem it causes is **Noise Induced Hearing Loss (NIHL)**.
- Exposure to loud noise can also cause **high blood pressure, heart disease, sleep disturbances, and stress**.
- Traffic noise increases the risk of heart attack, heart failure and hypertension.
- A 1 decibel increase in daytime sound increased the risk of cardio (heart) and cerebrovascular (related to blood flow to the brain) diseases by 0.17 to 0.66 per cent.

CENSUS ON ONE-HORNED RHINO SHOWS PROGRESS

◎ CONTEXT:

- According to a recent survey, the population of one-horned rhinoceros at the Kaziranga National Park has registered an increase of 200, taking the total to 2,613.

- This was the 14th Rhino Population Census.

Key Findings:

- The survey revealed the presence of:
 - 1,823 adult rhinos (above six years)
 - 365 sub-adult (between three to six years)
 - 279 juvenile (one to three years)
 - calves 146 (0 to one year)
- Assam now has an estimated 2,845 rhinos, the highest in India, if the figures of the recent surveys in two other rhino habitats are factored in.
- The Orang National Park has 125 rhinos while the Pobitora Wildlife Sanctuary has 107 rhinos, a rise of 24 and five over the 2018 survey figures.
- The census at **Manas National Park** found 48 rhinos in April 2021.

Important facts about Rhino

- There are five species and 11 subspecies of rhino. **White, Black, Indian, Javan, and Sumatran** make up the five species of rhino in the world.
- White and black rhinoceros are native to **Africa**.
- Indian, Javan and Sumatran can be found in **India and Asia**.
- **Habitat:** The animal is primarily found in the Himalayan foothills — India and Nepal.
- **World Rhino Day** is celebrated on **September 22** to make people more aware about rhinos and promote its conservation.



Conservation Status

- The **IUCN** lists the one-horned rhino, also known as the Indian rhinoceros, as **vulnerable**.
- Rhinoceros are listed in **Schedule 1** of the **Wildlife (Protection) Act, 1972**, as **endangered animals**.
- The **Wildlife Protection Act, 1972** allows for destruction of wildlife parts (including rhino horn) under **Section 39 (3)**.
- There is an **international ban** on trade of rhino horns under the **Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)**.

Rhino Operations in India:

- Our annual operations include:
 - Providing logistical support and training for wildlife crime enforcement;
 - Tracking and monitoring rhinos on a continual basis to ensure their safety;
 - Continuing intensive monitoring of these populations;
 - Growing population by translocating animals to new, sustainable habitats;
 - Working with local communities to build support for rhino conservation through education and employment;
 - Habitat management, including invasive species removal.

About Indian Rhino Vision:

- It was launched in 2005.
- IRV 2020 is an initiative led by the Forest Department, Government of Assam, in partnership with WWF India, International Rhino Foundation, and several other organizations.
- Wild-to-wild translocations were an essential part of IRV2020, moving rhinos from densely populated parks like Kaziranga NP, to ones in need of more rhinos, like Manas NP.
- The goal of IRV2020 was to increase the rhino population in Assam to 3,000 by establishing populations in new areas.
- Rhinos are now found in four Protected Areas in Assam: Pobitora Wildlife Reserve, Rajiv Gandhi Orang National Park, Kaziranga National Park, and Manas National Park.

SC'S RULING ON EX POST FACTO ENVIRONMENTAL CLEARANCE

- ◎ **CONTEXT:** **The Supreme Court recently set aside an order of the NGT on closure of industries running without prior green clearance.**

What is Environmental Clearance?

- **Environmental Clearance (EC)** is required under **Environmental Impact Assessment Notification** dated September 14, 2006.
- There is no justification to permit function of such units in violation of mandate of law.

National Green National Council

- It is a special body established under the National Green Tribunal Act (2010).
- **Aim:** To effectively and expeditiously deal with cases related to environmental protection and conservation of forests and other natural resources.
- NGT Act provides for special jurisdiction in court to deal with disputes arising under a set of seven rules (mentioned in Schedule I of the Act) -
 - ▶ Water Act
 - ▶ Wild Life (Protection) Act 1972
 - ▶ Forest (Conservation) Act 1980
 - ▶ Public Liability Insurance Act 1991
 - ▶ Biological Diversity Act 2002
 - ▶ National Green Tribunal Act 2010

- NGT has five residences, New Delhi is the principal place of sitting.
- Bhopal, Pune, Kolkata and Chennai are four others.

The case matter

- Appeal by Pahwa Plastics Pvt. Ltd against an NGT order holding that its manufacturing units, which did not have prior Environmental Clearance (EC) could not be allowed to operate.
- The question in this case is, **whether a unit contributing to the economy of the country and providing livelihood to hundreds of people**, which has been **set up pursuant to requisite approvals from the concerned statutory authorities**, and has applied for ex post facto EC, **should be closed down for the technical irregularity** of want of prior 28 environmental clearance, pending the issuance of EC, even though it may not cause pollution and/or may be found to comply with the required norms.

Points made by SC

- An industry contributing to the country's economy and providing livelihood needn't be closed down only on the ground of the technical irregularity of not obtaining prior environmental clearance (EC).
- The SC said **ex post facto clearances and/or approvals** couldn't be declined with pedantic rigidity, regardless of the consequences of stopping the operations.

SURAT GETS INDIA'S FIRST STEEL SLAG ROAD: WHAT IS IT, HOW IS IT DIFFERENT FROM REGULAR ONES?

◎ **CONTEXT:** Surat has become the first city in the country to get a processed steel slag (industrial waste) road.

◎ **ABOUT:** The processed steel slag (industrial waste) road is built as part of a joint-venture project by the

- Council of Scientific and Industrial Research (CSIR)
- Central Road Research Institute (CRRRI)
- Union **Ministry of Steel**
- government think-tank **NITI Aayog**
- **ArcelorMittal-Nippon Steel (AM/NS)**
- The six-lane public road is a **kilometre-long stretch** in Hazira industries.
- The construction cost of the processed steel slag road is **30 per cent cheaper** than roads built from natural aggregates.
- The **thickness of the road is also 30 per cent lesser than normal ones**, while the durability is much longer due to the utilisation of steel slag.
- This project falls under the initiative of the **Waste to Wealth and Clean India Campaign**.

The process

- The **slag is generated** from a steel furnace burning at around 1,500-1,600 degree centigrade **in the form of molten flux material** as an impurity.

- The molten material is poured into the slag pits for cooling as per the customized procedure and further processed to develop stable steel slag aggregates, with “better material properties in place of the natural aggregate commonly used in road constructions”

The load-test

- Over 30 heavy-loaded trucks use the carriageway on a daily basis.
- The steel slag road has been **constructed using instrumented test sections, comprising strain gauges, pressure cells, displacement gauges and thermocouples** to measure load-induced deformation, and stress and strain in the pavement areas.

Are these roads cost-effective and good for the environment?

- Utilisation of processed steel slag in road construction **paves the way for sustainable use of waste and reduces the reliance on perishable natural aggregates.**
- This process is also expected to **reduce GHG emissions and carbon footprint in road construction activity** and is in line with India’s commitment to the **United Nations Sustainable Development Goal No. 9** for building resilient infrastructure through inclusive and sustainable industrialization and green technologies.
- The approximate construction cost per square meter of a processed steel slag road is Rs 1,150 as against Rs 1,300 for a bitumen road and Rs 2,700 for cement or a concrete one.
- The lifespan of a cement or concrete road is over 30 years while that of bitumen and steel slag road is around 15 years.

Do high temperatures affect these roads?

- The **upper surface** of the road will be around **“1-2 degree higher in mid-afternoon when compared to regular ones”**.
 - Thermocouple has been used to maintain the temperature of the outer surface of the road.
- However, **the carbon footprint for such roads is much lower** as the ones built using natural aggregates are mined and processed.
- Besides, after mining and crushing, the material also needs to be transported from one place to another.
 - When it comes to steel slag road, there is no blasting, drilling or crushing as the material is waste coming out of a steel industry which is processed and converted to the form of aggregate material used for construction.
 - The **utilisation of waste steel slag for road constructions reduces pollution** created by heaps of waste dumped nearby.
 - The particles of steel waste also get into the air and even seep into the ground, reaching the underground water table.
- The steel slag melts at over 200 degree Celsius, while the temperature during peak summer in India is not above 45 degree Celsius.
 - Moreover, the **upper layer is made up of bitumen layers.**

RESERVE BANK INNOVATION BANK

◎ CONTEXT:

In order to promote and facilitate an environment that accelerates innovation across the financial sector, the Reserve Bank Innovation Hub (RBIH) has been set up as a wholly owned subsidiary of the RBI.

What is RBIH?

- The RBI has set up the RBIH as a Section 8 company under Companies Act, 2013, with an initial capital contribution of Rs 100 crore to encourage and nurture financial innovation in a sustainable manner through an institutional set-up.

A company is referred to as Section 8 Company when it registered as a Non-Profit Organization (NPO) i.e. when it has motive of promoting arts, commerce, education, charity, protection of environment, sports, science, research, social welfare, religion and intends to use its profits (if any) or other income for promoting these objectives.

Initial capital contribution: Rs 100 crore

- Objective: To create an ecosystem that focuses on promoting access to financial services and products for the low-income population in the country.
- The Hub would bring convergence among various stakeholders (BFSI Sector, Start-up ecosystem, Regulators and Academia) in the financial innovation space.
- This is in line with the objective behind the establishment of RBIH i.e., to bring world-class innovation to the financial sector in India, coupled with the underlying theme of financial inclusion."
- Independent Board
- The Hub has an independent Board with Senapathy (Kris) Gopalakrishnan as the Chairman and other eminent persons from industry and academia as members.
- With its own independent board, the RBIH will facilitate convergence of ideas among various stakeholders.


SEED BALLS

◎ **CONTEXT:** **Seed Balls are made from clay, seeds and compost or humus.**

About Seed balls:

- It is a ball made from clay, seeds and compost or humus.
- Seed balls are used to replant areas where the natural flora has been destroyed.
- It is a technique of propagating plants from seeds without opening up the soil using traditional methods like ploughing.
- Traditional methods of seeding have certain disadvantages.
 - The seed is sown on top of the soil, so it may get dried out by the sun, blown away by strong winds, washed away by rains or eaten by birds.
 - But when seed balls are used, the hard clay casing protects the seeds from excessive heat, winds, heavy rains and nibbling birds.
 - The moisture in the clay of the seed ball helps the seeds to germinate.
 - Additionally, cotton fibres or liquefied paper may be mixed into the seed ball while preparing it, to increase its strength.
- Using seed balls to replant an area is an ancient technique that was rediscovered and popularized in modern times by Masanobu Fukuoka, a Japanese farmer.
- Seed balls are used in seed bombing and aerial reforestation.
 - Environmental activists drop or throw seed balls in arid areas or land that is off limits.

- This is called seed bombing.
- In the case of aerial reforestation, planes are used to distribute seed balls over large inaccessible areas such as mountain tops.
- Seed bombing is widely practised in Africa.
 - The seed bomb is put in a biodegradable container and dropped onto the land, grenade-style.
 - When the seed sprouts, the container biodegrades into the soil.



SEEDBALLS

tree seeds in a protective capsule

seedballing TIPS

Think like a tree!
Look for suitable microhabitats for your seedballs. Favor areas likely to conserve moisture and are not easily accessible to wildlife and livestock.

Look for deforested land
For example: fill empty urban spaces with trees and regenerate areas that have suffered from deforestation.


Respect the land
Ask before you throw if the land is obviously privately owned and managed. Avoid farmland.

The perfect match
Always match trees to their ecosystems: highland, dryland, lakeshore or swampland. Each species thrives best in their home environment.

Be patient
Some seeds germinate only after several rainy seasons. Growing trees is a noble act of kindness, it takes time and perseverance.


Stay within the borders
Do not take seedballs out of Kenya or you may contravene various phytosanitation and biosafety laws.

THROW




Cast into suitable areas all year round.

WAIT...



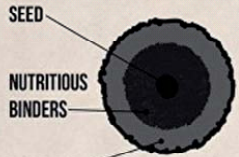
The seedball lays dormant until conditions are right for growth.

GROW!



The tree grows with strong roots.

WHAT IS A SEEDBALL?



The tough nutrient-rich biochar coating helps protect the seed within from predators such as birds, rodents and insects. The light-weight biochar also protects the seed from temperature extremes and reduces dehydration until the seasonal rains arrive.

With light rainfall, the seedball will absorb water and soften, retaining moisture to provide a nurturing environment for germination. With heavy storms, it will slowly wash away and help keep the seed in place where it was dropped.

PLEASE DO NOT TAKE SEEDBALLS OUT OF KENYA

www.seedballskkenya.com

“The best time to plant a tree was 20 years ago.
The second best time is now.”

SEEDBALLSKENYA

SEEDBALLSKENYA

THROW & GROW

AIZAWL TO HAVE RAIL LINK

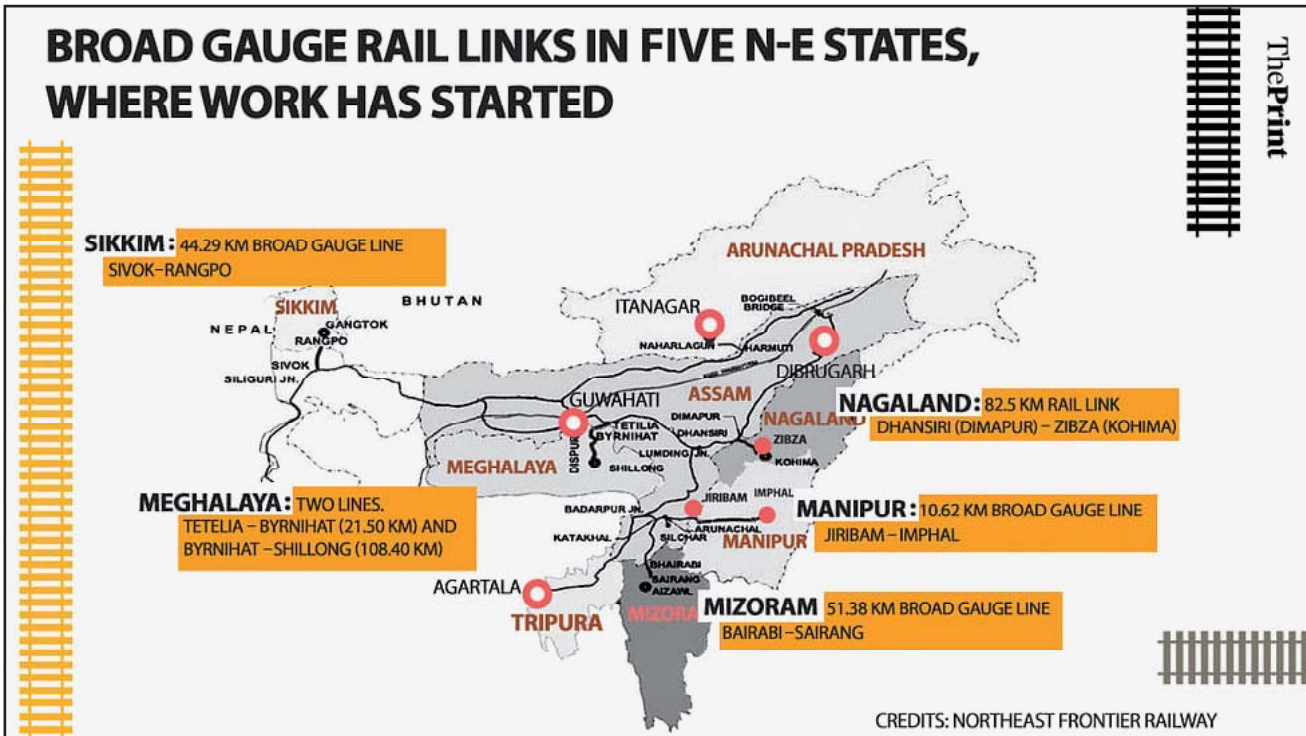
◎ **CONTEXT:**

A new Broad Gauge railway line is currently under construction from Bairabi of Assam's Hailakandi district to Sairang of Mizoram's Aizawl district covering 52 km.

About Bairabi-Sairang railway project:

- The upcoming railway network in Aizawl as the NFR (**National Frontier Railway**) is laying BG (Broad Gauge) track up to **Sairang town of Mizoram which is about 20 kilometres from Aizawl.**
- The BG railway line from **Bairabi to Sairang** was approved by the central Government in **2008-2009** at an initial cost of Rs 2,384.34 crore as a national project.
- Work on the project commenced in 2015 and the revised timeline for its completion is November 2023.
 - About 70 per cent work of the project has been completed so far.

- With 55 major bridges, 87 small bridges and 32 tunnels (total length of the tunnels is about 12.63 km) with the longest tunnel about 1.88 km in length.
- **Bairabi-Sairang railway line would have four stations -- Hortoki, Kawnpui, Mualkang and the terminal station at Sairang.**
- It may be mentioned that the other **three state capitals** in the northeast to have rail connectivity are **Agartala (Tripura), Guwahati (Assam) and Naharlugam (Arunachal Pradesh).**

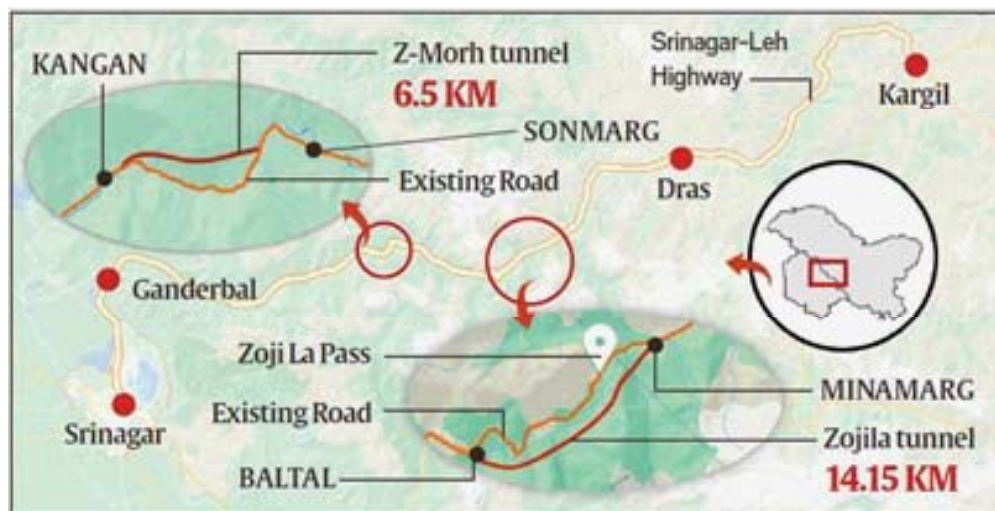


ZOJILA TUNNEL WORK APACE, DEADLINE ADVANCED TO 2024

◎ **CONTEXT:** Officials are confident about the opening of the Zojila tunnel for defence forces by 2024 and emergency services, two years ahead of the 2026 deadline.

About Zojila Tunnel:

- The Zojila tunnel will be **India's longest road tunnel** and **Asia's longest bi-directional tunnel.**
- The first part involves the development and expansion of the **18.475-km highway between Z-Morh to Zojila.**
- A 3-km stretch will be expanded; the rest will be newly developed.
- The highway will have 2 **twin-tube tunnels**, **5 bridges**, and **2 snow galleries.**
- To be built at a cost of Rs **2,600 crore**, the **horseshoe-shaped Zojila tunnel** will be India's longest street burrow and the **highest tunnel at 3,485 metre.**
- The need for the Zojila tunnel was first felt during the 1999 Kargil war and the recent incursions by China made it an urgent necessity.
- The tunnel will provide logistics flexibility and operational mobility to the Indian Army as it will reduce the travel time on Zojila Pass from 3.5 hours to 15 minutes



MEDIUM RANGE SURFACE-TO-AIR MISSILE (MRSAM)

© **CONTEXT:**

The DRDO conducted two successful flight tests of the Army version of Medium Range Surface to Air Missile (MRSAM).

About MRSAM:

- The MRSAM is a **surface-to-air missile** jointly developed by **DRDO and Israel Aerospace Industries (IAI)** for use by the Indian Army.
- The missile will **replace the ageing Air Defence systems** of the Army.
- The MRSAM weapon system comprises **multi-function radar, mobile launcher system and other vehicles.**
- It has Army, Navy and Air Force variants.
- The mobile **launcher can transport, place and launch eight canisterised missiles.**
- These can be fired either in single mode or in ripple firing mode in a vertical firing position.
- The missile's management system uses the radar to track and correctly identify the target, calculates the distance from it and gives all the information to the Commander for a decision to be made on interception.
- The missile itself is **4.5 metres in length with a weight of around 275 kg.**
- It is equipped with fins and canards to stabilise its flight and provide it manoeuvrability.
- The missile is powered by a solid propulsion system coupled with a thrust vector control system.
- The missile can move at a maximum speed of Mach 2 (twice the speed of sound).
- It can engage multiple targets upto a range of 70 km.

List of the surface to air missiles in India:

- Akash
- Akash-1S
- Akash Mk2
- Akash-NG
- QRSAM

- Barak 8
- MR-SAM
- LR-SAM
- XR-SAM

About DRDO

- DRDO is the R&D wing of Ministry of Defence, Government of India.
- DRDO was formed in 1958 from the amalgamation of the then already functioning Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).
- DRDO was then a small organisation with 10 establishments or laboratories.
- Over the years, it has grown multi-directionally in terms of the variety of subject disciplines, number of laboratories, achievements and stature.
- DRDO's pursuit of self-reliance and successful indigenous development and production of strategic systems and platforms have given quantum jump to India's military might, generating effective deterrence and providing crucial leverage, such as:
 - ▶ **Agni and Prithvi** series of missiles
 - ▶ light combat aircraft, **Tejas**
 - ▶ multi-barrel rocket launcher, **Pinaka**
 - ▶ air defence system, **Akash**
 - ▶ a wide range of radars and electronic warfare systems; etc.,

SCIENTISTS PUBLISH FIRST COMPLETE SEQUENCE OF GENOME

◎ CONTEXT:

Scientists have published the first complete, gapless sequence of a human genome, two decades after the Human Genome Project produced the first draft human genome sequence.

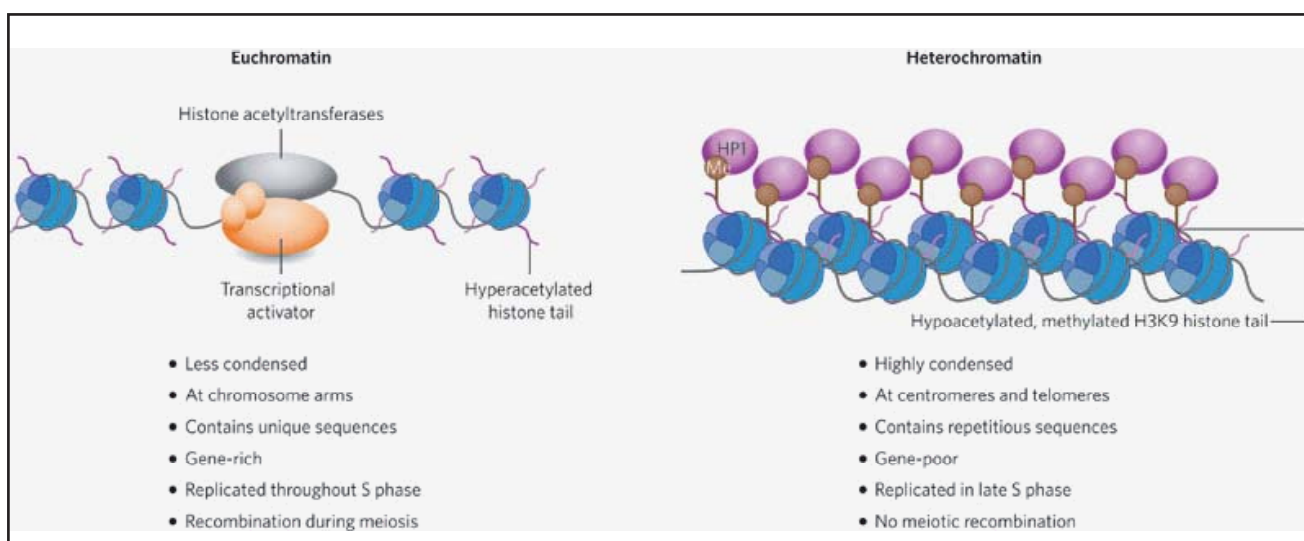
Why it matters?

- A complete human genome makes it **easier to study genetic variation** between individuals or between populations.
- A genome refers to all of the genetic material in an organism.
- The human genome is mostly the same in all people, but a very small part of the DNA does vary between one individual and another.
- By constructing a complete human genome, scientists can use it for reference while studying the genome of various individuals, which would help them understand which variations, if any, might be responsible for disease.

What was missing?

- The **genetic sequence made available in 2003** from the Human Genome Project, an international collaboration between 1990 and 2003, **contained information** from a region of the human genome known as the **euchromatin**.
 - Here, the chromosome is rich in genes, and the DNA encodes for protein.

- The 8% that was left out was in the area called **heterochromatin**.
 - This is a smaller portion of the genome, and **does not produce protein**.
- There were at least **two key reasons** why heterochromatin was given lower priority.
 - This part of the genome was thought to be "**junk DNA**", because it had no clear function.
 - Besides, the **euchromatin contained more genes** that were simpler to sequence with the tools available at the time.
- Now, the fully sequenced genome is the result of the efforts of a global collaboration called the **Telomere-2-Telomere (T2T) project**.
- The invention of new methods of DNA sequencing and computational analysis helped complete the reading of the remaining 8% of the genome.



What's in the 8%?

- The new reference genome, called **T2T-CHM13**, includes **highly repetitive DNA sequences** found in and around the **telomeres (structures at the ends of chromosomes) and the centromeres (at the middle section of each chromosome)**.
- The new sequence also reveals long stretches of DNA that are duplicated in the genome and are known to play important roles in evolution and disease.

The future:

- The **T2T consortium used the now-complete genome sequence as a reference to discover more than 2 million additional variants in the human genome**.
 - These studies provide more accurate information about the genomic variants within 622 medically relevant genes.
- The complete sequence will be valuable for studies that aim to establish comprehensive views of human genomic variation.
 - Many research groups have already started using a pre-release version of the complete human genome sequence for their research.
- The new T2T reference genome will **complement the standard human reference genome**, known as Genome Reference Consortium builds 38 (GRCh38), which originated from the Human Genome Project and has been updated since.

ALOPECIA

- ◎ **CONTEXT:** The Oscar slap that overshadowed the Academy Awards ceremony brings Alopecia in news.

About Alopecia:

- Alopecia is a medical word that refers to **hair loss**. And there are descriptors added which can refer to where the hair loss is occurring, or to the cause of it.
- Traction alopecia, for example, is hair loss from trauma or chronic inflammatory changes to the hair follicles.

What causes alopecia?

- **Traction alopecia happens when there is trauma to the scalp**, where the hair is being pulled or rubbed on a regular basis, causing inflammation around the hair follicles. This can lead to hair loss or thinning.
- **Alopecia areata describes hair loss to a particular area**. It has different levels of severity, so there might be just a coin-sized area of hair loss on the scalp, or it could affect large areas. It can occur at any place on the body.
- Or it might result in **complete hair loss on the scalp, alopecia totalis**. Some people lose eyebrows or see a thinning of their eyelashes.
- People can even have **alopecia universalis, which is a loss of hair on the entire body**.
- **Alopecia areata is considered an “immune-mediated” type of hair loss**. The immune system is attacking the hair follicles. It has to do with T cells, the important white blood cells in the immune system.

HUL'S DAPADA FACTORY RECOGNIZED AS 'ADVANCED 4TH INDUSTRIAL LIGHTHOUSE' BY WEF

- ◎ **CONTEXT:**
- Hindustan Unilever Limited (HUL) has joined the Lighthouse Network with its Dapada facility, which produces home care products such as Surf Excel, Rin, and Vim.
 - The first FMCG production facility in India to receive this designation.

What is Global Lighthouse Network?

- The Global Lighthouse Network is a community of manufacturing sites recognised by the World Economic Forum (WEF) for applying advanced technologies, innovations, and sustainable practices to modernise business operations.
- The Network includes sites that have implemented end-to-end digitisation across the value chain, pushing the boundaries of technological advancement.
- These revolutionary technologies result in reduced manufacturing cost, greater agility, and speed.

Interesting Fact

- **Tata steel Kalinganagar** TSK is the first Indian manufacturing plant to be included in the WEF's Lighthouse Network.

- They serve as beacons to guide others to overcome challenges in **upgrading systems and applying** cutting-edge technologies such as **artificial intelligence, big data analytics and 3D printing**.

Hindustan Unilever (HUL)

- Hindustan Unilever (HUL) is India's largest fast moving consumer goods company, with leadership in Home & Personal Care Products and Foods & Beverages.

Fast-moving consumer goods (FMCG)

- **Fast-moving consumer goods (FMCG)**, also known as **consumer packaged goods (CPG)**, are products that are sold quickly and at a relatively low cost.
 - ▶ **Examples** include non-durable household goods such as packaged food, beverages, toiletries, candies, cosmetics, over the counter drugs, dry goods, and other consumables.
- The retail market for FMCG products are determined by **International standards of Industrial classification**.

- It is a subsidiary of Unilever, a British company.
- **Founded:** 17 October 1933.

Dapada Facility

- Established in 2001, the Dapada site produces three million units per day for brands like Surf excel, Vim, Rin and Wheel.
- This site started its digital journey in 2018.
- It is known to be the first Unilever dedicated Home Care site globally to be recognised as an E2E lighthouse factory, paving the way for rapid digital transformation in South Asia.
- Using **Fourth Industrial Revolution (4IR) technologies** like **augmented reality, big data and analytics, and IoT**, the Dapada factory deployed artificial intelligence/machine learning-led solutions to accelerate the pace of innovation and speed of response to consumer demand.

Benefits due to technological advancement:

- The **Dapada facility** has seen a demonstrable benefit as a result of this digital transformation, with a **39% reduction in manufacturing cost** (per tonne) and a **50% reduction in end-to-end product development** lead time.
- The **greenhouse gas emissions** have decreased by **54%** and **water use** has decreased by **31%**. Making our personnel future-ready was a critical component of the digitization process.
- 48% of the **workers** will be Upskilled and reskilled.

SECTION: C
(QUICK FACTS)

ORDER OF BRITISH EMPIRE CONFERRED ON DR. P. RADHU RAM

◎ **CONTEXT:** Eminent Breast cancer surgeon P. Raghu Ram from Hyderabad conferred the Officer of the Most Excellent Order of British Empire (OBE). He is among the youngest surgeons of Indian origin in 100 years to get the owner of OBE.

- ◎ **BACKGROUND**
- The honours system of order of British Empire (OBE) recognises people who have made achievements in public life and committed themselves to serving and helping Britain.
 - The Doctors receiving honours in Knight/Dame, CBE, OBE, MBE etc categories by the queen.
 - Ram is also one of the youngest recipients of the prestigious **Padma Shri and Dr BC Roy National awards**, which were conferred on him in 2015 and 2016, respectively.

Awards and honours got by people of Indian origin in the world

- Khemka has been named a Dame Commander of the Order of the British Empire (DBE) for her service to the deprived areas of the West Midlands as principal of West Nottinghamshire College for the last eight years.
- Anil Parbhu Patel, second secretary at the UK Foreign and Commonwealth Office, has been honoured with the MBE for services to British diplomacy.
- Amarjit Kaur Bakhshi for services to the community in Hounslow.

WORLD AUTISM AWARENESS DAY

◎ **CONTEXT:** The World Autism Awareness Day is observed across the world on April 2.

■ About World Autism Awareness Day:

- The UN General Assembly had declared April 2 as World Autism Awareness Day.
- The objective of the day is to create awareness about Autism and also to encourage people to support those who are suffering from this disorder.
- The theme of 2022 is - "Inclusive Quality Education for All" which marks the global inequalities in education and society, faced by people with autism.

■ What is Autism?

- **Autism or Autism Spectrum Disorder** is a **lifelong developmental disability** that manifests itself during the first three years of life.
- It results from a neurological disorder that affects the functioning of the brain, mostly affecting children and adults in many countries irrespective of gender, race or socio-economic status.
- It is characterized by impairments in social interaction, problems with verbal and non-verbal communication and restricted, repetitive behaviour, interests and activities.
- Though there is no cure for it, therapeutic and behavioural guidance can considerably improve quality of life.

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

SUCCESS IS A PRACTICE WE DO!

TOP 100
ALL INDIA RANKING
CSE 2019

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