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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

HOW ICEBERGS 'REALLY' MELT?

CONTEXT

Icebergs are melting faster than current models describe, according to a new study at the University of Sydney. The researchers have proposed a new model to more accurately represent the melting speed of icebergs into oceans.

⊙ BACKGROUND

- Today, several million icebergs are floating on the oceans of all sizes and shapes. They are formed in the Arctic and Antarctic and, once detached, follow the currents (ocean) until they melt and disappear.

- Iceberg melt is responsible for about half the freshwater entering the ocean from the Antarctic and Greenland ice sheets.

- However, current models wrongly assume icebergs melt uniformly.

- Thus, accurately modeling how it enters is important for understanding the potential impact on ocean circulation.

⊙ ANALYSIS

Understanding the geography of Icebergs

- Icebergs are pieces of ice that formed on land and float in an ocean or lake.

- Icebergs come in all shapes and sizes, from ice-cube-sized chunks to ice islands the size of a small country.

  - The term "iceberg" refers to chunks of ice larger than 5 meters (16 feet) across.

  - Smaller icebergs are known as bergy bits and growlers. They can be especially dangerous for ships because they are harder to spot.

- The North Atlantic and the cold waters surrounding Antarctica are home to most of the icebergs on Earth.

Difference between icebergs, glaciers, and other ice trivia

- Glaciers and icebergs represent two of the most important facets of Earth's ecosystem.

- The glaciers, icebergs, ice sheets, and permanent areas of snow in the polar regions (the Arctic and Antarctica) comprise 1.7% of the total water on the planet.

- **Glaciers** are large sheets of ice that can extend for miles.

- Larger glaciers are referred to as continental glaciers, which start at a central point and spread out as they accumulate more ice and other debris like dirt and rock.

- Glaciers are located in the Arctic and Antarctica, with the largest glaciers appearing in Antarctica.

- **Icebergs**, on the other hand, are smaller pieces of ice that have broken off (or calved) from glaciers and now drift with the ocean currents.

  - Only the larger continental glaciers create icebergs, as it typically does not happen that a mountain glacier releases an iceberg into the sea.

How do they form? Where do they go?

- Icebergs calve from glaciers when **direct sunlight** or **rising air temperature** causes the glacier's surface ice to become more brittle.

- Once an iceberg has calved off a glacier it is already floating and, by the principle known since **Archimedes,** raises the oceans' volume.

Archimedes' principle and melting of sea ice and ocean water level

- Archimedes' principle is used to understand why there's no change in water level when the ice that is floating in the water melts.

- The principle states that a body immersed in a fluid is subjected to an upwards force equal to the weight of the displaced fluid.

GlobalWarmingTruth.jpg
46 KB JPG

checkmate climate cucks

> ➤ **For example**, a ship that is launched sinks into the ocean until the weight of the water it displaces is just equal to its own weight. As the ship is loaded, it sinks deeper, displacing more water, and so the magnitude of the buoyant force continuously matches the weight of the ship and its cargo.

- **Application**: The applications of Archimedes' principle are:
  - ➤ Archimedes' principle is used in designing ships and submarines
  - ➤ Lactometers based on Archimedes' principle is used to measure the purity of a sample of milk

◉ Icebergs travel with ocean currents, sometimes smashing up against the shore or getting caught in shallow waters.

◉ When an iceberg reaches warm waters, the new climate attacks it from all sides.

◉ On the iceberg surface, warm air melts snow and ice into pools called melt ponds that can trickle through the iceberg and widen cracks.

◉ At the same time, warm water laps at the iceberg edges, melting the ice and causing chunks of ice to break off.

◉ On the underside, warmer waters melt the iceberg from the bottom up.

◉ **Impacts:** Icebergs have two main impacts on climate
  - ➤ Iceberg production affects the mass balance of the parent ice sheets
  - ➤ melting icebergs influence both ocean structure and global sea level

What were the assumptions made in the current model?

◉ Current models, which are incorporated into the methodology used by the **Intergovernmental Panel on Climate Change**, assume that icebergs melt uniformly in ocean currents.
  - ➤ The **IPCC is the gold standard for climate science.**

◉ However, this recent research has shown that icebergs do not melt uniformly and melt at different speeds depending on their shape.

The **Intergovernmental Panel on Climate Change (IPCC)** was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess climate change based on the latest science.

What is the proposed method?

The results, published in *Physical Review Fluids*, have implications for oceanographers and climate scientists.

◉ The new research proposes a very simple model that accounts for iceberg shape, as a prototype for an improved model of iceberg melting.

◉ To test these models, the researchers developed the first **realistic small-scale simulations** of melting ice in saltwater.

◉ The old models assumed that stationary icebergs didn't melt at all, whereas the latest experiments show melting of about a millimeter every minute.

◉ In icebergs moving in oceans, the melting on the base can be up to 30 percent faster than in old models.

◉ The research shows that iceberg shape is important. Given that the sides melt faster, wide icebergs melt more slowly but smaller, narrower icebergs melt faster.

◉ The sides of icebergs melt about twice as fast as their base.

◉ For icebergs that are moving in the ocean, melting at the front can be three or four times faster than what the old models predicted.

Conclusion

While icebergs are only one part of the global climate system, the improved model provides scientists with a dial that they can tune to better capture the reality of Earth's changing climate.

These methods can also be applied to many other systems, including glaciers melting or the melting of frozen, saline sea ice. Moreover, these methods could be used by astrobiologists to better understand ice moons like Saturn's Enceladus, a candidate for finding life elsewhere in the Solar System.

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SILENCING DISSENT: MISUSE OF SEDITION LAW TO SHUT UP CRITICS

CONTEXT

The sedition law cannot be used to "quieten the disquiet under the pretence of muzzling miscreants", a court in Delhi said while granting bail to two men accused of posting fake videos on Facebook on the farmer protests.

⊙ BACKGROUND

- The increasing use of the sedition law by the authorities in recent years has led to allegations that **this colonial-era provision** is being invoked largely to stifle the citizens' **freedom of speech and expression**, which is guaranteed by the Constitution.

- The arrest of environment activist Disha Ravi over a toolkit in support of the protesting farmers is a case in point.

  ➤ Even though the document makes no mention of violence or incitement to violent behaviour, the 22-year-old woman has been booked on the charge of sedition.

  ➤ Whether she was aware of the Khalistani leanings of the group allegedly behind the toolkit has also not been established so far.

- Amid the outrage over Disha's arrest, a Delhi court has granted bail to a man accused of posting fake videos on Facebook on the farmers' protests.

- The court has asserted that the sedition law cannot be invoked to 'quieten disquiet under the pretence of muzzling the miscreants', especially if there is no 'exhortation or incitement to create disorder or disturb public peace or resort to violence'.

⊙ ANALYSIS

Where the Sedition Law and its validity?

- The law was originally drafted in **1837** by **Thomas Macaulay**, the British historian-politician, but was inexplicably omitted when the IPC was enacted in 1860.

- Section 124A was inserted in **1870** by an amendment introduced by **Sir James Stephen** when it felt the need for a specific section to deal with the offence.

- It was one of the many draconian laws enacted to stifle any voices of dissent at that time.

- **Section 124A IPC** states: *"Whoever, by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards, the Government established by law in India, shall be punished with*

imprisonment for life, to which a fine may be added; or, with imprisonment which may extend to three years, to which a fine may be added; or, with fine."

- Disaffection includes disloyalty and all feelings of enmity.

- However, comments without exciting or attempting to excite hatred, contempt or disaffection, will not constitute an offence under this section.

> The number of sedition cases registered in India has risen from 35 in 2016 to 93 in 2019, the conviction rate has been going down — from 33 per cent in 2016 to merely 3 per cent in 2019.

Punishment for the offence of sedition

- Sedition is a **non-bailable offence**. Punishment under the Section 124A ranges from **imprisonment up to three years to a life term**, to which fine may be added.

- A person charged under this law is barred from a government job. They have to live without their passport and must produce themselves in the court at all times as and when required.

What are the key-points made by the Delhi Court?

- The law of sedition was a powerful tool in the hands of the state to maintain peace and order in society.

- However, it cannot be invoked to quieten the disquiet under the pretence of muzzling miscreants.

- Its indiscriminate application threatens to undermine its potency and efficacy.

SC's views on the law

- **Section 124A** has been challenged in various courts in specific cases. The validity of the provision itself was upheld by a Constitution Bench in 1962, in **Kedarnath Singh vs State of Bihar.**

  ➤ That judgment went into the issue of whether the law on sedition is consistent with the fundamental right under **Article 19 (1) (a)** which guarantees each citizen's freedom of speech and expression.

- The Supreme Court laid down that every citizen has a right to say or write about the government, by way of criticism or comment, as long as it does not

"incite people to violence" against the government established by law or with the intention of creating public disorder.

Kedar Nath Singh versus State of Bihar (1962)

- In Kedar Nath Singh versus State of Bihar (1962), the Supreme Court had made it clear that 'strong words used to express disapprobation of the measures of the Government with a view to their improvement or alteration by lawful means' did not amount to sedition.

- This ruling puts the onus on law enforcers to come up with indisputable evidence of incitement to violence or disturbance of public peace.

- Raising the bogey of sedition on flimsy pretexts will only weaken the law and enfeeble democracy.

Law Commission of India on Sedition Law

- In August 2018, the **Law Commission of India** published a consultation paper recommending that it is time to re-think or repeal the Section 124A of the Indian Penal Code that deals with sedition.

- In its **39th Report (1968)**, the Law Commission had rejected the idea of repealing the section.

- In its **42nd Report (1971),** the panel wanted the scope of the section to be expanded to cover the Constitution, the legislature and the judiciary, in addition to the government to be established by law, as institutions against which 'disaffection' should not be tolerated.

- In the recent consultation paper on the sedition, the Law Commission has suggested invoking 124A to only criminalize acts committed with the intention to disrupt public order or to overthrow the Government with violence and illegal means.

- **Arguments in favour**

  - **National interest:** The law has its utility in **combating anti-national, secessionist and terrorist elements**

  - **Stability of the State:** It ensures continued existence of the government, which is essential condition of the stability of the State.

  - **Robust democracy:** Dissent and criticism of the government are essential ingredients of robust public debate in a vibrant democracy. Right to question, criticize and change rulers is very fundamental to the idea of democracy.

- **Arguments against**

  - **Legacy of colonial rule:** It is a relic of colonial legacy and unsuited in a democracy.

  - **Constraint of constitutional machinery:** It is a constraint on the legitimate exercise of constitutionally guaranteed freedom of speech and expression.

Sedition laws in other countries

- The **United Kingdom** deleted the seditious libel through the Coroners and Justice Act, 2009.

- In **Australia,** following the recommendations of the Australian Law Reform Commission (ALRC) the term sedition was removed and replaced with references to 'urging violence offenses'.

Conclusion

The Constitution of India provides all the wings of the governance, with a responsibility to secure at least 'freedom of expression' of their citizens, and all sorts of intimidation to silence them must be removed. Democracy must be encouraged by the State without fearing criticism, only this would be nationalism in true sense. If the right of individual will be snatched, the whole criminal justice system would crumble down.

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PANGOLINS IN CAMEROON ARE ON THE VERGE OF EXTINCTION

CONTEXT

Rampant poaching and mushrooming international wildlife trade fuelled by Chinese poachers, has resulted in the dwindling population of pangolins in Cameroon and other parts of the world.

◉ BACKGROUND

- Also called **scaly anteaters** because of their preferred diet, pangolins are increasingly victims of illegal wildlife crime—mainly in Asia and in growing amounts in Africa—for their meat and scales.

- Over one million pangolins have been hunted in the past decade, making it one of the world's most trafficked mammals and pushing the elusive animal towards extinction.

- They are mainly traded because of their scales.

- Pangolin scales are made of keratin, the same material that makes up fingernails, hair, and horn.

- Pangolin scales, like rhino horn, have no proven medicinal value, yet they are used in traditional Chinese medicine to help with ailments ranging from lactation difficulties to arthritis.

- The scales are typically dried and ground up into powder, which may be turned into a pill.

◉ ANALYSIS

What are Pangolins?

- Pangolins are unique mammals covered in hard scales, comprised of keratin.

- They are solitary and active mostly at night. Most live on the ground, but some, like the black-bellied pangolin, also climb trees.

- They range in size from a large housecat to more than four feet long.

- **Habitat:** Pangolins are found in a variety of habitats including tropical and flooded forests, thick brush, cleared and cultivated areas, and savannah grassland; in general they occur where large numbers of food (ants and termites) are found.

- **Common Name:** Pangolins
- **Scientific name:** Manidae
- **Diet:** Insectivore
- **Size:** 45 inches to 4.5 feet long
- **Weight:** 4 to 72 pounds

What are the different species of Pangolins?

Eight species of pangolins are found on two continents. They range from **Vulnerable to Critically Endangered**.

- Four species live in Africa:
  - ➤ Black-bellied pangolin (Phataginus tetradactyla)
  - ➤ White-bellied pangolin (Phataginus tricuspis)
  - ➤ Giant Ground pangolin (Smutsia gigantea)
  - ➤ Temminck's Ground pangolin (Smutsia temminckii)

- The four species found in Asia:
  - ➤ Indian pangolin (Manis crassicaudata)
  - ➤ Philippine pangolin (Manis culionensis)
  - ➤ Sunda pangolin (Manis javanica)
  - ➤ Chinese pangolin (Manis pentadactyla)

- All eight pangolin species are protected under national and international laws, and two are listed as Critically Endangered on the **IUCN Red List of Threatened Species.**

- The species is also listed under the Appendix I of the **International Convention of Trade in Endangered Species (CITES)** which prohibits international commercial trade.

Pangolins in India

- India is home to two species of pangolin. While the Chinese Pangolin (*Manis pentadactyla*) is found in northeastern India, the Indian Pangolin (*Manis crassicaudata*) is distributed in other parts of the countrys as well as Sri Lanka, Bangladesh and Pakistan.

- Both these species are protected and are listed under the **Schedule I Part I of the Wild Life (Protection) Act, 1972** and under **Appendix I of the Convention on International Trade in Endangered Species (CITES).**

- However, despite protective measures, pangolins in India are widely exploited and traded both domestically and internationally.

Recent efforts to save Pangolins

- Maharashtra is set to be the first state in India to have a dedicated action plan for conservation of pangolins – the world's most trafficked animal.

- In 2020, Madhya Pradesh forest department radio-tagged an Indian Pangolin, for the first time.
  - ➤ The radio-tagging is part of a joint project by the department and non-profit, the Wildlife Conservation Trust (WCT) that also involves the species' monitoring apart from other activities.
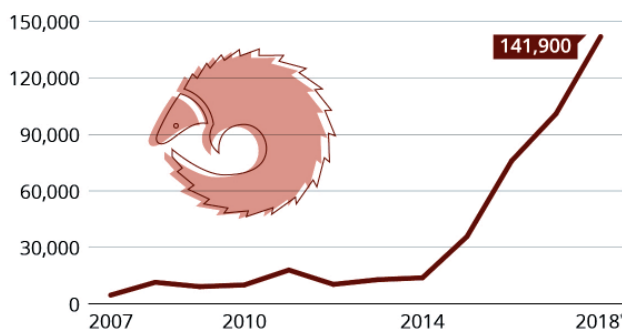
World Pangolin Day is celebrated on the third Saturday in February. The day is an opportunity for pangolin enthusiasts to join together in raising awareness about these unique mammals — and their plight.

The declining trend in Cameroon

- The shy, harmless pangolin is becoming increasingly well known for one reason: It's believed to be the world's most trafficked non-human mammal.

- Tens of thousands of pangolins are poached every year, killed for their scales for use in traditional Chinese medicine and for their meat, a delicacy among some ultra-wealthy in China and Vietnam.

- Cameroon hosts three species of pangolin — white-bellied, black-bellied and giant. There is one other species found in central Africa.

- Apart from being a source country, Cameroon serves as an international transit hub for pangolins.

Seizures of Trafficked Pangolins on the Rise

Number of whole pangolin equivalents seized per year worldwide (2007-2018)

141,900

* preliminary
Total number of trafficked animals exceeds seizures
Source: United Nations Wildlife Crime Report 2020

statista

- Pangolins fall under **Category A of Classified Wildlife Species** in Cameroon, which fully protects them from hunting, exploitation and possession.

- Cameroon is also a signatory to the **Convention on International Trade in Endangered Species of Wild Fauna and Flora also known as CITES.** The aim of CITES is to monitor international trade and conserve endangered species.

- But in many central African countries, including Cameroon, illegal hunting and trade continue.

- Most of these wildlife protection laws and international agreement never translate into action on the ground, thus giving a golden opportunity to poachers and traffickers.

What are the impacts of the loss of pangolins?

- Being insectivorous mammals, they feed on eggs, larvae and adults of ants and termites acting as biological pest controlling agents. The loss of pangolins could have drastic ecological and economical effects on local communities.

- The critically endangered species constitute a distinct taxonomic order and if they disappear, there will be nothing like them left on Earth.

Suggestive measures

- **Information for effective conservation:** There is also a lack of information on pangolin's ecological behaviour including habitat preferences, home-range, average life-span, reproduction-cycle and feeding habits. This information is critical to strategically revamp on-going conservation efforts in Cameroon.

- **Promoting community-stewardship:** Involving communities living around pangolin's habitat areas could effectively steer conservation campaigns. There are several examples where hunters have turned into die-hard conservationists.

- **Employment to local:** Bee-farming, pisciculture, piggery and orchard development, are few viable income-generating opportunities that should be provided to local communities.

Conclusion

To stop poaching of the mammal, regular monitoring of the population trends of pangolin in their habitat areas is important. It will enable government and conservation institutions to make informed decisions about protecting the species. Furthermore, it will help in facilitating the identification and prioritisation of key sites for holistic conservation.

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LIBERALISATION OF THE GEOSPATIAL SECTOR IN INDIA

CONTEXT

In a positive development, the Ministry of Science and Technology released new guidelines for the 'Geospatial sector' in India, which deregulates existing protocol and liberalizes the sector to a more competitive field.

⊙ BACKGROUND

- The past decade has seen an increase in the use of geospatial data in daily life with various apps such as food delivery apps like Swiggy or Zomato, e-commerce like Amazon, or even weather apps.

- However, there were strict restrictions on the collection, storage, use, sale, dissemination of geo-spatial data, and mapping under the current regime.

- The National Map Policy, 2005 had not been renewed in decades and has been driven by internal as well as external security concerns.

- The sector needed liberalization to drive innovation as it affects the lives of ordinary citizens.

- Not only in the country, but there has also been a global push for open access to geospatial data.

- The new guidelines will ensure open access for surveying and help the country become more self-reliant and reach its $5 trillion GDP goal.

- Furthermore, it will lead to the addition of around 0.5% of GDP.

⊙ ANALYSIS

What is geospatial data?

- Geospatial data is data about objects, events, or phenomena that have a **location on the surface of the earth.**

- The location may be static, or dynamic-

  ▶ **static** like the location of a road, an earthquake event, malnutrition among children

  ▶ **dynamic** like a moving vehicle or pedestrian, the spread of an infectious disease

- Geospatial data generally combines location information, attribute information (the characteristics of the object, event, or phenomena concerned), and sometimes temporal information or the time at which the location and attributes exist.

- Geo-spatial data involves both information of public interest such as roads, localities, rail lines, water bodies, and public amenities. It also provides information regarding security interest like location of critical infrastructure, military base, deployed weapons etc.

Where geospatial data is used?

- While for decades, geospatial data has been a priority for strategic reasons and internal and external security concerns, this priority has seen a shift in the past 15 years.

- Geospatial data has now become imperative for the government in planning for infrastructure, development, social development, natural calamities as well as the economy.

- Today, more sectors such as agriculture, environment protection, power, water, transportation, communication, health (tracking of diseases, patients, hospitals, etc) relies heavily on this data.

PM Swamitva Yojana

- PM Swamitva Yojana is a shining example of the use of geospatial data to empower the country's rural population.

- The Swamitva scheme helps to map rural inhabited lands using drones and the latest survey methods.

- It aims to ensure streamlined planning, revenue collection and provide clarity over property rights in rural areas.

Government monopoly in the sector

- Mapping was till now remained a government preserve, handled by the Central government's **Survey of India.**

- Private companies needed to navigate a system of permissions from different departments of the government (depending on the kind of data to be created) as well as the defense and Home Ministries, to be able to collect, create or disseminate geospatial data.

- Initially conceptualized as a matter solely concerned with security, geo-spatial data collection was the prerogative of the defense forces and the government's law enforcement agencies.

- GIS mapping was also rudimentary, with the government investing heavily in it after the Kargil war highlighted the dependence on foreign data and the need for indigenous sources of data.

Survey of India

- Survey of India, the **National Survey and Mapping Organization** of the country under the **Department of Science & Technology**, is the oldest scientific department of the Government of India.

- It was set up in **1767.**
- In its assigned role as the nation's Principal Mapping Agency, Survey of India bears a special responsibility to ensure that the country's domain is explored and mapped suitably, provide base maps for expeditious and integrated development and ensure that all resources contribute with their full measure to the progress, prosperity, and security of our country now and for generations to come.

What are the new guidelines?

- The new guidelines will apply to geospatial data, maps, products, solutions, and services offered by government agencies, autonomous bodies, academic and research institutions, private organizations, non-governmental organizations, and individuals.

- There shall be no requirement for prior approval, security clearance, license, or any other restrictions on the collection, generation, preparation, dissemination, storage, publication, updating, and/or digitization of geospatial data and maps within the territory of India.

- Individuals, companies, organizations, and government agencies, shall be free to process the acquired geospatial data, build applications and develop solutions in relation to such data and use such data products, applications, solutions, etc by way of selling, distributing, sharing, swapping, disseminating, publishing, deprecating and destructing.

- Self-certification will be used to convey adherence to these guidelines.

- There will also be a negative list of sensitive attributes that would require regulation before anyone can acquire and/or use such attribute data.

Which areas will be exempted?

- The guideline is not for access, but only for surveying.

- There is a restriction on revealing the attributes or features of sensitive areas even though there would be none on surveying the area itself.

- There will be exceptions to sensitive defense or security-related data.

What was the need for deregulation?

- This system of acquiring licenses or permission, and the red tape involved, can take months, delaying projects, especially those that are in mission mode – for both Indian companies as well as government agencies.

- There is also a huge lack of data in the country which impedes planning for infrastructure, development, and businesses that are data-based.

- The mapping of the entire country that too with high accuracy, by the Indian government alone could take decades.

- The government, therefore, felt an urgent need to incentivize the geospatial sector for Indian companies and increased investment from private players in the sector.

What will be its impacts?

- Liberalization of the system will ensure:

  - more players in the field

  - competitiveness of Indian companies in the global market

  - more accurate data available to both the government and individual Indian to formulate plans and administer

- **Employment generation**: With this policy, the private sector would be able to bring innovation in this sector and produce more solutions based on it, resulting in an increase in employment in the geospatial sector, while also pushing forth the economic growth.

  - Indian companies will be able to develop indigenous apps, for example, an Indian version of google maps.

- **Increase in Public-private partnership:** There is also likely to be an increase in public-private partnerships with the opening of this sector with data collection companies working with the Indian government on various sectoral projects.

- **Domestic innovation:** At the moment, India relies heavily on foreign resources for mapping technologies and services. The liberalization of the mapping industry and democratization of existing data sets will spur domestic innovation and enable Indian companies to compete in the global mapping ecosystem by leveraging modern geospatial technologies.

- **Economic development:** The government also expects an increase in investment in the geospatial sector by companies, and also an increase in the export of data to foreign companies and countries, which in turn will boost the economy.

Conclusion

The deregulation will eliminate the requirement of permissions as well as scrutiny, even for security concerns. Indian companies now can self-attest, conforming to government guidelines without actually having to be monitored by a government agency- these guidelines, therefore, place a great deal of trust in Indian entities. Also, the increased participation of the private sector will augment the growth of new technologies, platforms, and applications of geospatial data contributing to the country's progress.

PRIVATISATION OF BANKS

CONTEXT

The Union Budget 2021-22 has announced the privatization of two public sector banks (in addition to IDBI Bank) and one general insurance company in the upcoming fiscal.

It also announced a strategic sale/disinvestment policy for four strategic sectors — including banking, insurance, and financial services — in which it will have a "bare minimum presence".

Strategic Disinvestment:

- Strategic disinvestment would imply the sale of a substantial portion of the Government shareholding of a central public sector enterprise (CPSE) of upto 50%, or such higher percentage as the competent authority may determine, along with transfer of management control.

◉ BACKGROUND

- A little more than 51 years after the14 largest banks were nationalised, the government now aims to reduce it to just four.

- In the past, many committees had proposed bringing down the government stake in public banks. The **Narasimham Committee** on banking sector reforms, setup after 1991 LPG reforms, proposed to reduce the government stake in PSBs to 33%.

- Through a series of moves over the last few years, the government is **currently left with 12 state-owned banks**, from 28 in 2016.

- The two banks that will now be privatised will be selected through a process in which **NITI Aayog** will make recommendations, which will be **considered by a core group of secretaries on disinvestment** and then the **Alternative Mechanism (or Group of Ministers).**

◉ ANALYSIS

Why were private banks nationalised in the first place?

- Then-Prime Minister Indira Gandhi, who was also Finance Minister, decided to nationalise the 14 largest private banks on July 19, 1969.

- The idea was to **align the banking sector with the socialistic approach** of the then government.

- In the 1950s and 60s Indian banking sector, which **largely comprised private banks, had large-scale regional and sector-wise disparity** in terms of services offered.

- Thus, Bank nationalization was done to **increase financial inclusion** in India's banking sector.

- The big question is: if the banks are privatized again, will private banks repeat the mistakes of the 1960s.

Impact Nationalisation had on PSBs

- Banking is a highly competitive enterprise that works on profits, nationalization of banks has **led to lesser competition** between the public sector and private sector banks.

  ► This has created a **bureaucratic attitude** in the functioning of the banking system.

  ► **Lack of responsibility** and initiative, **red-tapism**, inordinate delays are common features of nationalized banks.

- A liberal credit policy was incorporated to provide support to the weaker sections of the rural community. But such a policy proved **harmful to the stability of the banking system**.

- Due to the **lack of performance audit of banks**, policy-making failed to ensure that the finance from the public institutions is going to productive uses in the larger public interest.

- The experience of the nationalized banks has shown that these banks are now facing the problems of **heavy overdue loans** and **economically unviable branches**.

- Given the significance of a vibrant banking system in the growth story of the nation, privatisation of banks has been proposed.

Current issues plaguing Public Sector Banks (PSBs)

- Compared with private banks, PSBs continue to have **high non-performing assets (NPAs)** and stressed assets although this has started declining.

- After the **Covid-related regulatory relaxations** are lifted, banks are expected to report higher NPAs and loan losses.This would mean the government would again need to inject equity into weak public sector banks.

- The government is **trying to strengthen the strong banks** and also minimize their numbers through privatisation to reduce its burden of support.

- After 1990, when RBI allowed more Private Sector Banks, competition increased. Today, **Private banks' market share in loans has risen** to 36% in 2020 from 21.26% in 2015, while public sector banks' share has fallen to 59.8% from 74.28%.

Will privatization help?

- **Arguments in Favour**
  - Privatization will **free up the government**, the majority owner, from continuing to provide equity support to the banks year after year.
  - It will be another step towards **reducing the fiscal deficit** and financing revenue expenditure through revenue receipts in the long term.
  - This move is along the **lines of minimum government and maximum governance** and proactive, people-centric, people-friendly, transparent and sustainable governance.
  - Privatizing loss-making PSBs will have a **deterrent effect** on the staff and management of such banks.

- **Arguments Against**
  - According to the former Deputy Governor of RBI, Bank Nationalisation will not solve all issues and suggested that **operational freedom with Government ownership** may work better as it did in Western countries.

  - This would totally **defeat the idea of inclusive banking** as it is practiced now and was the guiding principle at the time of the nationalization of banks.
  - The **past history of private sector banks tells the failure**. Before 1969, all banks, except the SBI, were in the private sector. Between 1947 and 1969, 559 banks failed.
  - The government will have **difficulty in providing low-cost financial services** to rural and poor sections of society as the private may not like to extend its services to them.
  - The **loosening of the government's control over the economy** might make the economy fragile in testing conditions.
  - With the Government announcing more and more **infrastructure projects**, the role of Public Sector Banks will increase.

Conclusion

Privatisation of banks is not a remedy to all solutions. With steps like Privatisation of Banks, the Government should also focus on comprehensive governance reforms, resolution of NPAs and creating a free market so that investment can be reinvigorated and wheels of the economy can again get back on track.

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SELF-REGULATION OF OTT

CONTEXT

Seventeen online streaming providers have announced the adoption of an 'implementation toolkit', under the aegis of the Internet and Mobile Association of India (IAMAI). This 'toolkit' is in furtherance to the Universal Self-Regulation Code that IAMAI had introduced in September 2020, which was rejected by the Government. Furthermore, on 16th February 2021, the Supreme Court asked the Centre on the measures it plans to take to regulate content on over-the-top (OTT) video streaming platforms such as Netflix and Amazon Prime Video.

◉ BACKGROUND

- So far in India, there are no comprehensive laws or rules regulating OTT platforms as it is a relatively new medium of entertainment.

- Unlike television, print, or radio, which follow guidelines released by governments, OTT platforms, classified as **digital media or social media**, had little to no regulation on the choice of content they offered, the subscription rates, certification for adult movies, and others.

◉ ANALYSIS

What are OTT platforms?

- OTT, or over-the-top platforms, are audio and video hosting and streaming services that started out as content hosting platforms, but soon branched out into the production and release of short movies, feature films, documentaries, and web-series themselves.

- These platforms offer a range of content and use artificial intelligence to suggest to users the content they are likely to view based on their past viewership on the platform.

- India is projected to become the **second-largest online video-viewing audience** by 2020.

What is the 'Implementation Toolkit' about?

- The 'toolkit', prepared by **IAMAI (Internet & Mobile Association of India)** in consultation with the streaming platforms, primarily aims to iron out the issues with the industry's self-regulation code that was put in motion on 4 September 2020.

- The toolkit provides details of the functioning of OTT platforms' grievance redressal mechanism for complaints received, including the composition of their internal panel and advisory panels.

- The new "implementation toolkit" is said to have followed the ethics code and also defined a framework for self-regulation.

What are the ethical issues involved in regulation of OTT?

- **Unequal treatment** of similar service providers

- While the print was regulated by the Press Council of India and Television (both News and Entertainment) were being regulated by the Cable Networks Regulation Act (2005), content on online, fell into a black hole with no oversight.

- Though there is no regulatory mechanism for OTTs as of now, all such platforms come under the **Information technology Act, 2000** as they qualify to be called as Intermediaries.

- **Section 79 of the IT Act**, intermediaries must exercise due diligence while streaming content. The Guidelines for due diligence have also been framed by the government in 2011.

- **Age-appropriate content** is needed to ensure well being -

  - OTT platforms' advantage of playing media anywhere and anytime has created a massive demand for it, but also creates the problem of providing age-appropriate content for Children. If children are subjected to violent or malicious content, it can lead to various psychological issues in the future.

- **Influence of foreign content** on society

  - With the increasing presence of OTT platforms, they are streaming a lot of cross-cultural content.

  - Though it is good for creating a cosmopolitan world, it has aggravated some of the means in society like **cultural imperialism.**

- Regulation if becomes **over-regulation can curb creativity** and in turn **freedom of speech and expression**

  - As OTT platforms are relatively less subjected to censorship, it helps bring socio-political content or matters to a common man, which otherwise are censored in mainstream media.

Why Self-regulation is better than Government regulation?

- It has been argued that OTT platforms provide people the right to choose whatever they want to see, thus regulation by the Government may be unnecessary.

- The OTT industry has led to the Democratization of Media and is benefiting numerous content producers and artists. It also helps in accessing regional films around the country as well as globally.

- Creative freedom is necessary to provide unbiased information to millions of citizens about the situation of the country, thus indirectly demanding transparency and accountability from the Government.

Is self-regulation enough?

- The issue of content regulation has always been important in India because of the diverse nature of Indian society in terms of religion, economic status, caste and language.

- Therefore, the effect that OTT has on society forms the basis of its regulation by the state.

- **Article 19** which gives a fundamental right to freedom of expression comes with reasonable restrictions of decency and public morality, public order, defamation, incitement to offenses, etc.

- In times of fast-changing entertainment media, the government and other stakeholders must come together to bring a proper framework that will balance the freedom of expression and necessary restrictions for the sake of law and order.

- Other countries of the world such as China and the USA have come forward to devise laws in the wake of progress in artificial intelligence and Internet-of-things.

- India with its huge diversity and demographic nature cannot remain behind.

Conclusion

Internet usage has been growing in India, becoming a marketplace for ideas, an opportunity for content creators to reach more people than ever before, and a new medium for entertainment and education. In light of this, both the government and the industry should appreciate the new space that the internet has given to free speech in India and, as a result of it, the need to adopt a more self-regulatory and freedom-oriented regulatory approach.

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SECTION: B
(PRELIMS)

CURRENT AFFAIRS

NO RECORDS OF CHILLA ADJACENT TO CHARMINAR: ASI

⊙ **CONTEXT:** The Bhagyalakshmi Temple abutting the Charminar 'came into existence' after the merger of Hyderabad State with the Union of India, and there are no records of the chilla at the monument, the Archaeological Survey of India (ASI) has stated responding to a Right to Information query.

⊙ **ABOUT:**

What is chilla?

- **Chilla** is a spiritual practice of penance and solitude in Sufism known mostly in Indian and Persian traditions.

- In this ritual a mendicant or ascetic attempts to remain seated in a circle practicing meditation techniques without food for 40 days and nights.

- The word *chilla* is derived from the Persian word *chehel* "forty". Chilla is commonly performed in a solitary cell called a *chilla-khana*.

Quick facts about Charminar

- **Built by:** Mohammed Quli Qutub Shah in 1591

    ➤ He was the founder of Hyderabad to commemorate the end of the plague in the city

- Each of the sides measure 20 meters while the minarets are located at a height of 48.7 meters from the ground level.

- Each side of Charminar opens into a plaza like structure where the giant arches overlook the major thoroughfares.

- It is a clear square structure that measures 31.95 mts. on each side while imposing arches span a distance of 11mts.

- It is these four (char) minarets (minar) that give the building, its name 'Charminar'.

- Each minar stands on a lotus-leaf base, a special recurrent motif in Qutub Shahi buildings.

- There are 149 circular steps inside each minaret.

- The four clocks in four cardinal directions were added in the year 1889.

The matter

- The Bhagyalakshmi temple too has been in the centre of a land dispute like the Ayodhya Ram temple.

- It was alleged that the temple was built and later encroached into Charminar property.

Key-observations made by ASI

- The **Bhagyalakshmi Temple** came into existence after taking over of Hyderabad by the Government of India adjacent to South Eastern minaret of the Charminar, a Centrally Protected Monument.

- No records are available in this office about the Chilla adjacent to Charminar.

"Protected monument" means an ancient monument which is declared to be of national importance by or under the **Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR Act).**

- There have been a lot of questions in connection with the both the temple and the *chilla*.

CONCERN REGARDING CERTIFICATION OF BILLS AS MONEY BILL

⊙ **CONTEXT:** In a pre-emptive move, the opposition has requested Speaker of the Lok Sabha to not bypass the Rajya Sabha by declaring seven key Bills, as "money bills".

⊙ **ABOUT:**

What is money bill?

- Article 110 of Indian constitution says a Bill shall be deemed to be a Money Bill if it contains only provisions dealing with all or any of the matters like,

  ◉ the imposition, abolition, remission, alteration or regulation of any tax,

  ◉ the regulation of the borrowing of money or the giving of any guarantee by the Government of India,

  ◉ the custody of the consolidated Fund or the Contingency Fund of India etc

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Difference between a finance bill and a money bill

- Finance bills are similar to money bills in the sense that it has provisions related to tax, expenditure and that may contain matters specified in **Article 110 (1).**

- A money bill specifically centres its identity around the provisions (a) to (g) and is certified by the Speaker as such.

- A financial bill becomes a money bill only when it carries the Speaker's certification as a money bill.

- Bills that are not certified by the Speaker are:

  ➤ Bills that contain any of the matters specified in Article 110, but do not contain only those matters **Article 117 (1)**

  ➤ Ordinary bills that contain provisions involving expenditure from the Consolidated Fund, according to **Article 117 (3)**

What is the role of Rajya Sabha in money bill?

- Money Bills can be introduced only in Lok Sabha.

- Once money bills are passed by the Lok Sabha, it is sent to the Rajya Sabha.

- The Rajya Sabha may not amend money bills but can recommend amendments.

- To make sure that Rajya Sabha doesn't amend the bill by adding some non-money matters (known as Financial Bill), the Lok Sabha Speaker certifies the bill as a money bill before sending it to the upper house, and the decision of the Speaker is binding on both the Houses.

- A money bill must be returned to the Lok Sabha within 14 days or the bill is deemed to have passed both houses in the form it was originally passed by the Lok Sabha.

Why opposition has shown its concern?

- Money Bills has special feature, after its certification from the Speaker (Article 110(3): Speaker's decision is final w.r.t, to certification), and it can only be presented in Lok Sabha and Rajya Sabha has no power to amend it.

- Hence this move is perceived as bypassing the bicameral legislative system of Parliament.

- Moreover due to parliamentary privileges and concept of separation of power there are less safeguards against wrongful certification of a bill as money bill.

Past controversies about money bill

- *Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016*: Supreme Court held that passing Aadhaar Act as money bill is justified.
- **Finance Act 2017** had amended various Acts to provide for new rules and appointments to various tribunals, including the industrial tribunal, Railway Claims Tribunal, National Green Tribunal, Armed Forces Tribunal, appellate tribunals for sectors such as telecom, aviation, highways, taxation, company law, and others.
  - Section 184 of the same Act gave the Central government the powers to frame rules regarding the tribunals. Later this act was held unconstitutional.

Is the role of Speaker outside the purview of judicial review?

- In **Kihoto Hollohan vs Zachillhu (AIR 1993 SC 412)**, the "final" decision of the speaker regarding disqualification of members of the House under Tenth Schedule of the Indian Constitution, has been held to be a judicial decision subject to judicial review.
- In the past SC has checked the certification of bills as money bill by virtue of its powers under Article 142 eg. Adhar case.

Other controversies surrounding Speaker

- Anti Defection Law
- Certification of Money Bill
- Voice vote
- Works under pressure of majority government

SAKSHAM (SHRAMIK SHAKTI MANCH)

⊙ **CONTEXT:** Technology Information, Forecasting and Assessment Council (TIFAC) recently unveiled 'SAKSHAM (Shramik Shakti Manch)'- a dynamic job portal.

⊙ **ABOUT:** **What is SAKSHAM?**

- SAKSHAM (Shramik Shakti Manch) is a dynamic portal for jobs/ mapping the skills of Shramiks vis-à-vis requirements of MSMEs and other industries all across the country.
- The pilot portal originally initiated with two districts is now being launched as an all India portal.
- **Objective:** The portal will map the skills of Shramiks vis-à-vis requirements of MSMEs to directly connect Shramiks with MSMEs and facilitate placement of 10 lakh blue-collar jobs.
- **Key Features:**
  - A dynamic job portal - opportunity for Shramiks and MSMEs
  - Facilitate creation of 10 lakh blue collar jobs
  - Direct connect between Shramiks and MSMEs, no middleman in between
  - Minimise migration of Shramiks – job opportunity in proximate MSMEs

How does it work?

- The portal with the demand and supply data uses **algorithm and Artificial Intelligence (AI) tools**, for **geo spatial information** on demand and availability of Shramiks.
- It also provides analysis on skill training programmes of Shramiks.

- The data / information pertaining to the Shramiks and the industries (especially MSME) are being updated automatically through various whatsapp and other links.

Genesis

- The genesis of SAKSHAM took place during the Covid-19 pandemic.

- The lockdown imposed in the wake of the pandemic left lakhs of migrant labourers without work across India, forcing them to return home.

- The pilot portal originally initiated with two districts is now being launched as an all India portal.

> **About TIFAC**
>
> - The Technology Information, Forecasting and Assessment Council (TIFAC), an autonomous technology think tank under the Department of Science & Technology (DST), Government of India.
>
> - It was set up in 1988.
>
> - It works to look ahead in technology domain, assess the technology trajectories, and support innovation by networked actions in select areas of national importance.

RARE SIGHT OF MANDRAIN DUCK IN INDIA

⊙ **CONTEXT:** Recently, a rare sight was noticed by people where they witnessed a spectacular and rare Mandarin duck floating in the Maguri-Motapung beel (or wetland) of Assam's Tinsukia district.

⊙ **ABOUT:** **What is the Mandarin duck?**

- Considered the most beautiful duck in the world, the Mandarin duck, or the (*Aix galericulata*) was first identified by Swedish botanist, physician and zoologist Carl Linnaeus in 1758.

- It is a "small-exotic looking bird" native to East Asia.

- The migratory duck breeds in Russia, Korea, Japan and northeastern parts of China.

Why is it 'rare' for India?

- The duck, however, rarely visits India as it does not fall in its usual migratory route.

- There are only a handful of recorded sightings here. It was recorded in
  - ⊙ 1902 in Dibru river in the Rongagora area in Tinsukia
  - ⊙ 2013 in Manipur's Loktak Lake
  - ⊙ 2014 in Saatvoini Beel in Manas National Park and Tiger Reserve in Assam's Baksa district

Maguri Motapung wetland

- The Maguri Motapung wetland is an **Important Bird Area** as declared by the Bombay Natural History Society.

- It is located close to the Dibru Saikhowa National Park in Upper Assam.

- The wetland has a grassland adjacent to it.

- The entire ecosystem (grassland and wetland) is very important as it is home to at least 304 bird species, including a number of endemic ones like **Black-breasted parrotbill** and **Marsh babbler**.

NIC LAUNCHES SANDES

⊙ **CONTEXT:** **In a bid to provide a secure way for people to communicate, the National Informatics Centre (NIC) has launched Sandes.**

⊙ **ABOUT:**

What is Sandes app?

- Sandes is a messaging app prepared by the central government. It claims to be a secure app where the users' data will be kept safe.
- The app has been developed by NIC (National Informatics Center), which is part of the Ministry of Electronics and Information Technology (MeitY).
- Sandes has an interface similar to many other apps currently available in the market. It has an additional safety feature which allows a user to mark a message as confidential.
- The chats on this instant messaging systems or GIMS can be backed up to a users' email.

Government Instant Messaging System (GIMS)

- **GIMS**, like other instant messaging apps uses a valid mobile number or email id to register the user for the first time.
- It allows a user to mark a message as confidential, which the app's description says, will allow the recipient to be made aware the message should not be shared with others.
- The confidential tag, however, does not change the way the message is sent from one user to another.
- The app does not allow the user to change their email id or registered phone number.

- This will make the recipient aware the message should not be shared with others.

Is it an alternative to 'Whatsapp'?

- 'Sandes' is said to be in lines with the popular instant messaging platform WhatsApp.
- Only a day ago, the Supreme Court issued a notice to Facebook and WhatsApp over the company updated privacy policy that it has postponed for the next three months.

Government also launched India's version of the **'Koo'** App in response to social media platform **Twitter**.

GUINEA DECLARES EBOLA EPIDEMIC

⊙ **CONTEXT:** **Guinea has declared an Ebola outbreak after three persons died in the country's southeast. This is the first time the disease has been reported in the country since an outbreak ended in 2016.**

⊙ **ABOUT:**

What is Ebola Virus Disease?

- Ebola is a deadly disease caused by a virus.
- **Ebola virus disease (EVD),** formerly known as **Ebola haemorrhagic fever**, is a rare but severe, often fatal illness in humans.
  - ⊚ The term "hemorrhagic fever" means it causes bleeding inside and outside the body.
- The average EVD case fatality rate is around 50%. Case fatality rates have varied from 25% to 90% in past outbreaks.

Previous outbreaks

- The virus first appeared in two simultaneous outbreaks in 1976 in South Sudan and the Democratic Republic of Congo (DRC).
- The last major Ebola outbreak started in 2014, which emerged in Guinea and then moved across borders to Sierra Leone and Liberia.
- During the outbreak, more than 11,000 patients out of around 28,000 with detected Ebola cases lost their lives.

Transmission

- The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission.
- The virus is not airborne, which means a person cannot get the disease simply by breathing the same air as an infected patient.
- Ebola jumps to humans from infected animals like chimpanzees, fruit bats and forest antelope.
- One of the natural reservoir of the Ebola virus is bushmeat – non-domesticated forest animals hunted for consumption.
- The disease spreads between humans through direct contact with infected blood, bodily fluids or organs.
- It can also spread indirectly through contact with contaminated environment.

ISRO ANNOUNCES 'BHUVAN', AN ALTERNATIVE TO GOOGLE MAPS

⊙ **CONTEXT:**　　**In an attempt to compete with Google Maps, Indian Space Research Organisation (ISRO) has partnered with digital mapping and navigation technology solutions provider MapmyIndia to launch an Indian Maps alternative.**

⊙ **ABOUT:**　　**What are Indian map alternatives?**

- As part of this partnership, MapMyIndia's end user maps, apps and services will now integrate with ISRO's catalogue of satellite imagery and earth observation data.

  ⊙ **MapMyIndia began in 1992**, with an aim to enhance India's map-making capabilities.

  ⊙ MapmyIndia's maps cover 7.5 lakh Indian villages, 7500+ cities at street and building-level, connected by 63 lakh kilometers of road network pan India and within cities.

- The service would be a "privacy-centric" option, compared to "foreign map apps and solutions".

- It will enable ISRO and MapmyIndia to jointly identify and build a holistic geospatial portal utilising earth observation datasets, '**NavIC**', **Web Services** and **APIs** (application programming interface) available in MapmyIndia, 'Bhuvan', 'VEDAS' and 'MOSDAC' geoportals.

- Indian Regional Navigation Satellite System also known as **NavIC (Navigation with Indian Constellation)**, is an indigenous navigation system, developed by ISRO.

- Users will be able to see mapping data along with information about weather, pollution, agricultural output, land-use changes, flood and landslide disasters etc.

Geospatial Portals

- **Bhuvan** is the national geo-portal developed and hosted by ISRO comprising geospatial data, services, and tools for analysis.

- **VEDAS (Visualisation of Earth observation Data and Archival System)** is an online geoprocessing platform that uses optical, microwave, thermal, and hyperspectral EO data covering applications particularly meant for academia, research and problem solving

- **MOSDAC (Meteorological and Oceanographic Satellite Data Archival Centre)** is a data repository for all the meteorological missions of ISRO and deals with weather-related information, oceanography, and tropical water cycles.

HAEMORRHAGIC SEPTICAEMIA

⊙ **CONTEXT:** **Six elephants died of haemorrhagic septicaemia in Karlapat Wildlife Sanctuary in Odisha's Kalahandi district within 14 days of time.**

⊙ **ABOUT:** **What is Haemorrhagic Septicaemia?**

- Haemorrhagic septicaemia is a **contagious bacterial disease** which infects animals that come in contact with contaminated water or soil.

- It is caused by certain serotypes of Pasteurella multocida, a Gramnegative coccobacillus residing mostly as a commensal in the nasopharynx of animals.

- The disease generally spreads in the period right before and after the monsoons. It can affect cattle, buffalo and other animals.

- Haemorrhagic septicaemia occurs in parts of Asia and Africa and is often fatal.

- It can be transmitted by ingesting contaminated food and water or through respiratory secretions.

- Hemorrhagic septicaemia is an important disease in Asia, Africa, and the Middle East. It has never been confirmed in Mexico, Central or South America.

Karlapat sanctuary

- Karlapat sanctuary is spread over an area of 175 square km in Odisha's Kalahandi district.

- The sanctuary home to tigers, leopards, sambars, nilgais, barking deer, mouse deer and a wide variety of birds like green munia, great eared-nightjar and various reptiles, apart from elephants.

- The forest consists of flora like Sal, Bija, Asan, Harida, Amala, Bahada and Bamboo and varieties of medicinal plants.

- There are several small and big waterfalls inside the sanctuary like **Phurlijharan, Ghusrigudi, Dumnijhola, Kamalajharan, Koyirupa, Kuang and Raja Rani.**

INDIA SUCCESSFULLY TEST-FIRES HELINA, DHRUVASTRA ANTI-TANK GUIDED MISSILES

⊙ **CONTEXT:** **Joint User Trials for Helina (Army Version) and Dhruvastra (Air Force Version) Missile Systems have been carried out from Advanced Light Helicopter (ALH) platform in desert ranges.**

⊙ **ABOUT:** **Helina and Dhruvastra missile systems**

- The Helina (Army version) and Dhruvastra (Air Force variant) are third-generation **variants of the Nag anti-tank guided missile system.**
- The missile systems have been designed and developed indigenously by Defence Research and Development Organisation **(DRDO).**

Features

- They are based on the **Lock on Before Launch (LOBL) fire and forget Anti-Tank Guided Missiles** system.
- They can engage targets both in direct hit mode as well as top attack mode.
- The system has **all-weather day and night** capability.

Anti-tank guided missile (ATGM)

- An **anti-tank guided missile** (**ATGM**), **anti-tank missile**, **anti-tank guided weapon** (**ATGW**), or **anti-armor guided weapon** is a guided missile.
- It is primarily designed to hit and destroy heavily armored military vehicles.
- **India's Anti-tank missiles:**
  ➤ DRDO Anti Tank Missile
  ➤ Amogha missile
  ➤ Nag missile
  ➤ HELINA missile/Dhruvastra
  ➤ SANT missile
  ➤ Man-Portable Anti-tank Guided Missile (MPATGM)
  ➤ Jasmine anti-tank missile - VEM technologies

Nag missile

- The **Nag** missile (Prospina- for the land-attack version), is an Indian missile with:
  ➤ third-generation
  ➤ all-weather
  ➤ fire-and-forget
  ➤ lock-on after launch
  ➤ anti-tank guided missile (ATGM)
  ➤ the operational range of 500 m to 20 km
- The Nag has five variants
  ➤ a land version, for a mast-mounted system
  ➤ the helicopter-launched Nag (HELINA and Dhruvastra)
  ➤ a "man-portable" version (MPATGM)
  ➤ an air-launched version
  ➤ Nag Missile Carrier (NAMICA) "tank buster"
- Development of the Nag is part of the Integrated Guided Missile Development Program (IGMDP), run by the Defence Research and Development Organisation (DRDO).

DETAILED GENOME OF THE MALARIA MOSQUITO VECTOR

⊙ **CONTEXT:** In a latest development, scientists have unveiled the detailed genome of the malaria mosquito vector, revealing thousands of new genes vital for the development of genetic control strategies of disease transmission.

⊙ **ABOUT:**

Key-highlights of the findings

- The detailed genome of the malaria mosquito vector, revealed thousands of new genes vital for the development of genetic control strategies of disease transmission.
- Scientists produced a new reference genome for the Asian malaria vector mosquito **Anopheles stephensi.**
  - ◉ Anopheles stephensi is a major malaria vector mosquito in urban areas of South Asia and has recently invaded the horn of Africa.
  - ◉ It is predicted to become a major urban malaria vector in Africa, putting 126 million urban Africans at risk.
- The newly revealed genes play key roles in blood feeding and the metabolism of ingested blood meal, reproduction and immunity against microbial parasites.
- The findings include 29 previously undetected genes that play critical roles in resistance to chemical insecticides, an advancement that lends itself to the necessity of addressing growing African and Asian An. stephensi populations with insecticide-resistant mutations.
- The new genome assembly is a comprehensive and accurate map of genomic functional elements and will serve as a foundation for the new age of active genetics in An. Stephensi.

Genome

- A genome is all genetic material of an organism. It consists of DNA (or RNA in RNA viruses).
- The genome includes both the genes (the coding regions) and the noncoding DNA, as well as mitochondrial DNA and chloroplast DNA.
- The study of the genome is called **genomics.**

The need

- Mosquito-transmitted malaria is the leading global killer among vector-borne diseases, claiming over 400,000 human lives in 2019.
- In order to engineer advanced forms of defence against malaria transmission, including targeted CRISPR and gene drive-based strategies, scientists require intricate knowledge of the genomes of vector mosquitoes.
  - ◉ CRISPR technology is a gene editing tool which allows researchers to easily alter DNA sequences and modify gene function.

Malaria in India

- Malaria is a potentially life-threatening disease caused by parasites (***Plasmodium vivax, Plasmodium falciparum, Plasmodium malariae and Plasmodium ovale***) that are transmitted through the bite of infected female Anopheles mosquitoes.
- According to the World Malaria Report 2019, India represents 3% of the global malaria burden.

Significance of the development

- The development can help address the growing Asian and African *An. stephensi* populations with insecticide-resistant mutations.
- The findings also offer clues suggesting that the molecular basis of insecticide resistance may differ between sexes.

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