

# CURRENT AFFAIRS

*Month of*

**FEBRUARY-2021**



Plot-1441, Opp. IOCL Petrol Pump, CRP Square, Bhubaneswar

**Ph : 8093083555, 8984111101**

Web : [www.vanikias.com](http://www.vanikias.com) | E-mail : [vaniksias@gmail.com](mailto:vaniksias@gmail.com)

facebook  [www.facebook.com/vanikias](https://www.facebook.com/vanikias)

**CURRENT AFFAIRS ANALYST**  
**WEEK-1 (FEBRUARY, 2021)**

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# SECTION:A

## (MAINS)

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### CURRENTAFFAIRS



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# EXTREME HEAT EVENTS IN INDIA'S CITIES: A FRAMEWORK FOR ADAPTIVE ACTION PLANS

## CONTEXT

- Among the most severe consequences of climate change is the global rise in average temperatures, and the resultant heat waves.
- Given the increase in the frequency and intensity of heat waves, it is essential to prepare and implement the action plans and to adopt a framework for adaptive action plans.

## ● BACKGROUND

- o Climate change, the long-term alteration of temperature and typical weather patterns, has emerged as a defining challenge of the 21st century.
- o Although it is both naturally induced and anthropogenic in character, climate change's rapid rate is mostly human-made.
- o Over 150 years of industrialisation, deforestation, fossil fuel use and large-scale agriculture have resulted in record levels of greenhouse gases (GHGs) being emitted into the atmosphere.
- o Burgeoning populations, growing economies, and improved living standards have also meant a considerable rise in the cumulative level of GHG emissions.
- o There is a direct link between the concentration of GHGs in the Earth's atmosphere and the average global temperature—rising GHG concentration has translated into increasing mean global temperature.
- o Consequently, there will also be impacts on biodiversity and the ecosystem, including species loss and extinction.
- o This is likely to lead to climate-related risks to health, livelihoods, food security, water supply, human security and economic growth.

- extreme temperatures in most inhabited regions
- a rise in mean sea level
- heavy precipitation in many areas
- the probability of drought and precipitation deficits in some areas

## ● ANALYSIS

### What are Heatwaves?

- o A heatwave refers to surface temperatures being significantly higher than normal for several days at a time.
- o The World Meteorological Organization defines heatwaves as **“five or more consecutive days during which the daily maximum temperature surpasses the average maximum temperature by 5°C (9°F) or more”**.
- o However, there is no universally accepted definition for heatwaves.
- o Heatwaves are measured relative to the usual weather in an area and the normal temperatures for these seasons, and so definitional differences are reflective of global climatic variations and the geographically variable nature of heatwaves and their impact.

### Important Reports

- In its **Fifth Assessment Report (2013)**, the **United Nations Intergovernmental Panel on Climate Change (IPCC)** revealed that between 1880 and 2012, the average global temperature rose by **0.85 percent**.
  - The report also stated that a great deal of irreversible damage had already been triggered and most aspects of climate change will persist for centuries, even if emissions are controlled.
- A **2018 IPCC report** concluded that many of the adverse impacts of climate change would come at the 1.5°C mark, including

### Different standards on heatwaves

Several countries have adopted their own standards on heatwaves:

- **India:** The India Meteorological Department requires that, to be classified as a heatwave, temperatures should reach:
  - at least 40°C in the plains,
  - at least 30°C in the hilly regions and,
  - should reflect an increase of at least 5°C-6°C (or 9°F-10.8°F) above the normal temperature

- **United States:** The US National Weather Service defines a heat wave as a spell of "abnormally and uncomfortably hot and unusually humid weather" over two days or more.
- **Denmark:** In Denmark, a heat wave occurs when the mean of the highest recorded temperature measured over three consecutive days exceeds 28°C (82.4°F).
- **Australia:** In Adelaide, Australia, a heat wave is defined as five straight days with temperatures at or above 35°C (95°F), or three consecutive days at or over 40°C (104°F).

### India and Heatwaves

- o India routinely experiences hot summers but, in recent years, several parts of the country have seen abnormally high temperatures—**4°C-5°C (39.2°F-41°F) above normal**—over several days, being defined as heatwaves.
- o India's north west region typically experiences heatwaves between March to June, and in rare cases until July.

- Heatwaves killed about 6,187 people in India between 2011 and 2018.
- However, data on heatwave fatalities are not widely available since most cases go unreported and the ambiguity of symptoms may mean that mortality rates are not accurately captured.

- o Urban habitats are more prone to disasters than rural areas—cities have frequently been hit by floods and other calamities and bore the brunt of the COVID-19 pandemic worldwide.
- o Similarly, cities are more vulnerable to heatwaves due to the 'heat island effect'. Urbanised areas experience higher temperatures due to their built density.

### Aren't heatwaves and 'loo'same?

- Additionally, during the summer months, north and north west India also experience the '**loo**'—**strong, hot, dry winds** that blow during the day and sometimes until late in the evening.
  - On account of its extreme temperature, ranging between 45°C-50°C (115°F-120°F) and very low humidity, the 'loo' zaps the human body dry on exposure, leading to **fatal heatstroke**.
  - However, the 'loo' is a normal weather phenomenon in northern India, and heatwaves are considered to occur above this condition *not* before it.

### How 'urbanization' is contributing to the phenomenon?

- o Buildings, roads and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies.
- o Urban areas, where such structures are highly concentrated and greenery is limited, become 'islands' of higher temperatures in comparison to outlying areas.
- o Consequently, temperatures in urban areas are about 1°F-7°F higher in the daytime and about 2°F-5°F higher in the nighttime than temperatures in outlying areas.
- o India is rapidly urbanising, with many of its cities adding large populations regularly. Indian cities have already experienced the fallout of rising temperatures. In 2015:
  - Hyderabad recorded a temperature of 46°C (114.8°F) on 21 May
  - Delhi was 46.4°C (115.5°F) on 25 May
  - Prayagraj recorded a temperature of 47.8°C (118°F) on 9 June
  - Bhubaneswar 44°C (111.2°F) on 10 June
- o It was the fifth deadliest heatwave ever recorded, with 2400 deaths reported across the country that year.

- According to the '**Assessment of Climate Change Over The Indian Region**' report by the Union Ministry of Earth Sciences, India's average temperature has risen by 0.7°C (33.2°F) between 1901 and 2018 and will rise by 4.4°C (39.9°F) by 2100, while heatwaves will multiply by a factor of two or three and their duration will double compared to the 1976-2005 period.
- Similar conclusions were made by the **McKinsey Global Institute**, which predicted that by 2050 India would face many lethal heatwaves—three-day events during which the average daily maximum wet-bulb temperature exceeds the survivability threshold for a healthy human resting in the shade.
  - Scientific literature holds that at **35°C (95°F) wet bulb**, a healthy human being can survive by resting in the shade for approximately five hours.

### Is the phenomenon limited to India?

Heatwaves are a global phenomenon; around the world, days are getting hotter more frequently. The proportion of the Earth's surface area that was subjected to scorching summers (significantly higher

than the average temperatures) increased from 1 percent between 1951-80 to over 10 percent between 1981-2010.

- o **United States:** In the US, for instance, the frequency of heatwaves has increased substantially, from an average of two per year during the 1960s to over six per year during the 2010s.
- o **England:** In England, between 2015 and 2019, over 3,400 people lost their lives on account of extreme temperatures, with nearly 900 extra deaths (deaths above the normal numbers recorded each year) during the 2019 summer heatwaves.
- o **Europe:** In 2003, a devastating heat wave during Europe's hottest summers since the sixteenth century killed about 30,000 people across the region.
- o **Japan:** In 2018, Japan's weather agency warned of unprecedented levels of threat on account of extreme heat and declared the heatwaves sweeping the country as a natural disaster.
- o **Africa:** While Sub-Saharan Africa has been identified as a heatwave 'hotspot', regional governments have not reported such events, but the African continent is as vulnerable to the impacts of heatwaves as elsewhere.

### What are the health impacts of Heatwaves?

Heatwaves have several health impacts.

- o **Dehydration:** Heatwaves can cause severe dehydration, acute cerebrovascular accidents and contribute to thrombogenesis (blood clots).
- o **Heat cramps:** Heat cramps result in edema (swelling) and syncope (fainting), often accompanied by fever below 39°C (102°F).
- o **Heat exhaustion and/or heat stroke:** Heat exhaustion can cause fatigue, weakness, dizziness, headaches, nausea, vomiting, muscle cramps and sweating. Meanwhile, heat strokes cause the body temperature to rise to 40°C (104°F) or more and can result in delirium, seizures, coma or possible fatality.

### Is India taking enough measures?

- o Despite the high incidences of deaths due to heatwaves and the rising number of extreme weather events, **India does not recognise heatwaves as a disaster** under its Disaster Management Act (2005).
- o **AMC's Heat Action Plan:** However, in 2013, the Ahmedabad Municipal Corporation (AMC) implemented the country's first HAP, developed in the aftermath of the **2010 heatwave** that hit the city, with temperatures exceeding 46.8°C (116.2°F) and 1344 people losing their lives.

o The HAP included four key strategies.

- o **> Awareness:** First, public awareness and community outreach to share information on the risks of heatwaves and do's and don'ts to follow to prevent heat-related deaths and illnesses.
- o **> Early warnings system:** Second, to put an early warning system in place to alert citizens about the onset of the heatwave and set inter-agency coordination in motion.
- o **> Training:** Third, to build capacity among healthcare professionals, including paramedical staff and community health staff.
- o **> Adaptive techniques:** Fourth, to launch measures to reduce heat exposure and promote adaptive techniques, such as access to potable drinking water, cooling spaces and night shelters, especially for high-risk populations.
- o **NDMA's guidelines:** However, in the wake of the **2015 heatwaves**, the National Disaster Management Authority (NDMA) published guidelines on preventing and managing heatwaves.
  - o **> The NDMA urged cities and states to prepare heat action plans (HAPs) that focus on**
    - o early warnings systems
    - o training healthcare professionals
    - o raising public awareness
    - o encouraging collaboration with NGOs and civil society, as a means to tackle heatwaves
- o Several other cities in India have also adopted such strategies.
  - o **> Currently, 30 cities across 11 states facing extreme hot weather conditions have adopted HAPs, including Delhi, Hyderabad, Bhubaneswar and Nagpur.**

### What needs to be done?

India must adopt several measures to prepare for and tackle the impact of heatwaves.

- o **Recognition under DM Act:** It must recognise heatwaves as a disaster and include it under the Disaster Management Act. This will equip the Centre, states and urban local bodies with statutory powers to enforce orders. It will also give authorities access to revenues that flow from the Act.
- o There are two broad types of responses to disasters:
  - o **> mitigation (the reduction of heatwave sources):** Mitigation measures can be more global while adaptation is primarily local.
  - o **> adaptation (adjustment mechanisms to cope with heatwaves):** Within adaptation,

annual preparatory and operational steps in a city and long-term but local policy-driven design changes should be included.

- o **Early warning system:** Cities must develop sound early warning systems to inform citizens of a coming heatwave. Additionally, public health information and guidelines should be prepared and made available to all citizens.
- o **Special attention to vulnerable people:** Special attention must be given to the urban poor and other vulnerable groups.
- o **Urban planning:** In addition to the short-term steps that need to be taken each year to manage heatwaves, cities must initiate several

significant urban planning measures for long-term sustainability.

### ◎ CONCLUSION

Given India's increasing vulnerability to heatwaves, it must first recognize such incidents as a disaster to make national and state disaster assistance available for mitigation efforts. Although the NDMA has issued guidelines on dealing with heatwaves, a national HAP will be extremely beneficial to cities and will "drive a national agenda to embed adaptation planning for rising temperature in our plans and design for space, utilities, infrastructure and industries."

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# COUNTERING DISINFORMATION AND HATE SPEECH ONLINE

## CONTEXT

- In order to align the utility of social media platforms with the welfare of citizens, while safeguarding the right to free speech, there is need for an overhaul of India's current regulatory framework in order to curb hate speech and fake news online.
- The failure of the system raises concerns and calls for transparent recognition of forest dwellers' rights.

## ● BACKGROUND

- o The use of social media for peddling fake news and hate speech is not a new phenomenon.
- o Before the pandemic, episodes of information dumping peaked during elections, socio-political movements, or to manipulate financial markets.
- o The COVID-19 pandemic has shown how fast and wide information can spread: so fast, that the phenomenon was given the name, "infodemic".
- o Amidst the COVID-19 crisis, it has become apparent that widespread fake news can threaten public health. Public awareness is key in battling a health crisis.
- o However, if the regulation of misinformation is concentrated in the hands of platforms or government agencies, it becomes susceptible to perception-alteration tactics.

### Example (scrutinising and fact check)

- Facebook, for one, can be a highly powerful tool, with over 290 million users in India—its highest in the world.
- In recent times, however, various governments have begun scrutinising the platform for what they allege to be its lackadaisical approach to hate speech.
- In April 2020, Facebook flagged 50 million posts with warning labels; it argued that once a content is flagged, 95 percent of end-users do not access it.
- Fact-checking organisations are also working to counter fake news campaigns, including, in India—reports about purported "cures" against the COVID-19.
- According to a Reuters report, between January and March 2020, there was a 900-percent increase in fact-checks related to Covid-19.
- The same report indicates that a mere 20-percent of the total misleading content in that period had come from prominent public figures.

## ● ANALYSIS

### To what extent, social media is to be blamed?

- o **Vulnerable to abuse:** Social media platforms facilitate the sharing of information and enhance connectivity and civic engagement. At the same time, however, they are vulnerable to abuse by malicious actors who use the channels to spread misinformation and hateful and divisive content. Behind the veil of protecting free speech, tech companies in India remain oblivious to such potential misuse.
- o **Conflicts:** Social media platforms may have democratized the internet, but the same technology can create conflicts as it enables the proliferation of erroneous information at an unprecedented pace.
- o **Lack of quick identification:** The companies do not have adequate resources to quickly identify such content and remove them.
- o **Numerical advantage:** Fake news thrives on dissemination through surplus or deficit information models. Under the surplus model, if enough users share the same information, it validates itself by a sheer numerical advantage, including when the gatekeepers of information (like journalists or politicians) validate it.
- o **Widespread impact:** The impact of fake news is enhanced due to lack of access to correct information, limited prominence of fact-checking mediums, overwhelming nature, or the user's inability to comprehend its consequence.
- o **Higher interaction:** Of all the content in these platforms, those that are extremist, fake and populist are found to often garner high "interaction" numbers.
  - Facebook, for example, took down 40 million misleading posts in March 2020 alone, and another 50 million the following month.
- o **Targeted advertisement:** The algorithms of these platforms work in such a manner that they record the user's past interactions and fill their feed with



their identified interests; this facilitates targeted advertisements, from where the platforms earn their incomes.

## India's Regulatory Framework: An Overview

### 1. Fake News

- o There is **inadequate regulation of fake news** under Indian law.
- o Due to the various types of fake news, their motivations, and the ways they are shared, the regulatory challenge is daunting.
- o To combat fake news, the first imperative is to identify the different forms:
  - > **'misinformation'** is the inadvertent sharing of false content
  - > Whereas, **'disinformation'** is deliberate sharing with an intent to deceive
    - Its sub-types are
    - misleading content
    - imposter content
    - fabricated content
    - false connection
    - false context
    - manipulated content
    - satire or parody
- o The Indian Ministry of Electronics and Information Technology (MeitY) has recognised the potential for misuse of platforms and even broadly defined 'disinformation'.
- o However, the term is yet to be adopted under the IT Act or any provisions of the penal code.
- o **Section 505(1)(b) of the Indian Penal Code or Section 54 of Disaster Management Act, 2005**, both provide broad recourse against cases which have severe consequences on public wellbeing; they are short-handed, however, against the rapid pace of social media.
- o These regulations also lack precedent or uniform application against multiple types of fake news.

### 2. Hate Speech

- o Absolute free speech laws that protect against any type of censorship inadvertently render protection to hate speech as well.
- o In India, hate speech is **not profusely restricted**, it remains undefined with appropriate IT Act provisions or a regulatory mechanism for online content.
- o Absent appropriate codes or regulations for intermediaries, those who tend to have a louder

voice—such as politicians or celebrities—can harness this capacity to incite anger or divide communities without being threatened by any form of liability.

- o India's multiple laws on sedition, public order, enmity between groups, and decency and morality, broadly form the country's jurisprudence on what is known as "hate speech", without using the term itself.
- o Following the unconstitutionality of **Section 66A of the IT Act**, no provision under the IT Act currently aims to curtail either online or offline 'Hate Speech'.
- o The most employed **sections 153A and 295A of the Indian Penal Code (IPC)** are also inadequate to deal with the barrage of online hate content.
- o The **Parliamentary Standing Committee** has recommended changes to the IT Act by incorporating the essence of the Section 153A.
  - > The report also suggests stricter penalties than prescribed under Section 153A due to the faster and wider spread of information in online spaces.
  - > It advocates criminalising "innocent forwards", for example, with the same strictness as the originator of the content.

### How other countries are handling these platforms?

Many countries have initiated inquiries into the role played by these platforms in spreading extremist, hateful or fake content.

- o **Germany, Singapore, and France** can now levy significant fines against platforms that fail to restrict illegal content after due process of notice and flagging.
- o The **United Kingdom (UK)** is debating an Online Harms White Paper.
- o The **European Commission** has proposed two legislative initiatives—i.e., the Digital Services Act (DSA) and the Digital Markets Act (DMA) for the creation of regulatory mechanisms to counter online harms.

In the United States in early January 2021, platforms like Twitter provided a peek into their ability to counter disinformation, directing end-users to reliable sources, and suspending the account of former president Donald Trump, "due to the risk of further incitement of violence."

### Challenges/Issues

- o **No definition:** The Indian challenge to garner consensus and counter 'hate speech' and 'fake

news' extend to their understanding in real/offline world. Both remain undefined under any domestic legal mandate, including the IT Act.

- o **Ethical-legal gap:** The difficult question concerning hate speech or fake news legislation pertains to the existing ethical-legal gap, the executive response departing from conservative understanding of online spaces and data.
- o **Lack of effective regulation:** While disruptive technologies are evolving at a fast rate, the regulations fail to address gaps to deter unethical behaviour.
- o **Lack of approach to counter manipulation and hate speech:** The platforms alone are not equipped to oversee the task for a remodelled approach to counter manipulation and hate speech.
- o **Difficulty in removal of risky content:** Due to the overarching jurisdictional nature of these acts and easy multiplication, taking down content is not a silver bullet in countering hate speech and fake news.
- o **Lack of accountability and transparency:** The lack of accountability and transparency calls for a rethinking of social media platforms' role and structure in order to counter their misuse.
- o **No liability:** In India, social media platforms are not liable under any rules or regulations. They function under a regulatory vacuum and are not bound by any industry regulatory standards for the functions they dispense

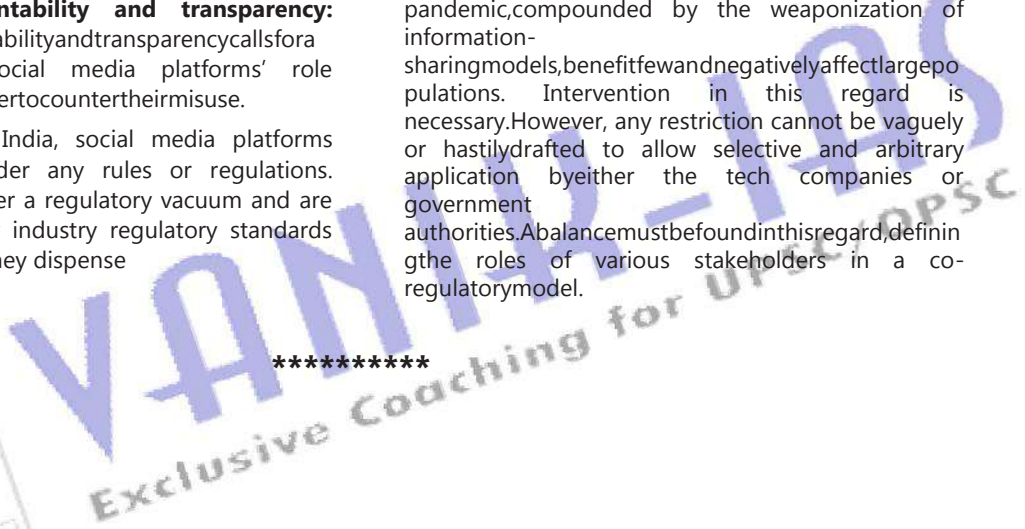
**Framing India's Approach (Guiding Principles)**

- o The Indian response must be driven by four guiding principles:
  - > **Accountability and transparency** over decision-making by tech platforms, state and non-state actors
  - > **Ensure consistency and collective will** by encouraging inclusive stakeholder engagement for all decision-making processes
  - > **Respect human rights standards** and habituate a humane application of tech. Incentivise innovative adoption of redesigned tech products that preempt and provide safeguards from online harms
  - > **Legal certainty** for consistent application and execution of duties and rights of stakeholders

**CONCLUSION**

The evolving nature of online harm necessitates an appropriate response from the regulatory bodies. Additionally, the dissimilar nature of the pandemic, compounded by the weaponization of information-sharing models, benefit few and negatively affect large populations. Intervention in this regard is necessary. However, any restriction cannot be vaguely or hastily drafted to allow selective and arbitrary application by either the tech companies or government authorities. A balance must be found in this regard, defining the roles of various stakeholders in a co-regulatory model.

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# SC QUESTION OVER DELAY IN CLEARING COLLEGIUM RECOMMENDATIONS

## CONTEXT

The Supreme Court questioned the government about the delay in clearing Collegium recommendations for judicial appointments to various High Courts.

### ● BACKGROUND

- A Bench headed by CJISABobde— which termed it a “**matter of great concern**”— asked the **Ministry of Law and Justice** to spell out how much time it would take to process the recommendations.
- Pointing out that recommendations sent by the high courts of Bombay and Allahabad in May-June 2020 were hanging fire, it said in many cases government took more than a year.
- As per the court, as on date 189 proposals on appointment of judges are pending and sought an update on the latest position from the government.
  - The central government is yet to clear 16 names that were approved by the Supreme Court collegium for appointment to four high courts, with the oldest recommendations going back to July 2019.
  - The central government is also yet to process 103 proposals that were sent to the Union Ministry of Law & Justice by various high courts to be forwarded to the top court collegium for its approval, deepening the vacancy crisis in the higher judiciary.

### ● ANALYSIS

#### What is Collegium system?

- It is the system of appointment and transfer of judges that has evolved through judgments of the Supreme Court, and not by an Act of Parliament or by a provision of the Constitution.
- Under the system, the collegium decides the following:
  - appointments and elevations of judges and lawyers to the Supreme Court and the High Courts
  - transfer of judges to High Courts and the Apex court

#### Composition of Collegium

- **SC Collegium:** The Supreme Court collegium is headed by the Chief Justice of India and comprises four other senior-most judges of the

- **HC Collegium:** A High Court collegium is led by its Chief Justice and four other senior-most judges of that court.

#### The procedure

- **CJ and SC Judges:** The President of India appoints the CJ and the other SC judges.
  - **CJ:** As far as the CJ is concerned, the outgoing CJ recommends his successor.
    - In practice, it has been strictly by seniority ever since the supersession controversy of the 1970s.
    - The Union Law Minister forwards the recommendation to the Prime Minister who, in turn, advises the President.
  - **SC Judges:** For other judges of the top court, the proposal is initiated by the CJ.
    - The CJ consults the rest of the Collegium members, as well as the senior-most judge of the court hailing from the High Court to which the recommended person belongs.
    - The consultees must record their opinions in writing and it should form part of the file.
    - The Collegium sends the recommendation to the Law Minister, who forwards it to the Prime Minister to advise the President.
- **Chief Justice of HC:** The Chief Justice of High Courts is appointed as per the policy of having Chief Justices from outside the respective States. The Collegium takes the call on the elevation.
- **HC Judge:** High Court judges are recommended by a Collegium comprising the CJ and two senior-most judges.
  - The proposal, however, is initiated by the Chief Justice of the High Court concerned in consultation with two senior-most colleagues.
  - The recommendation is sent to the Chief Minister, who advises the Governor to send the proposal to the Union Law Minister.

#### Consultation with Judges

- The constitution also has another condition specific to the appointment of the judges in the High Courts and the Supreme Court.

- **Article 124(2)** mandates the President to consult the judges of the court before appointing a judge in the same court.
- The 'consultation' however did not bind the president in the same way he is bound by the council of ministers and the president's power to appoint judges before 1973 was just a formality and the appointments were on behalf of the executive government.

**Is the system provided in the Constitution?**

- The Collegium of judges is the Supreme Court's invention.
- It does not figure in the Constitution, which says judges of the Supreme Court and High Courts are appointed by the President and speak of a process of consultation.

**What about 'independence of judiciary'?**

- o The Constitution of India has embodied the concept of Independence of Judiciary.
- o However, the appointment of judges in the High Court and the Supreme Court has been left to the President, who works on the aid and advice of the council of ministers.
- o The President shall act in accordance with such advice.

**Genesis of the system**

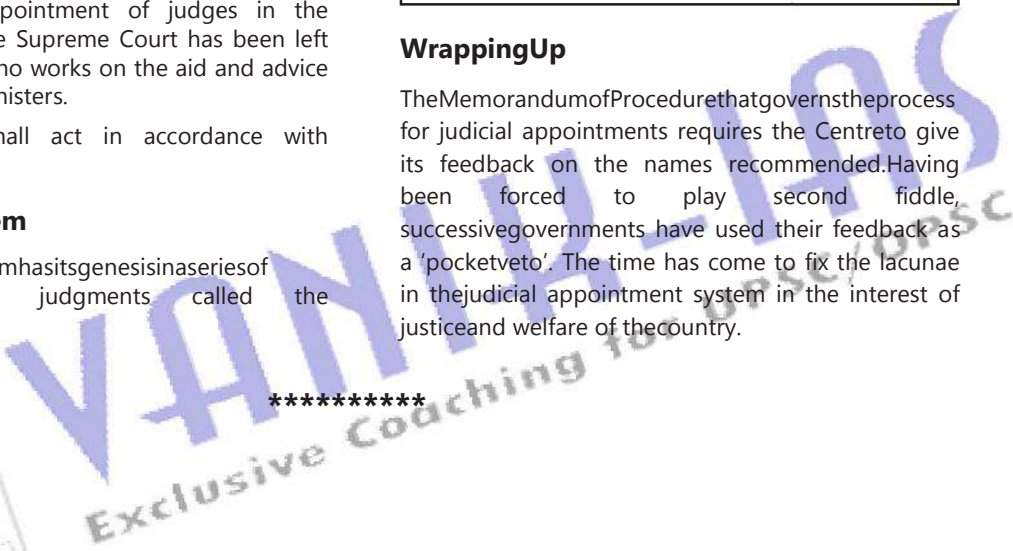
- o The collegium system has its genesis in a series of Supreme Court judgments called the 'Judges Cases'.

- o The collegium came into being through interpretation of pertinent constitutional provisions by the Supreme Court in the Judges Cases.

- **The 'First Judges Case' (1981)** ruled that the "consultation" with the CJI in the matter of appointments must be full and effective. However, it rejected the idea that the CJI's opinion, albeit carrying great weight, should have primacy.
- **The Second Judges Case (1993)** introduced the Collegium system, holding that "consultation" really meant "concurrence". It added that it was not the CJI's individual opinion, but an institutional opinion formed in consultation with the two senior-most judges in the Supreme Court.
- On a Presidential Reference for its opinion, the Supreme Court, in the **Third Judges Case (1998)** expanded the Collegium to a five-member body, comprising the CJI and four of his senior-most colleagues.

**Wrapping Up**

The Memorandum of Procedure that governs the process for judicial appointments requires the Centre to give its feedback on the names recommended. Having been forced to play second fiddle, successive governments have used their feedback as a 'pocket veto'. The time has come to fix the lacunae in the judicial appointment system in the interest of justice and welfare of the country.



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# QUANTITATIVE EASING VARIANTS IN EMERGING MARKETS

## CONTEXT

The coronavirus-led market rout hit developing economies hard. In order to combat economic pain from the COVID-19 pandemic, more than a dozen emerging markets have adopted quantitative easing.

### ◎ BACKGROUND

- o Several emerging economies have responded to the financial shock from the COVID-19 pandemic in a rather dramatic fashion.
- o The pandemic and the ensuing fallout in terms of twin demand and supply shocks — and all this amid a persistent shortfall in public finances — induced **Emerging Market (EM)** governments to seek swift and innovative solutions.
- o Quantitative Easing (QE) and its variants have been popular for a while.
- o Often likened to financing fiscal deficit overnight, QE is meant to prevent unwarranted tightening during times of stress.
- o Normally, it is assumed that only the most advanced economies like the US, EU, and Japan would implement it as a last resort for stabilising the economy in the face of recession.
- o However, many EM countries have plunged into their self-styled versions of QE programmes with policy rates well over zero, citing the need to quell market dysfunctions and ease liquidity conditions over the short run.
- o While some central banks including South Africa and India limited themselves to buying government debt in secondary trading, others such as Indonesia and Ghana launched themselves straight into primary markets, snapping up bonds as soon as they were issued.
- o Against this backdrop, EM policymakers have tried to reconcile concerns of inflation and debt sustainability with claims of adequate forex reserves and manageable current account deficits.

➤ These new reserves are meant to normalize credit markets during crunches.

- o In QE, central banks generate money to purchase bonds from banks, financial institutions and infuse money supply for increased credit activity.
- o Banks and financial institutions may lend to governments, businesses, individual households at lower interest rates. This results in increased levels of consumption and income.
- o Theoretically, when the economy recovers, central banks sell the bonds and destroy the cash received. This means in the long term there has been no extra cash created.
- o But QE is often undertaken by emerging markets under different circumstances altogether.
- o In such cases, central banks are called upon when the government faces temporary yet intense fiscal pressures. And this is also where the real risks come in.

#### The last resort

- Usually, central banks attempt to revive economy through Monetary policy tools, to infuse more liquidity into the economy, such as lowering-
  - Cash Reserve Ratio
  - Statutory Liquidity Ratio
  - Banks Rates
  - Repo rates
- QE is used as a last resort, when no other tools are working to revive economy.
- QE as a monetary policy tool was used by federal reserve bank during global financial crisis in 2008 and by European Central Bank during Euro Debt Crisis in 2014.

### ◎ ANALYSIS

#### What is QE?

- o Quantitative Easing (QE) is an **unconventional monetary policy** that implies **printing new money** to purchase government debt and other financial assets when interest rates have already hit zero.
- o **Objective:** The rationale behind this is to 'boost economic activity' by creating **new bank reserves**.

#### QE deployment and the role of 'core currencies' and 'peripheral currencies'

- o In the context of QE deployment, it is also important to underscore the difference between the role of
  - **core currencies (say US Dollar, the Euro)**
  - **peripheral currencies**
- o Only the former currencies are truly global in the sense that those are demanded by both foreign

and domestic market participants while the latter ones are only domestically demanded.

- o Peripheral currencies are also often undermined by historical episodes of currency and debt crises, high inflation and limited credibility, and the fragility of financial sectors and political systems.
- o This is what instigates the possible risks posed by QE in EMs (compared to the more advanced economies).
- o Instructively, during times of panic, investors rush into the safest assets like US Treasury securities.
- o This usually happens at the expense of other less mature economies that face significant capital outflows.
- o As a result, many EMs face rising bond yields and a higher term premium, which is the extra compensation offered for bonds with longer maturities.

### What transpired?

- o As a matter of fact, several EM economies faced unprecedented capital outflows and subsequent spikes in bond yields earlier this year caused by a sudden investor panic.
- o Simultaneously, most private asset markets, say stocks, bonds, commodities, and property, also came under stress as liquidity dried up.
- o At least 20 EM central banks, fiscally stronger and vulnerable ones alike, have sincerely resorted to some form of asset purchases on top of sharp interest rate cuts, to backstop the economy by stabilising financial markets.
- o And so far for most EMs, these thick and fast measures have not been counterproductive.

➤ **First group:** Interestingly, at the time of QE introductions, only **Croatia** and **Chile** were close to zero while **Poland** reached there slightly later. While this first group of EM central banks chose to engage in QE only after exhausting the space for further rate cuts, a second group dived in with largely fiscal (instead of monetary) objectives.

➤ **Second group:** Central banks in

**Ghana** and the **Philippines** cited exceptional circumstances and openly offered lifelines to their governments by purchasing sovereign debt toward off excessive pressure.

➤ **Third group:** Lastly, central banks in **South Africa, Thailand** and **India** among others, which constitute the third set, merely undertook the role of a market maker to bolster confidence in private investors. Their intent was not just to raise bond prices, but to simultaneously tighten the spreads (otherwise large gaps between the bid and offer prices) and reduce its volatility.

### Isn't printing currency a good solution to all economic problems?

- o Central banks cannot keep printing currency indefinitely by buying bonds to alleviate the stress from deteriorating fiscal dynamics.
  - **Inflation fears:** Printing money beyond appropriate limits may spark inflation fears.
  - **Erode confidence in local currency:** It can also erode confidence in the local currency.
  - **Worsen exchange rate:** The unsustainability of **debt monetisation** can spook international investors and the resultant outbound capital flows will worsen the exchange rate.
  - **Currency run:** At the extreme, their departure can bring a full-fledged currency run.
- o Therefore, it is the perception of government solvency which makes the state robust against debt rollover risks.

### Why QE is often seen as high-risk advice for EMs?

Notwithstanding the short-term gains, it is not difficult to see why QE is often seen as high-risk advice for EMs.

- o **Damage the credibility of central banks:** Intense injections of liquidity can damage the credibility of central banks greatly and cause inflationary shocks, currency runs, and exchange rate instability besides the possibility of debt distress and worsening private sector balance sheets.
- o **Multiple issues:** Intense injections of liquidity also cause
  - inflationary shocks
  - currency runs
  - exchange rate instability
  - debt distress
  - worsening private sector balance sheets
- o **Challenging debt dynamics:** At this juncture, Brazil, Colombia, and Costa Rica are among those facing challenging debt dynamics.
  - Brazil is perceived to be the riskiest of all, because of its reluctance in adopting reforms amid a high public debt burden (86% of GDP).
  - Costa Rica, meanwhile, has been facing a steep interest payment burden, reflected by loosening credit spreads, since its economy went into a tailspin.
- o **Inflationary risk:** Similarly, Turkey, Poland, Hungary, and India are among those facing inflationary risk.

**CONCLUSION**

Finally, it is worth noting that only strong and credible central banks are able to pull off unconventional policies successfully over the longer run. EM central banks with weak and unstable currencies should

understandably be more cautious when it comes to unconventional monetary policies. These are extraordinary circumstances and it may be wrong to assume that investors would continue reacting the same way as intervention becomes routine.

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# PUBLIC PARTICIPATION, AN IMPORTANT ELEMENT OF GOOD GOVERNANCE

## CONTEXT

With rapid urbanization in India, a focus on good governance is critical for sustainability for the country, as a whole. In this regard, 'public participation' is an important element of good governance.

### ● BACKGROUND

- o India is the largest democracy in the world and citizens here are highly enthusiastic to be a part of Governance.
- o After Independence, India has adopted **representative democracy** as form of Government.
- o Public participation is a mainstay of democracy and one of the key components of decision making process.
- o A fundamental rethinking is under way about the roles of government, citizens, and community organizations in public policy.
- o Can government be reconstructed to make public policies more responsive to citizens and thus more effective?
- o During last seven decades, the government has not directly involved citizens in Public Policy making Process.
- o However, it is important now, to understand

how to Indian democracy more people oriented and how to increase citizens' engagement in the government process.

### ● ANALYSIS

#### Why public participation is essential for Indian democracy?

- o **Increasing transparency and accountability:** Citizens play a critical role in advocating and helping to make public institutions more transparent and accountable.
- o **Solutions to complex issues:** It also contributes to effective and innovative solutions to complex development challenges.
- o **Improved development results:** Under the right conditions, citizen engagement can help governments achieve improved development results in creating links between citizen engagement and improved public service delivery, public financial management, governance, social inclusion and empowerment.
- o **Surfacing important issues:** It helps to surface important issues of social and environmental justice, entitlements and equity.

- o **Ensures justice:** Public participation has the potential to throw new light on different aspects of the human condition, and follow up with the authorities, through to the judicial system, to secure rights and justice.
- o **Reduces corruption:** In the deliberative democracy discourse, it has been proposed that a collaborative countervailing power is needed, to help foster the integrity of empowered participatory governance, and reduce its susceptibility to various forms of corruption.

#### Challenges to democracy

- India is sometimes called an 'unlikely democracy', built as it has been in:
  - > Poverty
  - > widespread illiteracy
  - > a deeply hierarchical social structure which are seen as 'inhospitable conditions for the functioning of democracy'

#### Ways of Citizen Engagement

- o Information sharing
- o Consultation
- o Joint assessment
- o Shared decision-making and collaboration

#### What are the principles of participatory democracy?

The principle of participatory democracy has two integral elements –

- o **Public participation in decision making:** The first element is carefully circumscribed by the state of **Rule of Law** or procedure established by law and a fine balance has been struck between "need for public participation and effective functioning of administration". The participation itself involves three features –
  - > the stage
  - > the extent
  - > the nature of participation
- o **Placing information regarding Government actions in public domain**



**The trend of public participation in other democracy**

- o **United States:** The US Senate makes it mandatory to require written submissions from the public for any Bill introduced, with no restrictions on senate committees.
- o **Australia:** Australia holds workshops as part of regional consultations in the prelegislative stage, and after a report is finalised. Transcripts of any depositions made as part of submissions before the committees are published.
- o **Canada:** The province of Ontario in Canada has a long history of active citizen engagement.
- o **United Kingdom:** The UK Government had released a citizen engagement framework in 2008 that sought to deepen engagement with public on a wide variety of issues including constitutional change, policy formulation, behavioural issues, e.g. smoking etc.

**Challenges in Citizen Engagement**

- o **Limited trust in Government:** It is seen that generally, government actions are often low on public trust due to many reasons. The primary challenge to initiate consultation is trust building.
- o **Political Reluctance:** Public participation is essentially a political process and is often not formalised or conducted in a structured manner. As such, people are often reluctant to participate.
- o **Limited capacity to engage:** Given the limited availability of knowledge and sometimes requirement of specialised skill sets viz. Legal, technical etc, many people believe that their capacity to engage in such processes is limited.
- o **Lack of Commitment:** Engagement in policy making processes is a long drawn process and often requires individuals to make long term commitments about time and other resources.

**What needs to be done to increase participation?**

- o **Mechanism for regular Participation:** The government needs to create mechanisms for interested registered voters to participate in local government on a regular basis, in a meaningful fashion.
- o **Greater data collection at micro level:** To support this, it needs greater data collection at the ward level, particularly with respect to expenditure, voter rolls and below-poverty-line lists.

- o **Public scrutiny:** In addition, draft Bills should undergo rigorous scrutiny by experts and ordinary citizens alike — with drafts circulated in advance to academics, trade unions, business bodies and interested citizens.
- o **Other measures:** Furthermore, the government can-
  - understand viewpoints of citizens and gather feedback
  - get people's ideas and their contribution through the tasks
  - identify talent and expertise which can be garnered towards the success of projects with people's participation
  - implement best ideas and achieve the goal of 'Good Governance'

**Government initiatives to ensure citizens' engagement**

**MyGov-** It is an innovative platform launched to ensure citizens' engagement in decision making by the Government so that the ultimate goal of "Good Governance" for building India is achieved.

**Organic and claimed Participation**

- Social movements, claimed participation spaces, including organic NGO-led participation, are a strong shaping force in India.

**Induced Participation**

- In India, the most consequential enablers of induced participation have been the **73rd and 74th Constitutional Amendment Acts (CA A)**, creating institutions of **local self-government in villages and urban areas** across the country, with elected councils.
- Empowered participatory governance in India refers to local self-government in rural India, especially in relation to gram sabhas (village assemblies).

**Concluding observations**

To build a better, credible state, the country needs to start at the bottom. Rising awareness about the importance of public participation and the benefits of such cooperation will help empower citizens, shifted them away from their current emasculated state.

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# **SECTION:B**

## **(PRELIMS)**

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**CURRENTAFFAIRS**



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## ASSAM CELEBRATES FIRST ANNIVERSARY OF BTR AGREEMENT

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◎ **CONTEXT:** Assam is celebrating the first anniversary of the historic Bodoland Territorial Region (BTR) agreement.

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◎ **ABOUT:** **What is Bodo Accord?**

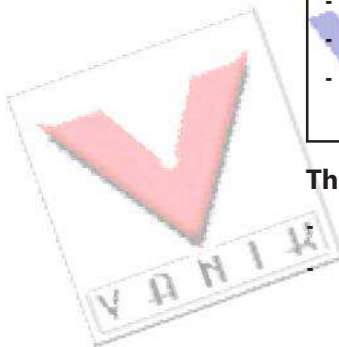
- The Bodo Accord, was signed in New Delhi on January 27 last year by the Centre with all four factions of-
  - o National Democratic Front of Bodoland (NDFB)
  - o the All Bodo Students Union (ABSU)
  - o United Bodo Peoples' Organisation (UBPO)
- It was expected to end decades-old violent demand for a separate Bodoland state and bring peace to areas dominated by Bodos, the largest tribe in Assam.
- This is the third peace deal with Bodo rebel groups.

### Quick details of the Accord

- The number of seats in BTAD will be increased from 40 to 60
- A central university will be set up at Baramain in the name of Upendra Nath Brahma
- Special industrial policy for BTAD
- Railway coach factory to be set up in BTAD area
- Sports Authority of India (SAI) centre to be set up at Udalguri, Baksa and Chirang
- DC, SP will be appointed in consultation with BTC authority
- A National Sports University will be set up
- Autonomous Welfare Council for the Bodo people living outside BTAD areas
- GOI to expedite the process of granting Hill tribes status to Bodos living in Hills areas
- A veterinary college will be set up at Kumarikata
- A central university and RIIMS will be set up in Udalguri
- Special industrial policy for BTAD

### The previous pacts

- This is the third pact signed between the government with Bodo tribes so far.
- **1993:** All Bodo Students Union (ABSU) and the government of India signed the first agreement in 1993.
  - o The deal helped in the creation of Bodoland Autonomous Council.
  - o The Bodos were unsatisfied with the pact as their demands were not met which led to an armed movement for a separate Bodoland.
- **2003:** In 2003, the second agreement was signed between Government of India and extremist group Bodo Liberation Tigers (BLT).
  - o This pact led to the formation of BTC within four districts- Udalguri, Chirang, Baksa and Kokrajhar.
  - o These areas are commonly called the Bodoland Territorial Area District (BTAD).



**Who are Bodo?**

- The Bodo people are the largest tribe of Assam settled in the northern part of the Brahmaputra river valley.
- It is estimated that the Bodo tribe comprises 28 percent of Assam's population.

**S.P. BALASUBRAMANIAM, SHINZO ABE AWARDED  
PADMA VIBHUSHAN**

◎ **CONTEXT:**

Late singer and music composer S.P. Balasubramaniam, former Japanese Prime Minister Shinzo Abe and Islamic scholar Maulana Wahiduddin Khan have been conferred India's second highest civilian award, the Padma Vibhushan.

◎ **ABOUT:**

**Bharat Ratna**

- The Bharat Ratna is the **highest civilian** award of the Republic of India.
- **Instituted on:** 2 January 1954.
- The award is conferred in recognition of exceptional service/performance of the highest order, without distinction of race, occupation, position, or sex.
- The recommendations for the Bharat Ratna are made by the Prime Minister to the President, with a maximum of three nominees being awarded per year.
- The recipients receive a **Sanad (certificate)** signed by the President and a **peepal leaf-shaped medallion**.
- There is no monetary grant associated with the award.
- Bharat Ratna recipients rank seventh in the Indian order of precedence.
- The first recipients of the Bharat Ratna were: **the last Governor-General of the Dominion of India – C. Rajagopalachari.**
- Though usually conferred on India-born citizens, the Bharat Ratna has been awarded to one naturalised citizen – Mother Teresa, and to two non-Indians: Abdul Ghaffar Khan and Nelson Mandela, born in and citizen of South Africa.



**Padma Vibhushan**

- The Padma Vibhushan is the **second-highest civilian award** of the Republic of India, after the Bharat Ratna.
- **Instituted on:** 2 January 1954.
- The award is given for "exceptional and distinguished service", without distinction of race, occupation, position, or sex.
- The award criteria include "service in any field including service rendered by Government servants".



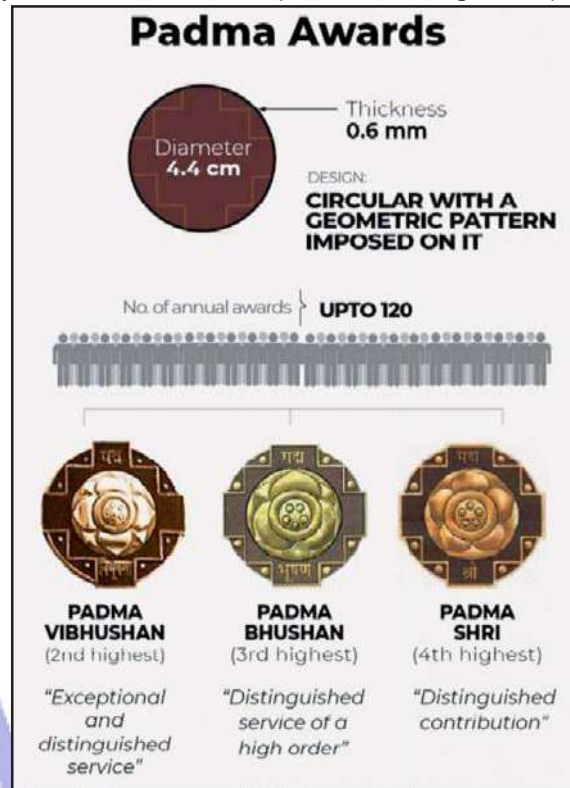
- It is a **circular-shaped bronze-toned medallion** 13/4 inches (44mm) in diameter and 1/8 inch (3.2 mm) thick.
- A centrally located lotus flower is embossed on the obverse side of the medal and the text "Padma" written in Devanagari script is placed above and the text "Vibhushan" is placed below the lotus.
- The Emblem of India is placed in the centre of the reverse side with the national motto of India, "Satyameva Jayate" (Truth alone triumphs), in Devanagari Script, inscribed on the lower edge.
- It has also been awarded to some distinguished individuals who were not citizens of India.

**Padma Bhushan**

- The Padma Bhushan is the **third-highest civilian award** in the Republic of India.
- The medal is **ranked fifth in the order of precedence of wearing of medals.**
- It has also been awarded to some distinguished individuals who were not citizens of India.

**Padma Shri**

- Padma Shri is the **fourth-highest civilian award** in the Republic of India.
- It has also been awarded to some distinguished individuals who were not citizens of India.



**US ANNOUNCES RESTORATION OF RELATIONS WITH PALESTINE**

◎ **CONTEXT:** U.S. President's administration announced it was restoring relations with the Palestinians and renewing aid to Palestinian refugees.

◎ **ABOUT:** **What is 'in' the plan?**

- The Biden administration will support a two-state solution, which it sees as "the best way to ensure Israel stays a democratic and Jewish state."
- The new administration will base its policies on consultations with both sides.
- Due to the large gaps between the Israeli and Palestinian leaders, the administration believes that its goal should be to preserve the possibility of a two-state solution in the future while focusing on improving the situation on the ground, mainly in Gaza.
- The United States would encourage Israel and the Palestinians to avoid unilateral steps that will make a two-state solution harder to reach — like:

- o Annexation
- o settlement building
- o the demolition of Palestinian homes by Israel
- o the payments to terrorists from the Palestinians
- Biden administration would oppose one-sided or biased resolutions that single out Israel in international forums.

● **BACKGROUND**

- Israel and Palestinians have clashed over claims to the Holy Land for decades, a conflict that has long been one of the world's most intractable.
- Israel forcefully captured East Jerusalem and the West Bank in the 1967 war. The international community considers both areas to be occupied territory, and the Palestinians seek them as parts of a future independent state.
- Although the United States is a strong supporter of Israel, it has traditionally tried to advance a diplomatic solution that would reconcile the competing claims of the two parties.
- The latest move is a reversal of the Trump administration's cut-off and a key element of its new support for a two-state solution to the decades-old conflict between Israel and Palestinians.
- President Donald Trump's administration provided unprecedented support to Israel, recognizing Jerusalem as Israel's capital, moving the U.S. Embassy from Tel Aviv, slashing financial assistance for the Palestinians and reversing course on the illegitimacy of Israeli settlements on land claimed by the Palestinians.
- The peace plan unveiled by Trump a year ago envisions a disjointed Palestinian state that turns over key parts of the West Bank to Israel, siding with Israel on contentious issues such as borders and the status of Jerusalem and Jewish settlements.
- It was vehemently rejected by the Palestinians.

**Why this development matters?**

- The Trump administration dramatically changed U.S. policy on the Israeli-Palestinian conflict.
- President Biden's policies, laid out for the first time today, will shift the U.S. back to the more traditional position held by previous Democratic and Republican administrations.

**What are U.S. interests in the dispute?**

- The Middle East has long been of central importance to the United States as successive administrations pursued a broad set of interrelated goals including:
  - o securing vital energy resources
  - o staving off Soviet and Iranian influence
  - o ensuring the survival and security of Israel and Arab allies
  - o countering terrorism
  - o promoting democracy
  - o reducing refugee flows
- Correspondingly, the United States has sought to resolve the Israeli-Palestinian conflict, which has been a major driver of regional dynamics, with an eye toward obtaining these strategic objectives while balancing its support for Israel and pushing for broader regional stability.



## US, RUSSIA AGREE TO EXTEND 'NEW START' NUCLEAR ARMSTRY TREATY

● **CONTEXT:** The Russian lower house of Parliament, the Duma, ratified a new START nuclear treaty with the US.

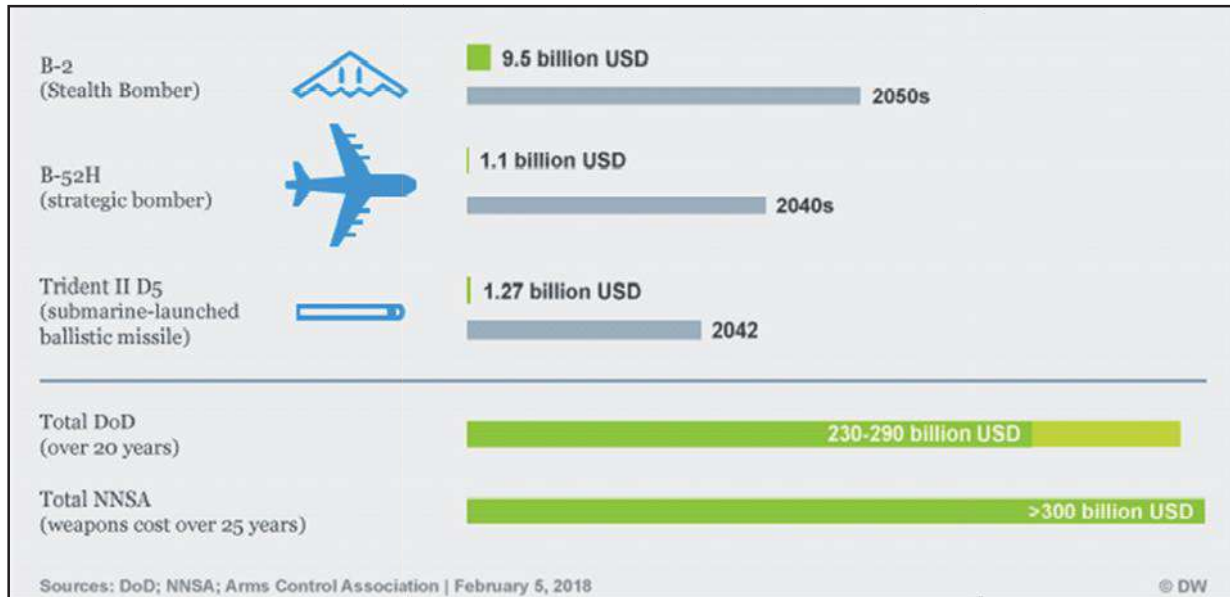
● **ABOUT:** What is in the treaty?

- The New START (Strategic Arms Reduction Treaty), was signed in 2010 by former US President Barack Obama and his Russian counterpart at the time, Dmitry Medvedev.
- The treaty was to replace the **1991 START treaty**.
- The treaty limits each party to 700 deployed intercontinental ballistic missiles (ICBMs) or deployed submarine-launched ballistic missiles (SLBMs), 1,550 nuclear warheads on deployed ICBMs and SLBMs, and 800 deployed and non-deployed ICBM launchers.
- It also envisions a rigorous inspection regime to verify compliance.

### Overview

- **Signed:** 8 April 2010
- **Entered into Force:** 5 February 2011
- **Duration:** Ten-year duration with option to extend for no more than five years
- **Parties:** United States, Russian Federation





### Has the treaty worked?

The U.S. and Russia reduced their nuclear arsenal to the agreed-upon limits by the 2018 deadline set forth in the treaty.

- The U.S. had 1,457 deployed warheads and 675 deployed strategic delivery systems as of Dec. 1, 2020, according to the U.S. State Department.
- Russia had 1,447 deployed warheads attributed to 510 deployed strategic launchers. Combined, the two countries account for about 90% of the world's nuclear weapons.

## PRESIDENT'S ADDRESS TO THE JOINT SITTING OF PARLIAMENT

### CONTEXT:

The first Parliament session of 2021 began with President Ram Nath Kovind addressing members of both Houses of Parliament. This joint sitting of Parliament which is being held during the time of the Coronavirus pandemic has great significance.

### ABOUT:

#### President Address

- The Constitution gives the President the power to address either House or a joint sitting of the two Houses of Parliament.
- There is no set format for the President's speech. The Constitution states that the President shall "inform Parliament of the cause of the summons".
- **Article 87 of the Constitution of India** provides two special occasions on which the President addresses a joint sitting:
  - o To address the opening session of a new legislature after a general election.
  - o To address the first sitting of Parliament each year.
- A session of a new or continuing legislature cannot begin without fulfilling this requirement.
- When the Constitution came into force, the President was required to address each session of Parliament. The **First Amendment to the Constitution in 1951** changed this position and made the President's address once a year.



### Joint Sitting of Parliament

- The joint sitting of the Parliament is called by the President under **Article 108**.
- As per Article 108 of Constitution, a joint session of Parliament can be summoned in the following situations.
- If after a Bill has been passed by one House and submitted to the other House—
  - o The Bill is rejected by the other House
  - o the Houses have finally disagreed as to the amendments to be made in the Bill
  - o more than six months elapse from the date of the reception of the Bill by the other House without the Bill being passed by it
- If the above conditions are satisfied, the President of India may summon the joint sitting of both the houses of parliament.

### Exceptions to the joint sitting

These two bills cannot be referred to a joint sitting:

- **Money Bill**
  - o Under the Constitution of India, money bills require the approval of the Lok Sabha only.
  - o Rajya Sabha can make recommendations to Lok Sabha, which it is not required to accept.
  - o Even if Rajya Sabha doesn't pass a money bill within 14 days, it is deemed to have been passed by both the Houses of Parliament after the expiry of the above period.
  - o Therefore, a requirement to summon a joint session can never arise in the case of a money bill.
- **Constitution Amendment Bill**
  - o Article 368 of Indian constitution requires that constitution of India can be amended by both houses of parliament by 2/3 majority (special majority).
  - o In case of disagreement between both houses, there is no provision to summon a joint session of parliament.

### Who presides the joint sitting?

- It is presided over by the Speaker or, in their absence, by the Deputy Speaker of the Lok Sabha or in their absence, the Deputy-Chairperson of the Rajya Sabha.
- The Chairperson doesn't preside over the joint session at any means/cost.
- If any of the above officers are not present then any other member of the Parliament can preside by consensus of both the House.

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## CABINET APPROVED MINIMUM SUPPORT PRICE OF COPRA FOR 2021 SEASON

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◎ **CONTEXT:** The Cabinet Committee on Economic Affairs has given its approval for the Minimum Support Price (MSP) of copra for 2021 season.

◎ **ABOUT:** Key-takeaways

- The approval is based on recommendations of the **Commission for Agricultural Costs and Prices (CACP)**.

- The increase in MSP for copra for 2021 season is in line with the principle of fixing the MSP at a level of at least 1.5 times the all India weighted average cost of production which was announced by the Government in the Budget 2018-19.
- It assures a minimum of 50 percent as margin of profit as one of the important and progressive steps towards making possible doubling of farmers' incomes by 2022.
- **Nodal Agencies:** The **National Agricultural Cooperative Marketing Federation of India Limited (NAFED)** and **National Cooperative Consumer Federation of India Limited (NCCF)** will continue to act as Central Nodal Agencies to undertake price support operations at the MSP in the coconut growing States.

### Declared MSP for Copra

- **Milling Copra:** The MSP for Fair Average Quality (FAQ) of milling copra has been increased, by Rs.375/-, to Rs. 10335/- per quintal for 2021 season from Rs. 9960/- per quintal in 2020.
- **Ball Copra:** The MSP for ball copra has been increased, by Rs.300/-, to Rs.10,600/- per quintal for 2021 season from Rs.10300/- per quintal in 2020.

The declared MSP ensures a return of 51.87 percent for milling copra and 55.76 percent for ball copra over the all-India weighted average cost of production.

#### Copra

- Copra is a term that refers to sun-dried or smoked coconut "meat" or "flesh", the edible part of a coconut.
- Copra is mainly used to yield coconut oil, however, the by-products themselves are used for additional purposes, mostly as food for livestock.
- **World producers:** Indonesia, the Philippines, India and Brazil are among the world's top coconut producers.
- **Major producing states (India):** Kerala, Karnataka, Tamil Nadu and Andhra Pradesh together account for more than 90% of coconut production in the country.

## OFF-BUDGET BORROWING

### ◎ CONTEXT:

**In order to restrict the fiscal deficit to a respectable number, "off-budget borrowing" is the easiest resort for the government.**

### ◎ ABOUT:

#### What are 'Off-Budget Borrowings'?

- Off-budget borrowings are loans that are taken not by the Centre directly, but by another public institution which borrows on the directions of the central government.
- Such borrowings are used to fulfil the government's expenditure needs.
- But since the liability of the loan is not formally on the Centre, the loan is not included in the national fiscal deficit.
- This helps keep the country's fiscal deficit within acceptable limits.

#### CAG Report, 2019

- A **Comptroller and Auditor General report of 2019** points out, this route of financing puts major sources of funds outside the control of Parliament.
- Such off-budget financing is not part of the calculation of the fiscal indicators despite fiscal implications.

◎ **BACKGROUND**

- The Union Budget is to be presented on February 1.
- The most sought after details in the Budget is the level of fiscal deficit, which is keenly watched by rating agencies, both inside and outside the country.
- This number is the most important metric to understand the financial health of any government's finances.
- This is why most governments want to restrict their fiscal deficit to a respectable number.
- One of the ways to do this is by resorting to "off-budget borrowings".

**How are off-budget borrowings raised?**

- **Implementing agencies:** The government can ask an **implementing agency** to raise the required funds from the market through loans or by issuing bonds.
  - o **Forexample**, food subsidy is one of the major expenditures of the Centre.
    - In the **Budget presentation for 2020-21**, the government paid only half the amount budgeted for the food subsidy bill to the **Food Corporation of India**.
    - The shortfall was met through a loan from the **National Small Savings Fund**. This allowed the Centre to halve its food subsidy bill from Rs 1,51,000 crore to Rs 77,892 crore in 2020-21.
- **Other PSUs:** Other public sector undertakings have also borrowed for the government.
  - o **For instance**, public sector oil marketing companies were asked to pay for subsidised gas cylinders for **Pradhan Mantri Ujjwala Yojana** beneficiaries in the past.
- **PSBs:** Public sector banks are also used to fund off-budget expenses.
  - o **Forexample**, loans from PSU banks were used to make up for the shortfall in the release of fertiliser subsidy.

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**GREENTAX**

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◎ **CONTEXT:**

**The Transport Ministry has approved a proposal for a 'greentax' on old vehicles.**

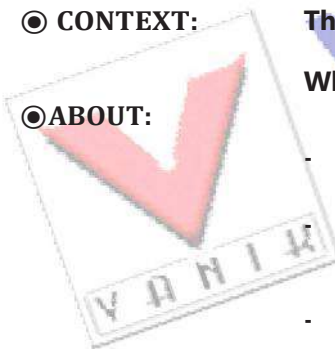
◎ **ABOUT:**

**What is Green Tax?**

- Green Tax aims to curb pollution and motivate people to switch to environment-friendly alternatives.
- The tax has been proposed to dissuade people from using vehicles that damage the environment, motivate them to switch to newer, less polluting vehicles and to reduce overall pollution level and make the polluter pay for it.
- Revenue collected from the Green Tax to be kept in a separate account and used for tackling pollution, and for states to set up state-of-art facilities for emission monitoring.

**Polluting vehicle**

- **Commercial vehicle:** It is estimated that commercial vehicles, which constitute about 5 per cent of the total vehicle fleet, contribute about 65-70 per cent of total vehicular pollution.
- **Older fleet:** The older fleet, typically manufactured before the year 2000 constitute less than 1 per cent of the total fleet but contributes around 15 per cent of total vehicular pollution. These older vehicles pollute 10-25 times more than modern vehicles.



### Who will be charged under the tax?

- The proposal is to levy a 'green tax' on old vehicles that are polluting the environment.
- **Vehicle older than 8 years:** Transport vehicles older than eight years can be charged at the time of renewal of fitness certificate, at the rate of 10-25% of the road tax.
- **Personal vehicles:** Personal vehicles will be charged at the time of renewal of their registration certificate after a period of 15 years.
- **Public transport:** The 'green tax' will be lower for public transport vehicles like city buses, but the rate will be higher for vehicles being registered in highly polluted cities.
  - o In such instances, the rate will be 50% of the road tax.
- **Exemption:** Vehicles like strong hybrids, electric vehicles and alternative fuels like CNG, ethanol, LPG will be exempted.

### Pollutants produced by vehicle exhausts

- Carbon monoxide, hydrocarbons, nitrogen oxides, particles, volatile organic compounds and sulfur dioxide.
- Hydrocarbons and nitrogen oxides react with sunlight and warm temperatures to form **ground-level ozone**.
- Ground-level ozone, a main ingredient in smog, can cause upper respiratory problems and lung damage.

### What about 'Scrapping policy'?

- The Ministry also approved a policy of deregistration and scrapping of vehicles owned by government departments and PSUs, which are above 15 years in age.
- The policy will come into effect from April 1, 2022.
- A broader scrapping policy for commercial vehicles is awaited and is likely to be announced during this year's Budget next week.

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## SIGUR PLATEAU

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### ◎ CONTEXT:

The Supreme Court appointed conservationist Nandita Hazarika as Member of a Technical Committee constituted.

### ◎ ABOUT:

#### The Committee

- The Technical Committee was constituted by SC in October 2020.
- On October 14, the top court upheld the Tamil Nadu government's authority to notify an 'elephant corridor' and protect the migratory path of the animal through the Nilgiri Biosphere Reserve.
  - o The Reserve is the largest protected forest area in India, spanning across Tamil Nadu, Karnataka and Kerala.
- It was constituted to hear complaints by land owners against the action taken by the Nilgiris Collector, which included sealing of their buildings and allegations about the "arbitrary variance in acreage of the elephant corridor."

#### Sigur Plateau

- The corridor is situated in the ecologically fragile Sigur Plateau, which connects the Western and the Eastern Ghats and sustains elephant populations and their genetic diversity.

- It has the Nilgiri Hills on its southwestern side and the Moyar River Valley on its north-easternside.
- Theelephantscrosstheplateauinsearchoffoodandwater.
- Theplateauisalowrainfallmarginallandwithpoorsoilsandtillrecenttimes,alsohadalowpopulation density.
- There are five major streams in the Sigur plateau, namely, the Moyar River, Sigur River, Avarahalla River, Kedarhalla River and Gundattihalla River. All these rivers originate intheNilgiris plateau.

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## MANUFACTURED SAND (M-SAND)

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◎ **CONTEXT:** **TheRajsthangovernmentbroughtthemuch-awaitedpolicyonmanufacturedsand(M-sand),givingindustrystatusotheunitsproducingit for construction work and reducing the dependence on bajri (riverbedsand).**

◎ **ABOUT:** **Whatismanufacturedsand(M-sand)?**

- Manufacturedsand(M-Sand)isasubstituteofriversandforconcreteconstruction.
- **Producedfrom:**Manufacturedsandisproducedfrom**hardgranitestonebycrushing**.Thecrushedsandisofcubicalshapewithgroundedges,washedandgradedtoasconstructionmaterial.
- **Size:**Thesizeofmanufacturedsand(M-Sand)islessthan4.75mm.

### Usageofmanufacturedsand:

- **To meet high demands:** Manufactured sand is an alternative for river sand. Due to fast growing construction industry, the demand for sand has increased tremendously,causingdeficiencyof suitable river sand in most part of the world.
- **Depletionofgoodqualityriversand:**Due to the depletion of good quality river sand for the use of construction, the use of manufactured sand has been increased. **TheSupremeCourthadbanned illegalminingonriverbedsin2017.**
- **To cut transportation cost:** Another reason for use of M-Sand is its availability and transportation cost.
- **To cut construction cost:** Thus, the cost of construction can be controlled by the use of manufactured sand as an alternative material for construction.
- **Easily available:** Since manufactured sand can be crushed from hard granite rocks, it can be readily available at the nearby place, reducing the cost of transportation from far-off river sand bed.
- **Easy modification:** The other advantage of using M-Sand is, it can be dust free, the sizes of m-sand can be controlled easily so that it meets the required grading for the given construction.
- **Eco-Friendly:** Usage of manufactured sand prevents dredging of river beds to get river sand which may lead to environmental disaster like groundwater depletion, water scarcity, threat to the safety of bridges, dams etc. to make M-Sands more eco-friendly than river sand.

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**CURRENTAFFAIRSANALYST**  
**WEEK-2(FEBRUARY,2021)**

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# SECTION:A

## (MAINS)

### CURRENTAFFAIRS



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# HURRICANES AND TYPHOONS MOVING 30 KM CLOSER TO COASTS EVERY DECADE

## CONTEXT

High-intensity tropical cyclones have been moving closer to coasts over the past 40 years, potentially causing more destruction than before, as per a study. The research is published in Science.

### ● BACKGROUND

- The team analyzed global data from 1982-2018 on tropical cyclone formation, movement and intensity mainly gathered from satellite observations.
- In the observation, it has been found that at maximum intensity, cyclones were on average getting 30 km closer to coastlines per decade.
- There were also on average two more cyclones per decade within 200 km of land.
- The study emphasizes the need to understand all aspects of tropical cyclones.

### ● ANALYSIS

#### Understanding the geography of Hurricanes

- Hurricanes are large, swirling storms with winds of 119 kilometers per hour (74 mph) or higher.
  - That's faster than a cheetah, the fastest animal on land.
- The storms form over warm ocean waters and sometimes strike land.
- When a hurricane reaches land, it pushes a wall of ocean water ashore. This wall of water is called a **storm surge**, which along with heavy rain can cause flooding, especially near the coast.

The different terms hurricanes, typhoons, and tropical cyclones all refer to tropical storms. They are named differently depending on the region they occur in.

- **Hurricanes** are tropical storms that form over the North Atlantic Ocean and Northeast Pacific.
- **Cyclones** are formed over the South Pacific and the Indian Ocean.
- **Typhoons** are formed over the Northwest Pacific Ocean

### How hurricanes are categorized?

- Hurricanes are categorized according to the speed of their maximum sustained winds.
- The scale used for this purpose, called the **Saffir-Simpson Hurricane Wind Scale**, was developed in 1971 by civil engineer Herbert Saffir and by meteorologist and then-director of the U.S. National Hurricane Center, Bob Simpson.
  - The **Saffir-Simpson scale** rates a hurricane's severity from 1 (very dangerous) to 5 (catastrophic), based on the following wind speeds:
    - **Category 1:** Winds of 74-95 mph (119-153 km/h)
    - **Category 2:** Winds of 96-110 mph (154-177 km/h)
    - **Category 3:** Winds of 111-129 mph (178-208 km/h)
    - **Category 4:** Winds of 130-156 mph (209-251 km/h)
    - **Category 5:** Wind exceeding 157 mph (252 km/h)

### Key-highlight of the Study

- Previously, studies have shown that the maximum intensity of tropical cyclones is found further towards the poles. However, this does not necessarily mean these more poleward storms are more devastating.
- **Westernward shift:** The new findings show cyclones at maximum intensity are also migrating westward, bringing them closer to coastlines and increasing their potential for damage.
- **Occurrence of the additional cyclone:** Each decade since the 1980s, an additional two cyclones have come within 124 miles (200 km) of land.

### Reasons behind the shift

- The exact mechanism for this enhanced westward steering is unknown, but it may be due



to the same underlying mechanism for poleward migration of cyclones as rising temperatures cause atmospheric patterns to shift.

- o The researchers also stated that it could be connected to changes in tropical atmospheric patterns possibly caused by **climate change**.

### **Atlantic Zone, a special case?**

- o Cyclones across the globe are moving closer to land, except Atlantic hurricanes.
- o It's mysterious that, unlike other areas, the Atlantic hurricane basin didn't show any significant westward shift.
- o The reason is not sure but that could be because the Atlantic hurricane zone is **more closely surrounded by continents**.
- o The busiest tropical cyclone basin is in the western Pacific, where there are the most landfalls and the shift westward is twice as big as the global average.

### **A puzzling situation**

- o Though storms are getting closer to land, researchers still haven't seen a significant increase in landfalls, which "is still a puzzle".
- o It is not only the landfall that causes damage. When the cyclone is close enough to land it can also cause damage like **Hurricane Sandy** and **Dorian** in 2019, both of which skirted along the US coast for a considerable time before making landfall.

### **Are Hurricanes impacted by climate change?**

- o Hurricanes feed off of heat energy, so as Earth's global temperatures continue to rise, hurricanes are bound to be affected.

- o So far, it's not evident that hurricanes are necessarily forming more often because of rising temperatures, although scientists do predict that hurricane activity and intensity will likely increase in future years.

### **How does it impact?**

- o **Impact on economy:** Globally, 80 to 100 cyclones develop over tropical oceans each year, impacting regions in the Pacific, Atlantic, and Indian Oceans and causing billions of dollars of damage.
- o **Risk to coastal communities:** These storms are likely becoming more destructive as they spend more time along coastlines at their highest intensities. The risk to some coastal communities around the world may be increasing and that will have profound implications over the coming decades.
- o **Other impacts are:**
  - Impact on environment: Destruction of flora and fauna
  - Agricultural loss
  - Loss of life and livelihood

### **CONCLUSION**

This new research is plausible, especially since scientists have already seen a shift of storms more toward the north and south poles, but it raises questions that require follow-up, especially why no corresponding increase in landfalls has been found. All these strange shifts are taking cyclones out of their preferred environment of warm tropical waters away from land.

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# REVIVAL OF AGE- OLD BORDER ROW BETWEEN MAHARASHTRA AND KARNATAKA

## CONTEXT

Recently, a book has been published by the state government of Maharashtra, titled ‘Maharashtra-Karnataka Seemavad: Sangharsh Aani Sankalp’ (Maharashtra-Karnataka Boundary Dispute: Struggle and Pledge). The book is a collection of articles, news, and other material on the demand that Marathi-speaking areas in Karnataka should be integrated into Maharashtra.

### ● BACKGROUND

- o The dispute began when the erstwhile Bombay Presidency had present-day Karnataka districts of Vijayapura, Belagavi, Dharwad, and Uttara-Kannada.
- o In 1948, the Belgaum municipality requested that the district be incorporated into the proposed Maharashtra state.
- o But with the States Reorganisation Act of 1956, Belgaum and 10 talukas of Bombay State became a part of the then Mysore State.
- o This happened because states were divided based on linguistic and administrative lines.
- o This long-smoldering interstate dispute resurfaces from time to time.

speakers outnumbered Kannada-speakers in those areas.

#### Mahajan Commission

- Eventually, the Centre formed the **Mahajan Commission**, comprising representatives of both Maharashtra and then Mysore, for a resolution in 1966.
- The commission in 1967 recommended handing over 264 villages to Maharashtra, which was formed in 1960 while leaving Belgaum and 247 other villages with the then state.
- However, Maharashtra rejected the report calling it illogically

### ● ANALYSIS

#### What is the dispute all about?

- o The genesis of the dispute lies in the reorganization of states along linguistic and administrative lines in 1956.
- o The erstwhile Bombay Presidency, a multilingual province, included the present-day Karnataka districts of Vijayapura, Belagavi, Dharwad, and Uttara-Kannada.
- o In 1948, the Belgaum municipality requested that the district, having a predominantly Marathi-speaking population, be incorporated into the proposed Maharashtra state.
- o However, **The States Reorganisation Act of 1956** made Belgaum and 10 talukas of Bombay State a part of the then Mysore State (which was renamed Karnataka in 1973).
- o While demarcating borders, the Reorganisation of States Commission sought to include talukas with a Kannada-speaking population of more than 50 percent in Mysore.
- o But the opponents of the region's inclusion in Mysore have maintained that in 1956, Marathi-

#### What is claimed by both states?

- o **Maharashtra** has for long claimed that certain areas that are a part of Karnataka - **Belagavi, Karwar, and Nippani** - should be handed over to Maharashtra. The state contends that the majority of the population in these areas is Marathi-speaking.
- o **Karnataka**, on the other hand, maintains that Belagavi is an integral part of the state and has built the **Suvarna Vidhana Soudha**, modeled after the **Vidhana Soudha**, the state secretariat in **Bengaluru**, where a legislative session is held once a year.

#### What is the present situation?

- o Maharashtra has continued to demand that 814 villages from Karnataka based on the theory of village being the unit of calculation, contiguity, and enumerating linguistic population in each village.
- o Then in 2004, the Maharashtra government moved the Supreme Court seeking resolution of the border dispute under **Article 131(b)** of the Constitution.
- o This case is still pending in the apex court.

o The Karnataka government too has made moves to seize its territory over Belgaum by constructing an assembly building and holding its winter session there annually.

o It also formally changed the name of **Belgaum to Belgavi** in 2014.

**Article 131**

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

**Major inter-stated disputes in India**

- **Assam–Nagaland**
  - > **Boundary:** 434 kilometer
  - > **Area of dispute:** Assam districts of Sivasagar, Jorhat, and Golaghat.
  - > **Commissions:** Sundaram Commission in 1971 and Shastri Commission in 1985
- **Gujarat – Rajasthan**
  - > **Area of dispute:** Mangadh Hill, located on the border of the two states. Gujarat claims half of the hill, while Rajasthan claims the entire hill is theirs.
- **Karnataka-Kerala**
  - > **Area of dispute:** district of Kasaragod
  - > **Committee:** Supreme Court, Justice M. Mahajan (1967)
- **Orissa–West Bengal**
  - > **Area of dispute:** 82 villages under Jaleswar and Bhogaraib blocks in Balasore district
- **Assam–Meghalaya**
  - > **Area of dispute:** Mikir Hills
- **Others**
  - > **Bihar and UP:** The inter-state boundary

to fluctuate due to the frequent change in the course of rivers.

- > **Haryana and UP:** Likewise, Haryana and Uttar Pradesh's fluctuating boundary was sought to be solved in the 1970s. But issues are still not resolved.
- > **Haryana and Punjab:** Punjab and Haryana are locked over the transfer of Chandigarh to Punjab, and part of the Fazilka sub-district of Punjab to Haryana.
- > **Orissa and Andhra Pradesh:** Between Orissa and Andhra Pradesh, the boundary dispute relates to 63 villages falling presently in Orissa. But neither government has asked for Central intervention.
- > **Orissa and Jharkhand:** Similarly, Orissa and Jharkhand have a boundary dispute relating to seven villages of the Mayurbhanj and Keonjhar districts. Orissa has claimed territories in the former princely states of Seraikela and Kharsuan, now in Jharkhand.
- > **Orissa and Chattisgarh:** Orissa has locked with Chhattisgarh over three villages of Nandapada district. Orissa and West Bengal are also stalemated over five villages of Balasore and Mayurbhanj districts of Orissa.
- > **Himachal Pradesh and Uttarakhand:** Himachal Pradesh is contesting Uttarakhand over six places of Dehradun district, adjoining its Shimla district.
- > **Arunachal Pradesh and Assam:** Arunachal Pradesh claims territory in Assam based on history.
- > **Meghalaya and Assam:** Assam and Meghalaya don't have a major boundary dispute, the reply said. But Nagaland claims 5,000 sq miles of territory in Assam "on historical grounds".

The inter-state border disputes in the country need to get resolved soon. And it can only happen when the government finds a lasting solution to border disputes.

**◎ WAY FORWARD**

The State government of Maharashtra is now planning to organize a Maharashtra government conference in the disputed areas, enlisting more beneficiaries from this region for schemes of the Maharashtra government, and creating a database of all such persons who can be mobilized to support

# SPECIAL UK BNO VISA SCHEME FOR MILLIONS OF HONG KONG RESIDENTS

## CONTEXT

A visa scheme to allow Hong Kong residents to come to the UK opened recently, with some 300,000 people expected to apply. The visa, which is open to holders of a British National (Overseas) passport and their immediate dependents, will offer a fast track to UK citizenship.

### ◎ BACKGROUND

- o The move comes as China and Hong Kong have said they will no longer recognize the British National Overseas (BNO) passport as a valid travel document from January 31.
- **BNO** is a special status created under British law in 1987 that specifically relates to Hong Kong.
- They allowed holders to visit the U.K. visa-free for up to six months, but didn't automatically confer the right to live or work there.
- Holders also weren't eligible to access public funds.



- o The scheme is also in a response to Beijing's decision last year to impose a sweeping **national security law** on Hong Kong, a former British colony, to snuff out huge and sometimes violent pro-democracy protests.
- o UK called the imposition of the security law "a serious and clear breach of the Sino-British Joint Declaration".
- o Britain says with the new visa policy, it is fulfilling a historic and moral commitment to Hong Kong people.

- o The UK government forecasts the new visa could attract more than 300,000 people and their dependents to Britain.

#### National Security Law

- The law criminalises four activities: "secession, subversion, organization and perpetration of terrorist activities, and collusion with a foreign country or with external elements to endanger national security".
- The law allows Beijing to override local laws while enhancing its ability to suppress political opposition.
- It also gives the mainland power to exercise jurisdiction over select criminal cases, raising the prospect that for the first time in Hong Kong's history, suspects could be extradited across the border to face trial, and potentially spend time in the mainland.

### ◎ ANALYSIS

#### Hong Kong's British History

- o Hong Kong was previously a port city of the **British Empire**, and inherited a different society, culture and legal tradition from Mainland China.
- o As a result, when it was handed back to China under the **1984 Sino-British joint declaration** ("**1984 Joint Declaration**"), the legally binding treaty sought to retain Hong Kong's way of life, common law legal system and capitalist economy, and guarantee its politico-economic status for 50 years from 1997.
- o But before Hong Kong was returned, the UK and China made an agreement to introduce "**one country, two systems**".
- o It was agreed that Hong Kong's capitalist system, which was different to China's communist model, would continue.

- o ItalsomeantHongKonghasitsownlegalsysteman dborders,andrightssuchasfreedomof assembly, free speech and freedom of thepressare protected
- o It is one of the few places in Chinese territorywherepeoplehavebeenabletomarkthe**1989TiananmenSquarecrackdown**,wherethemilitary opened fire on unarmed protesters inBeijing.
- o The agreement signed in 1984 was set to lastuntil2047.
- o But the UK says this agreement - known as **theJointDeclaration-** isunderthreatbecauseheterritory has passed a new law that gives ChinaspweepingnewcontrolsoverthepeopleofHongKong.
- oThe newlawcameintoeffectonthe30 Junefollowingmonthsofmassprotests.
- o TheUKalsohasaninterestinHongKongbecause300,000UKnationalslive there.

### What is BNO Citizenship?

- o **British National Overseas (BNO) citizenship** is a type of British nationality created in 1985 thatpeopleinHongKongcouldapplyforbeforethe1997handovertoChinatoretainalinkwiththeUK.
- o Thelifelongstatus,whichcannotbepasseddown to family members, did not give holders any special rights.
- o It meant only they could visit the UK for sixmonthswithout a visa.
- o But the new system, in place from 31 January2021, allows these BNO citizens and their closefamilyto apply for visa inthe UK.

### What is in the new law?

- o Underthespecialvisascheme,thevisaswillbeissuedtothoseinHongKongwhoholda

British National (Overseas) passport and theirimmediatedependents,andwillofferafasttrackto UK citizenship.

- o Applicantswhogetthevisacanliveandworkin the UK for 5 years, after which they apply forsettlement.
- o **Citizenship:** Twelve months after this, they canapply for citizenship.

### How many people are expected to come?

- o The British government estimates 5.4 millionHongKongresidentsareeligibleforthescheme,that’sabout72%ofits7.5millionpopulation.
- o Theseinclude:
  - 2.9millionBNOs
  - 2.3milliondependentsofBNOs
  - 187,00018-23-year-oldswhataleastoneBNOparent
- o Itisdifficulttosayhowmanyeligiblepeoplewillactuallycome to the UK.
- o Agovernmentreportpublishedlastyearputthenu mberofpeopleexpectedtotakeuptheofferatabout300,000inthefirstfiveyears.

### ● WAY FORWARD

ItisnotclearhowmanyHongKongerswilltakeup the offer, especially as the coronavirus restrictsglobalflightsandmiresmuchoftheworld,incl uding Britain, in a painful economic malaise.ButaBN(O)passportisavailabletoahugenum berof people (about 70 percent of Hong Kong’s 7.5million population), Britain predicts up to 154,000Hong Kongers could arrive over the next year andas many as 322,000 over five years, bringing anestimated “net benefit” of up to £2.9 billion (\$4billion).

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# BUDGET PREPARATION

## CONTEXT

The Union Finance Ministry presented the Union Budget 2021-22 in Parliament.

### ● BACKGROUND

- o The genesis of the central Budget in India goes back to 1860 when it was first introduced by then finance minister James Wilson, two years after the transfer of Indian administration from the East India Company to the British Crown.
- o The Budget is presented through 14 documents, some of which are mandated by the Constitution of India, while others are like explanatory documents.
- o Union Budget is an annual financial statement of estimated receipts and expenditures of the Government of India in respect of each financial year.
- o According to Article 112 of the Constitution of India, the Union Budget of a year is a statement of the estimated receipts and expenditure of the government for that particular year.

### ● ANALYSIS

#### Whom makes the budget?

- o The budget is made through a consultative process involving the ministry of finance, NITI Aayog, and spending ministries.
- o **Finance ministry** issues guidelines to spend based on which ministries present their demands.
- o The **Budget Division of the Department of Economic Affairs** in the finance ministry is the nodal body responsible for producing the Budget.

#### How is the budget made?

- o Budget Division issues a circular to all Union ministries, states, UTs, autonomous bodies, depts, and the defense forces for preparing the estimates for the next year.
- o After ministries & departments send in their demands, extensive consultations are held between Union ministries and the Department of Expenditure of the finance ministry.
- o At the same time, the Department of Economic Affairs and Department of Revenue meet

stakeholders such as farmers, businessmen, FIIs, economists, and civil society groups to take their views.

- o Once the pre-Budget meetings are over, a final call on the tax proposals is taken by the finance minister.
- o The proposals are discussed with the PM before the Budget is frozen.

#### How is the budget presented?

- o The Secretary-General of the Lok Sabha Secretariat seeks approval of the President after the Speaker agrees to the date suggested by the government.
- o The finance minister presents the budget in the Lok Sabha outlining key estimates and proposals.
- o He briefs the cabinet on the budget proposals through a 'summary for the cabinet' just before he presents the budget.
- o The budget is tabled in the Parliament after the minister's speech.

#### What comprises the Budget?

The union budget is divided into two parts-

##### - Capital Budget:

- As the name suggests, the capital budget provides details with regards to the capital payments and capital receipts of the government. The capital payments can be the money spent on infrastructure, healthcare facilities, etc. The capital receipts account for the loans taken from the RBI or the general public.

##### - Revenue Budget:

- The revenue budget comprises of the revenue expenditure and revenue receipts. The government is known to be suffering from a 'revenue deficit' in case if the revenue receipts are lower than the revenue expenditure.

### Constitutional sanctity of the Budget

- o The preparation of the Budget for the approval of the legislature is a Constitutional obligation.
- o The control of Parliament over the finances of the country is exercised through legislative prerogative over taxation and legislative control over expenditure.
- o To this effect, there are specific provisions in the Constitution consolidating these tenets.
- o Article 265 provides that no tax shall be levied or collected except by authority of law; Article 266 provides that no expenditure can be incurred from the Consolidated Fund of India and of the states, except with the authorization of the legislature.
- o Here are the constitutional and legal bases of some other key aspects of the Budget:

#### - Annual Financial Statement

➤ Interestingly, the Constitution of India does not specifically use the word Budget.

➤ **Article 112 of the Constitution** provides for laying before Parliament an 'Annual Financial Statement' providing a statement of the estimated receipts and expenditure for the financial year. This statement evidences the receipts and expenditure of the government in three separate parts under which accounts are maintained. These are:

- Consolidated Fund of India
- Contingency Fund of India
- Public Account

➤ According to constitutional provisions, the Annual Financial Statement has to distinguish expenditure on revenue account from other expenditure. It comprises:

**Revenue budget:** Proceeds of taxes and interest and dividend on investments made by the government, fees, and other receipts for services rendered by the government.

- **Capital budget:** Capital receipts and payments, including loans, raised by the government from the public, borrowings from Reserve Bank, et al.

#### - Demand for Grants

➤ The estimates of expenditure from the Consolidated Fund of India included in the Annual Financial Statement are required to be voted by the Lok Sabha and submitted in

the form of Demand for Grants as mandated by **Article 113**.

➤ These demands are arranged ministry-wise, and a separate demand for each of the major services is presented.

#### - Appropriation Bill

➤ Pursuant to the Demand for Grants, the Appropriation Bill is introduced for appropriating monies out of the Consolidated Fund of India to meet the said grants as provided under **Article 114**.

➤ The Appropriation Bill is intended to give authority to the government to incur expenditure from and out of the Consolidated Fund of India.

➤ The procedure for passing this Bill is the same as in the case of other Money Bills.

### Finance Bill

o At the time of introduction of the Annual Financial Statement, a Finance Bill is also presented before Parliament – the Finance Bill satisfies the criteria of a 'Money Bill' as it provides for the imposition, abolition, remission, alteration, or regulation of taxes proposed in the Budget.

o A 'Money Bill' is defined under **Article 110(1)**.

o It is pertinent to note that every Finance Bill is a Money Bill but every Money Bill is not a Finance Bill.

o A Bill is deemed to be a Money Bill if it contains provisions dealing with six specific matters provided under **Article 110(1)**.

o The Finance Bill, which provides for the imposition, abolition, remission, alteration or regulation of taxes proposed in the Budget, falls under **Article 110(1)(a) of the Constitution**.

#### Vote-on-

#### account, vote of credit and exceptional grant

o Pending the completion of the parliamentary procedure relating to the voting on the Demand for Grants, and passing of the Appropriation Bill, the Constitution under **Article 116** grants power to the Lok Sabha to make a grant in advance for authorising the withdrawal of money from the Consolidated Fund of India in respect of the estimated expenditure for a part of any financial year, referred to as vote-on-account.

o The Lok Sabha also has the power to make grants for meeting unexpected demands, referred to as vote of credit, or to make an exceptional grant.

**Fiscal Responsibility and Budget Management Act, 2003**

- o In addition to the Budget documents, the Fiscal Responsibility and Budget Management Act, 2003, mandates that certain additional documents shall be laid before Parliament.
- o This includes the macro-economic framework for the relevant financial year; fiscal policy statement for the financial year; medium-term fiscal policy statement and medium-term expenditure framework statement.

- o Upon President's recommendation, obtained under **Article 117(1) and 117(3)** for introduction and consideration of the Budget, it is laid before the Lok Sabha by the finance minister.

**● CONCLUSION**

The Budget assumes great significance as it impacts the overall Indian economy. A Union Budget that includes and covers all the different sectors of the economy, is a must for the development of the country.

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# THE FUTURE OF INDIAN AGRICULTURE

## CONTEXT

- The question of future of Indian agriculture has been around for some time now since the agrarian distress and crisis in the sector.
- It has become more important in the context of the spate of recent reforms that include permitting private wholesale markets, contract farming, direct purchase from farmers and land leasing across states both under the earlier state-level Acts, and now under the central Acts.

## ● BACKGROUND

- o India is an agricultural country. However, this sector is facing various issues and challenges due to the recent reforms introduced by the Centre.
- o These reforms led to the dispute, which raises questions not only about agriculture but about dwindling populations in rural India where small communities are already struggling to survive.
- o Future of agriculture is a very important question for the planners and all other stakeholders. However, its future depends on many existing and missing policies and directions of policy reforms.
- o But, it is sad to note that India does not have a policy for the same. The sector loses its policy focus as it is a **state subject**, but practically being run by the Centre for long time.
- o When the sector is faced with economic, social and environmental crisis, absence of policy is the major factor in the crisis not being attended by any stakeholder.

## ● ANALYSIS

Assessing the profile of the Indian agricultural sector

- o **Contribution to GDP:** The farm production sector contributes only **13 percent** of the gross domestic product (GDP). Small farmers contribute 51 percent of agricultural output with 46 percent of operated land, and a much higher share (70 percent) in high-value crops.
- o **Employment generation:** The sector engages 44 percent workforce.
  - This presents a dismal picture of the sector as compared with other sectors, as the earnings are poor.
- o **Land division:** 85 percent of India's farmers operate less than five acres of land, half of which in many parts of India may be dry/rain-fed and

only a part of their income comes from farming activity now with others coming from wages, off-farm and non-farm activities.

- o **Self-sufficient India:** Although this sector's contribution in the GDP has reduced to less than 20 percent, agricultural production has grown. This has made us self-sufficient and taken us from being a begging bowl for food after independence to a net exporter of agriculture and allied products.
  - **Total food grain production** in the country is estimated to be a record 291.95 million tonnes, according to these second advance estimates for 2019-20.
- o **Crops:** India is the top producer of milk, spices, pulses, tea, cashew and jute, and the second-largest producer of rice, wheat, oilseeds, fruits and vegetables, sugarcane and cotton.

## The increasing pressure on land

- o Increasing population, increasing average income and globalisation effects in India will increase demand for quantity, quality and nutritious food, and variety of food.
- o As per the estimates of Indian Council for Agricultural Research (ICAR), demand for food grain would increase to **345 million tonnes by 2030**.
- o Therefore, pressure on decreasing available cultivable land to produce more quantity, variety and quality of food will keep on increasing.

### Agro-Climatic Zones

- India is blessed with large arable land with 15 agro-climatic zones as defined by ICAR, having almost all types of weather conditions, soil types and capable of growing a variety of crops.
  - **Western Himalayan Region:** Jammu and Kashmir, Himachal Pradesh and the hill region of Uttarakhand

- **Eastern Himalayan Region:** Arunachal Pradesh, the hills of Assam, Sikkim, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, and the Darjeeling district of West Bengal
- **Lower Gangetic Plain Region:** West Bengal (except the hilly areas), eastern Bihar and the Brahmaputra valley
- **Middle Gangetic Plain Region:** Parts of Uttar Pradesh and Bihar
- **Upper Gangetic Plains Region:** Central and western parts of Uttar Pradesh and the Hardwar and Udham Nagar districts of Uttarakhand
- **Trans-Ganga Plains Region:** Punjab, Haryana, Chandigarh, Delhi and the Ganganagar district of Rajasthan
- **Eastern Plateau and Hills:** Chhotanagpur Plateau, extending over Jharkhand, Orissa, Chhattisgarh and Dandakaranya
- **Central Plateau and Hills:** Bundelkhand, Baghelkhand, Bhandar Plateau, Malwa Plateau, and Vindhya hills
- **Western Plateau and Hills:** Southern part of Malwa plateau and Deccan plateau (Maharashtra)
- **Southern Plateau and Hills:** Interior Deccan and includes parts of southern Maharashtra, the greater parts of Karnataka, Andhra Pradesh, and Tamil Nadu uplands from Adilabad District in the north to Madurai District in the south
- **Eastern Coastal Plains and Hills:** Coromandal and northern Circar coasts of Andhra Pradesh and Orissa
- **Western Coastal Plains and Ghats:** Malabar and Konkan coastal plains and the Sahyadris
- **Gujarat Plains and Hills:** Hills and plains of Kathiawar, and the fertile valleys of Mahi and Sabarmati rivers
- **Western Dry Region:** West of Aravalli (Rajasthan)
- **Island Region:** Andaman-Nicobar and Lakshadweep

In spite of all these facts, the average productivity of many crops in India is quite low.

is affecting and going to affect more the production in future. Demand for fruits and vegetables, dairy products, fish and meat is going to increase in future.

- **Innovation:** Researches, technology improvements, protected cultivation of high value greens and other vegetables will be more. There will be more demand of processed and affordable quality products.
- **Competition among private companies:** More competition will be there among private companies giving innovative products, better seeds, fertilisers, plant protection chemicals, customised farm machinery and feed for animal set c in cost effective ways at competitive prices giving more return on investment by farmers.
- **Eco-friendly and climate resilient crop:** Use of biotechnology and breeding will be very important in developing eco-friendly and disease resistant, climate resilient, more nutritious and tastier crop varieties.
- **Adoption of AI:** Precision farming with soil testing-based decisions, automation using artificial intelligence will be focused for precise application inputs in agriculture. Sensors and drones will be used for precision, quality, environment in cost effective manner. Use of GPS technology, drones, robots etc controlled by smart phones etc can make life of farmer easy and exciting with good results.
- **Nano-technology:** Usage of nano-technology for enhancement of food quality and safety, efficient use of inputs will be in near future.
- **Digitalization:** Retailing in agriculture will largely be digitalised.
- A study estimates that over 90 percent of kisan stores across the country will be digitalised by 2025 with modern traceable logistics and transparent supply chain.
- What are the major constraints in Indian agriculture?
- **Small land holding:** Farming for subsistence which makes scale of economy in question with majority of small holdings.

### What are the key-trend expected in the sector?

- **Changing demand** due to increase in

- According to **2010-11 Agriculture Census**, the total number of operational holdings was 138.35 million with average size of 1.15 hectares (ha).

- Of the total holdings, 85 percent are in marginal and small farm categories of less than 2ha (GOI, 2014).

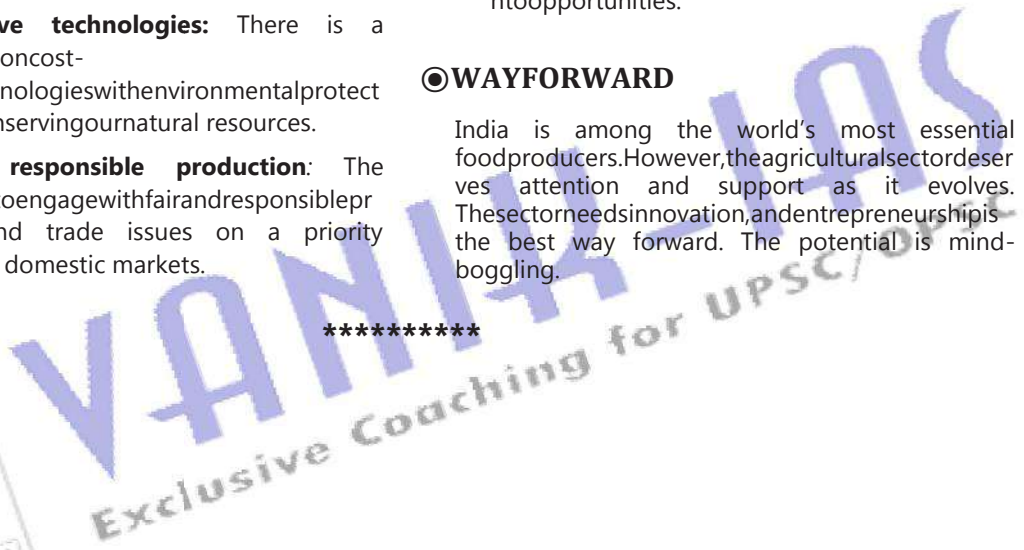
- o **Low access of credit:** Low-access of credit and prominent role of unorganised creditors affecting decisions of farmers in purchasing of inputs and selling of outputs
- o **Less utilisation of technology:** Less use of technology, mechanisation and poor productivity for which first two points are of major concern
- o **Less value addition:** Very less value addition as compared to developed countries and negligible primary-level processing at farmers level.
- o **Poor infrastructure:** Poor infrastructure for farming making more dependence on weather, marketing and supply chain suitable for high value crops.
- o How these key-challenges can be addressed?
- o **Cost-effective technologies:** There is a need for work on cost-effective technologies with environmental protection and on conserving our natural resources.
- o **Fair and responsible production:** The sector needs to engage with fair and responsible production and trade issues on a priority basis even for domestic markets.

- o **Value chain approach:** A combination of livelihoods and agribusiness or value chain approach can help leverage the sector for betterment of its stakeholders i.e. farmers, workers and others around it.
- o **Protective measures for small producers:** There is a need for a policy at union and state levels and even more effective regulation to protect small producer interest in a globalised market context to leverage the strength of modern and large players in the agribusiness value chains for a win-win for all stakeholders involved so that inclusive and effective sustainable agricultural development could be attempted.
- o **Institutional innovation:** There is also a need for institutional innovations besides product, process and organisational innovations in the sector to deal with existing and emerging challenges and problems of sustainability in the sector which can be converted into opportunities.

**◎WAY FORWARD**

India is among the world's most essential food producers. However, the agricultural sector deserves attention and support as it evolves. The sector needs innovation, and entrepreneurship is the best way forward. The potential is mind-boggling.

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# EMPLOYEE'S ACCOUNTABILITY FOR SOCIAL MEDIA POST

## ● INTRODUCTION

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- o Recently, an employee of Kannur International Airport was reportedly terminated from his post after the person criticised the state government on his Facebook post.
- o The employee was apparently unhappy with the Supreme Court's verdict on the Shree Padmanabhaswamy Temple and made his opinions public. Getting busted for posting something offensive on social media is not a new phenomenon.
- o James Gunn, a filmmaker, was removed from the director's chair for Guardians of the Galaxy Vol 3, when his past tweets came haunting.
- o However, in his case, it was a matter of political opinions and sharing them on social media.
- o Having a say about an issue of national concern and expressing it on social media has been one of the routine activities in the last couple of years.
- o That has quite often led to many terminations as well.
- o This is not the lone case. Recently, India's tech giant Infosys also terminated the services of an employee who wrote an "inappropriate post" on social media.
- o One of the more recurrent ethical issues in business is the question of employees' personal behavior on social media outside of work hours.
- o However, there's still quite a large gray area of situations that may or may not make it ethically justifiable to fire an employee for their social media conduct.

Here are a few questions to consider with regard to this ethical dilemma in business:

- o Is it right to punish employees for certain types of social media posts?
- o Are businesses obligated to keep an employee who holds distasteful views and express them online?

So, a question arises whether it is correct to terminate an employee for his /her personal post on social media.

- o It's fair not to sever ties with an employee just because her/his tweet is politically motivated. A

allegation of ... to be investigated and a fair chance has to be given to the person to explain.

- o These days, social media is its own judge.  
For instance, let's assume there is a junior in a multinational IT company who posts something about Kashmir or Muslims. Immediately, someone picks it up and insinuates that it is an American company's view of India. This is the problem with social media.
- o The problem is one can't wear one's company's identity and put a video that denounces a gender, government, leader or community.
- o The employer, doesn't care if the employee has a personal view, because that is not reflective of the company's view. The problem arises when these two start merging.
- o The best thing to do will be to just follow the company's social-media policy. No company stops anyone from sharing their views on social media as an individual.

Many companies have elaborated social-media guidelines that employees have to adhere to. They are discouraged from writing anything unworthy about the organisation in a public forum. But what about political thoughts and reasoning? Should they be regulated as well? If yes, is it fair to curb someone's personal opinion?

- o It all depends on the code of ethics of the company. Many dissuade employees from putting any politically-motivated posts on social media.
- o Nowadays, the internet serves as a hard dissonance one puts out something on it, it stays for good.
- o One can, of course, have a debate on soft topics, but anti-national posts should not be tolerated. One can have a neutral or mild opinion. If they are not offensive, it is okay.
- o Freedom of expression cannot be mistaken as a means to write whatever one wants. It may hurt the reputation of the company.
- o Many people believe such a thing always warrants a sacking. One can give a warning to the employee as well and ask them to remove those posts. One can't wear one's company's

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identity and put a video that denounces a gender, government, leader or community.

Social media is not going anywhere now that it is serving its purpose in more ways than one. For most people, this is the only gateway to share what they want to express. Many nameless and faceless entities are voicing their views and concerns on a regular basis now. For the young people, the way to get their views registered is through social media. It's a big influencer. They find a lot of comfort in being faceless, nameless activists."

Companies like Indigo have a very clear **social-media policy**. It doesn't take away anybody's right to express what they want to on social media, as long as that doesn't come in the way of Indigo's business enterprise. However, it is also advisable that one has to be responsible to not badmouth any key individual of the country just because they have a device in their hands. With the ability to be nameless and faceless, also comes social responsibility.

### **When is it right to fire an employee over Social Media Posts?**

- o When their behavior clearly crosses a stated employer policy or other obvious line, such as being threatening or harassing toward other employees.
- o When the behavior is clearly violating the social media policy, or when the employee is on social media for personal use while on the clock. (This likely wouldn't be something that would result in termination for a first offense, but it could escalate.)
- o Behaving in a way that tarnishes the employer's reputation, either by association or simply from the employee's conduct.
- o Divulging confidential information.
- o Posting things that prove the employee has lied to the organization, such as taking medical or disability-related leave but then showing on social media that the reason for the leave was not valid.

### **When is it wrong to fire an employee over Social Media Posts?**

- o When the post is protected in some way. The most prominent example that some employers overlook or get wrong: Employees should not be fired when their social media post could be considered "concerted activity" and could, therefore, be protected activity under various laws and regulations.
- o When there are specific rules that must be followed before a termination (and those are not followed).
  - For example, there may be contractual stipulations with the employee's union that outline steps that must be taken before any termination. If those steps aren't followed, the termination may be illegal even if it would have been fine otherwise.
- o When the social media post represents some other protected activity, like whistleblowing, or protected reporting of something else, such as discrimination or harassment.
- o When the employee are protected through the laws and regulation.
- o When it comes to employee etiquette on social media, the bottom line for most companies is that the employee can be justifiably fired if the activity is deemed disloyal or financially harmful to the company. Of course, neither employer nor employees would want to get to a point like that.

### **What can a company do about ethical issues related to social media?**

- o Addressing ethical problems in a company connected to social media can be tricky mainly because most situations will fall in the gray area.
- o To help eliminate confusion or disclarity for employer, the best step to take is to create a set of rules and policies that clearly describe what is (and isn't) acceptable for employee conduct on social media. Company's guidelines for employee behavior on social media should be paired with training sessions and periodic company-wide reminders via email.

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# **SECTION:B**

## **(PRELIMS)**

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## 'CHAURICHAURA' CENTENARY CELEBRATIONS

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◎ **CONTEXT:** 4<sup>th</sup> February 2021 marks the 100<sup>th</sup> year celebration of Chauri Chaura at Gorakhpur, Uttar Pradesh.

### About Chauri Chaura Incident

- The '**Chauri Chaura**' incident is a landmark event in the country's fight for independence.
- The **incident** took place on 4 February 1922 at Chauri Chaura in the Gorakhpur district of the United Province (modern Uttar Pradesh) in British India.
- During this, a large group of protesters participating in the **Non-cooperation movement**, clashed with police who opened fire.
- In retaliation the demonstrators attacked and set fire to a police station, killing all of its occupants.
- The incident led to the death of three civilians and 22 policemen.
- Mahatma Gandhi, who was strictly against violence, halted the non-cooperation movement on the national level on 12 February 1922, as a direct result of this incident.

### Quick Facts

- Date: February 5, 1922
- Place: Chauri Chaura, Gorakhpur district, The United Provinces
- Nature of Incident: Violent attack
- Number of Casualties: 25 deaths
- Historical Significance: 'Non-cooperation Movement' was called off due to the incident

### Non-Cooperation Movement

- The Non-Cooperation Movement was launched in 1920 in response to two key events in 1919—
  - the Rowlatt Act
  - the Jallianwala Bagh massacre
- Under the Rowlatt Act, political cases could be tried without a jury and the suspect detained for an indefinite period of time.
- The Act had sparked widespread protests across the country and in April 1919, Gandhi had planned to visit Amritsar to join one such protest. However, he was stopped in Delhi and arrested on 10 April, along with other prominent leaders. This angered the people of Amritsar who took to the streets.
- Following this, General Reginald Dyer was tasked with restoring order in the city and among other measures, a ban was put in place on public gatherings.
- On 13 April 1919, General Dyer opened fire on a gathering of unarmed men, women and children at Jallianwala Bagh, killing hundreds. More than 10,000 people had gathered in the park to protest the British rule.
- While official statistics note that 400 civilians died, the actual number is believed to be much higher.



- The Jallianwala Bagh massacre marked a turning point in India's history as well as Gandhi's approach to independence. He now demanded a complete independence from the British.
- The Non-Cooperation Movement was the **first step towards the total independence.**

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## **CORRUPTION PERCEPTION INDEX 2020**

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● **CONTEXT:** India's rank has slipped six places to 86th among 180 countries in corruption perception index (CPI) in 2020.

● **ABOUT:**

- **Corruption Perception Index (CPI)**
  - **Released by:** Transparency International (TI).
  - The Corruption Perceptions Index (CPI) is the leading global indicator of public sector corruption, providing an annual snapshot of the relative degree of corruption in 180 countries and territories.
  - The index ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and business people.
  - It uses a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean.
  - A country with a higher score has a higher rank.
- **Key findings of the Index**
  - India ranked at 86th position with a score of 40 while more than two-thirds of countries scored below 50, with a global average score of just 43.
  - India's score is below the average score of the Asia-Pacific region (31 countries) and global average.
  - India was ranked at 80th position out of 180 countries in 2019.
  - With a score of 31, India's neighbour Pakistan ranked at 124. Other top-scoring nations include Singapore with a score of 85, Australia with 77 and Hong Kong also with 77.
  - This year, New Zealand and Denmark ranked at first position with scores of 88.
  - Somalia and South Sudan ranked lowest at 179th position with scores of 12.

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## **2021 CENSUS TO GO DIGITAL**

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● **CONTEXT:** The Ministry of Finance announced that the upcoming Census 2021 is set to be the first digital census in the history of India and that the government has allocated over Rs 3,700 crore for the same.

● **ABOUT:**

**What is Census?**

- Population Census is the total process of collecting, compiling, analyzing or otherwise disseminating demographic, economic and social data pertaining, at a specific time, of all persons in a country or a well-defined part of a country.
- As such, the census provides a snapshot of the country's population and housing at a given point of time.

- **Responsible agency:** The Census is conducted by the **Office of the Registrar General and Census Commissioner**, India, under the Ministry of Home Affairs, Government of India.
- **Duration:** It is done every 10 years.
- **First and last Census:** The census was first conducted in 1872 during the British rule. The last census was done in 2011.
- **First complete census:** It was done in 1881.

#### **The Census Act, 1948**

- The Census Act was enacted in 1948 to provide for the scheme of conducting population census with duties and responsibilities of census officers.

#### **The first-ever digital census**

- The 2021 census of India is set to begin in March 2021, after the previous census was undertaken in 2011 – marking India's population at 1.21 billion back then.
- The census will be conducted through a mobile application. The decision to move from the traditional pen and paper was taken to promote **Digital India**.
- The exercise is said to be carried out in 16 languages.

The Netherlands implemented its first virtual census in 1981 using the population register and surveys.

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## **AIR POLLUTION IN RURAL INDIA: IGNORED BUT NOT ABSENT**

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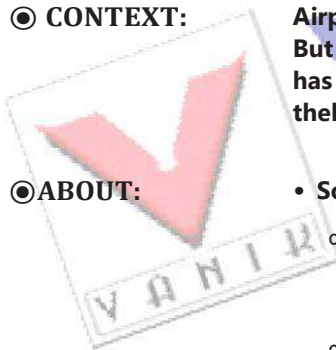
### ◎ **CONTEXT:**

Air pollution is a transboundary problem, it transcends rural and urban boundaries. But the issue is rarely discussed and action plans are rigid. Rural air pollution has usually been ignored by scientists and policy makers alike for the longest time.

### ◎ **ABOUT:**

#### • **Sources of pollution in rural areas**

- o **Vehicular pollution:** While the extent of vehicular pollution may not be the same in villages as in cities, the same sources richly contribute to pollution in rural areas.
- o **Toxic air, effluent discharge due to operation of heavy industries:** Most heavy industries now operate beyond city limits—in rural belts—and the local population is the recipient of toxic air and effluent discharge, often due to weak oversight.
- o **Stubble burning:** Northern India faces a seasonal issue of stubble burning, which, despite media attention and Delhi's annual air apocalypse, has continued unabated.
- o **Agricultural pollution:** Agriculture is a rich source of reactive nitrogen in India, as only 30 percent of the nitrogen is taken up by plants. The rest is released into the atmosphere, soil and water.



### Weak monitoring network

- **Monitoring stations disproportionately located:** India has **804 manual monitoring stations** under the **National Ambient Monitoring Programme (NAMP)** and **274 real-time monitoring stations (CAAQMS)**. Most of these are disproportionately located in tier-1 cities; a few are in tier-2 cities.
  - o A quick analysis shows that real-time monitoring is nearly absent in rural areas.
  - o Additionally, even cities in Arunachal Pradesh, Andaman and Nicobar Islands and Manipur don't have a single real-time monitoring station.
- The NAMP network of manual monitors are only marginally better. It does cover all states and includes even small cities and towns, but 96 percent monitoring stations are within the city boundaries and do not cover surrounding rural hamlets.
- Out of the 804 stations, only 26 are located in rural villages. Names of villages and their tehsils have been provided in the NAMP list. Two of these stations are in Dadra and Nagar Haveli among the Union territories.

### Recent government schemes

- **National Biomass Cookstoves Initiative:** In 2009, the Union Ministry of New and Renewable Energy launched the National Biomass Cookstoves Initiative and installed about 27 lakh units by 2017.
- **Unnat Chulha Abhiyan Programme:** Unnat Chulha Abhiyan Programme was launched in 2014, wherein both family and community cookstoves using biomass briquettes were distributed.
- **Pradhan Mantri Ujjwala Yojana (PMUY):** Launched in 2016, it is a countrywide initiative to increase use of clean cooking fuels among those below the poverty line.

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## DISCOVERY OF INDIA'S FIRST EVER LITHIUM RESERVES IN KARNATAKA'S MANDYA'

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### ◎ CONTEXT

- **In a major development, India has discovered its maiden lithium deposits of 1,600 tonnes in the igneous rocks located in the Marlagalla-Allapatna region of Karnataka's Mandya district.**
- **Though the discovery is very small in size in the present, it marks an initial success for the nation's attempts to domestically mine the metal in India, which is in high demand for making electric vehicles (EV).**

### ◎ ABOUT:

#### What is Lithium?

- Lithium is a **metal** of utmost importance. It is everywhere today.
- Lithium is a key element for new technologies and finds its use in ceramics, glass, telecommunication and aerospace industries.
- The well-known uses of lithium are in lithium ion batteries, lubricating grease, high energy additive for rocket propellants, optical modulators for mobile phones and as a converter to tritium used as a raw material for the nuclear reactions i.e. fusion.
- It's the juice that powers our smart phones, tablets, cameras, laptops and even cars. This element is the driver of the technology age. And it could dictate the future of civilization.

The survey was done on surface and limited subsurface in the pegmatites of Marlagalla - Allapatna area by Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy.

**Important facts**

- The growing demand for Lithium in India is driven by the goal of Indian government to become one of the largest electric vehicle markets worldwide.
- NITI Aayog has set an ambitious target to increase the number of electric vehicles by 30 percent by 2030.

**The projected market**

While electric cars in India remain a small segment, with an estimated 3,000 sold in 2018 compared with the 3.4 million fossil fuel-powered cars in the same year, the nation is forecast to become the fourth-largest market for EVs by 2040, when this segment will comprise nearly a third of all vehicle sales.

- India's first Lithium plant has been set up at Gujarat in 2021, where Manikaran Power Limited will invest Rs 1000 crore to set up this refinery.
- The refinery will use Lithium more to produce base battery material.

Karnataka's **Marlagalla-Allapatna area**, along the **Nagamangala Schist Belt**, is being seen as among the most promising geological domains for potential exploration for lithium and other rare metals.

- Bolivia is the leading producer with 2.10 crore tonnes lithium reserves, and Argentina has 1.70 crore tonnes of Lithium.
- Chile has around 8.6 Mnt tonnes, Australia has 2.8 Mnt tonnes, and even Portugal has around 60K tonnes of lithium deposits.

In 2020, India, signed an agreement with an Argentinian firm to jointly prospect lithium in the South American country that has the third largest reserves of the metal in the world.

**What are the advantages of lithium for the renewable sector?**

- The element is promoted because it has a lot of potential in the renewable sector of the modern energy spectrum, some of its advantages include:
- **Lithium-ion batteries** can serve as a solution for varied power demands across the spectrum. It can range from vast energy storage to portable energy storage solutions. They can thus be used as large or small batteries.
- Lithium-ion battery has **high energy density**. This implies Li-ion batteries can last way longer between charges, while maintaining high current output. This makes it an ideal battery for most of our contemporary needs.
- Li-ion batteries are **low to minimum maintenance**, most other cells like Nickel-Cadmium (Ni-Cd) batteries have a huge cost of ownership and maintenance.



- Li-ion batteries come in all shapes and sizes, giving the users with many options to choose from according to their needs.

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## CONSERVATION OF FISHING CAT

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◎ **CONTEXT:**

The fishing cat, a lesser-known feline species, is facing several threats due to its depleting habitat. So, a worldwide campaign by the Fishing Cat Conservation Alliance to protect the feline is being started.

**About Fishing Cat**

- The **fishing cat** (*Prionailurus viverrinus*) is a medium-sized wild cat of South and Southeast Asia.
- It is very much content and survives in water.
- **Protection Status:** Since 2016, it is listed as **Vulnerable** on the IUCN Red List.
- **Threats:** Fishing cat populations have declined severely over the last decade. Some of the reasons are for the declining population is:
  - o **habitat loss** [wetland degradation and conversion for aquaculture and other commercial projects]
  - o **sand mining** along river banks
  - o **agricultural intensification** resulting in loss of riverine buffer
  - o targeted hunting and retaliatory killings
- **Occurrence:** They are found in **Sundarbans in West Bengal and Bangladesh, Chilika lagoon, and surrounding wetlands in Odisha, Coringa, and Krishna mangroves in Andhra Pradesh.**
  - o Fishing cats have a patchy distribution along the Eastern Ghats. They are found in
    - estuarine floodplains
    - tidal mangrove forests
    - inland freshwater habitats

**Fishing Cat Conservation Alliance**

- The Fishing Cat Conservation Alliance is a team of conservationists, researchers, and enthusiasts across the world.
- **Aim:** To have a world with functioning floodplains and coastal ecosystems.

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## DENMARK APPROVES PLAN FOR ENERGY ISLAND IN NORTH SEA

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◎ **CONTEXT:**

The Danish government has reportedly approved plans for the construction of the first artificial "energy island" in the North Sea.

◎ **ABOUT**

**What the energy island?**

- The island would act as a hub for offshore wind development, built 80 km off the coast of Denmark in the North Sea.

- The island covers an area of 120,000m<sup>2</sup>, equivalent to 18 football fields.
- Once completed, it would store and supply energy to power nearly three million European households.
- It would also supply green hydrogen for shipping, aviation, industry and heavy transport sectors.

#### **Impact of the development**

- The latest move comes as the European Union announced transformation of its electricity system to mostly rely on renewable energy within ten years.
- It will also increase its offshore wind energy capacity approximately by 25 times before 2050.
- The project is part of Denmark's target to cut greenhouse gas emissions by 70% by 2030 from 1990 levels

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## **SQUARE KILOMETRE ARRAY, THE WORLD'S LARGEST RADIO TELESCOPE**

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◎ **CONTEXT:** **The Square Kilometre Array Observatory (SKAO) Council held its maiden meeting and announced the establishment of the world's largest radio telescope.**

◎ **ABOUT:**

- **Square Kilometre Array Observatory (SKAO)**
  - SKAO is a new intergovernmental organisation dedicated to radio astronomy.
  - **Headquarters:** The United Kingdom.
  - **Countries involved:** At the moment, organisations from ten countries are a part of the SKAO. These include Australia, Canada, China, India, Italy, New Zealand, South Africa, Sweden, the Netherlands and the UK.
- **The proposed telescope**
  - The telescope, proposed to be the largest radio telescope in the world, will be located in Africa and Australia whose operation, maintenance and construction will be overseen by SKAO.
  - The completion is expected to take nearly a decade at a cost of over £1.8 billion.
  - As per NASA, the telescope will accomplish its scientific goals by measuring neutral hydrogen over cosmic time, accurately timing the signals from pulsars in the Milky Way, and detecting millions of galaxies out to high redshifts.
  - Some of the questions that scientists hope to address using this telescope include:
    - > the beginning of the universe
    - > how and when the first stars were born
    - > the life-cycle of a galaxy
    - > exploring the possibility of detecting technologically-active civilisations elsewhere in our galaxy
    - > understanding where gravitational waves come from



#### About Radiotelescopes

- Unlike optical telescopes, radio telescopes can detect invisible gas and, therefore, they can reveal areas of space that may be obscured by cosmic dust.
- Significantly, since the first radio signals were detected by physicist Karl Jansky in the 1930s, astronomers have used radiotelescopes to detect radio waves emitted by different objects in the universe and explore it.
- According to NASA, the field of radio astronomy evolved after World War II and became one of the most important tools for making astronomical observations since.

## SILK-PROTEIN-BASED TUMOUR MODELS FOR TESTING OUT CANCER

#### ◎ CONTEXT:

Researchers from IIT Guwahati have come up with silk-protein-based tumour 3D model for testing cancer drugs.

#### ◎ ABOUT:

##### Key features of the Model

- **Bio-activity:** It involves fabrication of a bio-active composite of silk proteins from two species of silkworms.
- **3-D base:** It builds a scaffold that provides a three-dimensional base for growing tumours.
- **Imitate native environment:** This 3D silk-based tumour model imitates native tumour microenvironment, complex tumour physiology and metastasis, thus improving drug screening efficacy.

##### How scientists built scaffolds?

- The scientists mixed the silk fibroins extracted from the cocoons of the **domestic silk moth** (*Bombyx mori*) and the **silk glands of the muga silk moth** (*Antheraea assama*) in equal proportions and used them to build up scaffolds on which they grew breast and liver tumour cell cultures.
- As a proof of concept, the researchers created breast and liver tumouroids and these showed similar tumour physiology in 3D spatiotemporal arrangements and drug-resistance, as in native solid tumours.
- They also tested the screening capacity of the tumour on known anticancer drugs, **Doxorubicin and Paclitaxel**.
- The tumouroids grown on the silk composite exhibited increased resistance to cancer drug (as in native conditions) compared to monolayers and spheroids.

##### The need

- Normally, cancer drugs are tested using patient-derived **primary cancer cells**, on **tumours** induced in animal models or genetically modified organisms.
- These models are insufficient to reproduce the three-dimensional morphology and physiology of human tumours.



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## STARDUST1.0

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◎ **CONTEXT:** Stardust1.0, a rocket powered by bio-derived fuels successfully took off from a former military base in Maine.

◎ **ABOUT:** What is Stardust1.0?

- Stardust1.0 is a launch vehicle suited for student and budget payloads.
- The rocket is 20 feet tall and has a mass of roughly 250 kg.
- **Payloads:** The rocket can carry a maximum payload mass of 8 kg and during its first launch carried three payloads. The payloads included:
  - o a cube satellite prototype built by high school students
  - o a metal alloy designed to lessen vibrations, which is developed by Kellogg's Research Labs
  - o a cube satellite from software company Rocket Insights
- **Manufactured by:** The rocket is manufactured by **bluShift**, an aerospace company based in Maine that is developing rockets that are powered by bio-derived fuels. Other rockets being developed by the company include
- **Stardust Gen. 2, Starless Rouge and Red Dwarf**, which is a low-Earth orbit (LEO) vehicle and is designed to fly a maximum payload of 30 kg.

### First to be powered by biofuel

- Stardust1.0 became the first commercial space launch powered by biofuel, which is non-toxic for the environment as opposed to traditionally used rocket fuels.
- Though the biofuel used for the launch is not yet clear, but as per the reports it can be sourced from farms around the world.

### Significance of the rocket

- **Cheaper and environment friendly:** These rockets will help to launch small satellites called **cube sats** into space in a way that is relatively cheaper than using traditional rocket fuel and is less toxic for the environment.

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**CURRENTAFFAIRSANALYST**  
**WEEK-3 (FEBRUARY, 2021)**

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# SECTION:A

## (MAINS)

CURRENTAFFAIRS



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## CHAMOLIGLACIERBREAK

### CONTEXT

A major disaster struck the Himalayan state of Uttarakhand recently. A glacier broke after an avalanche in the Joshimath area of the state's Chamoli district.

#### ◎ BACKGROUND

- Human activities profoundly affect the earth's climate and mountains are a sensitive indicator of that effect and they provide an early glimpse of what could come to pass in a lowland environment.
- The mountain ecosystem is easily disrupted by variations in climate owing to their altitude, slope, and orientation to the sun.
- As the earth heats up, mountain glaciers melt at unprecedented rates, while rare plants and animals struggle to survive over ever-diminishing areas.
- The melting of Himalayan glaciers has doubled since the start of the 21st century due to rising temperature, losing over vertical foot-and-a-half of ice each year, and potentially threatening water supply for hundreds of millions of people in countries.
- Now, another disaster induced by climate change due to the negative impact of humans on the environment has been witnessed.
- Previously, the region has witnessed devastating earthquakes and in the recent past earthquakes in Chamoli and flood in Kedarnath has been witnessed.

#### ◎ ANALYSIS

##### What is a glacier outburst? What causes this disaster?

- Glacial lake outburst floods (GLOF) is being considered to be the most likely trigger for this event.
- GLOF is a reference to flooding caused downstream due to a breach in a glacial lake.
- Retreating glaciers, like several in the Himalayas, usually result in the formation of lakes at their tips, called **proglacial lakes**, often bound only by sediments and boulders.
- If the boundaries of these lakes are breached, it can lead to large amounts of water rushing

down to nearby streams and rivers, gathering momentum on the way by picking up sediments, rocks, and other material, and resulting in flooding downstream.

- GLOF events are not unusual, but their impact depends on the size of the proglacial lake that burst, and its location.
- In the Hindu Kush Himalaya, moraine-dammed glacial lakes are common and numerous GLOF events have been traced back to the failure of moraine dams.

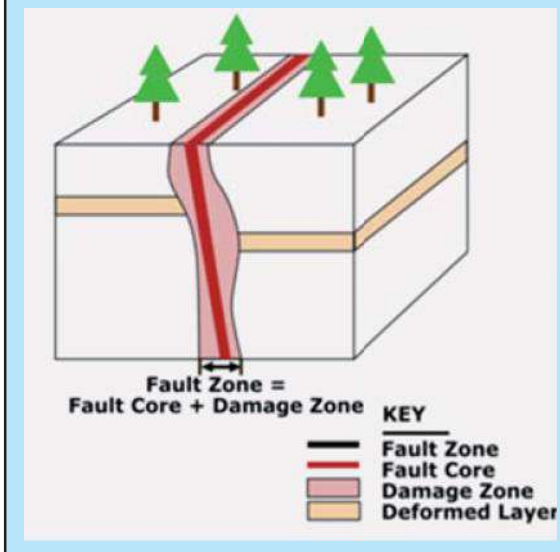
##### Why made the Himalayas so prone to disasters?

- There are four major faults in the Himalayas, including the **Himalayan Frontal Fault** and the **Trans Himadri Fault**. Multiple faults have developed parallel to these four.
- This branching and sub-branching means that this is a zone of faults. The movement of thousands of years means that all rock formations are broken and crushed.
- Water penetrates deep into the interior and sabotages the rocks from the inside. It washes away the base of the rocks.
- Even if smaller ruptures occur along with short segments of the mountains, stress builds up along the faults. That accumulated stress eventually triggers an enormous earthquake.
- Thus the number of landslides is high in the region. Landslides and earthquakes will continue to happen in the region because of the movement of the plates in the Himalayas.

##### What is a 'fault'?

- A fault is a fracture or zone of fractures between two blocks of rock. Faults allow the blocks to move relatively to each other.
- This movement may occur rapidly, in the form of an earthquake, or may occur slowly, in the form of creep.
- Faults may range in length from a few millimeters to thousands of kilometers.

- The fault surface can be horizontal or vertical or some arbitrary angle in between.



### How rapidly the Himalayas is losing its ice?

- o As per the first-ever assessment of climate change impacts on the **Hindu Kush Himalayan (HKH)** region, the number of glaciers in the Himalayan area has increased in the last five decades.
- o This is an indicator of how severe glacier melting has been due to global warming.
- o The increase in the number of glaciers is primarily due to glacier fragmentation.
- o **Glacier fragmentation** refers to the splitting of big glaciers into smaller ones.
- o And this is happening due to consistent loss in area as the glaciers occupy.
- o Since the 1950s, only reductions have been observed in glacier area (or shrinkage).
- o Based on a compilation of area change studies, eastern Himalayan glaciers have tended to shrink faster than glaciers in the central or western Himalayas.
- o In the northern slopes of the Himalayas, glaciers are receding.

Glacier area change ranges between -0.1 percent/year for the **Chandra-Bhaga** basin (northwestern Indian Himalayan region) between 1980 and 2010 to more than -1 percent/year for the **Poiqu** basin (on the northern slopes of central Himalaya) between 1986 and 2001.

### What can be the reasons behind the recent disaster?

- o **Low snowfall:** Reduced snowfall this winter due to climate change may have played a major part in the glacier bursts. The glacial outbursts are also related to global warming. As the temperature soars during summers, the glaciers retreat, leaving behind water-filled, unstable moraine-dammed lakes.
- o **Large hydropower projects:** The entire State of Uttarakhand is categorized as falling in **Zone-IV and V** of the earthquake risk map of India. Despite the threat of such calamity, large hydropower projects are in vogue in the state. The potential of the cumulative effect of multiple such projects has turned out to be more environmentally damaging than sustainable, given the current policy of the state government of pursuing hydro-power projects indiscriminately.

### CONCLUSION

Uttarakhand is a wake-up call, not just for the Government and people in the state, but also the planners and decision-makers all over the country. It is said that those who fail to learn from history are doomed to suffer from it repeatedly. It is high time, therefore, for the government to realize that the Himalayan mountains are fragile and impatient, and the governments shall set its development priorities and projects based on the potential of the mountains, local and traditional knowledge as well as aspirations of the place.

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# KURUBA COMMUNITY DEMANDING ST STATUS

## CONTEXT

The Kuruba community has been demanding the Schedule Tribe tag and held a massive rally in the outskirts of Bengaluru, Karnataka.

### ● BACKGROUND

- Three years after Karnataka witnessed a demand from the **Lingayat community** for a separate religion tag, the **Kurubas** have decided to revive a decades' old demand of including them in the Scheduled Tribes (ST) category.
- After more than seven decades of independence, there is now a growing number of communities desiring to be classified as scheduled tribes.
- There are probably many reasons behind this current spurt in the wish for marginality.
- One of these would be the fear of smaller ethnicities that they would be pushed to the margins of political power as well as on land holdings in their traditional home grounds by the inflow of settlers, therefore needing protection.
- The tension, however, is also internal. Here the contest is for the benefits of government job reservation.

### ● ANALYSIS

#### The Kurubas Community

- The Kurubas of Karnataka are a traditional sheep rearing community.
- They are known by different names in other states, such as Kurum in Andhra Pradesh, Gollains in southern Karnataka, Dhangan in Maharashtra, Pal in Rajasthan, and Maldhari/Gadariya in Gujarat.
- Presently, the Kurubas constitute 9.3% of the state's population and come under the backward classes category sharing 15% reservation with 104 other castes.
- They subscribe to the teachings of Kanakadasa who was a renowned composer of Carnatic music, poet, philosopher, and saint.
- From pre-independence till 1977, the community enjoyed the ST status.
- In 1977, Justice LG Haveri, who headed the backward class commission, removed the ST

tag, moving the Kurubas to the 'most backward classes' category, and brought in an amendment stating that those living in Bidar, Yadgir, Kalaburagi, and Madikeri with Kuruba synonyms can continue to avail the ST benefits.

#### What is the present reservation quota in Karnataka?

- Adhering to the **Supreme Court's 1992 order**, Karnataka has capped the reservation to 50% where 32% has been earmarked for backward classes, including Muslims, Christians, and Jains, 15% for SCs, and 3% for STs.
- This reservation quota has been further paired into categories: **Category 1 (4), Category 2 A (15), Category 2B (4), Category 3A (4), Category 3B (5), SC (15) and ST (3)**.

#### Supreme Court 1992 Order

- In 1991, the Narasimha Rao government issued an order providing an additional reservation of 10% for "other economically backward" sections, to the existing 27% reservation recommended by the **Mandal Commission for the other backward classes**.
- This was challenged by an advocate, **Indra Sawhney**, and the apex court struck down the additional 10% and upheld the 27% reservation by capping the overall quota at 50%.
- Presently, only Tamil Nadu and Maharashtra have exceeded the apex court's ceiling of 50%.
  - Tamil Nadu** has 69% reservation, which was achieved by including the reservation legislation in Schedule 9 of the Constitution.
  - In the case of **Maharashtra**, the Bombay High Court upheld the state government's quota for Marathas.

**What is meant by Scheduled Tribes?**

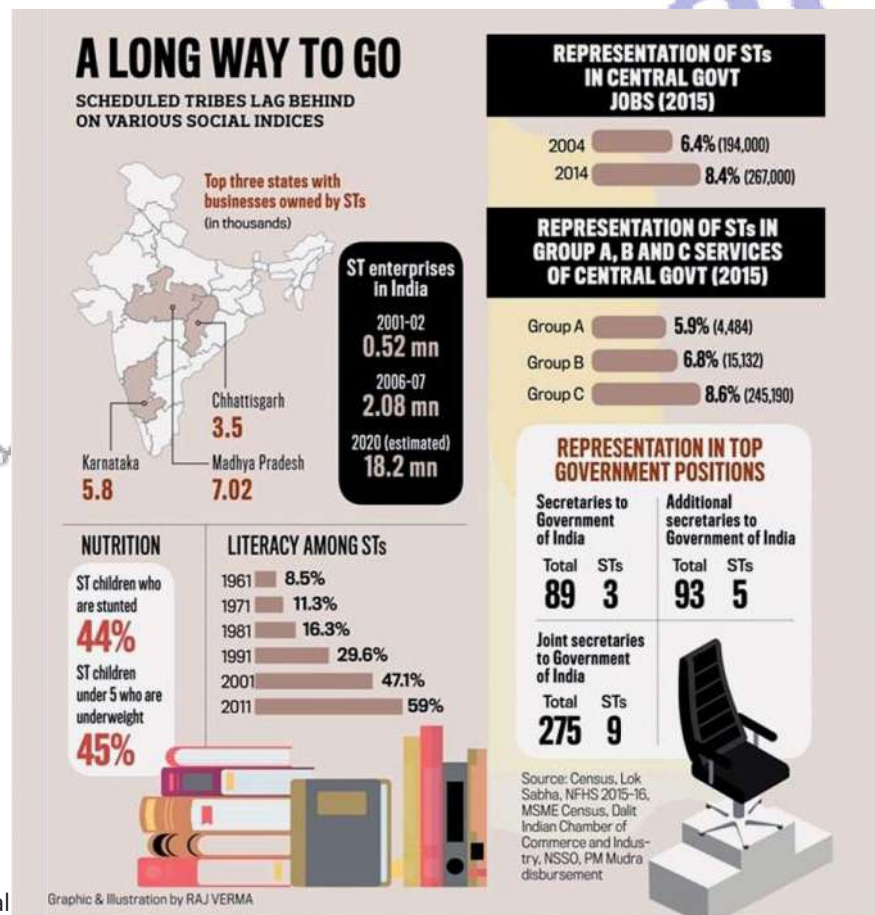
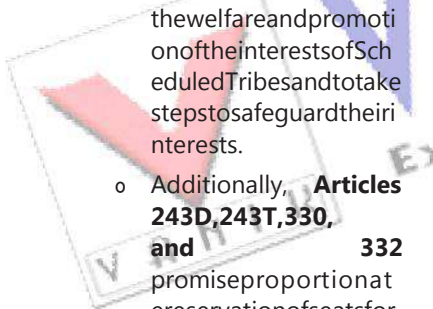
- o The Constitution of India in **Article 366 (25)** prescribes that the Scheduled Tribes means such tribes or tribal communities as are deemed under **Article 342** of the Constitution to be Scheduled Tribes.
- o The **National Commission for Scheduled Tribes** explains:
  - Primitiveness, geographical isolation, shyness, and social, educational & economic backwardness due to these reasons are the traits that distinguish Scheduled Tribes communities of our country from other communities.

**How Scheduled Tribes are protected?**

- o **Article 342** gives the President the power to notify those communities in specific regions that fall under the classification of Scheduled Tribes.
- o Apart from the fundamental rights under **Articles 15, 16**, and other provisions which assure non-discrimination based on caste, gender, race, religion, or place of birth, the other provisions protecting the fundamental rights of Scheduled Tribes areas follows.
- o **Article 46** directs the state to work for the welfare and promotion of the interests of Scheduled Tribes and to take steps to safeguard their interests.
- o Additionally, **Articles 243D, 243T, 330, and 332** promise proportionate reservation of seats for both Scheduled Castes and Scheduled Tribes in Panchayats, Municipalities, State Legislative Assemblies, and the Lok Sabha.
- o **Article 338A** directs the state to create a National Commission

for Scheduled Tribes, to oversee the implementation of the provisions and safeguard the rights of Scheduled Tribes in India.

- o Apart from the rights under the Constitution, the Scheduled Castes and Tribes (Prevention of Atrocities Act) also extends protection to Scheduled Tribes.
- o **Article 164** also provides for the appointment of a minister in charge of tribal welfare in the states of Chhattisgarh, Jharkhand, Madhya Pradesh, and Orissa, who may also be in charge of the welfare of the Scheduled Castes and backward classes or any other work.
- o **The Fifth Schedule** of the Constitution outlines the provisions for the administration of Scheduled areas. It assures the establishment of Tribes Advisory Councils, with three-fourths representation from the tribes in the area, in states with Scheduled Tribes but without Scheduled Areas. The council's duties include advising on matters of welfare and advancement of the tribes.



- o **The Sixth Schedule** of the Constitution also contains provisions for the administration of Tribal Areas, but in the states of Assam, Meghalaya, Tripura, and Mizoram.
- o The **SC/ST Atrocities Act** places Scheduled Tribes under its ambit as well.

### What are the challenges faced by STs in India?

- o **Unemployment, poverty, homelessness, and water scarcity** continue to plague the Scheduled Caste (SC) and Scheduled Tribe (ST) populations
- o On the economic front, **indebtedness** among STs remains an issue.
- o Lack of **sustainable livelihood opportunities** has also made it difficult for them to maintain personal assets acquired through government financial aid and otherwise.

### Why the demand for ST status is increasing?

- o Getting ST status means that members of the group have access to highly desired tangible benefits such as political representation, reserved seats in schools, and government jobs.

- o Over the years, social and political mobilization has led to the number of STs growing from 225 in 1960 to more than 700 today (with overlapping communities in more than one state).

### ◎ CONCLUSION

- o The Indian Constitution ensures certain protection for communities deemed as having Scheduled Tribe (ST) status. However, which groups should be accorded that status has been contentious. To avail of the protections and benefits of being accorded ST status, communities in India try to prove themselves as meeting the criteria.
- o This situation needs well-developed, transparent criteria and a clear definition of what makes groups eligible for ST status. Developing such criteria with specific economic and social data that can help compare communities requesting ST status with other STs and to the Indian population at large would limit the precarious character of deciding who belongs to what group, thereby ensuring greater transparency and confidence in the process of awarding deserving communities ST status.

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## CONTINUITY IN INDIA'S TIES WITH CENTRAL ASIA

### CONTEXT

As India cements its position as one of the fastest-growing major economies of the world, its increased engagement with the Central Asian region can lead to mutually beneficial gains—both in economic and strategic terms.

#### ◎ BACKGROUND

- India has a long history of cultural and commercial relations with Central Asia, facilitated by its geographical proximity and the Silk Route.
- However, India-Central Asia relations stagnated in the 20th century, due to the **Anglo-Russian**

Central Asia, India redesigned its ties with the region.

- However, in recent times, India has adopted a coherent strategy to upscale its relationship with C A and reinvigorate the ancient socioeconomic and traditional ties with the region through new initiatives.



#### ◎ ANALYSIS

rivalry in the “Great Game” and the consequent emergence of nation-states with differing ideologies.

- The Great Game, also known as ‘**Bolshaya Igra**’, which started in **1830** was intense rivalry between British and Russia empires over Central Asia and the trade routes.
- Britain sought to influence or control much of Central Asia to buffer the “**crown jewel**” of its empire, and Russia sought to expand its territory and sphere of influence.
- After the breakup of the Soviet Union and the formation of the independent republics in

#### What is Central Asia?

- Central Asia is a landlocked region, which is located in the heart of Asia.
- Central Asia is composed of the 5 post-soviet countries: **Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan and Tajikistan**.
- The countries are also known as “5 Stans” due to the ‘s’ ending in their names.
- It is bounded on the north by Russia and on the south by Iran, Afghanistan, and China.

#### Why Central Asia assumes significance for India?



- o **Geostrategic location:** Central Asia, forms a part of India's extended neighbourhood. Its geographical proximity, strategic location, and historical linkages make it an important partner for New Delhi.
- o **Energy:** Central Asia is significant for India as it has an abundance of oil and gas deposits.

- The region contains vast **hydrocarbon fields** both on-shore and off-shore in the Caspian Sea which homes around **4 percent of the world's natural gas reserves** and approximately **3 percent of oil reserves**.

- Gas in Turkmenistan
- Oil, gas and uranium in Kazakhstan
- Uranium and gas in Uzbekistan

- o **Global power hub:** Strategically, Central Asia is emerging as the next high-stakes competition ground for global powers, hence, it would behoove India to pay closer attention.
- o **Significant transportation hub:** Central Asia is a major transportation hub for gas and oil pipelines and multi-modal corridors connecting China, Russia, Europe, and the IOR.

### How India is increasing engagement with the region?

- o **India- Central Asia Dialogue:** As a part of moving India's engagement with the region forward, the first India-Central Asia Dialogue was held in Samarkand, Uzbekistan on 13 January 2019. The participants included India, the five Central Asian republics and Afghanistan. These **second India-Central Asia Dialogue** was hosted virtually in October 2020.
- o India is also involved in three connectivity initiatives that involve Central Asia. These initiatives are the International **North-South Transport Corridor (INSTC)**, the **Ashgabat Agreement** and the **development of Chabahar Port in Iran**.

**Connectivity Initiatives**

- **TAPI Pipeline:** The long-delayed Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline, backed by the Asian Development Bank (ADB), was first proposed in the mid-1990s and all four actors officially signed an agreement in 2010.

### ATTRACTIVENESS TO INDIA

<p style="text-align: center; background-color: #333; color: white; padding: 5px; margin-bottom: 5px;"><b>Tajikistan</b></p> <ul style="list-style-type: none"> <li>Geo-strategic location; shares borders with China, Afghanistan, Uzbekistan and Kyrgyzstan and proximity to Pakistan-occupied Kashmir (PoK).</li> <li>Rich in hydroelectric power</li> <li>The largest natural water resources in the region</li> <li>Rich mineral deposits</li> <li>Tajik military officers receive training at Indian defence institutions</li> </ul>	<p style="text-align: center; background-color: #333; color: white; padding: 5px; margin-bottom: 5px;"><b>Kazakhstan</b></p> <ul style="list-style-type: none"> <li>Immense hydrocarbon reserves and growing role in the region</li> <li>Cooperation in hydrocarbons, civil nuclear energy, space, information technology and cyber security, pharmaceuticals, health care, agriculture, and cultural exchange programmes.</li> </ul>	<p style="text-align: center; background-color: #333; color: white; padding: 5px; margin-bottom: 5px;"><b>Turkmenistan</b></p> <ul style="list-style-type: none"> <li>Enormous gas reserves</li> <li>Transit potential and geo-strategic location as a gateway to Central Asia through Iran.</li> </ul>
<p style="text-align: center; background-color: #333; color: white; padding: 5px; margin-bottom: 5px;"><b>Uzbekistan</b></p> <ul style="list-style-type: none"> <li>Supports India's candidature for full membership in the SCO and UNSC</li> <li>Cooperate in coal gasification, oil and gas, banking, pharmaceuticals, textiles, science and technology, standardisation, small and medium enterprises and tourism.</li> <li>More than 60 Indian companies operating in the country</li> <li>Economic reconstruction projects and cooperation on counter-terrorism</li> </ul>	<p style="text-align: center; background-color: #333; color: white; padding: 5px; margin-bottom: 5px;"><b>Kyrgyzstan</b></p> <ul style="list-style-type: none"> <li>Training for Kyrgyz armed forces in UN peacekeeping operations</li> <li>English language skills</li> <li>MoUs for cooperation in research and development in high altitude base agriculture, plantation, animal husbandry, poultry, education, sports, culture, IT, health, S&amp;T and food processing</li> </ul>	

- **Chabahar port:** The Chabahar port that was recently made partially operational gives New Delhi a direct land access to CA.
- **International North-South Transport Corridor (INSTC):** In the last few years, India has invested in projects such as the International North-South Transport Corridor (INSTC). India sees the INSTC as an import-export route to Russia, Europe and Central Asia.

- o Engagement with the region in 2020 saw a clear focus on issues of regional economic development, connectivity, and security—apart from the immediate need of dealing with the ongoing pandemic.
  - Among the highlights was the announcement of an additional 1 billion USD Line of Credit extended by India for priority development projects in energy, healthcare, connectivity, IT, agriculture, education, etc.
- o **India's 'Connect Central Asia Policy'** covers an entire gamut of a multi-model approach to strengthen politico-economic, security, and cultural ties between the two.
  - The policy received a significant boost in 2018, when New Delhi's diplomatic efforts paid dividends in the form of admission into the **Ashgabat Agreement**, signed in 2011 between Iran, Oman, Turkmenistan and Uzbekistan and Qatar, for the establishment of an international transport and transit corridor.

### Understanding India's constructive approach

- o India, for its part, has so far chosen to take the 'constructivist' approach.
- o Subsequently, India revived its "**Indian Technical and Economic Cooperation**" (ITEC) programme to provide assistance to the CARs countries, as well as capacity building through training programmes, study tours, technology transfers and, in some cases, aid for disaster relief.
- o The ITEC programmes covered information technology, management, journalism, diplomacy, entrepreneurship, and banking.
- o New Delhi also signed the **Strategic Partnership Agreements (SPA)** with three of the five CARs—Kazakhstan, Tajikistan and Uzbekistan—to stimulate defence cooperation and deepen

trade relations.

- o New Delhi has established **Indian Cultural Centres** in Kazakhstan, Tajikistan and Uzbekistan.
- o New Delhi's constructivism is more concretely manifested in its '**Connect Central Asia**' policy.
- o The policy, launched in 2012, aimed to enhance India's political, economic, historical and cultural connections with Central Asia.

- As a region, Central Asia has received special attention in Prime Minister Modi's foreign policy. India has designated Central Asia as part of its extended neighborhood.
- In 2015 Modi visited all the five Central Asian countries—Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan – in a period of one week.
- He became the first Indian prime minister to visit all the five Central Asian countries in a single trip.

### What needs to be done?

Efforts are now being made to address the weak trade ties by encouraging cooperation among businesses on both sides, as is evident in the launch of the **India-Central Asia Business Council** in 2020.

However, various other measures can also effectively strengthen the ties:

- o **Strategic and economic cooperation:** India also needs to **direct investment** to the region to reap the economic benefits of the strategic location of Central Asia that puts it at the crossroads of key trade and commerce routes. Sectors like the construction industry, agriculture, pharmaceuticals, IT, and tourism offer potential for collaboration.
- o **People-to-people tie:** India must increase its developmental and humanitarian aid to the region and promote closer people-to-people ties through education, knowledge transfer, medicine and health, culture, cuisine, and tourism.
- o **Multilateralism:** While India has strong relations with the U.S., it needs to apply multilateralism in Central Asia.
  - First, India needs to define its economic and strategic interests in the region.
  - Second, India must explore the extent to which it can act independently of the U.S.

regarding Iran, Afghanistan and the Central Asian countries.

- o **Utilizing Multilateral Organization:** Multilateral organisations like SCO, EAEU, and CICA can serve as platforms for sustained engagement and regular exchange of ideas.

**Shanghai Cooperation Organisation (SCO)**

- SCO is a permanent intergovernmental international organisation, created in 2001 in Shanghai (China) by Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan.
- The SCO currently comprises eight **Member States** (China, India, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan and Uzbekistan), four **Observer States** interested in acceding to full membership (Afghanistan, Belarus, Iran, and Mongolia) and six "**Dialogue Partners**" (Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka and Turkey).

**Eurasian Economic Union (EAEU)**

- EAEU is an international economic union and free trade zone comprising countries located in central and northern Asia and Eastern Europe.

- The founding member states of Belarus, Kazakhstan, and Russia established the union by treaty in 2014 and officially implemented the agreement beginning on Jan. 1, 2015.

**Conference on Interaction and Confidence-Building Measures in Asia (CICA)**

- CICA is an inter-governmental forum for enhancing cooperation towards promoting peace, security and stability in Asia.
- CICA members consist of: **Afghanistan, Azerbaijan, Bahrain, China, India, Iran, Iraq, Israel, Jordan, Kazakhstan, Kyrgyzstan, Egypt, Mongolia, Pakistan, Palestine, South Korea, Russia, Tajikistan, Thailand, Turkey, United Arab**

**CONCLUSION**

How far India and Central Asian countries will take this renewed, centuries-old relations remains to be seen. India must take into consideration its future energy needs and the market potential of the greater Eurasian region, and seize the opportunity to stretch its economic borders while maintaining a constructive approach.

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# WHAT DOES ENERGY SECURITY MEAN FOR MALDIVES?

## CONTEXT

Being one of the top energy importers, India understands the current ‘energy diplomacy’ and is investing in engaging potential future energy partners like Maldives and addressing its challenges.

### ◎ BACKGROUND

- o Energy has, no doubt, become an essential strategic component of bilateral equations.
- o This is because energy security is not only a crucial foreign policy goal, but is tied inextricably to a nation’s larger security concerns.
- o As India and Maldives look to become energy partners, it is important to consider the specific ways in which they can address each other’s energy challenges.
- o It is further useful for India to understand energy security from the specific point of view of a small island nation.

### ◎ ANALYSIS

#### Understanding the concept of ‘Energy Security’

- o Energy security refers to the ability to ensure the reliability of energy supply flows at stable and affordable prices.
- o The goal is to mitigate risk, whether geopolitical, environmental, on the supply side, or to do with price stability.
- o There are many dimensions to a country’s desire for energy security, depending on where it sits on a world map, what stage of development its economy is at and whether it’s a supplier or a consumer of energy.
- o Demographics, size, material capabilities, availability of energy resources, technical expertise, human resource development and several other attributes, further add layers of complexity to the challenge of energy security.

#### Why energy diplomacy has taken centre stage?

- o **Rise in demand:** The world is witnessing a burgeoning demand for energy in the years to come, along with reserves of conventional fossil fuel becoming critically depleted.

- o **Increased competition:** There will be increased competition for energy resources underpinned by other forms of competition and rivalry between nations, particularly the great powers.
- o **Interlinked nature:** Energy diplomacy will become interlinked with other kinds of diplomacy pertaining to trade, environment and development assistance.

#### What are the choke points in this direction?

- o **Disruption to supply lines:** Considering that much of the world continues to depend on fossil fuels, there is a strong maritime component to energy security. Disruptions to supply lines occur for various reasons such as:
  - piracy or natural disasters
  - extreme weather conditions like tsunamis and floods
  - global pandemics
- o **Spike in prices:** These delays lead to higher shipping costs and an invariable spike in prices, whether directly or indirectly.
- o **Geopolitical tensions:** However, geopolitical tensions are what make nation states most wary. Supply routes are particularly vulnerable to choke points that can be easily blocked in times of crisis, such as the **Malacca Straits, Sunda Strait, Lombok Strait and Straits of Hormuz**, amongst others.

#### What are Maldives’ energy challenges?

- o **Reliance on imports:** Overdependence on imports is a vulnerability from the point of view of energy security. Maldives has no proven fossil fuel reserves, i.e., oil or gas, so its energy needs are almost entirely met by imports.
- o **Energy storage:** An alternative to mitigating the vulnerabilities associated with imports is to have better energy storage. This must be addressed across all energy types:

- **Forsolar power**, it would be batteries, but the challenge here is that they are prohibitively expensive
- **For oil**, developing a reserve stock is an option.
- **Environmental challenges:** Nation states face a two-part challenge, how to meet the short-term challenge of providing their populations with energy services while addressing the long-term goal of a zero-carbon economy. Energy goals cannot be addressed one after the other, such as energy access first and climate change later.
- For India, as it addresses the many dimensions of its energy security goals, its biggest challenge will be addressing the **presence of coal in its energy mix.**
- **Human resource development:** Another challenge that needs to be addressed in the Maldives is one of human resource development.

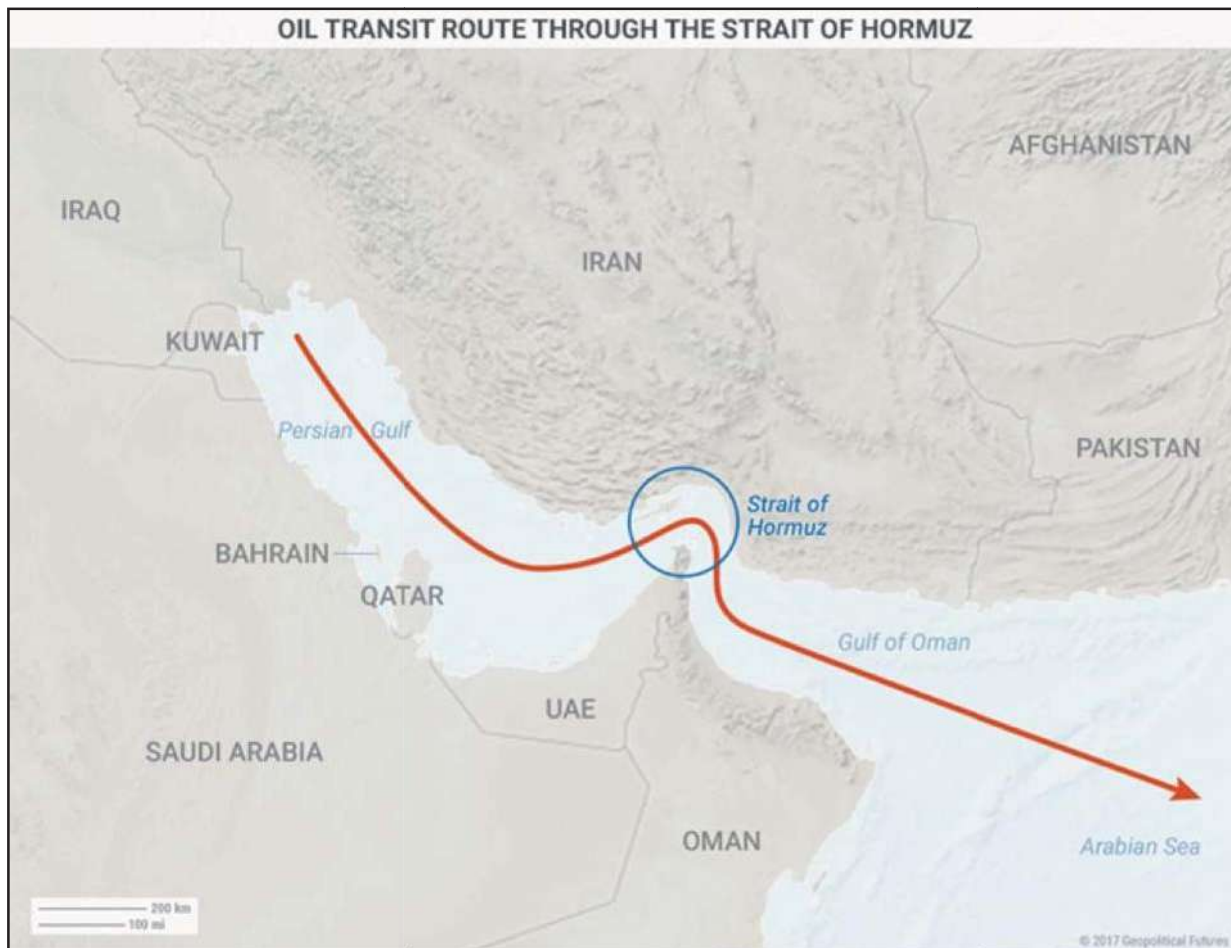
- **Inequality challenge:** There is a larger challenge of inequality, which needs to be addressed both in the Maldives as well as in India. Disparities exist in terms of affordability, availability and quality of services. There is an urban rural divide when it comes to energy security in both countries as also a strong urban bias.

**Why helping Maldives is important for India?**

- The **Strait of Hormuz** and the **Strait of Malacca** are the **world's most important strategic chokepoints by volume of oil transit.**
- The Maldives is geographically positioned like a **'toll gate'** between the **western Indian Ocean** chokepoints of the **Gulf of Aden** and the **Strait of Hormuz** on the one hand, and the **eastern Indian Ocean** chokepoint of the **Strait of Malacca** on the other.
- Since the Indian Ocean itself is a key highway for global energy and trade flows, the importance of Maldives for international sea lanes of communication is vital.



PSC



- o Thus, while the International Shipping Lanes (ISLs) in the vicinity of the Maldives have broad strategic significance for global maritime trade, they are of particular importance to India.
- o Fifty percent of India's external trade and eighty percent of its energy imports transit these ISLs.
- o Helping to address Maldives' energy concerns is a step in the right direction for India's own goals of energy security.

- Maldives is the **lowest-lying country** on the planet. With the highest elevation being just 2.3 metres (7 feet 7 inches) above sea level, the archipelago has the world's lowest naturally-occurring 'highest-point'.

**Quick facts about Maldives**

- The Republic of the Maldives is located in the **Indian Ocean**.
- It is an archipelago comprising approximately **1,200 islands** with a geographical spread over **90,000 sq.km**
- Incorporating some 26 atolls, the Maldives is one of the world's most geographically dispersed countries, and is a **99 per cent water-nation**.

**CONCLUSION**

- o Energy is vital to how our economies and societies function. India is becoming increasingly influential in global energy trends. The country's demand for energy is set to grow rapidly in the coming decades, with electricity use set to increase particularly fast.
- o The country's reliance on fuel imports makes further improving energy security a key priority for the Indian economy. Therefore, the approach to energy security has to be an integrated one.

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# PULSES FOR FOOD SECURITY AND SUSTAINABLE FUTURE

## CONTEXT

World Pulses Day is observed on February 10 of every year to recognize the importance of pulses as a global food.

### ◎ BACKGROUND

- o The celebration of World Pulses Day is an opportunity to heighten public awareness of the nutritional benefits of pulses and their contribution to sustainable food systems and a #ZeroHunger world.
- o Pulses have intrinsic value being packed with nutrients, high protein content, low fat and high fiber, which keeps cholesterol and blood sugar under control.

#### International Year of Pulses (IYP)

- The IYP 2016 heightened public awareness of the nutritional benefits of pulses as a part of sustainable food production aimed towards food security and nutrition.
- The Year created a unique opportunity to encourage connection throughout the food chain that would better utilize pulse-based proteins, further global production of pulses, better utilize crop rotations and address the challenges in the trade of pulses.

- o Not only do they improve food security and create economic stability, but they also contribute to climate change mitigation by reducing greenhouse gases.
- o Pulses play a crucial role in addressing food insecurity and achieving healthy and balanced diets for all, pointing to the need to unlock their full potential to accelerate progress towards the Sustainable Development Goals (SDGs) of the 2030 Agenda.

#### What is International Day of Pulses?

- February 10 is designated as an International Day of Pulses to Celebrate a day that may express the worth, value and benefits of Pulses.
- This year's theme for World Pulse Day is "**Nutritious Seeds for a Sustainable Future**", which explains in itself the value of pulses.

- The day aims to spread the benefits of not only eating pulses, but also growing pulses.
- The Day also comes under the second goal of the United Nations, i.e. **Zero Hunger**.
- World Pulses Day is not limited to the 2nd goal of the UN. It also covers objectives that have been mentioned in the UN's Agenda 2030. This may include the
  - > 3rd goal of the UN – "**Good Health and Well-being**"
  - > 13th goal of the UN – "**Climate Action**"

### ◎ ANALYSIS

#### What are Pulses?

- o Pulses are the edible seeds of plants in the legume family. Pulses grow in pods and come in a variety of shapes, sizes and colors.
- o The United Nations Food and Agriculture Organization (FAO) recognizes 11 types of pulses: **dry beans, dry broad beans, dry peas, chickpeas, cowpeas, pigeon peas, lentils, Bambara beans, vetches, lupins and pulses** (not elsewhere specified – minor pulses that don't fall into one of the other categories).

- India is the **largest producer of pulses** in the globe, with an annual output of over **23 million metric tons**.
- The country widely grows pulses like Bengal Gram, Pigeon Peas, Green Beans, Chick Peas, Black gram, Red Kidney Beans, Black Eyed Peas, Lentils, and White Peas.
- India accounts for 25% of the global production, 27% of world pulses consumption and imports 14% of pulses in the world.
- Apart from India, other countries, which produce a large number of pulses include Canada, Myanmar, China, Nigeria, Brazil, Australia, the USA, Russia, and Tanzania, while Argentina, France, Ethiopia, and Turkey.



### Why hunger still continues to grow?

- o Despite the global progress that has been achieved in advancing food security and alleviating poverty, the number of hungry people in the world continues to grow, reductions in child stunting remain insufficient, and obesity is on the rise.
- o With more than 840 million people estimated to be undernourished by 2030, the world is not on track to achieve 'Zero Hunger'.
- o The pandemic has further threatened lives and livelihood by reversing decades of progress on ending hunger and achieving food security.
- o **A UN World Food Programme (WFP) report** indicates a rise in hunger due to the pandemic, with an approximately 270 million people facing food insecurity as opposed to the **149 million** during pre-COVID times. This is a matter of grave concern.

#### Global Hunger Index 2020

India ranks 94 out of 107 countries on the **Global Hunger Index 2020**. It falls under the category of 'serious' level of hunger.

- **Malnutrition:** The Lancet attributed two-thirds of the 1.04 million deaths in children under the age of five in India to malnutrition.
- **Stunted:** Of the 144 million stunted under-five children in the world, India alone accounts for 46.6 million.

- **Wasted:** Furthermore, India is home to 25.5 million off the 47 million wasted under-five children globally.

The COVID-19 pandemic will possibly take the toll up by ten to twenty percent, worsening India's malnutrition problem.

### Correlation between Dietary Diversity and quality of diet

- o Research indicates a direct correlation between **dietary diversity**—with the **quality of diet and household food security**—and **higher socioeconomic status** in terms of maternal education and employment.
- o According to the **NFHS-4 2015-16**, only 9.6 percent children (6-23 months) are fed a minimum acceptable diet.
  - Going by the latest **NFHS-5** for 22 states/UTs, there is a slight improvement in percentage of children receiving an adequate diet, ranging from 5.9 percent in Gujarat to 29.8 percent in Meghalaya.
- o In India only 42 percent children (6-23 months) have minimum meal frequency (fed the minimum number of times per day for their age), and a mere 21 percent have minimum dietary diversity (diet containing four or more food groups—Grains, Pulses and Legumes, Milk and Milk products, Eggs, Fruits and Vegetables, and Fresh Foods).



## How Pulses can help India?

- o **Food security** exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.
- o **Food insecurity** is a major issue for many people and households in poor and developing countries— it is estimated that 795 million people are undernourished. Pulses can help contribute to food security in a number of ways.

### - Health

- According to the **Eat-Lancet Commission on Food, Planet, Health**, Indians need to enhance dietary diversity and behaviour change as it is crucial to achieving nutrition security.
- Pulses are inexpensive, easy to store, highly-nutritious.
- FAO suggests 'Overcoming hunger and malnutrition in the 21st century means increasing food quantity and quality, while making sure we produce food sustainably, efficiently and safely'.
- Pulses contribute 10 percent of dietary protein, with a modest increase in monthly per capita consumption. Supplementing cereal-based diets with pulses can potentially bring down malnutrition.
- Pulses are **nutritional powerhouses** among all the protein sources as they have zero cholesterol, high content of iron, gluten-free, rich in minerals and vitamins, low-fat content, and an important source of dietary fibre.
- Moreover, pulses are a **rich source of fermentable fibre**, which is beneficial to maintain the intestine health.
- They feed intestinal bacteria and promote the assimilation of nutrients, thus facilitating proper immune system functioning.
- Pulses can contribute to the overarching issue of food security in a number of ways, as cited in figure.

### - Environment

- **Lower carbon footprint:** Pulse crops have a lower carbon footprint than most foods because they require a small amount of fertilizer to grow.

- **Low water footprint:** They also have a low water footprint as they are adapted to semi-arid conditions and can tolerate drought stress.
- **Enhance soil microbiome:** They have the ability to enhance the soil microbiome. This has been key in improving farming techniques in low-income rural areas.
- How Government is ensuring pulses in diet?
- Pulses are an indispensable source of protein in Indian diets. The Government of **India's food security programmes** provide for 50 percent of the recommended dietary allowance of protein to children, adolescent girls, and pregnant and lactating women.
- The government announced a relief package during the pandemic, providing for an additional supply of 5 kg rice/wheat and 1 kg of preferred pulses per month.
- Some states namely Andhra Pradesh, Telangana, Haryana, and Himachal Pradesh have succeeded in providing pulses through the **Public Distribution System (PDS)**.

### Progress of National Food Security Act

- The implementation of the National Food Security Act was expected to make a dent in the nutritional challenges.
- The Act made access to food a legal entitlement for a large part of the society—75 per cent of the rural and 50 per cent of the country's urban population.
- Today, NFSAI is the key pillar supporting India's food-safety-net schemes, especially the:
  - Targeted Public Distribution System (TPDS)
  - Mid-Day-Meal (MDM)
  - Integrated Child Development Services (ICDS - Anganwadi - Supplementary Nutrition Programme)
- National figures for food grain procurement, off-take, and budget allocations under the NFSAI are staggering.
- Procurement of rice and wheat increased by nearly 35 per cent between 2009-10 and 2018-19.
- Annual off take of food grains increased by roughly 30 percent during the same period.

- Overall, the annual consumer food subsidy — or the difference between economic cost of procurement and sales realisation at central issue prices — has nearly tripled, from Rs 42,489.7 crore in 2009-10 to Rs 1,15,570 crore in 2020-21.
- In fact, the actual budget figures could be higher due to dues pending to the Food Corporation of India.
- NFSA, however, seems to have missed its mark in achieving nutritional outcomes for an

### ● WAY FORWARD

As a policy, the PDS should provide pulses at subsidised rates to make them more affordable and available. This will provide them much needed nutritional security, especially to the vulnerable section of our population. There is an urgent need to create awareness on the consumption of macronutrient rich pulses for the dual benefit of nutrition and sustainability. For a healthier future generation, act now!

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## **ETHICAL ISSUES WITH VACCINATION**

### **CONTEXT**

The World Health Organization recently included vaccine hesitancy in the Top 10 of global health threats. In high income as well as low-income countries, people increasingly question the need for, and safety of, vaccinations and therefore decide to forego immunization of their children. In the past, it was often religious convictions that led people to refuse vaccination. Nowadays the main ground for refusal or hesitance is fear of side-effects and doubts about the importance of protecting one's children against diseases like measles or pertussis. Often these beliefs are triggered or sustained by 'viral misinformation', undermining trust in vaccines and vaccinations.

#### **◎ BACKGROUND:**

- o Second, only to the development of clean water and sewage systems, vaccines have been a major force in reducing the occurrence of infectious diseases worldwide.
- o Universal vaccination programs have eliminated smallpox and reduced serious diseases including measles, mumps, rotavirus, and polio.
- o However, many ethical issues surround the development and use of vaccines. These issues include:
  1. Requiring vaccination by law;
  2. the development and testing of vaccines;
  3. informed consent about the benefits and risks of vaccination; and
  4. the equitable distribution of vaccines.
- o Vaccination has raised controversies ever since Edward Jenner conducted his experiments with cowpox.
- o For public health authorities and professionals, vaccine hesitancy and refusal create ethical dilemmas.
- o It is always argued that to what extent it can be justified to coerce parents to accept vaccination for their children.
- o Moreover, many experts also question whether citizens have to be responsible to accept vaccination and contribute to population-level immunity that benefits everyone.

#### **Ethics of immunization and vaccines**

- o The economic and human benefits of vaccination are clear for many vaccines. But, economic and political realities, along with philosophical questions, raise certain ethical issues concerning the use and distribution of vaccines.

#### **- Mandatory vaccination:**

- Vaccines have become victims of their own success.

- As diseases disappear from the general population after successful vaccination campaigns, the real risk of an individual contracting the disease decreases, and the perception of the seriousness of the disease, even if contracted, is reduced.
- Concomitantly, concerns about the real or imagined adverse effects of the vaccines increase.
- As a result, individuals might disagree with government mandates for population-wide vaccination.
- More recently, heightened fears of the perceived adverse effects of other vaccines (such as measles and hepatitis B), even if unproven, have had an impact on immunization rates and the incidence of disease.
- Greater awareness of the consequences of failure to vaccinate, through better education, might be the best tool to combat this problem.

#### **- Poverty and priorities:**

- In wealthier countries, the ethical issues that surround vaccination tend to focus on the rights of individuals versus government or society.
- In poorer countries, the fundamental issue is the lack of access to necessities for health, such as adequate nutrition, clean water, medicines, or vaccines.
- Although poverty is the main cause of these deficiencies, other factors contribute, such as the low priority given to health and preventive measures, the disenfranchisement and lack of political and economic power of the people most affected (children and women), corruption, and regional warfare.
- At present, only about 1% of contributions to

overseas development are directed towards immunizations.

- The hurdle is not simply the purchase price or availability of vaccines, but for many poor countries, there is a lack of infrastructure for health care in general, and vaccine delivery specifically.
- The trade-off of protecting children now from disease versus an emphasis on the development of new vaccines to protect children in the future is not a debate that can be resolved even by Solomon's wisdom.
- Neither trade-off is ethically defensible, nor should the world, instead, work constructively to increase the resources devoted to health, nutrition, prevention, and specifically immunization, to make vaccines available to all people as required.

**- 'Trickle-down' or simultaneous introduction:**

- A marked effort is required to introduce vaccines into all necessary areas of the globe in a more timely fashion.
- The average time lag between licensing of a new vaccine for industrialized countries and its use in less developed countries is 10–20 years.
- There are many reasons for this, including the lack of manufacturing capability for vaccines that require new technology in their production, return on investment, and the cost of manufacturing new or technology-based vaccines.
- For example, when the recombinant hepatitis B virus vaccine was first introduced, there was not sufficient capacity worldwide for its production.
- Moreover, the cost of manufacturing such a high-tech vaccine put it beyond the reach of the existing purchasing programs at the time.
- Although the technology that supports recombinant protein vaccines is now available worldwide, it took time and effort to develop that capacity, even in developed countries.

**Steps to be taken to address ethical dilemmas:**

- The developed countries should treat all of the world's children as their own, rather than denouncing particular groups as causing these inequities.
- Further support must be given rapidly to those whose efforts will result in vaccines that are better tailored for developing countries, both in terms of the disease focus and the development of technologies that will facilitate vaccine access and sustainability.
- New paradigms like public-private partnerships and alliances that are designed to engage local governments and manufacturers at the early stages of research and development are required.
- In this way, each group can contribute what they do best to the common goal of improving access to existing vaccines, developing new vaccines and technologies for existing diseases, and ensuring that an increase in immunization rates is sustainable.
- Perhaps most difficult of all will be to change the mindset of people all over the globe.
- We need to place a higher priority on health and disease prevention, and above all to value the lives of all people, no matter where they live even if they are impoverished and powerless.

**CONCLUSION:**

Vaccination poses many such ethical dilemmas from the time of formulation of research hypothesis to the final implementation of the vaccination and its conduct till completion including post-vaccination issues that have to be clearly understood by all the stakeholders in vaccination to carry out their responsibilities in protecting the rights of the citizens. However, in the absence of a well-structured vaccination policy in the country, there is a pressing need for continuous capacity building exercises at all levels. Awareness about national and international guidelines and regulations and putting in place appropriate laws in the country will go a long way in ensuring public confidence about the safety and well being of the people taking the vaccination.

# **SECTION:B**

## **(PRELIMS)**

**CURRENTAFFAIRS**



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## **DISENGAGEMENT PROCESS ON IN PANGONG TSO**

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● **CONTEXT:** After a nine-month standoff, militaries of India and China reached an agreement on disengagement in the north and south banks of Pangong Lake that mandates both sides to cease forward deployment of troops in a “phased, coordinated and verifiable” manner.

● **ABOUT:** **The disengagement agreement**

The two sides had reached an agreement to withdraw from Pangong Tso, a glacial lake at 14,000 ft (4,270 metres), after several rounds of talks between military commanders and diplomats from the nuclear-armed neighbours.

- Chinese forces will continue to have troop presence in the north bank of Pangong Lake to the east of **Finger 8**. Meanwhile, Indian troops will also re-position their forces at its permanent base at the **Dhan Singh Thap** post near **Finger 3**.
- Similar disengagement is set to take place along the **south bank of Pangong Lake**. It is worth noting though that this region houses the **Kailash range**, a crucial area that, if controlled, provides a sizeable tactical advantage.
- The disengagement will also entail that any structures built by both forces since April last year in the north and south banks of the Pangong Lake area will be dismantled, with landforms restored.
- The two parties have also agreed to conduct the next meeting of Senior Commanders within 48 hours from when completed disengagement in Pangong Lake takes place, with a view towards resolving outstanding issues.

### **About Pangong Lake**

- Pangong Tso is an **endorheic lake (landlocked)** that is partly in India's Ladakh region and partly in Tibet.
- The name reflects the mixed heritage of the lake: **Pangong** in Ladakh means extensive cavity, the word **Tso** is Tibetan for lake.
- Situated at an elevation of about 4,270m, it is a nearly 135-km long, narrow lake — 6km at its widest point — and shaped like a boomerang. Its total area is over 600 sqkm.
- The **Karakoram Mountain range**, which crosses Tajikistan, Afghanistan, Pakistan, China and India, with heights of over 6,000 metres including **K2, the world's second highest peak**, ends at the north bank of Pangong Tso.
- Its southern bank too has high broken mountains sloping towards **Spangur Lake** in the south.

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## **MAJOR PORT AUTHORITIES BILL, 2020**

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● **CONTEXT:** In a latest development, Rajya Sabha passed the Major Port Authorities Bill, 2020. The Lok Sabha had passed the bill on September 23, 2020, by voice vote.

● **ABOUT:** **Major ports in India**

- State-run ports in the country, termed 'major ports'.
- In terms of volume, 70 percent of cargo movement is through ports while 90 percent in value terms.

- India has 12 major ports—**Deendayal (erstwhile Kandla), Mumbai, JNPT, Marmugao, New Mangalore, Cochin, Chennai, Kamarajar (earlier Ennore), VO Chidambarnar, Visakhapatnam, Paradip and Kolkata (including Haldia).**
- These together had handled 705 million tonnes (MT) of cargo in 2019-20.

### Key-highlights of the Bill

- The Bill aims to provide for the regulation, operation and planning of Major Ports in India and to vest the administration, control and management of such ports upon the **Boards of Major Port Authorities** and for matters connected therewith or incidental thereto.
- The new law will supersede the major Port Trusts Act, 1963 governing the country's 12 major ports.
- The bill seeks to convert 11 of the 12 ports (**except Kamarajar Port Ltd, located at Ennore, Chennai**) run by the Centre into "authorities" from the current "trustee" set-up, in a biggest structural reform of state-owned ports ever attempted by any government.
- **Application:** The Bill will apply to the major ports situated in Chennai, Cochin, Jawaharlal Nehru Port, Kandla, Kolkata, Mumbai, New Mangalore, Mormugao, Paradip, V.O. Chidambarnar, and Visakhapatnam.
- **Governance:** It will be curtailed down for the Tariff Authority for Major Ports (TAMP); every port will now be governed by a **Port Authority (board)** which will have the power to fix reference tariffs for various port services.
  - o The role of Tariff Authority for Major Ports (TAMP) has been redefined in the bill. The port authority has now been given powers to fix tariffs which will act as a reference tariff for purposes of bidding for PPP projects.
  - o PPP operators will be free to fix tariffs based on market conditions.

### Board to replace trusts

- Under the 1963 Act, all major ports are managed by the respective Board of Port Trusts that have members appointed by the central government.
- The Bill provides for the creation of a Board of Major Port Authority for each major port.
- These Boards will replace the existing **Port Trusts**, a not-for-profit group involved in legislative research.

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## VIJAYANAGAR BECAME KARNATAKA'S 31<sup>st</sup> DISTRICT

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### ◎ CONTEXT:

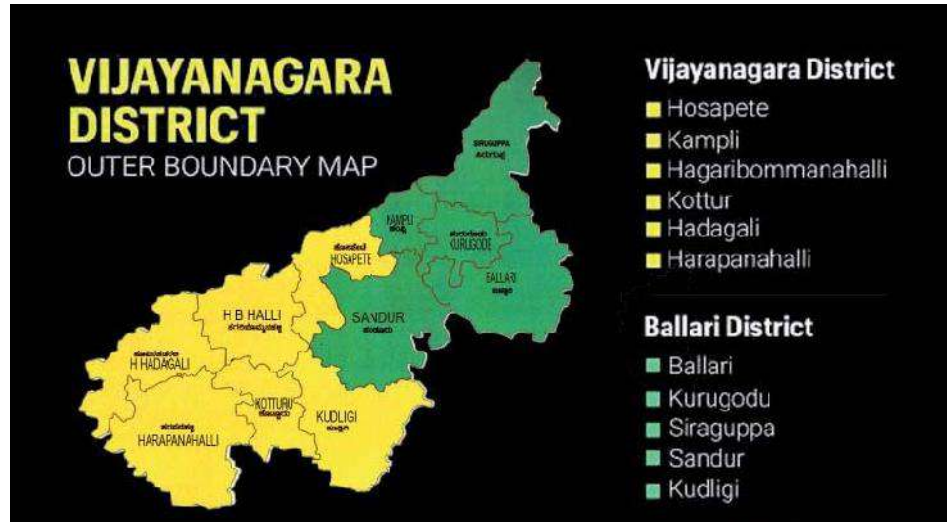
The government of Karnataka notified the formation of a new district called Vijayanagara, bifurcating the district of Ballari in the State. With Vijayanagara, the state now has 31 districts.

### ◎ ABOUT:

#### The Vijayanagara district

- Named after the capital of the **Vijayanagar Empire**, the new district was carved out from **Ballari** under the **Karnataka Land Revenue Act, 1964**.
- It is famous for its **UNESCO World Heritage sites – Hampi and Virupaksha Temple**.

- Vijayanagarahasixtaluks– Hosapete,Kudligi,Hagaribommanahalli,Kotturu,HoovinaHadagali,and Harapanahalli.
- **Hosapete**isitsheadquarters.



#### Formationofanewdistrict

- Fortheformationofanewdistrict,nocentralgovernmentpermissionisrequiredwhereas theformationofanewstateisinthepurviewofCentralgovernment.
- Thiswillbeunderthestategovernmentonly.

## CHINESE ENERGY PROJECT IN SRILANKA

### ◎ CONTEXT:

Inalatestdevelopment,SriLankaclearedChineseenergyproject,50kmoffTamilNadu.

### ◎ ABOUT THE PROJECT:

Undertheproject,Chinawillsetup**hybridwindandsolarenergyprojects**onthreeSriLan kanislands off the **northern Jaffna peninsula** 45km from **Rameswaram** in Tamil Nadu.

- **Project's local partner:** The energy project's local partner, the Ceylon Electricity Board.
- **Funding:** The funds for the project are to come from the **Asian Development Bank**.

#### The concerned islands

- The islands concerned are the **Delft Island, Anlativu and Nainativu**.
- **Delft island**, the largest of the three islands, is the closest to Rameswaram, which lies to the island's southwest.
- Between the two is Kachchativu, the tiny island that India ceded to Sri Lanka in 1974.
- The waters around these islands are an area of contest and rivalry between Tamil Nadu and Jaffna fishers. The matter has been on the bilateral agenda for decades.





### Why Sri Lanka's tilt towards China is concerning for India?

- Two recent developments seem to have affected India's relationship with Sri Lanka.
- Sri Lanka recently pulled out of the East Container Terminal (ECT) deal with India and Japan at the Colombo port.
- On the same day, the **Central Bank of Sri Lanka (CBSL)** returned US\$400 million **currency swap facility**, which it availed in July 2020 to meet its emergency needs during the Covid-19 induced lockdown.

#### East Container Terminal (ECT) deal

- India, Japan and Sri Lanka had inked an agreement in 2019 to develop Colombo's East Container Terminal.
- The project, worth an estimated \$500-\$700 million, was a key marker for infrastructure investment in the island nation where Chinese projects are most prominent.

## HYDROGEN: THE NEXT CLEAN ENERGY FRONTIER

### ◎ CONTEXT:

Researchers from the Indian Institute of Technology, Delhi have come up with a way to generate clean fuel hydrogen from water at a low-cost, which is a significant step towards efforts across the globe that are being made to look for clean and green energy sources.

A fuel cell works much like an electric battery, converting chemical energy into electrical energy.

### ◎ ABOUT:

#### What is hydrogen?

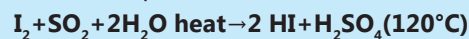
- Hydrogen is a clean alternative to methane, also known as natural gas.
- It's the most abundant chemical element, estimated to contribute 75% of the mass of the universe.

### Key-highlights of the research

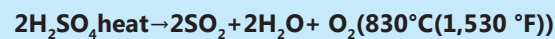
- The researchers have successfully split water by a process known as **Sulphur-Iodine (SI) thermochemical hydrogen cycle** to generate low-cost, clean hydrogen fuel for industrial consumption.
- The thermo-chemical hydrogen cycle for splitting water offers a practical means of generating hydrogen as a fuel and also oxygen as a byproduct.
- Hence, it can be considered favourably for the commercial production of hydrogen on a large scale, in the near future.

#### Sulphur-Iodine (SI) thermochemical hydrogen cycle

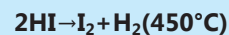
The S-I cycle is a pure thermochemical water splitting process consisting of three steps. The three steps are as follows:



The HI is then separated by distillation or liquid/liquid gravimetric separation.



The water, SO<sub>2</sub> and residual H<sub>2</sub>SO<sub>4</sub> must be separated from the oxygen byproduct by condensation.



Iodine and any accompanying water or SO<sub>2</sub> are separated by condensation, and the hydrogen product remains as a gas.

## RBI GIVES RETAIL INVESTORS DIRECT ACCESS TO GOVERNMENT 'GILT BONDS'

### ◎ CONTEXT:

In a major move aimed at encouraging small investors to become direct investors in government bonds, the Reserve Bank has proposed to allow them to directly buy government debt, also called "gilt bonds", making India the first Asian country to do so and among a handful globally.

### ◎ ABOUT:

#### What are Gilt Funds?

- Gilt funds are **debt funds** that invest in **government securities**. The government bonds issued to be issued in **golden-edged certificates**.
- The nickname gilt comes from **gilded edged certificates**.
- **Types:** There are two kinds of gilt funds.
  - o One, gilt fund that invests mostly in government securities across maturities.
  - o Two, gilt funds with constant maturity of 10 years – these funds must invest at least 80% of their assets in government securities with a maturity of 10 years.

### G-Secs

- G-Secs are tradeable investment instruments issued by the Central or state governments and are the most risk-free sovereign-backed bonds available in the country.
- They can broadly be classified into four categories, namely **Treasury Bills (T-bills)**, **Cash Management Bills (CMBs)**, **dated G-Secs**, and **State Development Loans (SDLs)**.
- These securities are available in both short-term and long-term tenures — ranging from three months to 30 years — with an annual yield starting from 3.37 percent.
- Although government securities do not carry credit risk, they are not a risk-free instrument. They are subject to interest rate risk.

### Impact of the decision

- **Regularisation:** The decision will encourage formalisation, digitisation, and financialisation of savings with low yield non-financial assets expected to move to better yield and secure instruments.
- **Secure and fixed income:** Besides opening an **endless demand source**, it will also provide the retail investors a highly **secure - sovereign-guarantee rated - fixed income investment avenue**.
- **Denationalisation of banks:** If most risk-averse depositors could be persuaded to shift to the G-Secs, the government could go ahead with the denationalisation of banks at a faster pace.

### Challenges/Issues

- **Less interest rate:** Since g-secs carry low risks, the commensurate returns offered are also low. Interest rates have not been attractive when compared to other fixed-income instruments like company fixed deposits, small saving instruments and non-convertible debentures.
- **Poor liquidity:** Poor liquidity in the secondary market is a cause of concern for most investors.
- **Huge investment required:** Another big problem is the lot size required to trade g-secs. Typically, g-sec market sees trades worth Rs 5 crore and above.

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## ECO-SENSITIVE ZONES (ESZ) DECLARATION AROUND THE WAYANAD WILDLIFE SANCTUARY

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### ◎ CONTEXT:

The State government of Kerala has requested Prime Minister Narendra Modi's intervention on the draft notification issued by the Ministry of Environment, Forest and Climate Change (MoEFCC) notifying 118.59 sq kms around Wayanad wildlife sanctuary as a **eco-sensitive zone (ESZ)**.

### ◎ ABOUT:

#### What is Eco-Sensitive Zone?

- The Eco Sensitive Zones are envisaged as a cushion or shock absorbers for protected areas. They are supposed to act as the transition zones from areas of high protection to less protection.

- They are notified by the Ministry of Environment, Forests and Climate Change, Government of India around Protected Areas, National Parks and Wildlife Sanctuaries.
- They are like an **ecotone** - the transition between two biological communities or ecosystems, and it is crucial for the protection of protected areas like wildlife sanctuaries and forests.
- Its aim is to reduce the impact of human intervention in the core protected area.

#### **What does the State want?**

- The Kerala government is of the view that while notifying eco-sensitive zones, densely populated areas should be excluded.
- In the case of Wayanad wildlife sanctuary areas such as **Tholpetty, Kattikkulam, Panavalli, Kurukkanmoola, Chaligadha and Kappistore, Cheeyambam, Moodakolly, Cheeralare** these are to be excluded.
- The Kerala government had prepared recommendations for notifying eco-sensitive zones around 21 protected areas in December 2019.
  - o According to this amended proposal for draft notification the extent of eco-sensitive zone goes up to 88.2 sq. kms.

#### **What is in the notification?**

- The ESZ, as per the draft notification, will cover an area of 118.59 km, which includes 8.89 km of the **Tirunelly reserve forest** of north Wayanad and 17.67 km of **Chedelaythu range** in south Wayanad.
- It also included 18.21 sq. km of human settlements, inside the forest.
- The State government had submitted a revised draft notification by reducing the ESZ to 88.21 sq. km after excluding the human settlement on 30 sq. km.

#### **The concerns**

- The biodiversity-rich **Wayanad wildlife sanctuary** has a sizeable elephant and tiger population.
- However, there have been concerns over the environmental degradation of Wayanad, which is also a tourist's haven.

#### **Wayanad wildlife sanctuary**

- The Wayanad Wildlife Sanctuary is an animal sanctuary in Wayanad, Kerala, India.
- The sanctuary, spread over 344.44 sq km, is an integral part of the **Nilgiri Biosphere** in the **Western Ghats** and contiguous to the tiger reserves of **Nagerhole** and **Bandipur** of Karnataka and **Mudumalai** of Tamil Nadu.



## **DEPLETION OF PARTICULAR BRAIN TISSUE LINKED TO CHRONIC DEPRESSION, SUICIDE: STUDY**

#### **CONTEXT:**

In a recent research, a common characteristic has been found in the brain structure of people who died by suicide. There was a sharp fall in the density of 'Astrocytes', a particular nerve cell throughout the brain.

◎ ABOUT:

**What is Astrocytes?**

- It is a type of support nerve cells, look like the end of a frayed rope.
- Astrocytes are highly heterogeneous neuroglial cells with distinct functional and morphological characteristics in different parts of the brain.
- They are responsible for maintaining a number of complex processes needed for a healthy central nervous system (CNS).

**Key-highlights of the Study**

- Scientists found that the number of astrocytes, was much lower in brains of people who had died by suicide.
- The density was five times lower in the **medial dorsal thalamus** and **caudate nucleus** and half in the **prefrontal cortex** in the subjects who had died by suicide than those who had no psychiatric conditions till death.
- Astrocytes can strongly modulate most facets of neuronal activity, including neuronal firing, neurotransmitter synthesis, neurotransmitter reuptake and synaptic transmission.
- The human cerebral cortex has a large volume and fast variety of astrocytes than that in mice. So, their role in the human brain will be much more significant.
- The research also noted that depression impacted the quantity of these nerve cells rather than their structure. It, however, doesn't establish the reason behind this depletion of astrocyte volume.

**How reduction in astrocytes have negative effects?**

- A reduction in astrocytes in the brain regions studied here may have negative effects because these brain regions make up a circuit thought to be important for decision making and emotional regulation, functions affected by depression.
- With fewer astrocytes to support them, the neurons in this circuit may not function as well as they otherwise would.
- Abnormalities in the prefrontal cortex also seem to be connected to impulsivity, which may play a role in suicide in some cases.

Three regions of the brain that are considered to be responsible for emotion regulation—  
**dorsomedial prefrontal cortex, dorsal caudate nucleus and medial dorsal thalamus**

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## TRANSPARENT WOOD IS COMING

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◎ CONTEXT:

**As per a new study, researchers have found a way to make wood transparent without using huge amounts of energy in the process.**

◎ ABOUT:

- Wood is an ancient material humans have been using for millions of years, for the construction of housing, ships and as a source of fuel for burning.
- Wood is essentially composed of two basic ingredients cellulose and lignin:
  - o **Cellulose** is tiny fibers and **lignin** is the bonds that keep these fibers together and resist compression.

o **Lignin** is a glue-like material that bonds the fibres together, a little like the plastic resin in fibreglass or carbon fibre. The lignin also contains molecules called chromophores, which give the wood its brown colour and prevent light from passing through.

- It's also a renewable source, and one way to capture excess carbon dioxide from the Earth's atmosphere.

### **Understanding wood's lack of transparency**

- Wood's lack of transparency comes from the combination of its two main components—cellulose and lignin.
- The lignin absorbs light, and the presence of chromophores—light-activated compounds—in the material make the wood look brown.
- The fibres in the wood, which mainly comprise cellulose, are hollow tube-like structures.
- The air in these hollow tubes scatters light, further reducing the material's transparency.

### **The new method**

- The new study demonstrates how to make wood transparent using a simple chemical—**hydrogen peroxide**—commonly used to bleach hair.
- This chemical modifies the **chromophores**, changing their structure so they no longer act to absorb light and colour the wood.
- The chemical can be brushed onto the wood, and then activated using light to produce a brilliant **white material**—blond wood if you like.
- The other reason paper is white is because pores or holes in its structure scatter light, just like the hollow cellulose fibres in wood.
- Filling these fibres with resin reduces that scattering, allowing light to pass through the wood and making it transparent, while retaining its original mechanical properties.

### **Uses of transparent wood**

- Transparent wood would be much more resistant to accidental breakage
- It could become an alternative to glass in energy-efficient buildings, or perhaps covering roofs or solar panels in harsh environments.

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## **UNITED ARAB EMIRATES CELEBRATES ITS FIRST MISSION AT MARS**

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### **◎ CONTEXT:**

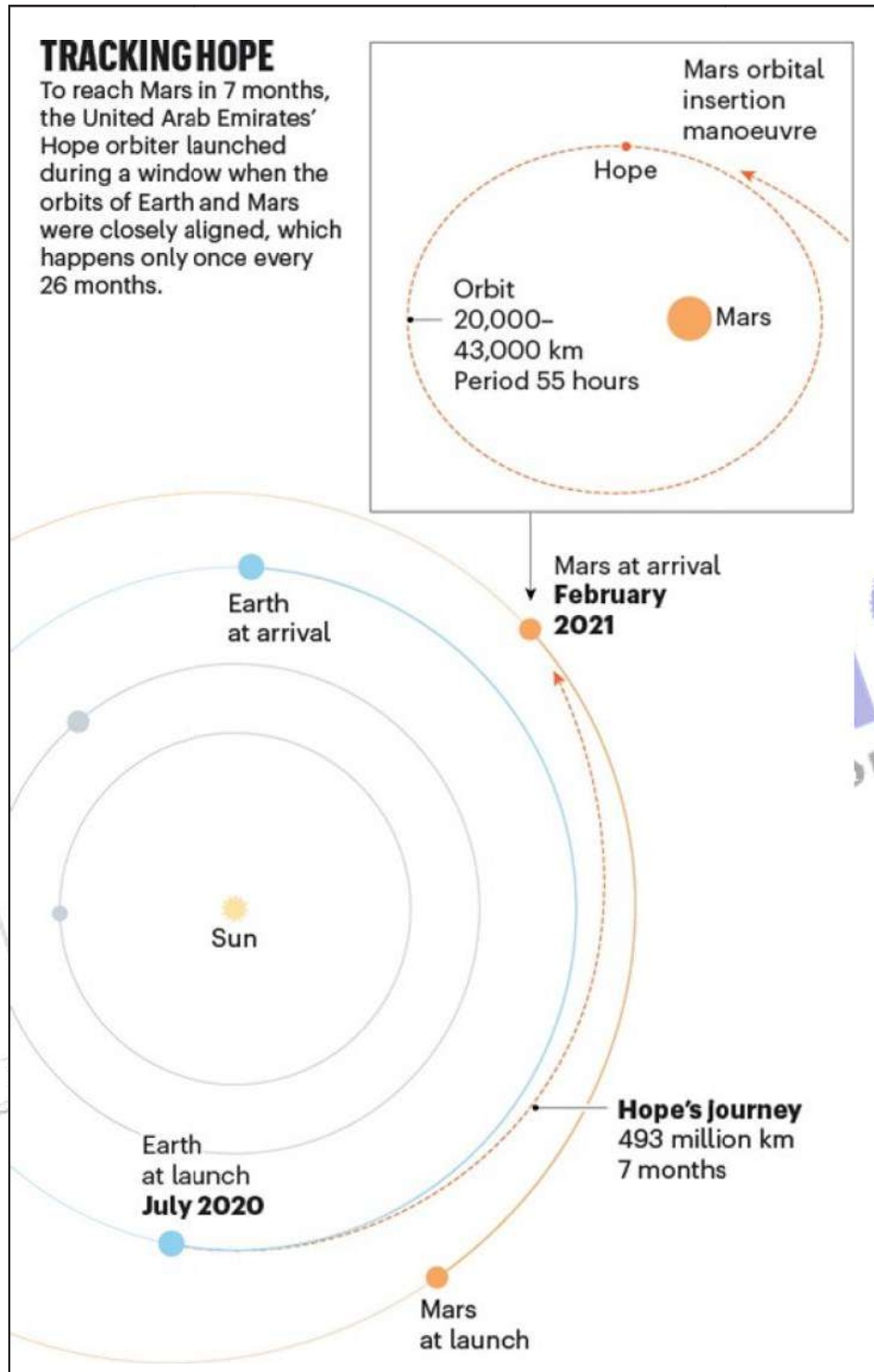
The United Arab Emirates has put a probe called **Hope** in orbit around the planet, making it only the fifth spacefaring entity to do so after the US, the Soviet Union, Europe and India.

### **◎ ABOUT:**

#### **What is HOPE?**

- The unmanned probe—named "Al-Amal", Arabic for "Hope"—is a United Arab Emirates mission to Mars.

- Hope launched from the Tanegashima Space Center near Minamitane, Japan last year (July 2020).
- The 1,350-kilogram probe—about the size of an SUV— took **seven months** to travel the 493 million kilometres to Mars.
- Hope is the Arab world's first mission to another planet.



### Other Mars Missions

The other two Mars missions include **China's Tianwen-1 dual orbiter-rover** and **Perseverance** from NASA, are also expected to reach the red planet.

- Tianwen-1 means Questions to Heaven and comes from a poem written by Qu Yuan (about 340-278 BC), one of the well-known poets of ancient China.
- The China's first Mars probe 'Tianwen-1' has entered orbit around the Red Planet.
  - China's previous 'Yinghuo-1' Mars mission, had failed after it could not leave the Earth's orbit and disintegrated over the Pacific Ocean in 2012.
- Hope and Tianwen-1 thereby made their respective countries the fifth and sixth earthly cultures to successfully reach the neighboring planet.

NASA's Perseverance rover is expected to land on the planet in the coming days.

### A brief history of Mars Mission

- The US, UAE (latest one), Russia, India and the EU have so far succeeded in sending missions to Mars regarded as the most complex space mission.
- **India became the first Asian country** to have successfully launched its Mars orbiter mission on Mangalyaan which has entered the orbit of the red planet in 2014.
- India also became the first country to have entered the Martian orbit in its first attempt.

India's **MOM (Mars Orbiter Mission)** successfully achieved orbit in 2014 to image the entire planet, providing a unique perspective on its weather and surface features.

### Significance of the mission

- The mission will build a complete picture of Mars' climate, helping scientists better understand what Mars was like when its atmosphere could have supported life.
- Its entry into Martian orbit paves the way for the probe's science mission, during which it will make observations of the planet's atmosphere, across all times and locations.

### Rapid rise of UAE in space sector

- The UAE's rise as a space power has been swift.
- The country's first space venture was just 15 years ago, when it began work with the Satrec Initiative, a company based in Daejeon, South Korea, to build an Earth-observation satellite.
- Last year, it announced plans to send a rover to the Moon in 2024.
- Unlike the Emirates Mars Mission, which involved hundreds of Emirati engineers but saw Hope designed and built mostly in the United States, the rover is intended to be developed solely in the UAE.

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**CURRENTAFFAIRSANALYST**  
**WEEK-4(FEBRUARY,2021)**

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# **SECTION:A**

## **(MAINS)**

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**CURRENTAFFAIRS**



**VANIK-IAS**  
Exclusive Coaching for UPSC/OPSC

# 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

- o 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.
- o Iceberg melt is responsible for about half the freshwater entering the ocean from the Antarctic and Greenland ice sheets.
- o However, current models wrongly assume icebergs melt uniformly.
- o Thus, accurately modeling how it enters is important for understanding the potential impact on ocean circulation.

- 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.

### ● ANALYSIS

#### Understanding the geography of icebergs

- o Icebergs are pieces of ice that formed on land and float in an ocean or lake.
- o 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 hard to spot.
- o The North Atlantic and the cold waters surrounding Antarctica are home to most of the icebergs on Earth.

#### How do they form? Where do they go?

- o Icebergs calve from glaciers when **direct sunlight or rising air temperature** causes the glacier's surface ice to become more brittle.
- o Once an iceberg has calved off a glacier, it is already floating and, by the principle known since **Archimedes**, raises the ocean's 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.

#### 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



➤ **Forexample**, 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
- o Icebergs travel with ocean currents, sometimes smashing up against the shore or getting caught in shallow waters.
- o When an iceberg reaches warm waters, the new climate attacks it from all sides.
- o On the iceberg surface, warm air melts snow and ice into pools called melt ponds that can trickle through the iceberg and widen cracks.
- o At the same time, warm water laps at the iceberg edges, melting the ice and causing chunks of ice to break off.
- o On the underside, warmer waters melt the iceberg from the bottom up.
- o **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?**

- o 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.**
- o 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.

- o The new research proposes a very simple model that accounts for iceberg shape, as a prototype of an improved model of iceberg melting.
- o To test these models, the researchers developed the first **realistic small-scale simulations** of melting ice in salt water.
- o The old models assumed that stationary icebergs didn't melt at all, whereas the latest experiments show melting of about a millimeter every minute.
- o In icebergs moving in oceans, the melting on the base can be up to 30 percent faster than in old models.
- o 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.
- o The sides of icebergs melt about twice as fast as their base.
- o 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 PCRITICS

## 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 women accused of posting fake videos on Facebook on the farmer protests.

### ◎ BACKGROUND

- o 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.
- o 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 Khalistanian leanings of her group allegedly behind the toolkit has also not been established so far.
- o 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.
- o 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?

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

- o Disaffection includes disloyalty and all feelings of enmity.
- o 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

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

- o The law of sedition was a powerful tool in the hands of the state to maintain peace and order in society.
- o However, it cannot be invoked to quieten the disquiet under the pretence of muzzling miscreants.
- o Its indiscriminate application threatens to undermine its potency and efficacy.

#### SC’s views on the law

- o **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.
- o 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 this 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

**Arguments in favour**

- o **National interest:** The law has its utility in combating anti-national, secessionist and terrorist elements
- o **Stability of the State:** It ensures continued existence of the government, which is essential condition of the stability of the State.
- o **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**

- o **Legacy of colonial rule:** It is a relic of colonial legacy and unsuited in a democracy.
- o **Constraint of constitutional machinery:** It is a constraint on the legitimate exercise of constitutionally guaranteed freedom of speech and expression.

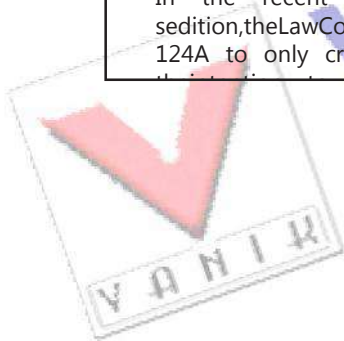
**Sedition laws in other countries**

- o The **United Kingdom** deleted the seditious libel through the Coroners and Justice Act, 2009.
- o In **Australia**, following the recommendations of the Australian Law Reform Commission (ALRC) the term sedition was removed and replaced with reference 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 sort 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

- o Also called **scaly anteaters** because of their preferred diet, pangolins are increasingly victims of illegal wildlife crime—mainly in Asia and growing amounts in Africa—for their meat and scales.
- o 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.
- o They are mainly traded because of their scales.
- o Pangolin scales are made of keratin, the same material that makes up fingernails, hair, and horn.
- o 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.
- o The scales are typically dried and ground up into powder, which may be turned into a pill.

### ● ANALYSIS

#### What are Pangolins?

- o Pangolins are unique mammals covered in hard scales, comprised of keratin.
- o They are solitary and active mostly at night. Most live on the ground, but some, like the black-bellied pangolin, also climb trees.
- o They range in size from a large housecat to more than four feet long.
- o **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**.

- o 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)
- o The four species found in Asia:
  - Indian pangolin (Manis crassicaudata)
  - Philippine pangolin (Manis culionensis)
  - Sundapangolin (Manis javanica)
  - Chinese pangolin (Manis pentadactyla)
- o 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**.
- o The species is also listed under the Appendix I of the **International Convention on 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 country 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

- 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.

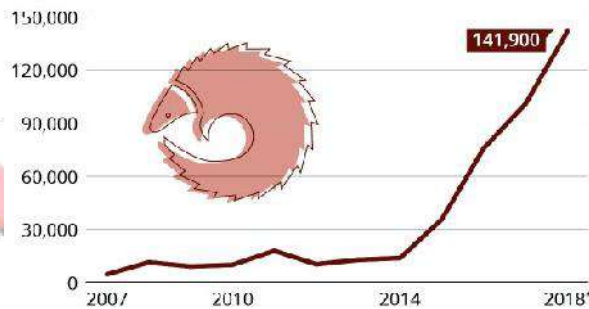
**World Pangolin Day** is celebrated on the third Saturday in February. The day is an opportunity for pangolin enthusiasts to join together in raising awareness about these unique mammals —

**The declining trend in Cameroon**

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

**Seizures of Trafficked Pangolins on the Rise**

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



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



- 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 agreements never translate into action on the ground, thus giving a golden opportunity to poachers and

**What are the impacts of the loss of pangolins?**

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

**Suggestive measures**

- o **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 ongoing conservation efforts in Cameroon.
- o **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.
- o **Employment to local:** Bee-farming, pisciculture, piggy 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

- o 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.
- o However, there were strict restrictions on the collection, storage, use, sale, dissemination of geo-spatial data, and mapping under the current regime.
- o The National Map Policy, 2005 had not been renewed in decades and has been driven by internal as well as external security concerns.
- o The sector needed liberalization to drive innovation as it affects the lives of ordinary citizens.
- o Not only in the country, but there has also been a global push for open access to geospatial data.
- o The new guidelines will ensure open access for surveying and help the country become more self-reliant and reach its \$5 trillion GDP goal.
- o Furthermore, it will lead to the addition of around 0.5% of GDP.

### ● ANALYSIS

#### What is geospatial data?

- o Geospatial data is data about objects, events, or phenomena that have a **location on the surface of the earth**.
- o 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
- o Geospatial data generally combines location information, attribute information (the characteristics of the object, event, or phenomenon concerned), and sometimes temporal information or the time at which the location and attributes exist.
- o 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?

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

- o Mapping was still now remained a government preserve, handled by the Central government's **Survey of India**.
- o 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.
- o Initially conceptualized as a matter solely concerned with security, geospatial data collection was the prerogative of the defense forces and the government's law enforcement agencies.
- o 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

### What are the new guidelines?

- o 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.
- o There shall be no requirement for prior approval, security clearance, license, or any other restriction on the collection, generation, preparation, dissemination, storage, publication, updating, and/or digitization of geospatial data and maps within the territory of India.
- o 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.
- o Self-certification will be used to convey adherence to these guidelines.
- o There will also be an explicit list of sensitive attributes that would require regulation before anyone can acquire and/or use such attributed data.

### Which areas will be exempted?

- o The guideline is not for access, but only for surveying.
- o There is a restriction on revealing the attributes or features of sensitive areas even though there would be none on surveying the area itself.
- o There will be exceptions to sensitive defense or security-related data.

### What was the need for deregulation?

- o 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.
- o There is also a huge lack of data in the country which impedes planning for infrastructure, development,

and businesses that are data-based.

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

- o 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 Indians to formulate plans and administer
- o **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.
- o **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.
- o **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 datasets will spur domestic innovation and enable Indian companies to compete in the global mapping ecosystem by leveraging modern geospatial technologies.
- o **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 up to 50%, or such higher percentage as the competent authority may determine, along with transfer of management control.

### ◎ BACKGROUND

- o A little more than 51 years after the 14 largest banks were nationalised, the government now aims to reduce it to just four.
- o In the past, many committees had proposed bringing down the government stake in public banks. The **Narasimham Committee** on banking sector reforms, set up after 1991 LPG reforms, proposed to reduce the government stake in PSBs to 3%.
- o Through a series of moves over the last few years, the government is **currently left with 12 state-owned banks**, from 28 in 2016.
- o The two banks that will now be privatised will be selected through a process in which **NITIAayog** 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?

- o Then-Prime Minister Indira Gandhi, who was also Finance Minister, decided to nationalise the 14 largest private banks on July 19, 1969.
- o The idea was to **align the banking sector with the socialistic approach** of the then government.
- o 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.
- o Thus, Bank nationalization was done to **increase financial inclusion** in India's banking sector.
- o The big question is: if the banks are privatized again, will private banks repeat the mistake of the 1960s.

### Impact Nationalisation had on PSBs

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

- o Compared with private banks, PSBs continue to have **high non-performing assets (NPAs)** and stressed assets although this has started declining.
- o 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 the public sector banks.
- o The government is **trying to strengthen the strong banks** and also minimize their number through privatisation to reduce its burden of support.

- o 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?**

#### **o 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.

#### **o 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 the wheel 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 IMAI 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

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

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

##### What is the ‘Implementation Toolkit’ about?

- o 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.
- o 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.
- o 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?

- o **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 online, fell into a black hole with no oversight.

> Though there is no regulatory mechanism for OTT as of now, all such platforms come under the **e-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.

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

> OTT platforms’ advantage of playing media anywhere and anytime has created a mass 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.

- o **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**.

- o 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?

- o 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.

- o 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.
- o 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?

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

- o 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.
- o 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.
- o 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)**

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**CURRENTAFFAIRS**



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## NO RECORDS OF CHILLA ADJACENT TO CHARMINAR: ASI

◎ **CONTEXT:** The Bhagyalakshmi Temple butting 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 11 mts.
- 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 (AMASRA 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,
  - o the imposition, abolition, remission, alteration or regulation of any tax,
  - o the regulation of the borrowing of money or the giving of any guarantee by the Government of India,
  - o the custody of the consolidated Fund or the Contingency Fund of India etc

### 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:
  - Bill 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 by 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.
  - o Section 184 of the same Act gave the Central government the power 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:**
  - o A dynamic job portal - opportunity for Shramiks and MSMEs
  - o Facilitate creation of 10 lakh blue collar jobs
  - o Direct connect between Shramiks and MSMEs, no middleman in between
  - o 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 **geospatial 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.

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## RARE SIGHT OF MANDRAIN DUCK IN INDIA

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### ◎ 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
  - o 1902 in Dibru river in the Rongagora area in Tinsukia
  - o 2013 in Manipur's Loktak Lake
  - o 2014 in Saatvoini Beel in Manas National Park and Tiger Reserve in Assam's Baks 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 system or GIMS can be backed up to a user's email.
- This will make the recipient aware that the message should not be shared with others.

### 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.

### Is it an alternative to 'Whatsapp'?

- 'Sandes' is said to be in line with the popular instant messaging platform WhatsApp.
- Only a day ago, the Supreme Court issued a notice to Facebook and WhatsApp over the company's 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.
- **Ebolavirus disease (EVD)**, formerly known as **Ebola haemorrhagic fever**, is a rare but severe, often fatal illness in humans.
  - o 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 reservoirs of the Ebola virus is bushmeat – non-domesticated forest animal 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.

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## ISRO ANNOUNCES ‘BHUVAN’, AN ALTERNATIVE TO GOOGLE MAPS

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◎ **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 user maps, apps and services will now integrate with ISRO's catalogue of satellite imagery and earth observation data.
  - o **MapMyIndia began in 1992**, with an aim to enhance India's map-making capabilities.
  - o 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 landslides 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 Gram-negative 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.
- Haemorrhagic 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, sambar, nilgai, barking deer, mouse deer and a wide variety of birds like green munia, greater and lesser 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 Ra**

## INDIA SUCCESSFULLY TEST-FIRE SHELINA, DHRUVA STRAANTI-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 Dhruvastram 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 Missile** system.
- They can engage targets both in direct hit mode as well as in 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-armored 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-forthel and-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 500m to 20km
- 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) "tankbuster"
- 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-highlightsofthefindings**

- Thedetailedgenomeofthemalariaimosquitovector,revealedthousandsofnewgenesvitalforthe developmentofgenetic controlstrategiesofdiseasetransmission.
- ScientistsproducedanewreferencegenomefortheAsianmalariavectormosquito **Anophelesstephensi**.
  - o AnophelesstephensiisamajormalariavectormosquitoinurbanareasofSouthAsiaand has recently invadedthe horn of Africa.
  - o ItispredictedtobecomeamajorurbanmalariavectorinAfrica,putting126millionurban Africans at risk.
- The newly revealed genes play key roles in blood feeding and the metabolism ofingestedbloodmeal,reproductionandimmunityagainstmicrobialparasites.
- Thefindingsinclude29previouslyundetectedgenesthatplaycriticalrolesinresistancetochemicalinsecticides,anadvancementthatlendsitselftothenecessityofaddressinggrowingAfricanandAsianAn.stephensipopulationswithinsecticide-resistantmutations.
- Thewnewgenomeassemblyisacomprehensiveandaccuratemapofgenomicfunctionalelements and will serve as a foundation for the new age of active genetics in An.Stephensi.

**Genome**

- Agenomeisallgeneticmaterialofanorganism.ItconsistsofDNA(orRNAinRNAviruses).
- The genome includes both the genes (the coding regions) and the noncoding DNA,aswell as mitochondrial DNAand chloroplast DNA.
- Thestudyofthegenomeiscalled**genomics**.

**The need**

- Mosquito-transmittedmalariaistheleadingglobalkilleramongvector-borne diseases,claimingover 400,000 human livesin2019.
- Inordertoengeeradvancedformsofdefenceagainstmaliatransmission,includingtargetedCRISPRandgenedrive-basedstrategies,scientistsrequireintricateknowledgeofthegenomes of vectormosquitoes.
  - oCRISPRtechnologyisageneditingtoolwhichallowsresearchersto easilyalterDNAsequences and modify gene function.

**Malaria in India**

- Malaria is a potentially life-threatening disease caused by parasites (**Plasmodiumvivax, Plasmodium falciparum, Plasmodium malariae and Plasmodium ovale**)thataretransmittedthroughthebiteofinfectedfemaleAnophelesmosquitoes.
- According to the World Malaria Report 2019, India represents 3% of the

**Significanceofthedevelopment**

- ThedevelopmentcanhelpaddressthegrowingAsianandAfricanAn.stephensipopulationswithinsecticide-resistant mutations.
- Thefindingsalsooffercluessuggestingthatthemolecularbasisofinsecticideresistancemaydiffer between sexes.

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# OCS SELECTIONS OF 2018

1 SELECTION IN EVERY  
2 SELECTION ARE FROM VANIK

7 IN TOP 10  
11 IN TOP 20  
24 IN TOP 50  
47 IN TOP 100  
48% SELECTION FROM VANIK



**DEBASIS PANDA**



**RITUPARNA MOHAPATRA**



**AKASH KUMAR PANDA**



**SANTOSHINI DAS**



**NARAYANI P. PANDA**



**SHAKTI MOHAPATRA**



**SMARANIKA TULO**



**Sampat Ku. Dash**



**Serada P. Panda**



**Sidhant Narayan**



**Akash Pattnaik**



**Priti R. Rath**



**Rajiv Das**



**Abhishek Sahu**



**Annanya Tripathy**



**Prasenjit Mishra**



**Debajyoti Panda**



**Avipsa Mohanty**



**Dillip Satapathy**



**Nibedita Parida**



**Rashmi Prava Das**



**Asima Padhi**



**Om Prasad**



**Jyotibikash Dash**



**Narayan Behera**



**Suvasnigdha**



**Subrat Ku. Swain**



**Biswa Tripathy**



**Upasana Padhi**



**Bibhuti Satapathy**



**Avilash Purshit**



**Birendra Tripathy**



**Himanshu B. Pale**



**Sambit Ku. Majhi**



**Subhadra**



**Byomakesh**



**Bishnu Govind**



**Tanmaya Nayak**



**Ashutosh Matari**



**Anshuman Sarangi**



**Krishna Padhi**



**Madhusmita Nanda**



**Adarsh A. Tripathy**



**Sanishree Mallick**



**Om Prakash Parida**



**Md. Azharuddin Khan**



**Rajesh Ku. Samal**



**Tattwomasi**



**Amit Biswal**



**Agurba R. Aich**



**Trisandhya Patra**



**Bani Satabdi Dash**



**Harekrushna Sahu**



**Nirmal Ku. Bhouh**



**Ajit Ku. Uttaray**



**Manoja Ku. Behera**



**Ananda Ch. Palei**



**Sushree Supriya**



**Dhiren Ku. Nayak**



**Nivedita Nayak**



**Biranchi N. Jagat**



**Sridhar Ku. Sethi**



**Ananta Ku. Nayak**



**Abhijit S. Swain**



**Gyanaranjan Majhi**



**John Major Dalai**



**Jyoti P. Sethi**



**Arjun Majhi**



**Subha P. Kanungo**



**Deepak Ku. Jena**



**Rashmirani Sonapat**



**Subha Kanta Naik**



**Madhusmita Samal**



**Gitu Behera**



**Madhusmita Singh**



**Manaranjan Suna**



**Prachi**



**Tapan Ku. Malik**



**Manoj Ku. Behera**



**Manaswee Sethi**



**Bhabani Pradhan**



**Upanjali Majhi**



**Satyabrata Naik**



**Sagar Palo**



**Prasanti Pradhan**



**D. Satyabhusan**



**Prem Chand Jani**



**Mrutunjaya Sabar**



**Gouranga Ghosh**



**Meera Naik**



**Deepak Bara**



**Debasish Patra**



**Bhabesh Majhi**



**Vikas Mundari**



**Sandeep Singh**



**Prafulla Muduli**



**Smrutiranjana Tudu**



**Lalit Ku. Naik**



**Phalguni Sabar**



**Sunita Panda**

**And Many More Selections**