

CURRENT AFFAIRS

WEEKLY

WEEK: 3

JUNE
2022

MAINS

PRELIMS

GS-II

- REMAINS OF THE BUDDHA TO MONGOLIA

GS-II

- WHY ARE INDIA'S ECONOMIC STAKES HIGH IN WEST ASIA?
- NATIONAL FINANCIAL REPORTING AUTHORITY (NFRA): FUNCTIONS AND SIGNIFICANCE
- UPHOLDING THE RIGHT TO REPAIR
- FSSAI RELEASES STATE FOOD SAFETY INDEX
- POLICY ON AIR SPORTS: A STEP AHEAD TOWARDS INCLUSIVE GROWTH
- GREEN GOLD AND THE TRIBAL RIGHTS
- INDIA'S PATENT REGIME

GS-III

- INDIA'S STAND IN ENVIRONMENT PERFORMANCE INDEX 2022
- SCIENCE BEHIND THE NEW CANCER CURE
- HOW DO INTEREST RATES AFFECT INFLATION IN THE ECONOMY?
- WIDENING URBAN-RURAL DIVIDE, AND NEED OF ECONOMY'S STRUCTURAL TRANSFORMATION

POLITY & GOVERNANCE

- World Day Against Child Labour: A look at global figures
- How to decarbonise defence: International Military Council shares guidelines
- Thailand becomes first Asian nation to make marijuana legal for medical use
- CiSS application to help rehabilitation of children in street situations

ECONOMY

- What is Post Office Recurring Deposit Scheme?

ENVIRONMENT

- Rhino reintroduction success in Assam
- Chelonoidis phantasticus
- Microplastics discovered in fresh Antarctic snow for first time
- How cheetahs went extinct in India, and the plan to reintroduce them into the wild
- World Oceans Day: Marine litter
- Carbon bombs

SCIENCE & TECHNOLOGY

- Testosterone deficiency & the safety of replacement therapy
- Fast radio burst
- Next-generation Corvettes
- China releases world's 'most detailed' map of Moon

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— **Disclaimer** —

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

REMAINS OF THE BUDDHA TO MONGOLIA

CONTEXT

The Four Holy relics of Lord Buddha are taken to Mongolia for display for 11 days to coincide with the Mongolian Buddhist festivals of Purnima.

- ☐ The four relics come from among 22 Buddha relics, known as the Kapilavastu relics.
- ☐ In Mongolia, the Holy Relics are on display at the Batsagaan Temple within the Gandan Monastery building

◎ BACKGROUND

- The Holy Buddha Relics is known as the 'Kapilavastu Relics', first discovered in 1898.
- It was originated in the area of Bihar, which is believed to be the ancient city of **Kapilavastu**.
- Located at the stupa site in **Piprahwa** (near Siddharthnagar in Uttar Pradesh), an inscribed casket was found.
- This helped in identifying the ancient city of Kapilavastu.
- The inscribed casket contained relics of Buddha and Sakya, his community.
- The relics are currently housed at **Delhi's National Museum**.

- ▶ Mallas of Pava
- ▶ the Colossians of Ramagrama once
- ▶ Brahmana of Vethadipa
- The purpose was to place stupas on sacred relics.
- Other stupas appeared, one on top of the pipe where the remains were collected and the other on the coals.
- The remains were later excavated by Ashoka - ruler of the Maurya Dynasty, who ruled almost the entire Indian subcontinent from c. 268 to 232 B.C.
- He dispersed the remains and built stupas over them throughout his district.
- According to Ashokavadana, Ashoka had relics of Buddha placed on 84,000 stupas made up of Yakshas (usually gentle natural spirits).



Signs of the Buddha:

- As per the Buddhist belief, at the age of 80 (486-483 BC), lord Buddha obtained salvation in **Kushinagar (Uttar Pradesh)**.
- Lord Buddha was cremated as a universal king by the **Mallas of Kushinagar**.
- His **funeral relics** were collected and divided into eight shares to be distributed among them
 - ▶ Ajathsatrus of Magadha
 - ▶ Vaishali's Licchavis
 - ▶ the Sakyas of Kapilavastu
 - ▶ Housing in Kushinagar
 - ▶ Alakappa Bullies

India-Mongolia relationship

- Mongolia regards India as its "third" and a "spiritual neighbour". The year 2022 marks the 67th anniversary of diplomatic ties between India and Mongolia.
- The spiritual connect between India and Mongolia continues to bind the people of our two nations.





- The bilateral relationship was upgraded to a Strategic Partnership in 2015 during the historic visit of Prime Minister which has proven to be a watershed event in India's bilateral relations with Mongolia.
- Since then, bilateral cooperation with Mongolia has expanded and has seen significant growth.

Buddhism in India:

- **Origin:**

- ▶ Siddhartha Gautam, born in 563 BC, was part of the Sakya royal family that ruled from Kapilvastu, Lumbini. At the age of 29, Gautama left home and led a life of self-denial.
- ▶ After 49 days of meditation, Gautama received enlightenment under a pipal tree at Bodhgaya in Bihar.
- ▶ Buddha made his first sermon in the village of Sarnath, near the town of Benares in the UP. The event is known as the Dharma-Chakra-Pravartana (legal wheel revolution).
- ▶ He died at the age of 80 in Kushinagara, a city in the UP. The event is known as Mahaparinibban.

- **The rules of Buddhism:**

- ▶ **Middle Path:** Avoid both extremes of worldly pleasure and the practice of extreme self-

control. The Buddha instead called the '**Madhyam Marg**' or the intermediate method to be followed.

- ▶ **Four good truths:** Suffering (dukkha) is the backbone of the world, All suffering has a reason - Samudya, Suffering can end - Nirodha, Can be gained by following Atthanga Magga
- ▶ **Eight-Way Ways:** Positive Views, Proper Objective, Proper Speech, Proper Action, Proper Health, Positive Thinking, Positive Effort, Positive Concentration
- ▶ **Five Principles or Pancasil** - Violence, theft, sexual misconduct, lying or gossip, drunkenness

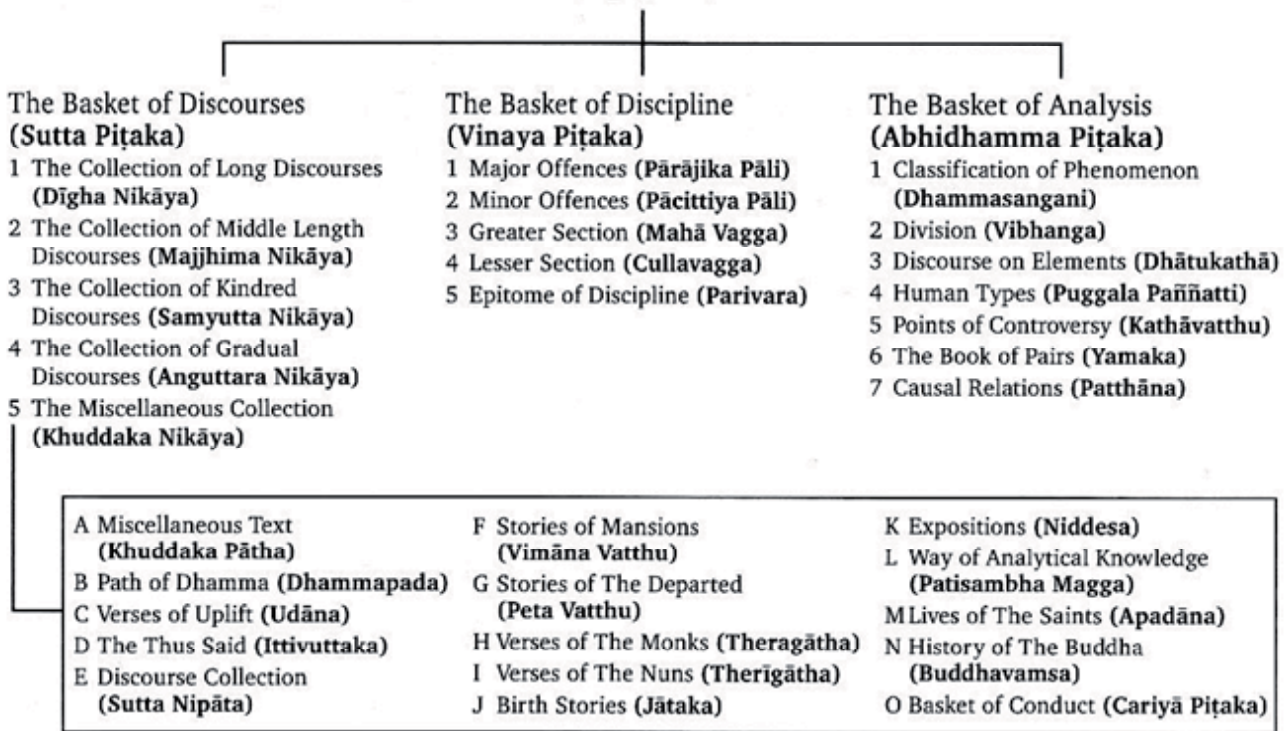
- **Major Buddhist texts:**

- ▶ **Three pitakas:** Vinaya Pitaka (moral code), Sutta Pitaka (Dhamma Buddha): Divided into five Nicayas: Digha, Majjhima, Samyutta, Anguttara, Anguttara Khuddaka, Abhidamma Pitaka (philosophical analysis)
- ▶ Other important Buddhist texts include Divyavadana, Dipavamsa, Mahavamsa, Milind Panha etc.

- **Buddhist councils:**

- ▶ **First:** It was held in the Sattapani cave at Rajgriha shortly after Mahaparinirvan Buddha, about 483 BC under the rule of King Ajatshatru

The Three Baskets (Tipiṭaka)



and was led by Mahakasyapa, a monk.

- **Second:** held at Vaishali under the reign of King Kalasoka in 383 BC. It was owned by Sabakami.
- **Third:** 250 BC at Patliputra under Ashoka rule and led by Moggaliputta Tissa.
- **Fourth:** held in 72 AD in Kundalvana, Kashmir. It was controlled by Vasumitra, while Asvaghosa supported him under the direction of King Kanishka of the Kushan Empire. Buddhism is divided into Mahayan and Hinayan.

● **Buddhist Schools:**

- **Mahayana:** literally means "Great Car". It believes in the heaven of the Buddha and the idolatrous worship of the Buddha and the Bodhisattvas including the Buddha Nature.
- **Hinayana:** A small car literally. It believes in the original teachings of the Buddha or the Doctrine of the Elders. He does not believe in idolatry and seeks to gain personal salvation through self-discipline and meditation.
- **Theravada:** is a Hinayana sect, founded in Sri Lanka and later spread throughout Southeast Asia.
- **Vajrayana:** means "Car of Thunder", also known as tantric Buddhism.

- **Zen:** It is a school of Mahayana Buddhism founded in China.

How does Buddhism still operate in recent times?

- **Non-Violence:** Buddhism preached a non-violent approach, gaining significant significance in the aftermath of the Middle East crisis.
- **Middle path:** At the diplomatic front non-alignment policy is the unique example of middle path, which fosters the ideas to collaborate with every nation.
- **Mutual co-existence:** Buddhism had preached for mutual co-existence and tolerant policy for all religions, one should not disrespect others belief and faith to protect one's own religion, promoting fraternity among the citizens.

◎ **CONCLUSION:**

The recent cultural exchange and soft power diplomacy will provide a stronger base to strengthen up the diplomatic relations between India and Mongolia. The urgency of Buddhist's ideology is increasing in the recent events of Middle-east crisis and societal clashes.

WHY ARE INDIA'S ECONOMIC STAKES HIGH IN WEST ASIA?

CONTEXT

In the wake of recent allegedly derogatory remarks made against Prophet Mohammad, that triggered a diplomatic offensive from the Muslim world, it is important to analyse India's stakes in West Asia.

The geographic boundary

- Western Asia is bounded in the west by the Mediterranean Sea and the Red Sea
- north by the Black Sea, the Caucasus, and the Caspian Sea
- east by the fringing mountains of Iran
- south by the Arabian Sea and the Indian Ocean

Assessing India's dependence on West Asian countries

- **Domestic crude oil production** meets **less than a fifth of the country's oil requirement**, forcing India to rely on imports to fill the gap of over 80%.
- The **share of Gulf countries of India's total crude oil imports** has remained fairly stable over the past 15 years at **around 60%**.
 - ▶ In 2020-21, **India's top oil exporter was Iraq** with a share of over 22%, followed by **Saudi Arabia** – at around 18%.
- **Bilateral trade:** Countries in the West Asian region collectively account for **one-sixth of India's total bilateral trade** and contribute about **three-fifths of India's crude oil supply**.
- **Economic opportunity:** The region is a major provider of **jobs and economic opportunities** for Indian workers, professionals and entrepreneurs and is home to approximately 8.9 million Indians.

Getting the better picture (with numbers)

- According to the World Bank, India is the top remittance-receiving country in 2021.
- In 2021, India received remittances totalling more than \$89 billion, an increase of 8 percent above the \$82.73 billion received in 2020.

- The Reserve Bank of India (RBI) documents reveal that 82 percent of the total remittances received by India originated from seven countries: the United Arab Emirates (UAE), the United States (US), Saudi Arabia, Qatar, Kuwait, the United Kingdom, and Oman.
- India's trade with the GCC in 2020-21 was \$87 billion, and in 2019-20 it was \$120 billion.

- **International Treaties:** India has signed a Comprehensive Economic Partnership Agreement (CEPA) with the **United Arab Emirates** earlier this year, has become **one of the biggest contributors to the region**.
- **Easy access:** With the region acting as a **major hub for markets in Africa**, India is keen to have tariff-free access to its exports not only in the Gulf region but also in countries in Africa.

Challenges for India in West Asia

- **Islam:** On issues of Islam, particularly with reference to the Quran and Prophet Mohammed, most if not all 57 members of the Organisation of Islamic Countries (OIC) stay together.
 - ▶ For them, it is also a common 'identity issue', in these times of perceived and propagated strife.
- **Lack of direct investment:** India lacks direct investment in the energy sector of this oil and gas-rich region.
- **Growing divide:** The region is quickly turning into a highly polarised part of the world. The growing divide between Riyadh and Tehran and Washington's hypocritical ignorance could put New Delhi in a spot of bother.
- **Emergence of non-state actors:** Another emerging threat in the region is of non-state actors. Large scale instability and growing terrorism in West Asia has increased the threat of takeovers of natural resources by non-state actors.

NATIONAL FINANCIAL REPORTING AUTHORITY (NFRA): FUNCTIONS AND SIGNIFICANCE

CONTEXT

With an aim of improving the powers of the National Financial Reporting Authority (NFRA), the government has committed to strengthen the mandates of defending the general public interests.

◎ BACKGROUND

- The decision to constitute the NFRA was taken after the role of auditors and the **Institute of Chartered Accountants of India** came under the scanner for alleged lapses in various corporate scams including that at the **Punjab National Bank**.

◎ ABOUT

- NFRA was **constituted in 2018** by the Government of India **under section 132 (1) of the Companies Act, 2013**.
- It functions as an **audit regulator**.
- Its account is monitored by the **Comptroller and Auditor-General of India**.
- It is headquartered in **New Delhi**.

Powers of National financial reporting authority:

- NFRA, administered by the **Ministry of Corporate Affairs**, regulates the auditing standards in the country.
- It also oversees the **Quality of Service provided** by the accounting and audit professions.
- **According to the Companies Act, 2013 NFRA has following powers;**
 - ▶ To investigate matters of professional misconduct by chartered accountants or CA firms, impose a penalty and debar the CA or firm for up to 10 years.
 - ▶ No other institute or body shall initiate or continue any proceedings in such matters of misconduct where the National Financial Reporting Authority has initiated an investigation.
 - ▶ It is expected that the NFRA's functioning would result in improved domestic and foreign investments, improved economic growth, assistance in the development of the audit profession and supporting the globalisation of

business through compliance with international practices.

Important roles played by NFRA

- **As an Advisor to the government:** It recommends accounting and auditing policies and standards to be adopted by companies for approval by the Central Government.
- **As Enforcing Agency:** Monitor and enforce compliance with accounting standards and auditing standards.
- **Eligible to issue penalty:** Oversee the quality of service of the professions associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service.
- **Guardian of Public Interest:** Protect the public interest.

What is the need to strengthen NFRA?

- To enable it to discharge its duties effectively as well as strengthen the mandates of protecting the public interests.
- To bring in efficiency at the independent regulatory body.

Benefits

- India gains eligibility for **IFIAR** (International Forum of Independent Audit Regulators), which was denied earlier, resulting in enhancing the confidence of Foreign/Domestic investors and India's position on a **global scale**.
- Increase in foreign/domestic investors.
- Economic growth.
- IFIAR eligibility proves our international standards of business, further supporting globalization.
- Further development of the auditing profession.
- Establishment of NFRA will free resources for the ICAI to work on developing new and complex skills needed in the uncertain world of technology.

UPHOLDING THE RIGHT TO REPAIR

CONTEXT

Apple recently announced that consumers will have the right to purchase spare components of their products, following an order of the Federal Trade Commission of the United States.

- It is directed to the manufacturers to remedy unfair anti-competitive practice and asks them to make sure that consumers can make repairs, either themselves or by a third-party agency.

What is 'Right to repair'?

- The rationale behind the "right to repair" is that the individual who purchases a product must own it completely.
- This implies that apart from being able to use the product, consumers must be able to repair and modify the product the way they want to.
- Monopoly on repair processes infringes the customer's "right to choose" recognised by the **Consumer Protection Act, 2019**.

In *Shamsher Kataria v Honda Sael Cars India Ltd (2017)*, for instance, the Competition Commission of India ruled that restricting the access of independent automobile repair units to spare parts by way of an end-user license agreement was anti-competitive.

Need to include Right to repair: Ending manufacturers' monopoly

- An expensive affair: Repairing is becoming unreasonably expensive or pretty much impossible as the technology becoming obsolete.
- Unwanted monopoly:** Companies avoid the publication of manuals that can help users make repairs easily.
- Incompatibility:** Manufacturers have proprietary control over spare parts and most firms refuse to make their products compatible with those of other firms.
- Replacement than repair:** Planned obsolescence results in products breaking down too soon and buying a replacement is often cheaper and easier than repairing them.
- Losing the right of warranty:** Digital warranty cards, for instance, ensure that by getting a product from a "non-recognised" outfit, a customer loses the right to claim a warranty.

What is the status of 'repair laws' in India?

- In accordance with the **Consumer Protection Act, 2019**, monopoly on repair processes infringes the customer's "right to choose".
- The right to repair has been partially acknowledged in India in the Consumer disputes jurisprudence.

International practices

- Many countries have taken initiatives, adopted policies and even tried to enact legislation that recognise the "right to repair" to reduce electronic waste.
- Some jurisdictions offer limited scope for exercising the right to repair.
- For instance, under the Australian Consumer Law consumers have a right to request that certain goods be repaired if they break too easily or do not work properly.
- The Massachusetts Motor Vehicle Owners' Right to Repair Act, 2012 requires automobile manufacturers to provide spare parts and diagnostics to buyers and even independent third-party mechanics.
- The UK also introduced the path-breaking "right to repair" in 2021 that makes it legally binding on manufacturers to provide spare parts.
- Well-drafted legislation** will not only uphold the right to repair but may aid in striking a much-needed balance between intellectual property and competitive laws in the country.

CONCLUSION

If people want to fix things in a timely, safe and cost-effective way, whether by doing it themselves or taking it to a service centre of their choice, providing access to spare parts and information is imperative.

FSSAI RELEASES STATE FOOD SAFETY INDEX

CONTEXT:

The Food Safety and Standards Authority of India (FSSAI) have recently released the State Food Safety Index (SFSI) 2021-22.

◎ BACKGROUND:

- Food Security is important for the healthy growth of the demography irrespective of the development and income status of a nation.
- Green Revolution, use of new variety seeds and use of fertilisers, has narrowed down the scope of food insecurity for India
- The climate change, land use pattern soil degradation and global warming are possessing a potential threat to the food security in various ways.
- Socio-economic factor and accessibility of sea food are correlated to each other.

◎ ANALYSIS:

What is Food Safety Index?

- Food Security Index developed by **Food Security and Standards Authority of India (FSSAI)**.
- The index aims to measure the performance of states and Union Territories on selected "parameters" of food safety.
- The major objective of the index is to encourage states and UTs to improve their performance and work towards establishing a proper food safety ecosystem.

What are the parameters measured in the food safety index?

- Human Resources and Institutional Data; 20% weightage
- Compliance; most important parameter with 30% weightage
- Food Safety- Infrastructure and Surveillance; 20% weightage
- Training and Capacity; 10% weightage
- Consumer Empowerment; 20% weightage

How are the states assessed?

The states and UTs are classified into three categories and are assessed separately:

- Large state
- Small state
- Union Territories

Key Findings of the Index:

- Large state category:
 - ▶ Tamil Nadu: 1st rank with a score, 82 out of 100
 - ▶ Andhra Pradesh: 17th rank with a score of 26
- Small state:
 - ▶ Goa: 1st rank; 56 score
 - ▶ Arunachal: 8th rank with 21 score
- UTs:
 - ▶ J&K: 1st rank; 68.5 score
 - ▶ Lakshadweep: 8th rank; 16 score

Significance of the Food Security and Safety:

- Access to sufficient amounts of safe food is key to sustaining life and promoting good health, reducing the events of non-communicable diseases.
- Food safety has a critical role in assuring that food stays safe at every stage of the food chain - from production to harvest, processing, storage, distribution, all the way to preparation and consumption.

What are the major challenges behind ensuring food safety and security?

- **Socio-economic diversity:** The amplitude of socio-economic diversity poses a threat to the accessibility of safe food, leading to food insecurity.
- **Land degradation and desertification:** Climate change and global warming has led to degradation and desertification of land, reducing the harvest.
- **Climate change:** Climate change and global warming has also impact the local seasonal climate which further contributes to crop failure.
- Unemployment and poverty
- Unplanned rural to urban migration
- Gender inequality and lack of education
- Lack of safe storage facility
- Lack of logistics support and connectivity
- Rapidly growing population and resource constraints

Initiatives taken by the government:

- Eat Right India Movement; aligned with National Health Policy
- Et Right Research awards and grants
- Targeted Public Distribution System
- Ayushman Bharat
- Poshan Abhiyan 2.0
- Swachh Bharat Abhiyan
- Plastic Waste Neutral

◎ CONCLUSION:

Food security and food safety remains the prime objective of any nation for the health growth of the demography. India with the high demographic dividend and diversified income level needs to focus on narrowing down the socio-economic gap and make food available to every citizen irrespective of their economic and geographical position.

POLICY ON AIR SPORTS: A STEP AHEAD TOWARDS INCLUSIVE GROWTH

CONTEXT

A National air sport policy 2022 (NASP) was launched by civil aviation minister.

The new policy lays out the vision of making India one of the top sports nations.

◎ ABOUT

- Air sports encompass various sports activities involving the medium of air.
- These include 11 sports like **air-racing, aerobatics, aero-modelling, hang-gliding, paragliding, paramotoring and skydiving** etc.
- India has the potential to be among the leading nations in the world of air sports.
- It has been drafted based on the inputs received from policymakers, air sports practitioners and the public at large and will ensure the establishment of good quality **infrastructure, equipment, instructors and services**.
- It aims to provide by providing a **safe, affordable, accessible, enjoyable and sustainable air sports ecosystem in India**.

◎ ANALYSIS

What does the policy aims to provide?

- The key objectives of the NASP 2022 include promoting an air sports culture in the country enabling the adoption of international good practices in safety.
- Under the new policy, there will be a **four-tier governance structure** for air sports in India namely;
 - ▶ The Air Sports Federation of India (ASFI) as the apex governing body;
 - ▶ National associations for individual air sports or a set of air sports,
 - ▶ Regional or State and Union Territory level units of the national of air sports association;
 - ▶ And District-level air sports associations.
- This will generate Indian sportspersons in global air sports events; and to promote design, development and manufacturing of air sports equipment in India in line with the **Atmanirbhar Bharat Abhiyaan**.

The Fédération Aéronautique Internationale (FAI)

- It headquartered in **Lausanne, Switzerland** is the **Global governing body** for air sports.
- It sets **standards, organises events** and has **over 100 members**.
- It was founded on 14 October 1905.
- **Facts:** The FAI suspended Russia and Belarus due to the **2022 Russian invasion of Ukraine**, as a result of which pilots from Russia and Belarus will not be able to compete in any FAI-sanctioned event in the **13 FAI air sports disciplines** including paragliding, hang gliding and paramotoring.

Why India should promote Air sports?

- **Geographic advantage:** India has the potential to be among the leading nations in the world of air sports.
 - ▶ It has a large geographical expanse, diverse topography, and fair-weather conditions.
- **Using Demographic Dividend:** It has a large population, especially the youth.
 - ▶ It has a growing culture for adventure sports and aviation mostly for youth in our country will like to take part in such sports.
- **Generating employment:** We can leverage the energy of our youth below the age of 35 which accounts for 70% of India population.
 - ▶ It will provide employment opportunities for youth and can generate approx. 1 lakh job annually.
- **Increase Tourism:** It will serve to attract air sports enthusiasts from all over the world.
 - ▶ Especially those who live in areas where harsh winters prevent them from participation.
- **Economic Benefits:** presently in India, air sports has a small market of 80-100 crores and 5000 participants across the country.
 - ▶ Policy will make rules regarding these activities and thus help people to participate more to explore new things.
 - ▶ This will generate revenue for our country and

can reach up to 8000 crore Industry, according to the government.

What are the challenges for India?

- **Lack of adequate safety measures:** Inability to enforce safety standards by an air sports association might lead to penal action by the ASFI against such association, including financial penalties, suspension or dismissal.
- **Funding issues:** the air sports will not be funded by the government directly and its Long term funding will come from corporate investors, sponsors, membership fees, events and media rights.
- **Making quality sporting goods:** The sporting goods used under the policy has been proposed to be made indigenously.
 - ▶ Whereas till now India is not equipped with best quality sporting goods and it can impact safety measures of sportspersons.

What can be done to make this policy effective?

- **School based training to students:** Government should promote air sports in school curriculum for better skill management from early stage in children and youth.

- **Promote air sports as a Career option:** Youth in our country who are unemployed should be made aware of benefits in this industry.
 - ▶ This can be done by providing benefits and allowances in air sports services as coaches, instructors and guides.
- **Training and Infrastructure:** adequate Training is essential before promoting any such activity in the country as it may lead to accidental damages to human life.
- **Developing Air sports zone:** Creating air spaces free from aeroplanes and any air traffic for this activity will help in the forward direction.

◎ CONCLUSION

There is need to leverage the energy of Indian youth which accounts for 70 % of India's population which is larger than the total population of Europe and three times that of USA. Hence we have an opportunity to make use of this policy for betterment of our country's image globally and harness the potential of India to be a global leader in air sports in future.

GREEN GOLD AND THE TRIBAL RIGHTS

CONTEXT

Tribal residents of 50 villages in Chhattisgarh's have decided to file an FIR against the officials.

- As the official had seized Tendu leaves collected by tribals and they wanted to sell on their own instead of to the government.

◎ BACKGROUND

- Forest produce** is defined under **section 2(4)** of the Indian Forest Act, 1927.
- Minor Forest Produce (MFP) is a subset of forest produce and got a definition only in 2007 when the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, was enacted.
- Section 2(i)** of the act defines a **Minor Forest Produce (MFP)** as all non-timber forest produce of plant origin and includes bamboo, brushwood, stumps, canes, Tusser, cocoon, honey, waxes, Lac, tendu/kendu leaves, medicinal plants and herbs, roots, tuber and the like ones.
- As per the Report of the National Committee on Forest Rights Act, submitted in 2010, in all, about **100 million people** living in and around forests derive at least part of their livelihood from collection and marketing of non-timber forest products or MFPs.
- This includes, in addition to **Tribals, Dalits, other forest dwellers** whom have not been officially declared as tribals, women, and other marginalised groups.

◎ ANALYSIS

What is the issue?

- Tendu** is also called '**green gold**' and is a prominent minor forest produce in India.
- In 1964, the trade in **tendu leaves was nationalised** in then-undivided Madhya Pradesh. Until then, people were free to sell tendu leaves in markets across the country.
- Under the state provision the **state forest department** collects tendu leaves, allows their **transportation and sells them to traders**.
- Now, the villagers have claimed that the **Gram Sabhas of 13 villages** had passed a proposal to collect and sell tendu leaves on their own.
- Despite this, the forest range officer seized 250 sacks of tendu leaves.
- Even the documents related to the confiscation of these goods have not been handed over to the tribals.
- The villagers, who are enraged by the development, have consequently decided to lodge an FIR against the officer.



What does the Forest Rights Act 2006 says?

- FRA enacted in 2006 recognises the rights of forest-dwelling tribal communities and other traditional forest dwellers to forest resources on which these communities were dependent for a variety of needs, including **livelihood, habitation and other socio-cultural needs**.
- It recognizes and vests the forest rights and occupation in Forest land in Forest Dwelling **Scheduled Tribes (FDST) and Other Traditional Forest Dwellers (OTFD)** who have been residing in such forests for generations.
- It strengthens the conservation regime of the forests while ensuring livelihood and food security of the FDST and OTFD.
- **The Gram Sabha** is the authority to initiate the process for determining the nature and extent of Individual Forest Rights (IFR) or Community Forest Rights (CFR) or both that may be given to FDST and OTFD.

Role of Gram Sabha

Under the Forest Rights Act, 2006, the Gram Sabha has been assigned the following roles for implementing the provisions of the Act:

- To initiate the process for determining the nature and extent of individual or community forest rights.
- To recommend developmental projects managed by the Government which involve felling of trees not exceeding seventy-five trees per hectare.
- To consider the resettlement or alternative packages prepared by the State Governments.
- To protect the wild life, forest, biodiversity, adjoining catchments areas, water sources, other ecological sensitive areas, preserve the habitat of forest dwelling Scheduled Tribes to preserve their culture.
- To pass a resolution against any higher authority by giving a notice of not less than sixty days to the State Level Monitoring Committee.

Rights Under the Forest Rights Act:

- **Title rights:** It gives FDST and OTFD the right to ownership to land farmed by tribals or forest dwellers subject to a maximum of 4 hectares.
- Ownership is only for land that is actually being cultivated by the concerned family and no new lands will be granted.
- **Use rights:** The rights of the dwellers extend to extracting Minor Forest Produce, grazing areas etc.

- **Relief and development rights:** To rehabilitate in case of illegal eviction or forced displacement and to basic amenities, subject to restrictions for forest protection.
- **Forest management rights:** It includes the right to protect, regenerate or conserve or manage any community forest resource which they have been traditionally protecting and conserving for sustainable use.

Why there is a need for reforms?

- **Administrative Apathy: As tribals are not a big vote bank in most states, governments find it convenient to subvert FRA or not bother about it at all in favour of monetary gains.**
- The forest bureaucracy has misinterpreted the FRA as an instrument to regularise encroachment instead of a welfare measure for tribals.
- Corporates fear they may lose the cheap access to valuable natural resources.
- **Dilution of Act:**
 - ▶ Certain sections of environmentalists raise the concern that FRA bends more in the favour of individual rights, giving lesser scope for community rights.
- **Institutional Roadblock:**
 - ▶ Rough maps of community and individual claims are prepared by Gram Sabha which at times often lack technical knowhow and suffers from educational incapacity.
- **Misuse of FRA:**
 - ▶ The FRA has been misused and communities have rushed to file claims. Politicians across party lines have interpreted FRA as a land distribution exercise and have fixed targets for districts.

◎ WAY FORWARD

- It is important that the governments at Central and State levels are strengthened with human and financial resources to help implement FRA on a mission mode.
- Besides leveraging modern technology to map and monitor the implementation of FRA, the forest bureaucracy must also be reformed to serve as service providers to gram sabhas.
- **Gender inclusive initiatives** must be taken so that the work opportunities should be equal for both men and women with adequate protection of their rights.

© CONCLUSION

This activity has a strong linkage to women's financial empowerment as most of the Minor Forest Produces are collected and used/sold by women. Minor Forest Produce sector has the potential to create about

10 million workdays annually in the country. Hence governments and officials should leave exploiting innocent tribals and should be paid for their resources, as MFP are not just a source for their earning but attached to their culture and social activities.

INDIA'S PATENT REGIME

CONTEXT:

The U.S. Trade Representative (USTR) said in a report released last month that India was one of the most challenging major economies as far as IP protection and enforcement is concerned.

- It has decided to retain India on its Priority Watch List along with six other countries —Argentina, Chile, China, Indonesia, Russia and Venezuela.

◎ BACKGROUND

- Right granted for an invention-** A patent is an exclusive set of rights granted for an invention, which may be a product or process that provides a new way of doing something or offers a new technical solution to a problem. Indian patents are governed by the Indian Patent Act of 1970.
- Patent protection of pharmaceuticals** -The original Indian Patents Act did not grant patent protection to pharmaceutical products to ensure that medicines were available at a low price. Patent protection of pharmaceuticals were reintroduced after the 2005 amendment to comply with TRIPS
- Recent situation-** The USTR report highlighted a range of issues in domains ranging from copyright and piracy to trademark counterfeiting and trade secrets, saying that India “remained one of the world’s most challenging major economies with respect to protection and enforcement of IP.”

◎ ANALYSIS:

What is a patent?

- A patent is an exclusive set of rights granted for an invention, which may be a product or process that provides a new way of doing something or offers a new technical solutions to a problems.
- What is India’s Patent regime?**
- India’s Patent regime is governed by **India’s Patent Act 1970**, with the provision:
 - It should be novel
 - It should have inventive steps or it must be non-obvious
 - It should be capable of Industrial application
 - It should not attract the provisions of **sections 3 and 4 of the Patents Act of 1970**

What does the Section 3 of Indian patent act deal with?

- Section 3** deals with non-compliance as established under the Act.
- Section 3 (d)** does not exclude “the discovery of

a new type of known object that is not effective in developing the known success of that object.

- or the mere discovery of any new space or new use of a known object
- or just the use of a known process, machine or resources unless that known process results in a new product
- or uses at least one new reactant “to qualify for protection under copyright law.
- Section 3 (d)** prohibits what is known as “ever-greening” of patents.
- It is a business, legal, business, and technical strategy to extend / extend the patent granted to an expired site, in order to save profits for them, by taking new patents.
- According to the Committee report, **Section 3 (d)** allows generic competition by authorizing only novels and real inventions.
- A minor decision in the **Novartis vs. case. Union of India (2013)**, proposed the validity of section 3 (d).

Judicial Intervention (Novartis v/s Union of India):

- In this case, pharmaceutical company Novartis filed a patent for the latter type of cancer drug Gleevec, which was challenged in the Supreme Court.
- The Supreme Court concluded that Gleevec was a beta crystalline type of known drug, i.e., imatinib mesylate, and did not differ significantly in properties in terms of efficacy. Therefore, it would not be patented in India.
- The decision also states that Article 3 is in line with the TRIPS agreement and the Doha Declaration.
- The Doha Declaration on the TRIPS and Public Health Accord was adopted in November 2021, by WTO member states.
- The declaration recognizes the “complexity of public health problems affecting developing and developing countries” and emphasizes the need for TRIPS to be part of a broader national and international initiative to address these issues.
- The declaration states that the agreement “can be interpreted and should be interpreted and

implemented in a way that supports the right of WTO members to protect public health and, in particular, to promote universal access to medicines.”

- These conditions include the right to issue compulsory licenses and the reasons for such licenses,
 - ▶ the right to decide what “includes the national emergency or other emergency, including public health problems”
 - ▶ and the right to establish its own state of intellectual property rights.
- Compulsory licenses may be requested by the state in the public interest, which allows companies without a patent to produce a patented product without permission.

What are the major issues related to the Indian patent act?

- Copyright issues have continued to be “a major concern in India,” highlighting the threat of copyright withdrawal, lack of speculative copyright and narrow licensing process as “issues affecting companies in various sectors”.
- The issue of narrow licensing procedures was also raised in terms of Section 3 (d) of the Copyright Act of India, with the report that in the field of pharmaceutical industry, the United States “continued to monitor the limited patent title in the Category. 3 (d) of the Copyright Act of India and its implications.

Issues addressed by Parliamentary committee on Patents:

- The threat of copyright infringement, lack of consideration of patent infringement and narrow patent conditions as problems “companies with various sectors were largely addressed by the Parliamentary Standing Committee which took over ‘the intellectual property rights review in India.
- The Parliamentary Standing Committee noted that section 3 (d) “acts as a protection against the irrational establishment in line with the flexibility provided for in the TRIPS agreement.
- According to the Committee report, Section 3 (d) allows for “generic competition by authorizing only novels and real inventions.”

Issues with TRIPS agreement:

- The process of policy development and production has a few steps, and involves a complex approach to intellectual property.

- Different types of IP rights apply to different processes and no single type of IP can unlock the policy generating policy.
- Performance technologies may be protected as a trade secret, and data from clinical trials evaluating the safety and effectiveness of the policy may be protected by copyright.
- Manufacturing vaccines will require designing a vaccine production process, obtaining the necessary equipment, building production facilities, and conducting clinical trials to obtain regulated approvals.
- The production process itself has different steps, some of which may be incorporated into other organizations.
- Thus, copyright withdrawal alone does not give producers the ability to start producing a product immediately.

◎ WAY FORWARD:

- Common issues related to IPR were largely addressed by the Parliamentary Standing Committee which began ‘reviewing intellectual property rights in India.
- Voluntary Licensing: The state of compulsory licensing is compulsory and may have the advantage of forcing a number of pharmaceutical companies to grant licenses voluntarily.
- India has historically played a leading role in stabilizing TRIPS flexibility as a compulsory license to the WTO. In this global and national health emergency, the government must enforce compulsory licenses in a mysterious way.
- The government’s efforts to strengthen National IPR policy, IP court of appeals, electronic governance and commitment to compliance with the WIP TRIPS agreement by letter and air will help advance India’s global vision.
- An effective and equitable system of inventory can help all countries recognize the potential of intellectual property as a catalyst for economic development and social and cultural well-being.
- It is important to ensure effective, affordable, and equitable access to all anti-epidemic tools, and therefore, the need to create a framework for their distribution.
- The report also highlights the positive steps India has taken in the past, such as joining the World Intellectual Property Organization (WIPO) Performances and Phonograms Treaty and the WIPO Copyright Treaty, jointly known as the WIPO Internet Treaties, 2018 and Nice . Agreement for 2019.

INDIA'S STAND IN ENVIRONMENT PERFORMANCE INDEX 2022

CONTEXT

With an overall score of 18.9, India ranks at the bottom of all countries in the 2022 EPI with low scores across a range of critical issues.

◎ ABOUT

- **Environment Performance Index 2022**, which lists countries based on the environmental performance of their policies.
- India is ranked **180th among 180 countries** in the Environmental Performance Index (**EPI**) **2022**.
- It has been published by the **Yale Center for Environmental Law and Policy** and the **Center for International Earth Science Information Network**, Columbia University.
- This is a method of quantifying and **numerically marking** the environmental performance of a **state's policies**.
- It uses **40 performance indicators across 11 issue categories**, on climate change performance, environmental health, and ecosystem vitality.
- The overall EPI rankings indicate which countries are best addressing the environmental challenges that every nation faces.
- It provides a way to spot problems, set targets, track trends, understand outcomes, and identify best policy practices.

Significance of the Index

- The EPI offers a scorecard that highlights leaders and laggards in environmental performance and provides practical guidance for countries that aspire to move toward a sustainable future.
- The indicators provide a gauge at a national scale of how close countries are to established environmental policy targets.
- The Index provides a data-driven summary of the state of sustainability around the world.
- Data and fact-based analysis can also help government officials refine their policy agendas, facilitate communications with key stakeholders, and maximise the return on environmental investments.
- The EPI also offers a powerful policy tool in support of efforts to meet the targets of the UN Sustainable Development Goals and to move society toward a sustainable future.

◎ ANALYSIS

What does EPI stated for India?

- With an overall score of **18.9**, India ranks at the bottom of all countries in the 2022 EPI with low scores across a range of critical issues.
- Deteriorating **air quality and rapidly rising greenhouse gas emissions** pose especially urgent challenges.
- Most low-scoring countries such as **Myanmar and Vietnam** are those that have prioritised economic growth over sustainability, or those that are struggling with civil unrest and other crises.
- According to EPI, India also ranks poorly in terms of rule of law, corruption control, and government performance.
- "India slips to the bottom of the rankings for the first time, with increasingly hazardous air quality and quickly rising greenhouse gas emissions," the report stated.
- With a score of 27.6, India was ranked 168th in EPI-2020.

What are the concerns recognized for India?

- **On India's 180th ranking**, the Government of India has responded by saying that some indicators are extrapolated and based on surmises and unscientific methods.
- Some concerns raised by India are:
 - ▶ **Projected GHG Emissions Levels in 2050** the new indicator in the Climate Policy Objective is calculated using the average rate of change in emissions over the previous ten years rather than modelling that takes into account a longer time period.
 - ▶ It also included the level of renewable energy capacity and usage, extra carbon sinks, energy efficiency and so on in the individual nations.
 - ▶ China and India are projected to be the largest and second-largest emitters of greenhouse gases in 2050, despite recently promising to curb emission growth rates.

- The weight of indicators in which the country performed well has been lowered as compared to earlier performances.

What is India's stand on its performance?

- The Environment Ministry questioned the ranking stating that some of the indicators it used were "**extrapolated**" and based on "**surmises and unscientific methods**".
- Indicators such as **agricultural biodiversity, soil health, food loss and waste** are not included, despite the fact that these are critical for developing nations with significant agrarian populations.
- In the current calculation, historical data on the lowest emission trajectory was ignored.
- The country's forests and wetlands are important carbon sinks that have been overlooked while calculating EPI 2022's predicted GHG emissions trajectory up to 2050.

- The equity principle is given relatively small weightage in the form of statistics such as GHG emission per capita and GHG emission intensity trend.

◎ CONCLUSION

- India ranked lowest on the parameters set by the Environmental Performance Index. India must make information about its efforts and achievements easily available and verifiable. This will aid in providing a more accurate picture of the country's environmental performance. The country must conduct an internal review to determine whether its environmental performance is adequate. It must assess if it is adopting sufficiently appropriate steps and implementing policies aimed at promoting human well-being and lowering environmental impact.

SCIENCE BEHIND THE NEW CANCER CURE

CONTEXT

Twelve patients in the United States were completely cured of rectal cancer without requiring any surgery or chemotherapy found in a medical trial.

◎ ABOUT THE TRIAL

- The study was done by doctors from the **Memorial Sloan Kettering Cancer Centre in New York**, and its results have been published in the New England Journal of Medicine.
- The trial **used a monoclonal antibody called dostarlimab** every three weeks for six months for the treatment of a particular kind of stage **two or three rectal cancer**.
- The participants of the trial had a **mismatch repair deficient stage II or III** rectal adenocarcinoma.
- All 12 patients had completed the treatment and were followed for six to 25 months after.
- No cases of progression or recurrence had been reported during the follow-up, as per the study.
- The response shown in colon cancer in this study is **100 per cent** it needs to be validated involving a larger cohort of patients.
- Cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths in 2020, or nearly one in six deaths.

What is Rectal Cancer?

- Rectal cancer is cancer that begins in the rectum. The rectum is the last several inches of the **large intestine**.
- It starts at the end of the final segment of your colon and ends when it reaches the short, narrow passage leading to the anus.
- While rectal cancer's treatments are quite different. This is mainly because the rectum sits in a tight space, barely separated from other organs and structures.
- The tight space can make surgery to remove rectal cancer complex.
- Signs and symptoms of rectal cancer include:
 - ▶ A change in bowel habits, such as diarrhea, constipation or more-frequent bowel movements
 - ▶ Dark maroon or bright red blood in stool
 - ▶ Narrow stool
 - ▶ A feeling that your bowel doesn't empty completely
 - ▶ Abdominal pain
 - ▶ Unexplained weight loss

- ▶ Weakness or fatigue

What is PD1 Therapy?

- PD1 is a type of protein that regulates certain functions of the immune system, including by suppressing **T cell activity**, and PD1 blockade therapy looks to release the T cells from this suppression.
- T-cells are the **White Blood cells (WBCs)**. They are critical for developing immunity towards common pathogens or antigens.
- Although the therapy is usually used for cancers that have metastasised (spread to locations other than where the cancer formed), it is now recommended for all mismatch repair deficient cancers as they result in quicker improvement and lesser toxicity as compared to traditional chemo and radiotherapy.
- Eliminating other treatments can improve a patient's quality of life by preserving fertility, sexual health, and bladder and bowel functions.

What are monoclonal antibodies?

- Monoclonal antibodies are laboratory-produced molecules engineered to serve as substitute antibodies that can restore, enhance, modify or mimic the immune system's attack on cells that aren't wanted, such as cancer cells.

Key terms related to the Trial

● Mismatch repair deficient cancer

- ▶ It is most common among colorectal, gastrointestinal, and endometrial cancers.
- ▶ Patients suffering from this condition **lack the genes to correct typos in the DNA** that occur naturally while cells make copies.
- ▶ The anomalies in the DNA result in cancerous growths in patients.

● Dostarlimab

- ▶ Dostarlimab belongs to a group of monoclonal antibodies called "**checkpoint inhibitors**".
- ▶ These are synthetic antibodies which block the proteins that cancer cells produce to prevent the body's immune system from attacking them.

- ▶ It is a game of blocking the blocker, so that the native immune system which has recognised the cancer threat is not impeded in launching its attack on the malignant cells.
- ▶ This form of immunotherapy does not attack the cancer cells directly but unshackles the body's own able defenders.
- **Checkpoint inhibitors**
 - ▶ They are named according to the type of protein they block — **CTLA-4 inhibitors, PD-1 inhibitors and PD-L1 inhibitors.**
 - ▶ Dostarlimab is an inhibitor of the **Programmed Cell Death Protein (PD-1).**
 - ▶ PD1 is a type of protein that regulates certain functions of the immune system, including by suppressing T cell activity, and PD1 blockade therapy looks to release the T cells from this suppression.
- **T cells**
 - ▶ They are also called T lymphocytes
 - ▶ They are a type of white blood cell.
 - ▶ T cells are part of the immune system and develop from stem cells in the bone marrow.
 - ▶ They help protect the body from infection and may help fight cancer

- ▶ Larger phase III studies are required to confirm the results and see whether this is a temporary phenomenon or can the cancer return aggressively.
- **Most cases do not need surgeries:** These patients can be well managed with chemotherapy and radiotherapy as well.
 - ▶ Around **10 to 15% of cancer patients** actually do not need surgeries.
- **High cost:** Immunotherapies are expensive and unaffordable for most people in India.
 - ▶ An immunotherapy treatment can cost around Rs 4 lakh per month, with patients needing the treatment for six months to a year.
- **Use in initial stages in India:** Precision medicine, such as using particular immunotherapy drugs for particular types of cancers, is still at a nascent stage in India

Measures to be taken for early detection of diseases

- **Cancer registry network:** A network of cancer registries have to be set up towards this end.
 - ▶ To start with hospital based cancer registries can be initiated by the regional cancer centres and they can later on be **expanded to population based cancer registries.**
- **Strategy matrix:** Cancer Control is an area in which we need participation from all sectors of the society.
 - ▶ There are areas in which various agencies can put in their contributions. Keeping targets will help to monitor the programme as well as to identify the usefulness of the strategies.
- **Role of international agencies:** The World Health Organization has promoted National Cancer Control Programmes and India is one of the few countries that has actively taken up this initiative.

◎ ANALYSIS

Why is treating Cancer so difficult?

- The difficulty in treating cancer is that it's not a single disease, but rather a group of diseases.
- In total there are more than 100 different types of cancers.
- Cancers are also caused by different things, so no one strategy can prevent them.
- Likewise, different cancers respond to different treatments, so no one treatment can cure them all.
- Treating cancer is further complicated due to the lifestyle and attitude of patients, the different physiology of people and the rate their bodies will metabolise drugs, the blood supply to the tumour affecting the drug getting into the tumour, the tumour physiology and the fact that the tumour can continue to change.

What does the new discovery bring for India?

- **Responsibility for more researches:** The trial is a phase II one and conducted in a small set of patients with a short follow-up.

◎ CONCLUSION

Where resources are limited, diagnosis and treatment services should initially target all patients presenting with **curable cancers, such as breast, cervical and oral cancers** that can be detected early. They could also include childhood acute lymphatic leukaemia, which has a high potential for cure although it cannot be detected early. Above all, services need to be provided in an equitable and sustainable manner. As and when more resources become available, the programme can be extended to include other curable cancers as well as cancers for which treatment can prolong survival considerably.

HOW DO INTEREST RATES AFFECT INFLATION IN THE ECONOMY?

CONTEXT

Recent Economic turmoil faced by all the countries due the highest inflation in last four decades is undeniable.

- The central banks of the United States and UK are hiking interest rates in order to contain inflation.

◎ BACKGROUND

- The term inflation appeared in **America in the mid-nineteenth** century related to something that happens **to a paper currency**.
- By the nineteenth century, economists categorised **three separate factors** that cause a **rise or fall in the price of goods**:
 - A change in the **value** or production costs of the good,
 - A change in the **price of money** which then was usually a fluctuation in the commodity price and
 - **Currency depreciation** resulting from an increased supply of currency.
- Following the proliferation of private banknote currency printed during the **American Civil War**, the term "inflation" started to appear as a **direct reference to the currency depreciation**.
- At that time, the term inflation referred to the devaluation of the currency, and not to a rise in the price of goods.
- Today, however, it is understood as referring to a **sustained increase in the general price** level.

◎ ANALYSIS

What is Inflation?

- **Inflation** is a general increase in the prices of goods and services in an economy.
- When the general price level rises, each unit of currency buys fewer goods and services; consequently, inflation corresponds to a reduction in the **purchasing power of money**.

How do we measure it?

- The common measure of inflation is the **inflation rate**, the annualized percentage change in a **general price index**.
 - As prices do not all increase at the same rate, the **consumer price index (CPI)** is often used for this purpose.

- The CPI is a measure that examines the **weighted average of prices of a basket** of goods and services which are of **primary consumer needs**.
- **GDP deflator** is also a measure of the price of all the goods and services included in **gross domestic product (GDP)**.
 - It is defined as its **nominal GDP** measure divided by its **real GDP** measure.
- **The Wholesale Price Index**: The WPI is another popular measure of inflation, which measures and tracks the changes in the price of goods in the stages before the retail level.
 - For example, it includes cotton prices for raw cotton, cotton yarn, cotton gray goods, and cotton clothing.

Formula of Inflation calculation:

- Per cent Inflation Rate = $(\text{Final CPI Index Value} / \text{Initial CPI Value}) \times 100$

What are the factors affecting Inflation?

- **Increase in Money Supply**: Inflation is caused by an increase in the supply of money which leads to increase in aggregate demand. The higher the growth rate of the nominal money supply, the higher is the rate of inflation.
- **Increase in Disposable Income**: When the disposable income of the people increases, it raises their demand for goods and services. Disposable income may increase with the rise in national income or reduction in taxes or reduction in the saving of the people.
- **Increase in Public Expenditure**: Government activities have been expanding much with the result that government expenditure has also been increasing at a phenomenal rate, thereby raising aggregate demand for goods and services.
- **Increase in Consumer Spending**: The demand for goods and services increases when consumer expenditure increases. Consumers may spend more due to conspicuous consumption or demonstration effect.
- **Cheap Monetary Policy**: When credit expands, it raises the money income of the borrowers which,

in turn, raises aggregate demand relative to supply, thereby leading to inflation.

- **Deficit Financing:** In order to meet its mounting expenses, the government resorts to deficit financing by borrowing from the public and even by printing more notes. This raises aggregate demand in relation to aggregate supply increasing inflation.

Steps to be taken to curb Inflation

- **By Strict Monetary Policy:** It refers to the actions of a central bank or other committees that determine the size and rate of growth of the money supply.
- **Maintaining Price stability:** This will promote maximum employment, which is determined by non-monetary factors that fluctuate over time and are therefore subject to change.
 - ▶ It also allows businesses to plan for the future since they know what to expect.
- **Quantitative Easing:** Quantitative easing (QE) is a form of unconventional monetary policy in which a central bank purchases longer-term securities from the open market in order to increase the money supply and encourage lending and investment.

- ▶ Quantitative easing usually involves a country's central bank purchasing longer-term government bonds, as well as other types of assets, such as mortgage-backed securities.

- **Demonetisation of Currency:** However, one of the monetary measures is to demonetise currency of higher denominations.
 - ▶ Such a measure is usually adopted when there is abundance of black money in the country.
- **Fiscal Measures:** Monetary policy if alone is incapable of controlling inflation it should therefore be supplemented by fiscal measures.
 - ▶ Fiscal measures are highly effective for controlling government expenditure, personal consumption expenditure, and private and public investment.

◎ CONCLUSION

Inflation is all together not only a bad omen for the Country's economy but has advantages too. It is often used by many to curb their losses and income flows to their countries. However it can be controlled by the Governmental, the Central bank and Public efforts together.

WIDENING URBAN-RURAL DIVIDE, AND NEED OF ECONOMY'S STRUCTURAL TRANSFORMATION

CONTEXT

There are some serious concerns about growing inequality or disparity between rural and urban areas in India.

Disparities in income distribution, consumption, and quality of life between the rural and urban area are known as the **rural-urban divide**. The rural-urban disparity, as measured by the ratio of urban-to-rural expenditure, has gone up from 1.63 in 1993-'94 to 2.42 in 2017-'18.

Role of rural economy

Rural areas

- As per the last census (2011) 68.84 percent of India's population (833m) live in 640867 villages.
- All the areas not covered by **Notified Area Council (NAC), Municipal Corporation, Cantonment Area** are basically rural area.

The rural-urban divide

There are glaring disparities in income distribution, consumption and quality of life between rural and urban India.

- **Income disparity:** The rural-urban divide in India is so prominent that the income of an average person in the rural parts of India is less than even half of the urban counterpart.
- **Lack of opportunities:** There is a lack of livelihood opportunities, modern amenities and services, necessary for decent living in rural areas.
- **Insufficient public healthcare infrastructure.** A majority of health infrastructure is in the private sector, which is limited to the middle classes in urban India. Rural areas are catered by government-run dispensaries which lack infrastructure and medicines.
- **Exclusion:** A majority of rural society remains excluded from India's journey of development.
- **Lack of infrastructure:** There is improper and inadequate provision of infrastructure when compared to urban areas.
- **Decline in profitability and productivity within agriculture:** The decline of India's agriculture and the rise of the urban-centric service-led economic growth has led to the widening of rural-urban disparities.

What are the challenges?

- **Social customs:** In closed rural societies, social institutions such as caste system, joint family

system and various social customs play a major role in the day-to-day life of an individual.

- ▶ **For example,** the rigid caste system does not allow a low caste person to give up his traditional work. While in urban areas, the emphasis is on individual's merit and qualification.
- **Pushing factor:** The rural area characterised by lower wages, a small size of landholdings, lack of opportunities and amenities have been a pushing factor for migration from rural area to urban area.
- **Multiple issues:** Although there is no dearth of schemes for rural development, the benefits of these schemes are not reaching the target population mainly due to
 - ▶ corruption in the disbursal of funds
 - ▶ non-transparency in financial transactions
 - ▶ wrong identification of the beneficiaries
 - ▶ lack of involvement of Gram Panchayats in planning and implementation
 - ▶ lack of political and administrative accountability

What measures are required?

- **Reforms in farm sector:** To address the longstanding economic problems of agriculture, the farm sector needs reform to raise productivity, enhance farmers' income, built market infrastructure and address declining soil fertility.
- A concomitant industrial policy that takes into account the structural relationship between agriculture-industry that also provides urban infrastructure and social sector support, particularly investments in education and health.
- Policies needs to be crafted to increase productivity simultaneously diversify the workforce to accelerate the structural transformation of the Indian economy.
- **Equitable access to quality education and healthcare.**

SECTION: B

(PRELIMS)

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WORLD DAY AGAINST CHILD LABOUR: A LOOK AT GLOBAL FIGURES

© **CONTEXT:** The World Day against Child Labour is held annually on June 12 as a day dedicated to creating awareness about the menace of child labour and human trafficking.

World Day against Child Labour:

- June 12 was officially adopted as World Day against Child Labour in 2002 by the International Labour Organisation, a United Nations body that regulated the world of work.
 - The day aims to guarantee a normal childhood to victims of child labour by providing them appropriate support for education, and medical services.
- **Theme:** The theme for World Day against Child Labour 2022 is “**Universal Social Protection to End Child Labour.**”
 - The theme is dedicated to the cause of increasing investment in social protection systems and schemes to establish solid social protection for protecting children from child labour.

■ Significance:

- The day focuses on providing dignity to the life of children affected by child labour and ensuring support for their education, medical services and other needs.
- It is observed with campaigns, events and programs also addressing the issue of negative mental and physical concerns that children who are pushed into child labour endure across the world.

Child labour:

- Child labour is work carried out to the detriment and endangerment of a child, in violation of international law and national legislation.
- It either **deprives children of schooling or requires them to assume the dual burden of schooling and work.**
- Child labour to be eliminated is a subset of children in employment. It includes:
 - All “**unconditional**” **worst forms of child labour**, such as slavery or practices similar to slavery, the use of a child for prostitution or for illicit activities;
 - **Work done by children under the minimum legal age** for that type of work, as defined by national legislation in accordance with international standards.
- The worst forms of child labour involves children being enslaved, separated from their families, exposed to serious hazards and illnesses and/or left to fend for themselves on the streets of large cities – often at a very early age.
- Whether or not particular forms of “work” can be called “child labour” depends on the child’s age, the type and hours of work performed, the conditions under which it is performed and the objectives pursued by individual countries.
- **Convention No. 138** provides that the minimum age for admission to employment shall not be less than the age of completion of compulsory schooling.
- The **ILO’s adoption of Convention No. 182 in 1999** consolidated the global consensus on child labour elimination.
 - It provided much-needed focus without abandoning the overarching goal, expressed in Convention No. 138, of the effective abolition of child labour.

- Moreover, the concept of the worst forms helps set priorities and can be used as an entry point in tackling the mainstream child labour problem.



Child labour situation around the world:

- Around the world, 160 million children, some as little as five, are engaged in child labour, despite alleviation efforts of the last two decades.
- Africa ranks highest among regions both in the percentage of children in child labour — one-fifth — and the absolute number of children in child labour — 72 million, states the UN.
- Africa and the Asia and the Pacific regions together account for almost nine out of every ten children in child labour worldwide.
- The remaining child labour population is divided among the Americas (11 million), Europe and Central Asia (6 million), and the Arab States (1 million).
- In terms of incidence, 5% of children are in child labour in the Americas, 4% in Europe and Central Asia, and 3% in the Arab States, according to the UN.

HOW TO DECARBONISE DEFENCE: INTERNATIONAL MILITARY COUNCIL SHARES GUIDELINES

© **CONTEXT:** International Military Council on Climate and Security (IMCCS) recently released a report on the need to decarbonise defence agencies across the world.

Key highlights of the report:

- Only a handful of the 30 members of the North Atlantic Treaty Organization (NATO) share information on the carbon footprint from their defence activities
- The world's defences are dominated by the use of fossil fuels, which serve as a reliable and efficient means to operate the forces across the world.
 - But military fuel consumption does not only pose a problem in terms of operations but also involves high expenses and dependence on external suppliers.
- The Russian army attack on a fuel storage facility in Odessa in southern Ukraine in April 2022, for instance, crippled the Ukrainian troops fighting the Russians near the Mikolayev front.

- The recent risks and the commitments of the United States and the European Union to become carbon neutral by 2050 and the recent conflict have compelled the western international organisations and the European Union (EU) to accelerate the process of military decarbonisation.

Key recommendations:

- **High technology innovations** such as use of bio-fuel, could help to shift them to low-carbon alternatives thus evolving the modernisation process.
- To bring **hybrid vehicles or alternative fuel technologies** to reduce reliance on fossil energy.
- Concerted move in such a direction to **combat climate change by phasing out use of fossil energy** can also work as weapon against Russia in its war against the Ukraine.

NATO's stand

- In **2010, NATO acknowledged the link between climate change and security** for the first time in its report Strategic Concept.
 - The Allied forces have prioritised adaptation to the drawbacks of climate change on various aspects of the military such as its installations, equipment, force readiness and operations.
- NATO strongly believes that decarbonisation can be achieved by initially introducing **innovations and sustainable solutions** in sectors of operating buildings, facilities, short and medium distance vehicles, equipment and energy consumption.
- NATO is **not a first responder to climate change**. This role is played by other international bodies, in particular those who can set limits on CO2 emissions.
 - NATO **instead seeks to become "the leading international organization when it comes to understanding and adapting to the impact of climate change on security**.

International Military Council on Climate and Security (IMCCS):

- IMCCS is a **group of senior military leaders**, security experts, and security institutions across the globe dedicated to anticipating, analysing, and **addressing the security risks of a changing climate**.
- The **launch** of the IMCCS was announced at **The Hague, Netherlands**, in **2019** in response to a growing demand from military professionals for sharing information and best practices on addressing the security and military dimensions of climate change.
- **Governance:** The IMCCS is administered by the Center for Climate and Security (CCS), an institute of the Council on Strategic Risks, and consists of three main entities.
 - **IMCCS Leadership:** The IMCCS Leadership is a multi-organizational consortium made up of an Expert Group, Executive Committee and Secretariat who govern the activities of the IMCCS.
 - **IMCCS:** The IMCCS is a Council of senior military leaders and security experts from the governmental and nongovernmental sectors, consisting of the full Council and an IMCCS Expert Group.
 - **IMCCS Institutional Partners:** IMCCS Institutional Partners are security organizations, networks and donors that formally affiliate with the IMCCS.

THAILAND BECOMES FIRST ASIAN NATION TO MAKE MARIJUANA LEGAL FOR MEDICAL USE

◎ CONTEXT:

The decision by the Food and Drug Administration to remove all of the plant from the category of narcotic drugs makes Thailand the first nation in Asia to decriminalise marijuana for medical and industrial use.

About:

- Thailand made it legal to cultivate and possess marijuana.
- Thailand's government has warned that those eager to light up for fun that smoking in public could still be considered a nuisance, subject to a potential 3-month jail sentence and 25,000 baht (\$780) fine.

Cannabis in parts

Legal parts can be made into the following:



Food



Cosmetics



Herbal Products



Medicines

Seeds

These parts are illegal and can only be used by licensed growers for planting with special permission.

Flowers

These parts are illegal and can only be used for medical uses and research purposes.

Leaves

These parts are legal if used for medical purposes, research, and ingredients for food, cosmetics and herbal products.

Branches

These parts are legal if used for medical purposes, research, and ingredients for food, cosmetics and herbal products.

Roots

These parts are legal if used for medical purposes, research, and ingredients for food, cosmetics and herbal products.

Stems

Legal for research purposes, industrial production, and components for textiles, vehicle parts, and paper.



- **Marijuana extracts, such as oil, remain illegal** if they contain more than 0.2% of tetrahydrocannabinol, or THC, the chemical that makes people high.

Which countries permit the use of cannabis?

- In 2018, Canada became the first G20 country to legalise the recreational use of cannabis.
- Meanwhile, Uruguay legalised the recreational use of marijuana for all adults above the age of 18 in 2013.
- Here, you can purchase weed at pharmacies.
- Several European countries — including the Netherlands, Spain and the Czech Republic — permit smoking marijuana in public places.
- In the US, consumption of marijuana is legal in at least 20 states, including Washington DC, New York and California.

Cannabis:

- Cannabis is a generic term used to denote the several psychoactive preparations of the plant **Cannabis sativa**.
- The major psychoactive constituent in cannabis is **delta-9 tetrahydrocannabinol (THC)**.
- Compounds which are structurally similar to THC are referred to as cannabinoids.

CiSS APPLICATION TO HELP REHABILITATION OF CHILDREN IN STREET SITUATIONS

- ◎ **CONTEXT:** **The National Commission for the Protection of Child Rights (NCPCR) has launched the “CiSS application” to help Street Children.**

About CiSS application

- The **CiSS application** is used for receiving data of children in street situations from all the states and union territories, tracking their rescue and rehabilitation process.
- The initiative is taken under the direction of **the Supreme Court of India**.
- The program embodies **Article 51 (A)** of the Constitution of India, as it provides a platform to the public and organizations catering to the welfare of the children to report any child in need of assistance.
- It also provides a platform for professionals and organizations to provide any help that they can to children in need.
- Help can be provided in the form of open shelters, counselling services, medical services, sponsorships, de-addiction services, education services, legal/paralegal services, volunteering etc.
- CiSS application has been launched under the **Baal Swaraj portal**.
 - The Baal Swaraj portal was launched by the **National Commission for the Protection of Child Rights (NCPCR)** for online tracking and monitoring of children in need of care and protection.
- Bal Swaraj portal follows a 6 steps framework for children’s rehabilitation-
 - Collection of the child’s details through the portal
 - Prepare a **Social Investigating Report (SIR)** i.e. investigating the child’s background under the supervision of the **District Child Protection Unit (DCPU)**

- Formulating an **Individual Care Plan (ICP)** for the child
- Release an order of the **Child Welfare Committee (CWC)** based on the reports.
- Allocating the schemes and benefits
- Prepare a Checklist for the evaluation of the progress.

About National Commission for Protection of Child Rights (NCPCR)

- The National Commission for Protection of Child Rights (NCPCR) is a **statutory body** established under the Commission for Protection of Child Rights (CPCR) Act, 2005.
- It is under the administrative control of the **Ministry of Women and Child Development**.
- **Under the act, a Child is defined as a person in the 0 to 18 years age group.**
- It aims to ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in harmony with the Child Rights perspective as enshrined in the Constitution of India and also the UN Convention on the Rights of the Child.

Composition

- This commission has a chairperson and six members of which at least two should be women.
- All of them are appointed by the Central Government for 3 years.
- The maximum age to serve in commission is 65 years for Chairman and 60 years for members.
- The salary and allowances payable to, and other terms and conditions of service of, the Chairperson and Members, shall be such as may be prescribed by the Central Government.

WHAT IS POST OFFICE RECURRING DEPOSIT SCHEME?

- ◎ **CONTEXT:** **Regarding the deposit schemes for small savings in India, there are nine savings schemes that India Post offers in which recurring deposit or RD accounts offer an interest rate of 7.2 per cent per annum.**

Background

- India Post operates across a network of more than 1.5 lakh post offices in the country provides a variety of banking services.
- Among the nine savings schemes that India Post offers, recurring deposit or RD accounts offer an interest rate of **2 per cent per annum**.
- Small savings instruments help the citizens to achieve their financial goals over a particular time period.
- Interest rates on these post office saving schemes move in line with the government's interest rates **on small savings schemes, which are revised on a quarterly basis**.

- ◎ **ABOUT** **What is recurring Deposit (RD)?**

- A recurring deposit is a type **of term-deposit**.
- Unlike a fixed deposit account, a recurring deposit account allows the investor to park a fixed amount of funds at regular intervals; for instance, every month.

How to open a recurring account (RD)?

- A post office recurring deposit (RD) account can be opened by cash as well as cheque. In case of cheque, the date of deposit is the date of presentation of cheque, according to India Post.
- Any number of RD accounts can be opened in a post office.
- Account can also be opened in the name of a minor. A minor of **10 years and above age** can open and operate the account.

Benefits

- The maturity period of post office RD account is 5 years. However, it can be continued for another five years on a year-to-year basis.
- It can be opened with a minimum of **Rs 10 per month** or any amount in **multiples of Rs 5**.
- There is **no maximum limit on investment in post office** recurring deposit (RD).
- One withdrawal up to **50 per cent of the balance** is allowed after one year.
- The monthly deposits should be credited on any day of the month.

Disadvantage

- The withdrawal amount should be repaid in one lump-sum along with interest at the prescribed rate at any time during the currency of the account.
- Non-payment of a monthly instalment leads to a default.
- If in any RD account, there is monthly default amount, the depositor has to first pay the defaulted monthly deposit with default fee and then pay the current month deposit, according to India Post.

Small savings schemes in India

- **The small savings instruments include**
 - ▶ Public Provident Fund Account (PPF)
 - ▶ Sukanya Samriddhi Scheme
 - ▶ Senior Citizen Savings Scheme
 - ▶ Post Office Savings Account
 - ▶ 5-Year Post Office Recurring Deposit Account (RD)
 - ▶ National Savings Certificates (NSC)
- They are the **major source of household savings** in India.
- The small savings schemes basket can be classified under three categories. They are;
 - ▶ **Postal deposits:** Post Office Savings Account(SB), National Savings Recurring Deposit Account(RD), National Savings Time Deposit Account(TD) etc.
 - ▶ **Savings certificates:** National Savings Certificates (VIIIth Issue), Kisan Vikas Patra (KVP) etc.
 - ▶ **Social security schemes:** Public Provident Fund (PPF), Senior Citizens 'Savings Scheme (SCSS) etc.
- **Interest rates are reviewed every quarter** by the Government for these schemes

RHINO REINTRODUCTION SUCCESS IN ASSAM

- © **CONTEXT:** Recently, the latest census (14th Assam rhino estimation) revealed that the Manas National Park rhinos have higher life expectancy but need translocation support.

About the 14th Assam rhino estimation

- The rhino census in the Manas Park was carried out in all three ranges: **Bhuyanpara, Bansbari and Panbari** comprising 71 estimation blocks.
- The current rhino population in the park was estimated at 40.
- The park's rhinos have a male-female sex ratio of 1:1.
- The number of calves born in the wild reflects the availability of welfare factors to foster rhinos in Manas National Park.
- **Methodology: Total count or Direct count method**
 - A total count is generally used when a single species is targeted to be counted in a well-defined, specific area.
 - This method assumes the detection probability to be one, which means that each and every animal has a 100% chance of being seen during the counting.

Limitations of this method

- The limitations of this method include undercounting as the assumption of a detection probability of 1 is unrealistic especially if the population closure cannot be established satisfactorily within a small area of 10-20 sq. km.
- Total count requires high visibility to observe the animals from far off, which is not possible in case of "shy, cryptic animals".
- The level of precision cannot be measured in total counts either.

About Greater One-Horned Rhino

- There are three species of rhino in Asia-
 - ▶ Greater one-horned (Rhinoceros unicornis)
 - ▶ Javan
 - ▶ Sumatran
- World Rhino Day is celebrated on September 22 every year.
- The five rhino range nations are India, Bhutan, Nepal, Indonesia and Malaysia.
- They have signed 'The New Delhi Declaration on Asian Rhinos 2019' for the conservation and protection of the species.
- **IUCN Red list-**
 - ▶ Javan and Sumatran Rhino are critically endangered
 - ▶ Greater one-horned (or Indian) rhino is vulnerable
- **CITES-**
 - ▶ All three listed under **Appendix I**
- **Wildlife Protection Act, 1972-**
 - ▶ Greater one-horned rhino is listed under the Schedule I of the Act.

CHELONOIDIS PHANTASTICUS

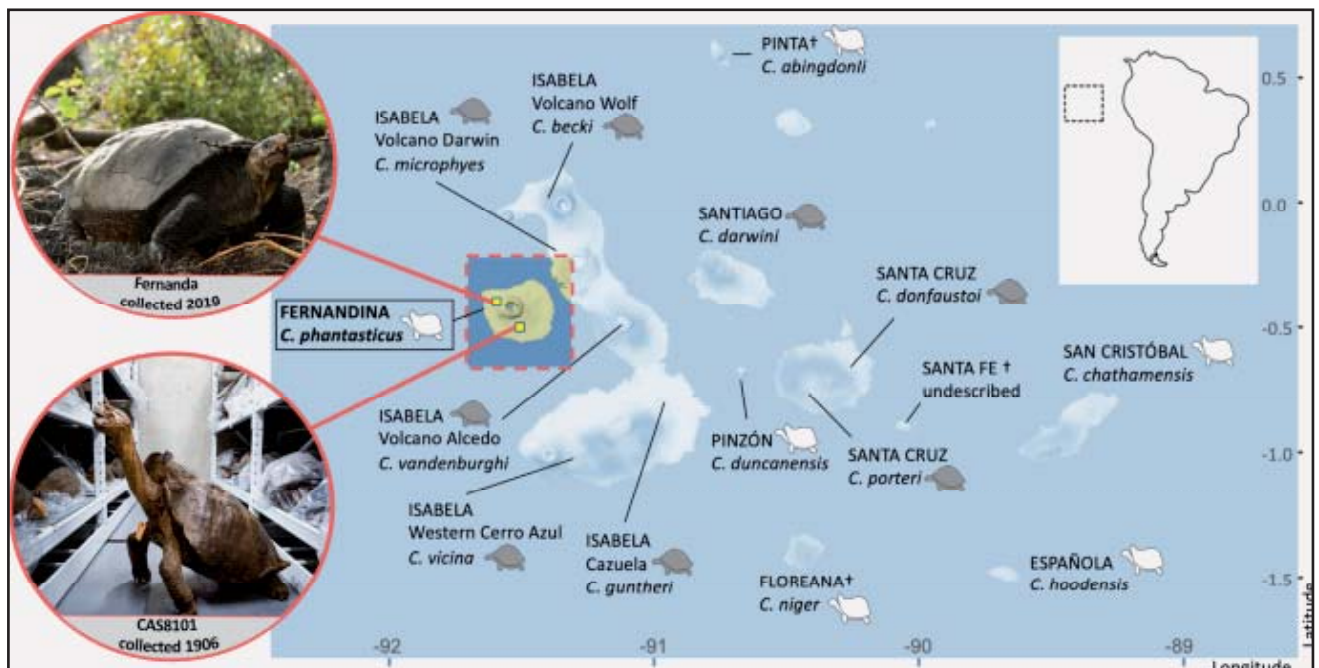
◎ **CONTEXT:** Species of turtle named Fernanda after her Fernandina Island thought extinct 100 years ago rediscovered recently.

What is Chelonoidis Phantasticus?

- It belongs to *Chelonoidis phantasticus*.
- *Chelonoidis phantasticus* means “fantastic giant tortoise”.
- It is commonly called Fernandina Island, Galápagos Giant Tortoise.
 - It has been named Fernanda after the Fernandina Island where it was discovered.
- The species was so far known only from a single individual, collected in 1906.
- It has now been recently discovered again in 2019.
- These tortoises can't swim from one island to another. But they can be carried from one Galápagos island to another during major storms. There are also historical records of seafarers moving the tortoises between islands.

Habitat and Distribution

- *Chelonoidis phantasticus* is a saddle backed tortoise adapted for browsing on higher vegetation such as *Opuntia* trees.
- Fernandina habitat is largely dry xeric brushland at lower elevations, but much of that habitat has been destroyed by extensive recent lava flows.
- The small area of remaining higher-quality habitat is mesic and at higher elevations.



IUCN Status

- *Chelonoidis phantasticus* is listed as Critically Endangered.

What is Fernandina Island?

- Fernandina Island is an active volcano that stands alone on the western periphery of the Galápagos Archipelago.

- It is reputed to be the largest pristine island on Earth.
- Fernandina Island is the third largest, and youngest, island of the Galápagos Islands, as well as the furthest west.

About Galapagos Islands

- The Galapagos Islands, spread over almost 60,000 sq km, are a part of Ecuador, and are located in the Pacific Ocean around 1,000 km away from the South American continent.
- Ecuador made a part of the Galapagos a wildlife sanctuary in 1935, and the sanctuary became the Galapagos National Park in 1959.
 - ▶ In 1978, the islands became UNESCO's first World Heritage Site.
- The Galapagos Islands host a wide array of aquatic wildlife, including marine iguanas, fur seals, and waved albatrosses.

MICROPLASTICS DISCOVERED IN FRESH ANTARCTIC SNOW FOR FIRST TIME

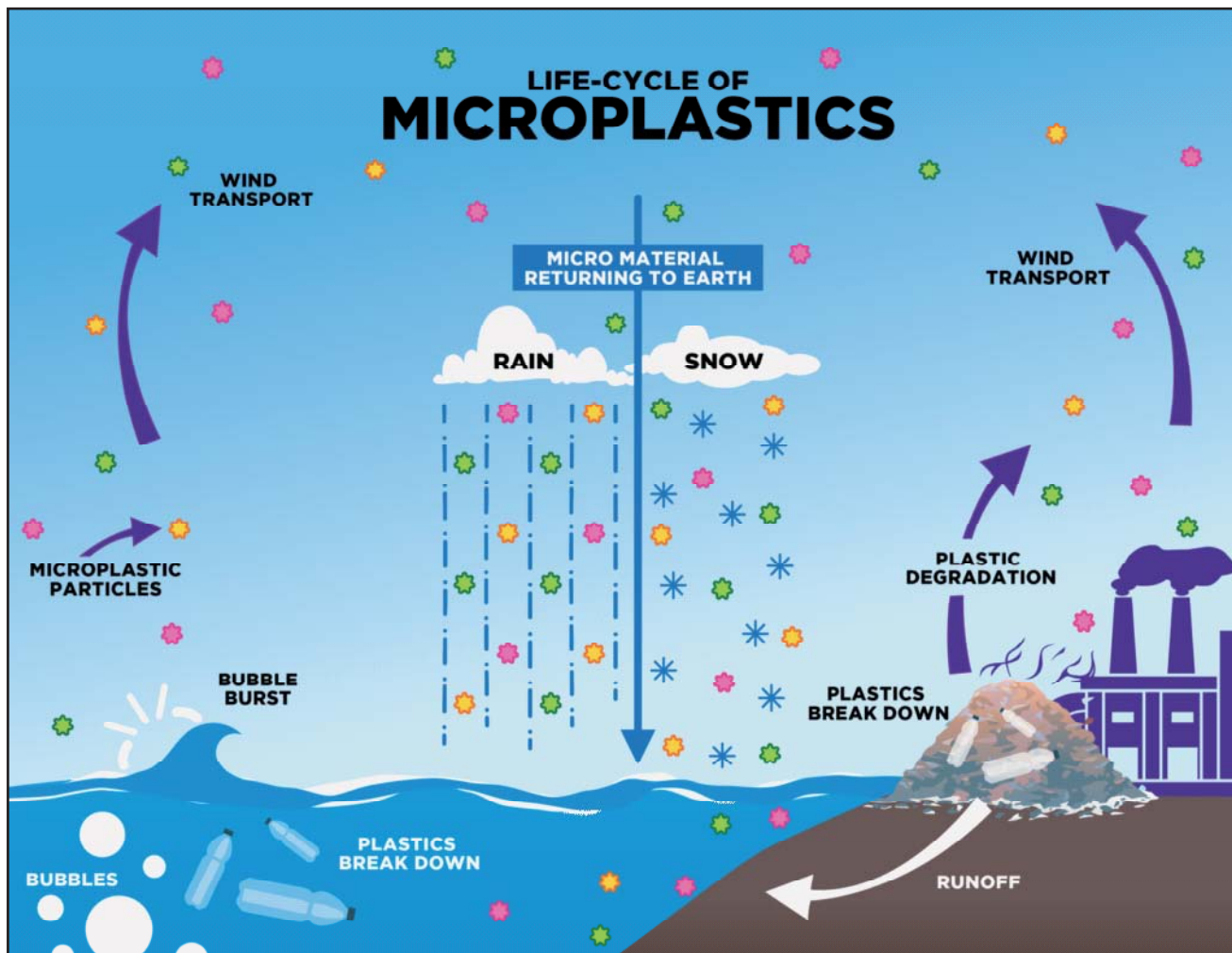
© **CONTEXT:** Microplastics have been found in freshly fallen snow in Antarctica for the first time.

About:

- Scientists have found microplastics in fresh Antarctic snow for the first time, highlighting the extent of global plastic pollution as even the most remote regions experience contamination.
- Researchers gathered samples of snow from 19 different sites in the Ross Ice Shelf in Antarctica and discovered plastic particles in all of them.
- Most of the particles were from a type of plastic called polyethylene terephthalate, which is found in clothing and water bottles.
- The study found an average of 29 particles per liter of melted snow, higher than marine concentrations previously reported from the surrounding Ross Sea and in Antarctic sea ice.
- Microplastics in the freshly fallen snow of Antarctic would only accelerate the process of melting of ice.
- There is increasing international alarm over volume and omnipresence of plastics pollution, and its impact.
- Infiltrating the most remote and otherwise pristine regions of the planet, microplastics have been discovered inside fish in the deepest recesses of the ocean and locked inside Arctic ice.

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**.

HOW CHEETAHS WENT EXTINCT IN INDIA, AND THE PLAN TO REINTRODUCE THEM INTO THE WILD

◎ CONTEXT:

The Union Environment Ministry recently said that India is set to bring cheetahs from South Africa to Madhya Pradesh's Kuno-Palpur National Park by August this year.

How cheetahs went extinct in India?

- The cheetah is the only large carnivore to have gone extinct in India, primarily due to hunting and habitat loss.
- Maharaja Ramanuj Pratap Singh Deo of Korea, Madhya Pradesh, is widely believed to have killed the last three recorded cheetahs in India in 1947.
- In 1952, the Indian government officially declared the Cheetah extinct in the country.

Cheetah in Indian History:

- The **earliest available record for cheetahs being used for hunts** in India, comes from the 12th century Sanskrit text **Manasollasa**, which was produced by the **Kalyani Chalukya ruler, Someshvara III** (reigned from 1127-1138 CE).
- According to the wildlife expert, "**Cheetah coursing**" or the use of trained cheetahs for hunting had become a highly specialized activity in the medieval period and was carried out on a large scale during the Mughal Empire.
 - **Emperor Akbar**, who reigned from 1556-1605, was particularly fond of the activity and is recorded to have collected 9,000 cheetahs in total.
 - **Abul Fazl**, Akbar's chief courtier, noted that the emperor had devised a new method to capture cheetahs. Akbar is said to have used shallow pits with an automatic trap door which would close after they fell inside.
- The capture of wild cheetahs for hunting and the difficulty to breed them in captivity was leading to a decline in the cheetah population, even before the entry of the British.
- Unlike the Mughals, the British were not very interested in coursing with the cheetahs. Rather, they preferred to hunt big game, such as tigers, bison and elephants.
 - Under the British Raj, forests were extensively cleared, so as to develop settlements and to set up indigo, tea and coffee plantations.
 - This further resulted in the loss of habitat for big cats, contributing to their decline.

What is reintroduction and why reintroduce Cheetah now?

- '**Reintroduction**' of a species means releasing it in an area where it is capable of surviving.
- Reintroductions of large carnivores have increasingly been recognised as a strategy to conserve threatened species and restore ecosystem functions.
- The **cheetah is the only large carnivore** that has been extirpated, mainly by over-hunting in India in historical times.
- India now has the **economic ability** to consider restoring its lost natural heritage for ethical as well as ecological reasons.

Re-introducing Cheetah in India:

- The project to **translocate cheetahs from Africa to India** is a long-term one being implemented by the environment ministry with the help of the Wildlife Institute of India.

- The **Supreme Court** appointed an expert panel, which **approved Kuno Palpur as the possible location for cheetah relocation.**
- In the past six months, the Madhya Pradesh forest department has relocated villagers from Kuno and has prepared an enclosure with round-the-clock surveillance for reintroduction of cheetahs.

About Cheetah:

- The cheetah, *Acinonyx jubatus*, is one of the **oldest of the big cat species**, with ancestors that can be traced back more than five million years to the Miocene era.
- The cheetah is also the **world’s fastest land mammal.**
- It is listed as **vulnerable** in **IUCN red listed species.**
- The country’s last spotted feline died in Chhattisgarh in 1947. Later, the cheetah — which is the fastest land animal — was **declared extinct in India in 1952.**
- **The Asiatic cheetah is classified as a “critically endangered”** species by the IUCN Red List, and is believed to survive only in Iran.

CHEETAH
Acinonyx jubatus

Jagluiperd **iHlosi**

Shoulder Height : 75cm **Mass : 55-59kg**

Distribution is wide but highly fragmented. Mainly in northern parts of southern Africa and East Africa. Found in a wide variety of habitats but prefers open grasslands and light woodland.

Previous classification as vermin led to dramatic reduction in numbers. Habitat loss and genetic bottlenecking are the main factors causing rapid population decline

Diurnal, active early morning and late afternoon preying on medium-sized antelope, guinea fowl, hares

Solitary, male coalitions, or female with cubs. Gestation is 90 days. Avg litter size 2-4 high cub mortality

IUCN RED LIST

NOT EVALUATED	DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
NE	DD	LC	NT	VU	EN	CR	EW	EX

WORLD OCEANS DAY: MARINE LITTER

◎ **CONTEXT:** **The United Nations designated June 8 as World Ocean Day to raise awareness about ways to safeguard the seas.**

Marine litter:

- It is any **man-made, long-lasting solid material** that humans have incorrectly disposed of and that has ended up on the beach, in estuaries, rivers, seas and ocean.

- It is made of many materials including plastic, rubber, paper, processed wood, textiles, metal, and glass, ceramic and sometimes a mix of them.
- Marine litter **threatens ecosystems**, affects public health and negatively impacts fishery and tourism industries around the globe.

Key Statistics of Marine litter:

- Plastics are the most common man-made objects sighted at sea, with an estimate of **18,000 pieces of plastic litter floating on every square kilometre of the world's oceans**.
- By 2050 there will be **12 billion tonnes of plastics** in landfills or the natural environment.
- Estimates show that 4.8-12.7 million tonnes of plastic enters the ocean every year from land-based sources.
- It's estimated that 100,000 turtles and marine mammals, such as dolphins, whales and seals, are now killed by plastic marine litter every year around the world.

India's measures

India is taking strong measures to tackle the menace of marine litter.

- In 2021, the Government of **India prohibited the manufacture, import, stocking, distribution, sale, and use of several single-use plastic items** like plastic flags, plates, cups, spoons and straws from July this year.
- The Government of India has already **banned the import of plastic waste** in the country.
- Many states and Union Territories have gone further, banning identified single-use plastic items like decorative styrofoam / thermocol plastic, cups, glasses, flags, earbuds, candy and ice-cream sticks — **all plastic which is less than 100 microns in thickness**.

UK-India Intervention:

- United Kingdom and India agreed a '**Roadmap 2030**' last year, which sets out an ambitious framework for UK and India partnerships in a wide range of science disciplines, including marine science.
- **Commonwealth Litter Programme (CLiP)**: Under the CLiP, the UK and India have launched a pilot project to understand deteriorating sea water quality due to marine litter.
 - Under CLiP, the UK has partnered with India for a longer term and channelled the efforts to facilitate the creation of a strong science evidence base to inform India's National Marine Litter Strategy.
- The UK is also leading the **Global Ocean Alliance: 30by30 initiative** which aims to protect 30 per cent of all land and water by 2030.

World Ocean Day:

- The idea of World Ocean Day was first proposed by Canada's International Centre for Ocean Development (ICOD) and the Ocean Institute of Canada (OIC) in 1992.
- But only after global collaboration between The Ocean Project and the World Ocean Network, and various other scientific institutes and organisations did the UN official recognise June 8 as World Ocean Day in 2008.

Theme:

- The theme for World Ocean Day 2022 is “Revitalisation: Collective Action for the Ocean”.
- This year’s theme focuses on how to not only stop harming the ocean but on actions that need to be taken in order to restore the oceans to their former glory through collective efforts.

Significance:

- World Ocean Day seeks to promote knowledge about the delicate systems that govern the world’s oceanic system and how they’re at increasing risk from climate change.
- From rising pollution, acidification of ocean water, rising average temperatures, to a reduction in ocean biodiversity.
- Through spreading awareness, World Ocean Day hopes to protect the Earth’s major water bodies.

CARBON BOMBS

◎ CONTEXT:

A group of environmentalists, lawyers, and activists have come together to identify and ‘defuse carbon bombs’– coal, oil and gas projects that have the potential to contribute significantly to global warming.

What are carbon bombs?

- The usage of the **term ‘carbon bombs’** picked up after an investigative project of **The Guardian** from May 2022.
- Defining the term in its report, The Guardian said that it is **“an oil or gas project that will result in at least a billion tonnes of CO2 emissions over its lifetime.”**
- In total, around 195 such projects have been identified world over, including in the US, Russia, West Asia, Australia and India.
- According to the report, they will collectively overshoot the limit of emissions that had been agreed to in the Paris Agreement of 2015.
- Examples of **Carbon Bomb projects in India** include the Carmichael Coal Project owned by the Adani Group, Gevra Coal Mines in Chhattisgarh owned by Coal India, and Rajmahal Coal Mines in eastern Jharkhand owned by Eastern Coalfields.

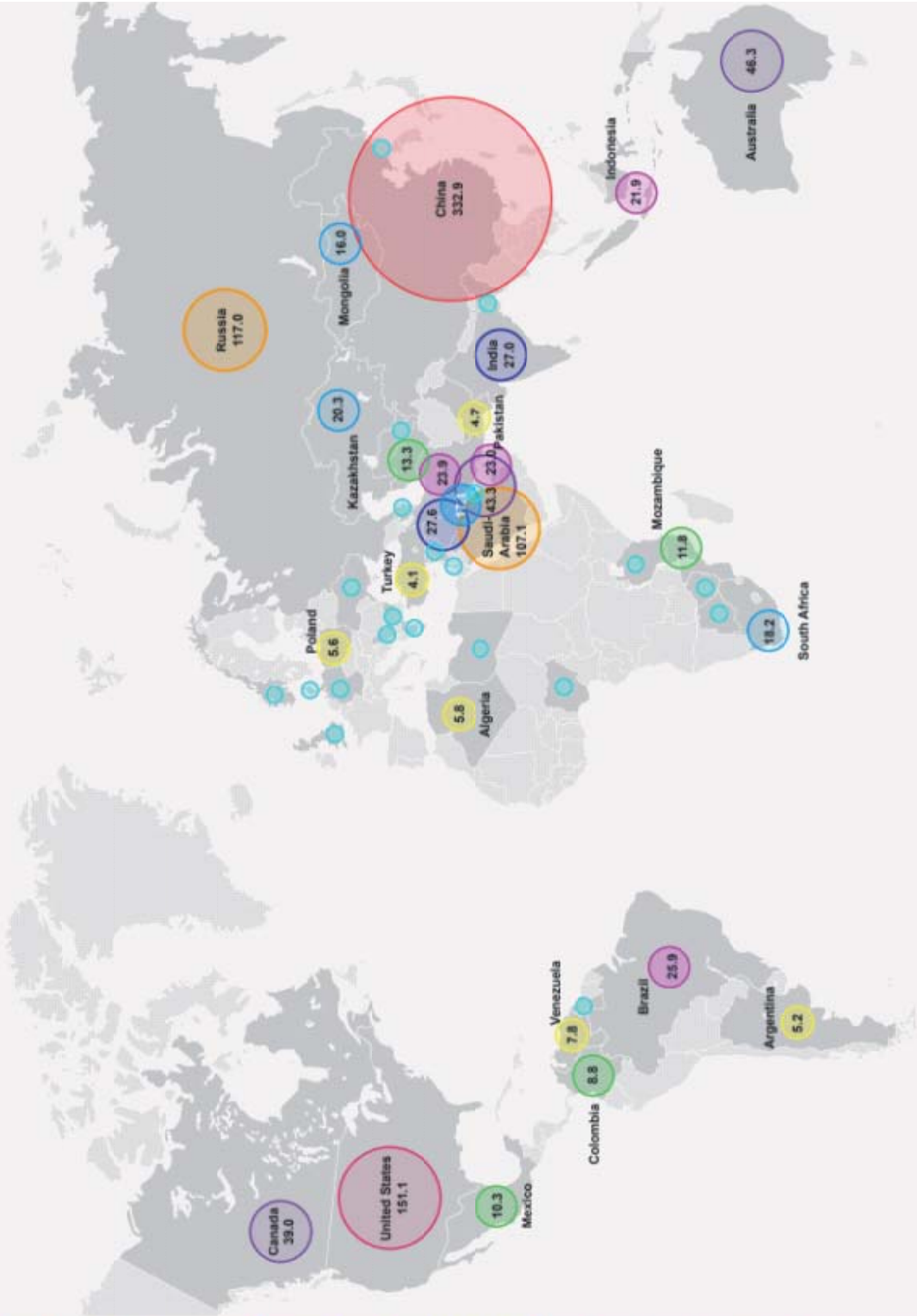
Key findings of the investigation:

- More than 60% of these carbon bomb projects are already underway, according to the investigation.
- Apart from coal, oil, and gas operations, the report highlighted the threat of methane, which “routinely leaks from gas operations and is a powerful greenhouse gas, trapping 86 times more heat than CO2 over 20 years”.
- The four countries with the biggest number of carbon bombs are China, the United States, Russia and Saudi-Arabia.
- The US is the leading source of emissions from these mega projects, with its 22 carbon bombs spanning the deep waters of the Gulf of Mexico to the foothills of the Front Range in Colorado to the Permian Basin.
 - Together they have the potential to emit 140bn tonnes of CO2, almost four times more than the entire world emits each year.

Carbon Bombs World Map

Potential CO₂-Emissions

Country	Potential Emissions
China	332.9
United States	151.1
Russian Federation	117.0
Saudi-Arabia	107.1
Australia	46.3
Qatar	43.3
Canada	39.0
Iraq	27.6
India	27.0
Brazil	25.9
Iran	23.9
United Arab Emirates	23.0
Indonesia	21.9
Kazakhstan	20.3
South Africa	18.2
Kuwait	17.1
Mongolia	16.0
Turkmenistan	13.3
Mozambique	11.8
Mexico	10.3
Colombia	8.8
Venezuela	7.8
Algeria	5.8
Poland	5.6
Argentina	5.2
Pakistan	4.7
Turkey	4.1
North Korea	3.2
Germany	3.0
Norway	2.8
Libya	2.7
Serbia	2.6
Bulgaria	2.5
Denmark	2.2
Botswana	2.2
Greece	2.2
Guyana	2.1
Ukraine	1.7
Azerbaijan	1.7
United Kingdom	1.5
Bahrain	1.4
Bangladesh	1.4
Syria	1.4
Israel	1.1
Nigeria	1.0
Tanzania	1.0
Zimbabwe	1.0



Source: Kjell Kühne, currently under submission; don't cite without author's permission

- Saudi Arabia is the second biggest potential emitter after the US, with 107bn tonnes, followed by Russia, Qatar, Iraq, Canada, China and Brazil.

What is the plan for 'defusing' carbon bombs?

- The network working towards this goal is called **Leave It In the Ground Initiative (LINGO)**.
- Its mission is to "leave fossil fuels in the ground and learn to live without them."
- It believes the root of climate change is the burning of fossil fuels, and the 100% use of renewable energy sources is the solution.
- LINGO **aims to organise ground support for protesting** such projects, challenge them through litigation, and conduct analysis and studies for the same.

TESTOSTERONE DEFICIENCY & THE SAFETY OF REPLACEMENT THERAPY

◎ CONTEXT:

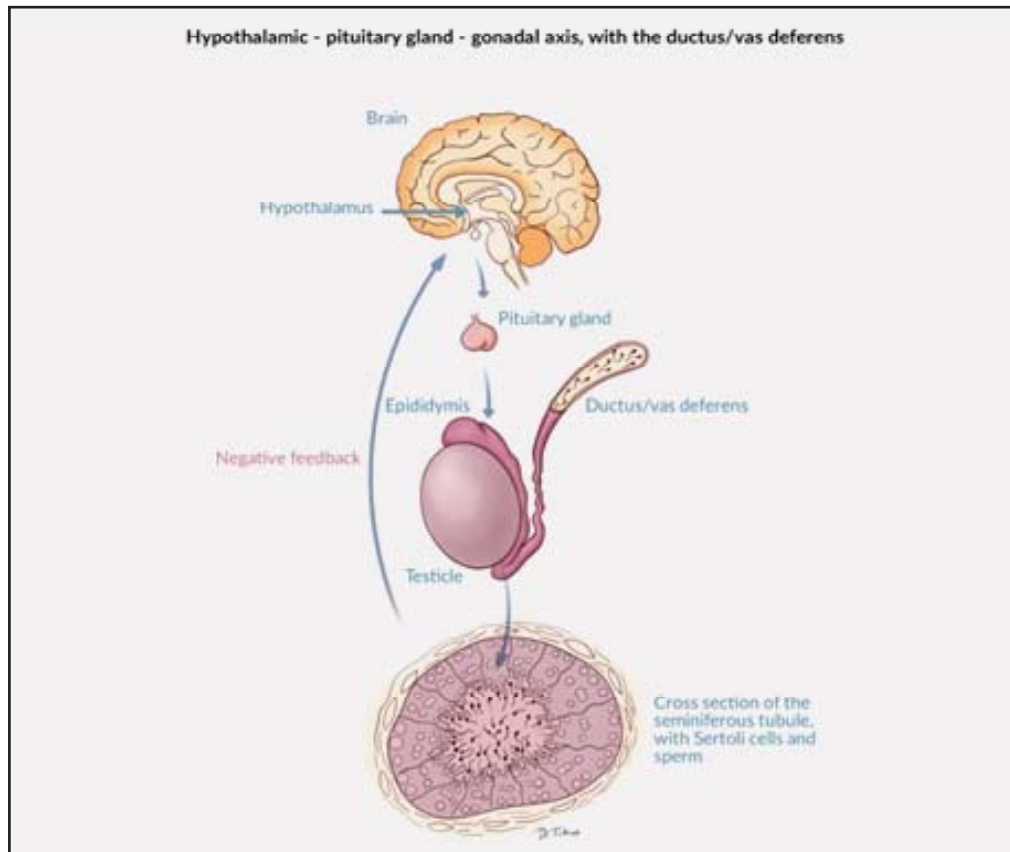
A new study found that the testosterone treatment increases the risk of cardiovascular events such as arrhythmia, heart attack, and stroke, in the short to medium terms.

Hypogonadism:

- It is a condition caused by the deficiency of the male sex hormone, testosterone.
- **Types - There are two types of hypogonadism:** primary and central.
 - **Primary hypogonadism** means that you don't have enough sex hormones in your body due to a problem in your gonads.
 - ▶ Your gonads are still receiving the message to produce hormones from your brain, but they aren't able to produce them.
 - **In central (secondary) hypogonadism**, the problem lies in your brain.
 - ▶ Your hypothalamus and pituitary gland, which control your gonads, aren't working properly.
- **Symptoms** - Sexual dysfunction, weakening of bones and muscles, and reduced quality of life.
- Risk factors include ageing (as testosterone levels decline with age), obesity and diabetes.
- Worldwide, 2% of men aged over 40 are affected, and this is growing as the population gets older.

Testosterone replacement therapy:

- Testosterone replacement therapy is the standard treatment for hypogonadism, which can cause sexual dysfunction, weakening of bones and muscles, and reduced quality of life.
- Prescribing of testosterone for hypogonadism is increasing globally, but conflicting messages about its safety may have led to many patients not receiving the treatment.
- **Impacts** - Testosterone treatment significantly reduced serum total cholesterol, HDL, and triglycerides.
- However, there were no significant differences in LDL, blood pressure, glycaemic parameters, diabetes incidence, and prostate adverse outcomes.



FAST RADIO BURST

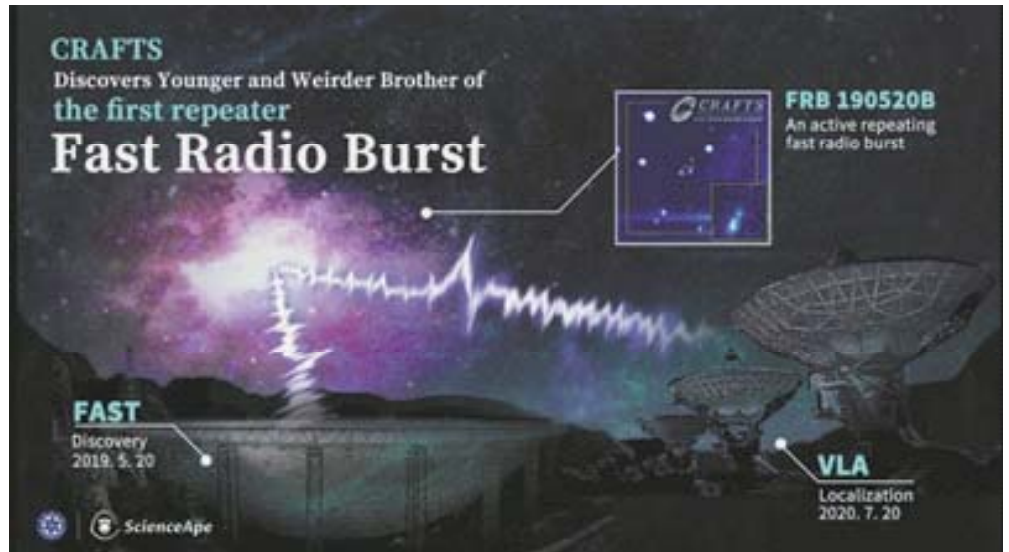
© **CONTEXT:** Astronomers have recently reported a fast radio burst (FRB) whose characteristics are different from almost all other FRBs previously detected, except one.

Fast radio burst (FRB):

- FRBs are bright flashes of light that appear for a few milliseconds and then vanish.
- The phenomenon was discovered in 2007, by graduate student David Narkevic and his supervisor Duncan Lorimer.
- The source of these highly energetic events is a mystery, but clues as to their nature are being gradually collected.
- Since 2007, 140 more were discovered until June 2021. Their origins are unknown, and their appearance is unpredictable.

Fast radio burst 20190520B:

- The new source, Fast radio burst 20190520B, was detected with the Five hundred-meter Aperture Spherical radio Telescope (FAST) in Guizhou, China in May 2019.
- It emits frequent, repeating bursts of radio waves. And between bursts, it constantly emits weaker radio waves.
- Only one FRB has been previously observed to behave this way. Called FRB 121102, which was discovered in 2012.

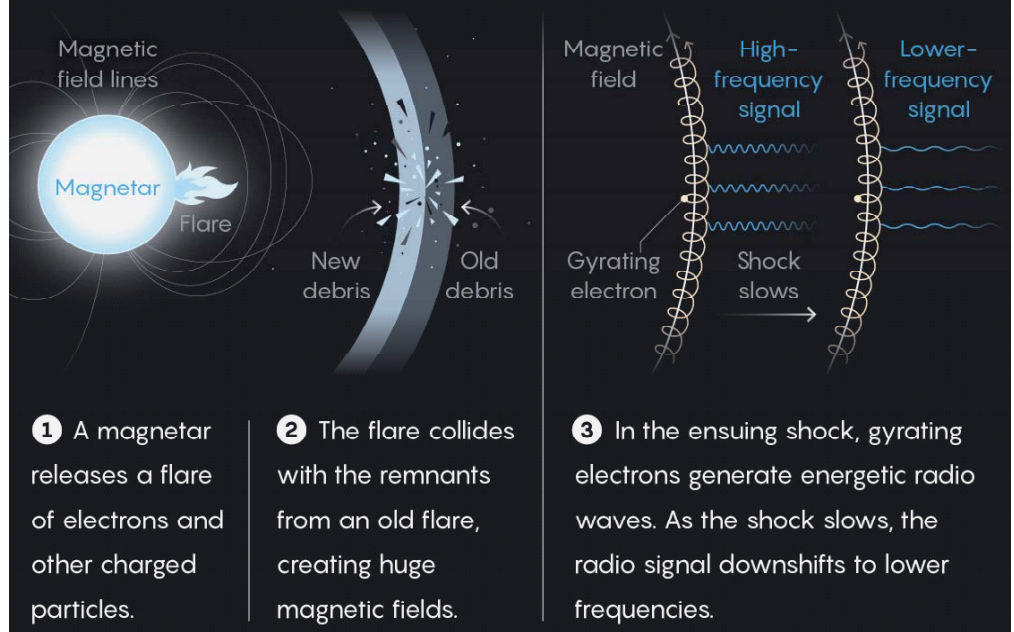


How a Burst Bursts

- Astronomers have racked up roughly 50 separate theories to explain fast radio bursts — a tally that until recently outnumbered the events.
- The ideas include a variety of wild scenarios involving evaporating black holes, snapping cosmic strings, and even the propulsion systems of alien civilizations.

How Fast Radio Bursts Work

Fast radio bursts are brief, energetic blips of radio waves. A recent theory suggests that they come from a shock wave created by a magnetar.



What is a magnetar?

- A magnetar is a neutron star, “the crushed, city-size remains of a star many times more massive than our Sun.”

- The magnetic field of such a star is very powerful, which can be over 10 trillion times stronger than a refrigerator magnet and up to a thousand times stronger than typical neutron stars.
- Neutron stars are formed when the core of a massive star undergoes gravitational collapse when it reaches the end of its life.

NEXT-GENERATION CORVETTES

◎ CONTEXT:

The Defence Acquisition Council (DAC) has given the Acceptance of Necessity (AoN) for several capital acquisition projects of the Indian defence forces.

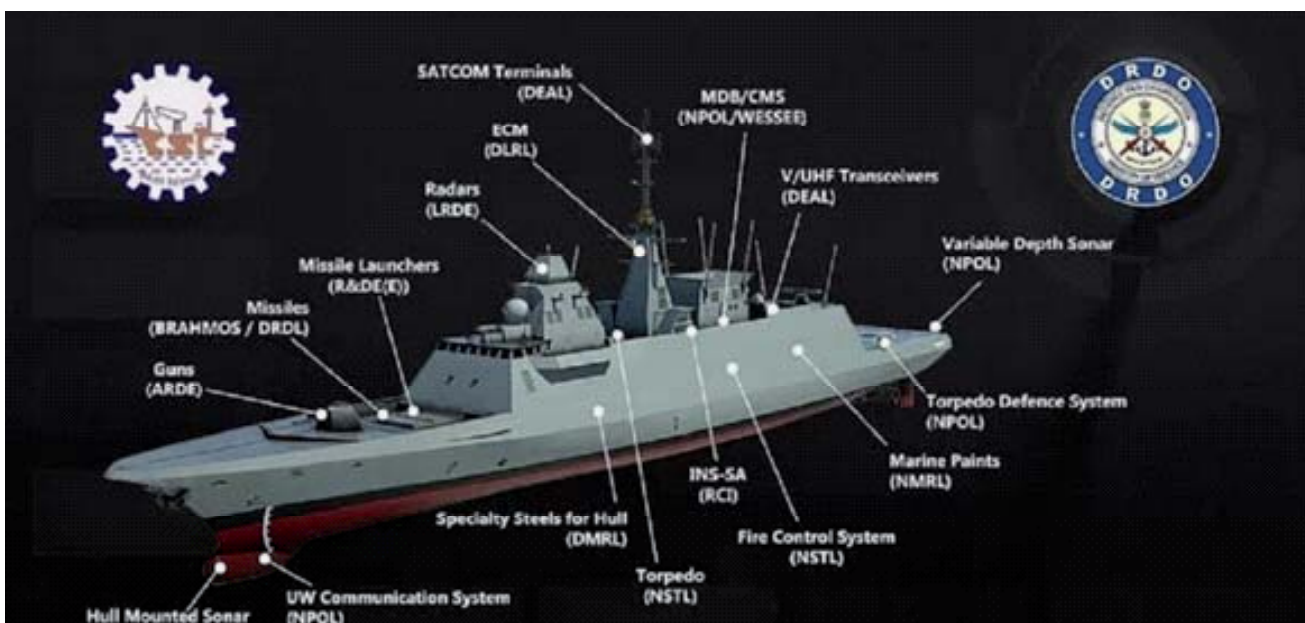
- It includes the procurement of next-generation Corvettes for the Indian Navy at an approximate cost of Rs 36,000 crore.

Corvette:

- A Corvette is the smallest class of naval ships and it falls below the warship class of a frigate.
- These are highly agile ships and are categorised as missile boats, anti-submarine ships, coastal patrol crafts and fast attack naval vessels.
- The word corvette itself is derived from French and Dutch origin.
- Corvettes date back to the 18th and the 19th century when they were extensively used in the naval warfare duels that were fought at high seas.

Corvettes that Indian Navy possess:

- The Indian Navy at present has the Kamorta Class Corvettes, which are also known as Project 28.
- These ships have an anti-submarine role and are manufactured at Garden Reach Shipbuilders and Engineers in Kolkata.
- The four Kamorta Class Corvettes that the Indian Navy possesses are named INS Kamorta, INS Kadmatt, INS Kiltan and INS Kavaratti.
- The first of these was commissioned in 2014 and the last one in 2020.



New capabilities of the new generation Corvettes:

- The next-generation Corvettes will be manufactured for various roles like **surveillance missions, escort operations, deterrence, surface action group operations, search and attack and coastal defence**.
 - These roles will be in addition to the **anti-submarine roles** being already performed by the existing Corvettes in the Navy.
- These NGCs will be built based on a **new design** developed in-house by the Indian Navy, using **state-of-the-art shipbuilding technologies** and are expected to help **promote the government's SAGAR (Security and Growth for All in the Region) initiative**.

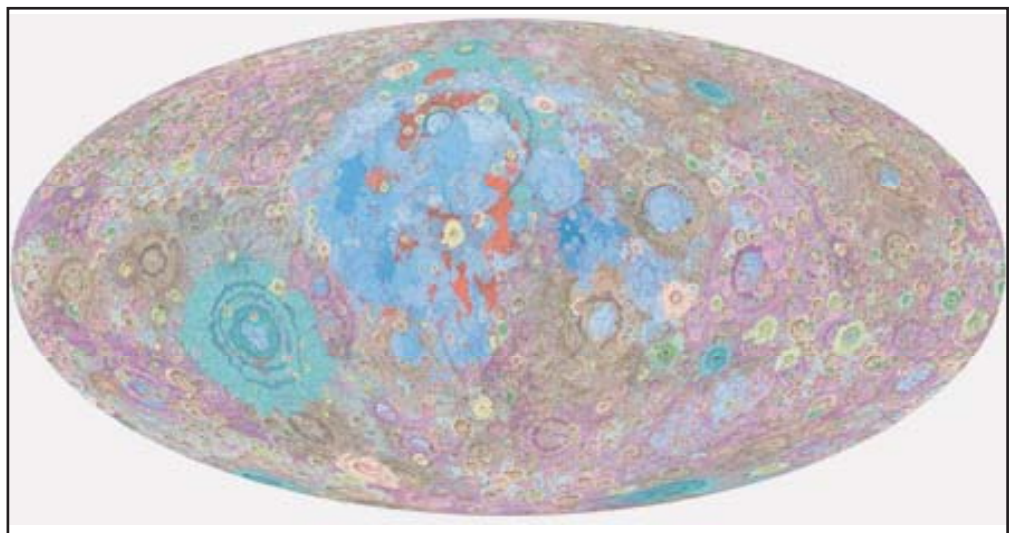
CHINA RELEASES WORLD'S 'MOST DETAILED' MAP OF MOON

◎ CONTEXT:

China has released a new geological map of the moon, which it says is the most detailed to date, registering even finer details of the lunar surface than mapped by the US in 2020.

About the new map:

- China has released a new comprehensive geologic map of the moon to a scale of 1:2500000, the most detailed to date.
- The map includes 12,341 impact craters, 81 impact basins, 17 rock types and 14 types of structures, providing abundant information about geology of the moon and its evolution.
- The new map was first published in a Chinese science journal called the Science Bulletin.
- It is expected to make a great contribution to scientific research, exploration and landing site selection on the moon.

**China and Moon:**

- In January 2019, China's Chang'e-4 probe landed on the far side of the moon, making it the first spacecraft to touch down on the part of the moon, which is never visible from earth.

- In December 2020, China's Chang'e-5 mission has returned to Earth with the cargo of rock and "soil" it collected from the lunar surface.
- China plans to send a crewed mission to the moon in the 2030.

MADRAS HC GETS ITS FIRST WOMAN MACE-BEARER

◎ CONTEXT:

In a first, the Madras High Court has appointed a woman mace bearer. Justice R.N Manjula is the first to utilise the services of the court's first woman mace bearer.

Mace Bearer:

- The Mace bearer/ Chobdar, a position traditionally held by men, **is an officer who carries the mace and walks before a dignitary signifying the dignitary's power.**
- In courts, the mace helps in **the free passage of Judges between the court halls.**
- The mace carries significance in the history of the High Court since its presence outside a judge's chamber indicates his/presence inside the chambers and its absence indicates otherwise.



■ Appointment:

- The Mace Bearer/ Chobdars are appointed through **direct recruitment by the High Court.**
- The Madras High Court, in 2021 had called for applications for filling up 40 vacancies in the post of Chobdars among others.
- The candidates are offered Pay Level- I in the band of rupees 15,700-50000.
- The appointment is done after a **common written test, a practical test and an oral test.**
- **Uniform:** While male Chobdars were expected to wear a white shirt and pant with a turban-like red cap that displays the national emblem and a band around their waist, the uniform of the woman chobdar consists of a **white salwar kameez with a dupatta, though the cap and the waist band remains the same.**

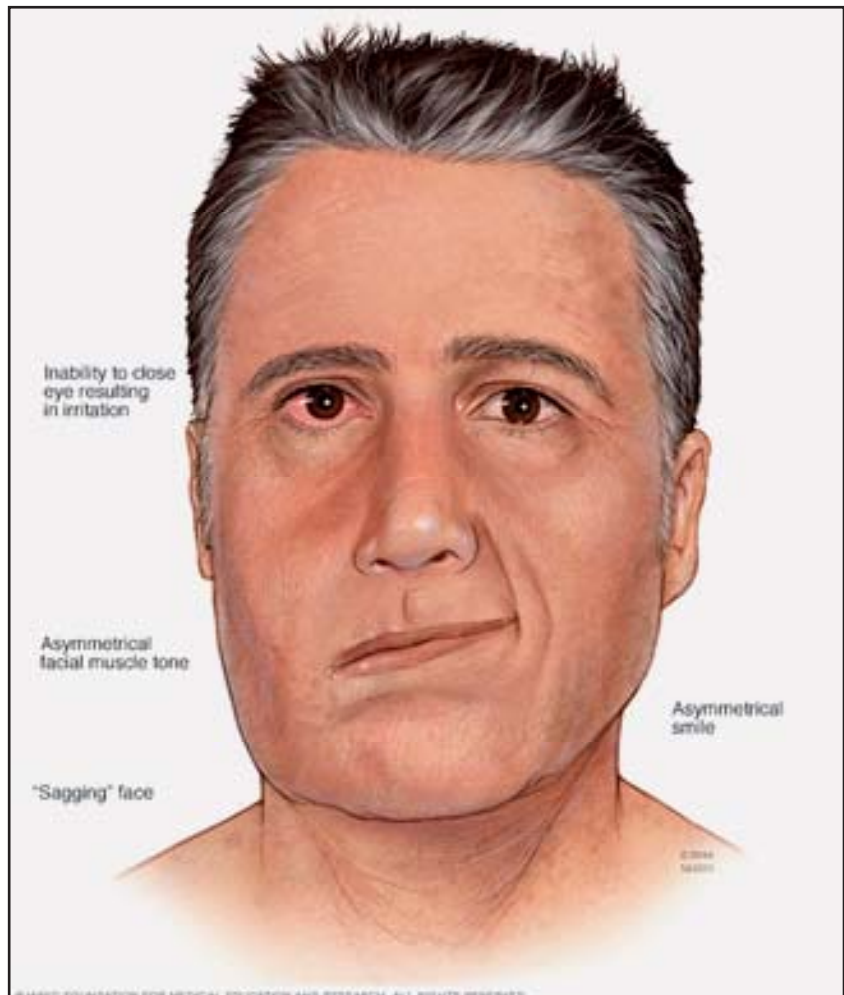
RAMSAY HUNT SYNDROME

© CONTEXT

Pop sensation Justin Bieber recently revealed that a viral disease has temporarily paralysed one side of his face.

About

- **Ramsay Hunt Syndrome:**
 - Ramsay Hunt Syndrome is neurological disease in which a **virus – Varicella Zoster** – causes inflammation of the nerves involved in facial movements.
 - When the nerves get inflamed, they lose their ability to function, leading to **temporary facial palsy or paralysis**.
 - It means that the facial muscles in the infected person cannot receive necessary signals to function properly.
 - The condition was named after **James Ramsay Hunt**, an **American neurologist** and army officer in **World War I**, who first observed and noted the condition.

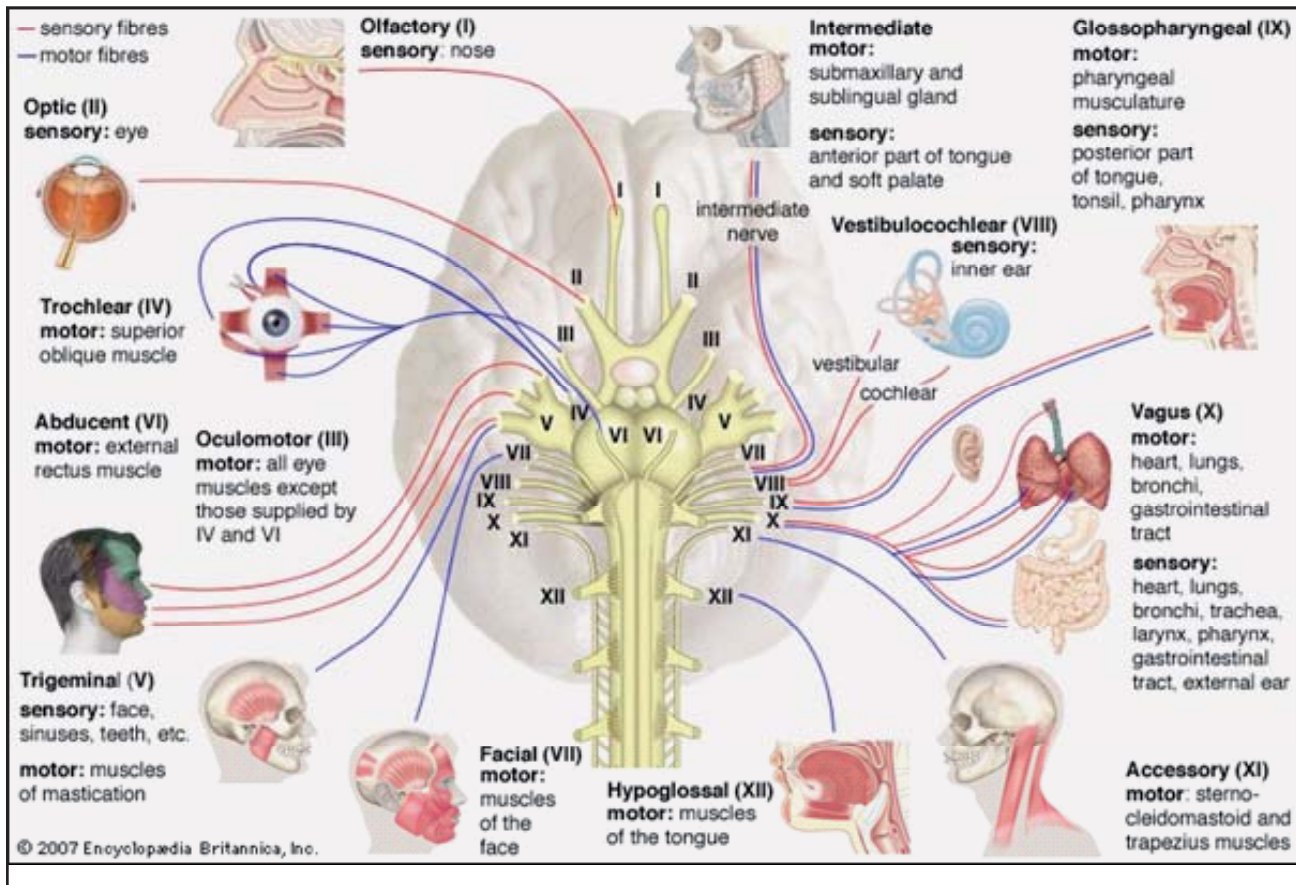


- There are **12 cranial nerves in the body**.
- Ramsay Hunt Syndrome is the viral infection impacting the 7th cranial nerve that is involved in facial movements.
- The inflammation caused by the **Varicella Zoster Virus** makes the nerve ineffective.

Symptoms of Ramsay Hunt Syndrome:

The two main signs and symptoms of Ramsay Hunt syndrome are:

- A painful red rash with fluid-filled blisters on, in and around one ear
- Facial weakness or paralysis on the same side as the affected ear



Other symptoms:

- Ear pain
- Hearing loss
- Ringing in your ears (tinnitus)
- Difficulty closing one eye
- A sensation of spinning or moving (vertigo)
- A change in taste perception or loss of taste
- Dry mouth and eyes

Virus that causes Ramsay Hunt Syndrome:

- The Varicella Zoster Virus (VZV) is the same virus that **causes chickenpox and shingles**.
- According to the US Centre for Disease Control and Prevention, this virus belongs to the **herpesvirus group and can stay in the body as a latent infection**.
- The virus can stay dormant in a person's body and can reawaken to attack the nerves.
- When reactivated due to a weakened immune system, which may be caused by anything from stress to ageing, the VZV affects the nerves near the ear on one side of the face.

Treatment:

- It is treated using anti-viral drugs, steroids and physiotherapy.
- Steroids and anti-viral drugs are the cornerstone of the treatment.

Is Ramsay Hunt Syndrome contagious?

- The disease is not contagious but can lead to chickenpox in those not vaccinated for the disease.
- Till the blister scabs fall off, the patients are advised to avoid contact with those with low immunity and the ones who have not had chickenpox, or are not vaccinated against it.

WEB 5.0

◎ CONTEXT:

Former Twitter CEO Jack Dorsey recently announced his vision for a new decentralized web platform that is being called Web 5.0.

- **It is being built with an aim to return "ownership of data and identity to individuals".**

◎ ABOUT**Web 5.0:**

- "Web5 is a Decentralized Web Platform that enables developers to leverage Decentralized Identifiers, Verifiable Credentials, and Decentralized Web Nodes to write Decentralized Web Apps, returning ownership and control over identity and data to individuals".
- Web 5.0 is **being developed by** former Twitter CEO Jack Dorsey's Bitcoin business unit, **The Block Head**.
- **Web 1.0** was the first generation of the global digital communications network.
- It is often referred to as the "read-only" Internet made of static web-pages that only allowed for passive engagement.
- **Web 2.0** was the "read and write" Internet.
- Users were now able to communicate with servers and other users leading to the creation of the social web.
- This is the World Wide Web that we use today.
- **Web 3.0** is an evolving term that is used to refer to the next generation of Internet – a "read-write-execute" web – with decentralization as its bedrock.
- **Web 5.0** is aimed at "building an extra decentralized web that puts you in control of your data and identity".
- Simply put, **Web 5.0 is Web 2.0 plus Web 3.0** that will allow users to 'own their identity' on the Internet and 'control their data'.
- Both Web 3.0 and Web 5.0 envision an Internet without threat of censorship – from governments or big tech, and without fear of significant outages.

The evolution:

- The term **Web 2.0** was coined for the first time by **Darcy DiNucci in 1999** when talking about the future of the Web.
- While Web 1.0 was the beginning of the internet where users could only engage with content in a passive way (reading or viewing), **Web 2.0 gave a path to a new way for people on the internet to engage in different activities.**

- For example, rather than simply reading a website, people could comment, give an opinion or interact with those creating content.
- Web 3.0 started when **blockchain technology** appeared, even without people, developers and companies knowing what was yet to come.
- The first time that the term Web3 was used was when the co-founder of **Ethereum**, the second largest cryptocurrency in the world, Gavin Wood talked about it in
- Compared to Web 2.0 where people were just uploading content to different centralized platforms, it is nowadays possible to earn digital things and prove ownership of these things.
- For example, non-fungible tokens are a clear example of this.
- NFTs, despite the fact that they were popularized with CryptoKitties and memes, are a clear example of how virtual things and objects can exist without the need of relying on centralized networks or parties.
- **Web5's goal** is to create a unique set of tools based on Bitcoin that would change the financial system as we know it today.
- This would not only allow investors and individuals to protect and own their data, but they would also keep control over all their interactions.
- The **pillars of Web5** include **self-owned identifiers** that enable **decentralized identity authentication and routing**, **verifiable credentials** as data formats and models for cryptographic presentation and verification of claims, and **decentralized web nodes** (data storage and message relay nodes).

The Pillars of Web5

Decentralized Identifiers

did://

Self-owned identifiers that enable decentralized identity authentication and routing.

Verifiable Credentials



Data formats and models for cryptographic presentation and verification of claims.

Decentralized Web Nodes



Data storage and message relay nodes that serve as the foundation for decentralized apps and protocols.

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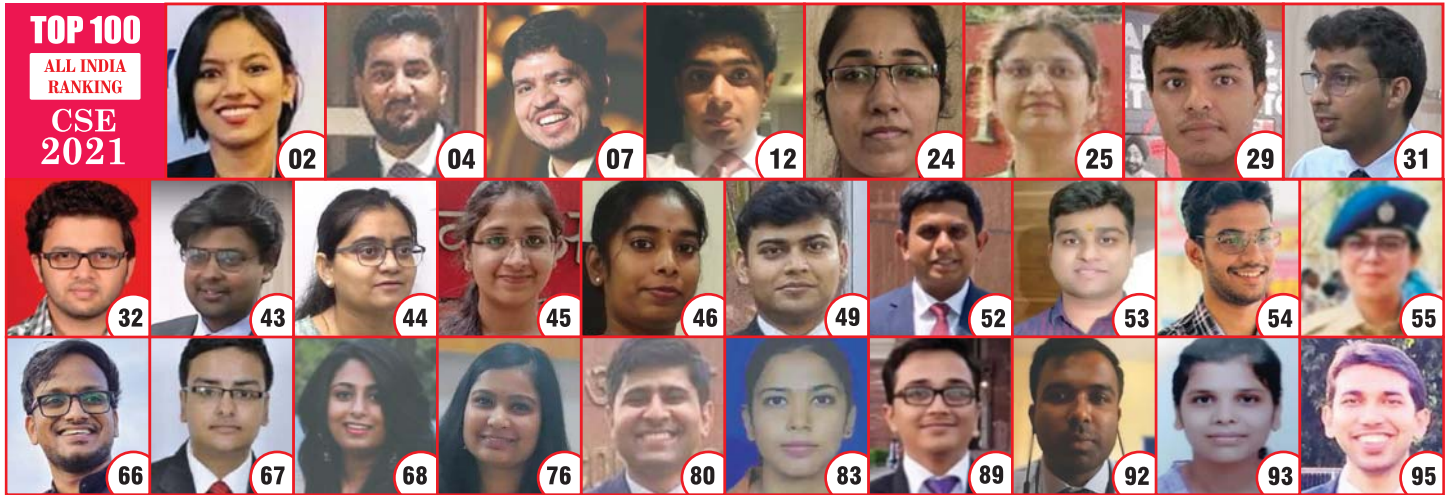
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