

# CURRENT AFFAIRS

WEEKLY

WEEK: 4  
SEPTEMBER  
2022

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GS-II ☐ EASTERN ECONOMIC FORUM AND INDIA'S BALANCING ACT

☐ 19<sup>th</sup> ASEAN-INDIA ECONOMIC MINISTERS' MEETING

☐ SETTING UP A NEW REGULATOR FOR MEDICAL DEVICES

☐ SC REFERS 'DEATH PENALTY' ISSUES TO A CONSTITUTION BENCH

☐ CAN STATE IMPOSE LIMITS ON STUDENTS' FUNDAMENTAL RIGHTS: SC

☐ ROLE OF 'DEPARTMENTAL COMMITTEES' FOR ACCOUNTABILITY OF PARLIAMENT FUNCTIONING

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- ☐ Scientists create world's first cloned wild Arctic wolf 'Maya'

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- ☐ India's Presidency extended at AIBD
- ☐ World Ozone Day
- ☐ SOVA virus

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- ☐ Re-location of Cheetahs and the question of Biodiversity

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## — **Disclaimer** —

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

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

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**SECTION: A**  
**(MAINS)**

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**CURRENT AFFAIRS**

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# CLIMATE CHANGE'S INFLUENCE ON HURRICANES

## CONTEXT:

Hurricane Fiona recently intensified into the 2022 Atlantic season's first major hurricane.

## ◎ ABOUT HURRICANES

- A hurricane is a large rotating storm with high speeds of wind that gust at least 74 mph that forms over warm waters in tropical areas.
- In the southern hemisphere, hurricanes rotate in a clockwise direction, and in the northern hemisphere they rotate in an anti-clockwise direction.
  - ▶ This is due to what's called the Coriolis force, produced by the Earth's rotation.

### How are hurricanes formed?

- Hurricanes begin as tropical disturbances in warm ocean waters with surface temperatures of at least 80 degrees Fahrenheit (26.5 degrees Celsius). Those low-pressure systems are fed by energy from warm seas.
  - ▶ **Tropical Depression:** A storm with wind speeds of 38 miles (61 km) an hour or less is classified as a tropical depression.
  - ▶ **Tropical storm:** It becomes a tropical storm, when its sustained wind speeds top 39 miles (63 km) an hour.

### Hurricanes have three main parts:

- the calm eye in the center
- the eyewall where the winds and rains are the strongest
- the rain bands which spin out from the center and give the storm its size

Hurricanes are given names by the **World Meteorological Organisation (WMO)** so that they can be distinguished.

### The system divides storms into five categories:

- **Category 1:** Winds 74 to 95 mph (Minor damage)
- **Category 2:** Winds 96 to 110 mph (Extensive damage — Can uproot trees and break windows)
- **Category 3:** Winds 111 to 129 mph (Devastating — Can break windows and doors)
- **Category 4:** Winds 130 to 156 mph (Catastrophic damage — Can tear off roofs)
- **Category 5:** Winds 157 mph or higher (The absolute worst and can level houses and destroy buildings)

### How climate change is impacting hurricanes?

- **Rising temperature:** Hurricanes feed off of heat energy, so as Earth's global temperatures continue to rise.
- **Intensification:** Climate change is making hurricanes wetter, windier and altogether more intense. There is also evidence that it is causing storms to travel more slowly, meaning they can dump more water in one place.
- **Heavy rainfall:** Climate change can also boost the amount of rainfall delivered by a storm. Because a warmer atmosphere can also hold more moisture, water vapour builds up until clouds break, sending down heavy rain.
  - ▶ According to a recent study, during the 2020 Atlantic hurricane season (one of the most active on record), climate change boosted hourly rainfall rates in hurricane-force storms by 8%-11%.

# EASTERN ECONOMIC FORUM & INDIA'S BALANCING ACT

## CONTEXT:

Russia hosted the seventh Eastern Economic Forum (EEF) in Vladivostok; which provided a platform for entrepreneurs to expand their businesses into Russia's Far East (RFE).

### What is Eastern Economic Forum (EEF)?

- The EEF was established in 2015 to encourage foreign investments in Russia.
- The forum displays the economic potential, suitable business conditions and investment opportunities in the region.
- As of 2022, almost 2,729 investment projects are being planned in the region.

The agreements focus on **infrastructure, transportation projects, mineral excavations, construction, industry and agriculture.**

### Geography of the Region:

- The Russian Far East is a region in **Northeast Asia**.
- It is the easternmost part of Russia and the Asian continent; and is administered as part of the **Far Eastern Federal District**, which is located between **Lake Baikal in eastern Siberia and the Pacific Ocean**.



## ● ANALYSIS

### Why Russia wants other countries to invest in Far East Region?

- Expansion of power: Moscow seeks to strengthen its "administrative and economic footprint in the RFE" through such measures as increased regional investment and the May 2012 creation of a Ministry for the Development of the Russian Far East.
- Establishing links with Neighbours: Russia wants to strengthen economic links with its Asia-Pacific neighbours in an effort to tie its economy to the dynamic and growing economies of the Pacific region.

### Who are the major actors in the Russia's far eastern deal?

- China is the biggest investor in the region as it sees potential in promoting the Chinese Belt and Road Initiative and the Polar Sea Route in the RFE.
  - ▶ China's investments in the region account for 90% of the total investments.
- South Korea has also been gradually increasing its investments in the region. South Korea has invested in shipbuilding projects, manufacturing of electrical equipment, gas-liquefying plants, agricultural production and fisheries.

- ▶ In 2017, the Export-Import Bank of Korea and the Far East Development Fund has sanctioned funds for the developments in the region.
- Japan is another key trading partner in the Far East. In 2017, Japanese investments through 21 projects amounted to \$16 billion.
  - ▶ Japan identified eight areas of economic cooperation and pushed private businesses to invest in the development of the RFE.

### What is India's stand for investing in the region?

- India is interested in expanding trade, connectivity and investments in Russia.
- India is keen to deepen its cooperation in energy, pharmaceuticals, maritime connectivity, healthcare, tourism, the diamond industry and the Arctic.
- In 2019, India also offered a \$1 billion line of credit to develop infrastructure in the region.
- Through the EEF, India aims to establish a strong inter-state interaction with Russia.
- Business representatives of Gujarat and the Republic of Sakha have launched agreements in the diamond and pharmaceuticals industry.

### How Russia wants help from India?

- Russia wants to cultivate its own connectivity corridors in Eurasia, and in coordination with India and Iran, it is pushing International North-South Transport Corridor (INSTC), a 7,200-km multi-mode network of ship, rail, and roads connecting India, Iran, Azerbaijan, Russia, Central Asia and Europe.
- Moscow also wants New Delhi to increase its presence in Central Asia as a balancing power.

### India's act of balancing between EEF and Indo-pacific Economic framework (IPEF)

- Though India's interest in IPEF led by US, is more fulfilling than EEF. However, it seeks to balance out both the economic investments.
- The U.S.-led Indo-Pacific Economic Framework for Prosperity (IPEF) and the EEF are incomparable based on its geographic coverage and the partnership with the host-countries.
- India has vested interests in both the forums and has worked towards balancing its involvement.
- India has given its confirmation and acceptance to three of the four pillars in the IPEF.
- Significance of IPEF:
  - ▶ The IPEF plays a key role in building resilient supply chains for India. India's participation in the forum will help in disengaging from supply chains that are dependent on China and will also make it a part of the global supply chain network.
  - ▶ Additionally, the IPEF partners will act as new sources of raw material and other essential products, further reducing India's reliance on China for raw materials.

## 19<sup>th</sup> ASEAN-INDIA ECONOMIC MINISTERS' MEETING

### CONTEXT:

Recently, the 19th ASEAN-India Economic Ministers Consultations was held in the Siem Reap City, Cambodia.

### Highlights of the Meeting:

- **Acknowledged Economic achievements:** Trade and economic relations between ASEAN and India are starting to recover from the impact of the Covid-19 pandemic and the two-way trade between ASEAN and India reached USD 91.5 billion in 2021 increasing by 39.2% year-on-year.
- **ASEAN India Business Council:** Recommendations made by ASEAN India Business Council (AIBC) to enhance the ASEAN India economic partnership were considered.



- Supply Chain Connectivity: The member countries welcomed ASEAN and India's collective actions, through the launching of the ASEAN-India Trade in Goods Agreement (AITIGA) Upgrade Negotiations in securing a robust supply chain to maintain the flow of essential goods and services.
- ASEAN India Trade in Goods Agreement: The Ministers endorsed the Scope of the Review of the AITIGA to make it more user-friendly, simple, and trade facilitative for businesses, as well as responsive to the current global and regional challenges including supply chain disruptions.
- The Ministers also activated the AITIGA Joint Committee to undertake the review of AITIGA expeditiously.



### About the Association of Southeast Asian Nations (ASEAN):

- Established in 1967 in Bangkok, Thailand, ASEAN is a regional grouping that promotes economic, political, and security cooperation.
- Its chairmanship rotates annually, based on the alphabetical order of the English names of Member States.
- ASEAN countries have a total population of 650 million people and a combined Gross Domestic Product (GDP) of USD 2.8 trillion.
- Members: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam – into one organization.

### Commodity trade between India and ASEAN

- Trade reached 98.39 billion in the period April 2021-February 2022.
- India's main trading ties are with **Indonesia, Singapore, Malaysia, Vietnam, and Thailand.**

## SETTING UP A NEW REGULATOR FOR MEDICAL DEVICES

### CONTEXT:

A recent Parliamentary panel Report stated that the Central Drugs Standard Control Organization (CDSCO) is falling short in effectively regulating the medical devices industry.

## ◎ ABOUT:

- **The parliamentary panel has presented its 138th report on “Medical Devices: Regulations and Control”** pertaining to the department of health and family welfare to the head of Rajya Sabha and Lok Sabha.
- The committee has observed that the function of the Central Drugs Standard Control Organization (CDSCO) primarily focus on the regulation of drugs as a regulatory body was set up originally to regulate pharma and other Medical Devices segment as well.
- The Medical devices Rule (MDR) 2017 mandated the CDSCO to regulate medical devices as well. But the organization in its existing structure and expertise (which is more pharma centric) is unable to regulate the medical devices industry.

### Central Drugs Standard Control Organization (CDSCO):

- It is headed by the Drugs Controller General of India, under the Ministry of Health & Family Welfare.
- CDSCO along with state regulators is jointly responsible for the grant of licenses of certain specialized categories of critical Drugs such as blood and blood products, I. V. Fluids, Vaccine, and Sera.

### Major functions of CDSCO:

- Regulatory control over the import of drugs,
- Approval of new drugs and clinical trials,
- Meetings of the Drugs Consultative Committee (DCC) and Drugs Technical Advisory Board (DTAB),
- Approval of certain licenses as Central License Approving Authority is exercised by the CDSCO headquarters.


## Committee Observation:

- **Insufficient Medical Device Testing Laboratories:** The country has only 18 certified Medical Device Testing Laboratories that have been approved by CDSCO and it is minuscule keeping in view the size of the country.
- **Underuse of Labs:** The institutes which have high-tech labs are not being used and are not allowed to be used to test medical devices for their electronic, electromagnetic, and biochemical-run aspects.
- **Absence of Research Ecosystem:** Indian Medical Devices Industry presently lacks a research ecosystem and infrastructure for manufacturing of high tech, advanced medical devices (Class C&D)
- **Adequate common infrastructure:** Accredited laboratories in various regions of the country for standard testing can encourage local manufacturers to get their products tested for standards. It may reduce the cost of production which ultimately will improve the availability and affordability of medical devices in the domestic market.
- **Low Standards:** The Indian Medical Devices Industry doesn't have the facilities to produce such medical devices comparable to global standards.

## Recommendations of Committee

- **Post-market surveillance system for Medical Devices:** The Committee noted that there is a dire need for developing IT enabled feedback-driven post-market surveillance system for Medical Devices to evaluate the efficiency of specific Medical Devices.
- **Need for Medical device registry:** This is to ensure the traceability of patient who has received the implant, to assess the performance of the implant also to seek feedback on the functional capacity of medical devices.
- **Imparting necessary skill-set:** The union government and the State governments must work in coherence and impart the necessary skills to the local medical device officers and also devise a mechanism to regularly designate State Medical personnel so that the mandate of the legislation can be implemented effectively.
- **Ensuring Participation of IITs/IISC etc:** The Ministry should allow the new regulator to involve institutions such as IISC, CSIR, DRDO, and the network of IITs to test medical devices for safety and efficacy. These institutes have high-tech labs and thus can be used to test medical devices for their electronic, electromagnetic, and biochemical-run aspects.

## MEDICAL DEVICES AND THE EXPLOITATION OF PATIENTS



	Device	Wholesale price (₹)	MRP (₹)	You pay extra...
An FDA Maharashtra report sent June 2017 urging Centre to "initiate steps in public interest"	Urine bag	14	80	5.7 times
	Face mask: a dozen	1.30	6	4.6
	Oxygen mask	290	1,100	3.8
	Disposable endotracheal tube	63.00	180	2.9
	Arterial catheter set	800-900	2,200-2,500	2.8
	Balloon catheter (Angioplasty)	3,000-9,945	20,000-28,000	2.2-6.7
	Guiding catheter (Angioplasty)	2,346-4,321	5,000-10,500	2.1-2.9
	Imported intraocular lens	3,750-15,200	5,400-26,550	1.4-2.8
In 2014, Odisha drug controller sent a similar report	IV set	9.80	98	10
	Blood transfusion set	14.70	115	7.8
	IV catheter with injection port	35.85	110	3.1
	Disposable syringe 10ml	4.40	11	2.5
	Spinal needle 23	44.40	105	2.4
	Oncofusion set	252	583	2.3
	Tracheostomy tube	264.50	621	2.3
	Urinary catheter 8 (Foleys)	178.50	295	1.7

- Single Window System:** The multiplicity of regulations is creating chaos. So, a single window clearance would significantly boost investment in R&D in the field of medical devices and would also reduce the time required for obtaining approvals from different Departments/Ministries.
- Research Linked Incentive (RLI) Scheme:** Indian Medical Devices Industry lacks the infrastructure for manufacturing advanced medical devices. It is recommended to start a Research Linked Incentive (RLI) Scheme in Line with the PLI scheme.
- Improving on Research and Development:** Indian Medical Devices Industry also lacks the research ecosystem for manufacturing high medical devices (Class C&D). We need to inculcate a culture of research and development in medical devices in institutions of excellence.

### Significance:

- Encourages Local Manufacturers:** Having adequate common infrastructure including accredited laboratories in various regions of the country for standard testing would significantly encourage local manufacturers to get their products tested for standards.
- Lower Cost of Production:** The measures undertaken would also help in reducing the cost of production which ultimately will improve the availability and affordability of medical devices in the domestic market.
- Matching with the pace of industry growth:** The industry is growing by leaps & bounds, and if the medical device regulations are dispensed with by qualified and well-trained Medical Device Officers to give a fillip to the Medical Device industry in the country.

## SC REFERS 'DEATH PENALTY' ISSUES TO A CONSTITUTION BENCH

### CONTEXT:

The question of providing accused in death penalty cases a “meaningful, real and effective” hearing before a trial judge has been referred to a Constitutional bench by the Supreme Court.

### ◎ ABOUT

#### What is the issue?

- **Sentencing after conviction is a complex problem** in cases relating to capital offenses.
- Many times, the mitigating factor for awarding the death penalty is not properly taken into consideration due to the lack of any laid norms.
- Trial judges are called upon to make a decision on **whether only a death sentence will meet the ends of justice, or a life term will be enough.**

#### Supreme Court view:

- The **Supreme Court** has laid down that the death penalty can be imposed only in the “**rarest of rare**” cases.
- **Subsequent judgments** have laid the principle by holding that the **gruesome nature of the offense may not be the sole criterion** to decide what brings it under the ‘rarest of rare category’.

**Offender’s socio-economic background and his state of mind must also need to be taken into account.**

#### ● **The Procedure is tilted against the Convict:**

- ▶ The sentencing part of the trial takes place after the court records a conviction.

**It is only after the conviction that they are able to speak about mitigating circumstances.**

- The prosecution presents its case from the beginning on how heinous the crime was, and how much the accused deserved maximum punishment.
- The courts must refer to the reports from the jail authorities, probation officers, and even trained psychologists to assess the mitigating factors in favour of not imposing the death penalty.

#### When is ‘capital punishment’ awarded?

- The term “**Capital Punishment**” stands for the most severe form of punishment.
- It is the punishment that is to be awarded for the most heinous, grievous, and detestable crimes against humanity.
- While the definition and extent of such crimes vary, the implication of capital punishment has always been the death sentence.

In *Jagmohan Singh vs State of UP* (1973), then in *Rajendra Prasad vs State of UP* (1979), and finally in *Bachan Singh vs the State of Punjab* (1980), the Supreme Court affirmed the constitutional validity of the death penalty.

Arguments in favour	Arguments against
<ul style="list-style-type: none"> <li>● Forfeiture of life</li> <li>● Moral indignation of the victim</li> <li>● The highest form of Justice</li> </ul>	<ul style="list-style-type: none"> <li>● Eye for an eye is not the cure</li> <li>● Deterrence is a myth</li> <li>● he political tool of suppression</li> </ul>

<ul style="list-style-type: none"> <li>• Deterrent against crime</li> <li>• Proportional punishment</li> <li>• Prevailing lawlessness</li> <li>• Prevention of crime is non-existent</li> </ul>	<ul style="list-style-type: none"> <li>• 'Reverence for life' principle</li> <li>• Discriminatory nature</li> </ul>
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◎ **WAY FORWARD**

It is expected that the Constitution Bench may come up with new guidelines under which the trial courts themselves can hold a comprehensive investigation into factors related to the upbringing, education, and socio-economic conditions of an offender before deciding the punishment.

## CAN STATE IMPOSE LIMITS ON STUDENTS' FUNDAMENTAL RIGHTS: SC

### CONTEXT:

The Supreme Court has raised questions over the legitimacy of states placing curbs on the rights of students in classrooms (Karnataka hijab case).

#### Religious Practices and Rights: Arguments

- It is argued in the court that, the Fundamental right can be exercised anywhere, whether in the classroom or any other place, subject to legitimate restrictions.
- The court has tried to seek an answer to, what actually amounts to a 'religious practice'. Wearing a particular dress, while conducting puja, may be linked to religion. But is wearing a particular dress outside religious places within the ambit of "religious practice" is necessary?

India is a "*beautiful democracy*" where the majority are obliged not to discriminate against minorities. The secular state in the Indian Constitution meant a state that does not discriminate on religion, a state that does not patronize nor prefer one religion over the other.

#### How is Religious Freedom Protected under the Constitution?

- Article 25(1) of the Constitution guarantees the "freedom of conscience and the right freely to profess, practice and propagate religion".
- It is a right that guarantees negative liberty, which means that the state shall ensure that there is no interference or obstacle to exercising this freedom.
- However, like all fundamental rights, the state can restrict the right for grounds of public order, decency, morality, health, and other state interests.

**Important cases:**

- Amna Bint Basheer v Central Board of Secondary Education (2016)
- Fathima Tasneem v State of Kerala (2018)

Argument in Support of the Hijab Ban	Argument against Hijab Ban
<ul style="list-style-type: none"> <li>• Hijab is not an essential religious practice and the freedom of religion can be subjected to reasonable restrictions.</li> </ul>	<ul style="list-style-type: none"> <li>• Wearing hijab is fundamental right under the right to freedom of religion under Article 25.</li> </ul>

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Educational institutions can impose dress codes/uniforms prohibiting religious dress to ensure secular education.</li> <li>• Public places are meant to be secular; religion has to be kept out of them.</li> <li>• The spirit behind a dress code is of ensuring homogeneity in a classroom and obliterating the visible class or caste divide.</li> </ul> | <ul style="list-style-type: none"> <li>• Students silently wearing a hijab/headscarf and attending class cannot in any manner be said to be a practice that disturbs "public order".</li> <li>• India is a land of diversity, and the diversity in the classroom must reflect this social reality</li> </ul> |
|--|--|

## ROLE OF 'DEPARTMENTAL COMMITTEES' FOR ACCOUNTABILITY OF PARLIAMENT FUNCTIONING

### CONTEXT:

- As per the recently concluded monsoon session, the Competition (Amendment) Bill, 2022 and the Electricity (Amendment) Bill, 2022 has been sent for re-consideration to Standing Department Committee of parliament.
- So, let us examine how referring a Bill to the Department Related Parliamentary Standing Committees does help the process of law making.

### ◎ ABOUT

#### The Parliamentary Standing committee:

- A standing committee is a committee consisting of Members of Parliament.
- It is a permanent and regular committee which is constituted from time to time according to the provisions of an Act of Parliament or Rules of Procedure and Conduct of Business.
- Standing committees are of the following kinds :
  - ▶ Financial standing committees (FSC)
  - ▶ Department related standing committees (DRSC)
  - ▶ Other standing committees (OSC)
- The Parliament has 24 Department Related Parliamentary Standing Committees (DRSC), comprising members of the Parliament of both the Lok Sabha and the Rajya Sabha in the ratio 2:1.
- These committees are constituted by the Speaker of Lok Sabha and the Chairman of the Rajya Sabha.
- The term of office of these committees does not exceed one year.
- These committees are serviced either by Lok Sabha secretariat or the Rajya Sabha secretariat, depending on who has appointed the chairman of that committee.

Any Bill introduced in Lok Sabha or Rajya Sabha can be referred to a DRSC by either **the Speaker** of the Lok Sabha **or Chairman** of the Rajya Sabha.

#### Functions of the parliamentary Committees:

- It examine various legislations referred to it
- The budget proposals of different Ministries
- Policy thinking on the vision, mission
- Future direction of the Ministries concerned

### Why these committees are important?

Analysis of Bills in respective houses: It has been alleged that Bills which are not being referred to the parliamentary committees, are not examined properly, especially from the perspective of consumers and stakeholders. Example: Farm bills

- Effective law making: The committee involves participation of parliamentary members and add value to the content of the legislation, the Members, their party positions notwithstanding, try to reach a consensus.

### How the Standing Committee assure accountability of functioning?

- Think on critical issues: Parliament deliberates on matters that are complex, and therefore needs technical expertise to understand such matters better.
  - ▶ Committees help with this by providing a forum where Members can engage with domain experts and government officials during the course of their study.
- **Regional aspects considerations:** Committees also provide a forum for building consensus across political parties. The proceedings of the House during sessions are televised, and MPs are likely to stick to their party positions on most matters.
- **Maintain Cooperation:** Committees also examine policy issues in their respective Ministries, and make suggestions to the government.
- **Economic functions:** Besides Bills, the DRSCs also examine the budget. The detailed estimates of expenditure of all ministries, called Demand for Grants are sent for examination to the DRSCs.

## CLIMATE ACTION THAT RUNS ON COOPERATIVE FEDERALISM

### CONTEXT

Rapid electrification is a key pillar of India's public transportation. This pillar has the potential to reduce India's pollution and its import bill. E-mobility- 'Grand Challenge 1' in this context is an innovative model for India and the world.

#### Issue: Status of State-owned Buses

- **Sputtering engines:** Currently around 1, 40,000 registered public buses on India's roads, most of them having inefficient engines emitting planet-warming fumes into the atmosphere.
- Old Vehicles: At least 40,000 of these buses are at the end of their lifespan and must be taken off the roads immediately.
- **States in poor financial health:** It is disheartening to see that because of the poor financial health of states in addition to the responsibility of providing subsidized fares, it is a herculean task to overhaul the entire fleet of buses.
- **Higher cost for buying buses:** Due to fragmented demand the state transport undertaking often faces problems of higher prices while buying buses.
- Limitations on nationwide action: As state governments control issues such as transit, urban governance, and pollution control, it becomes difficult to find a unified solution.

#### Cooperative Federalism: A Success Story

- **Unified Tender:** Grand Challenge 1 is a great example of cooperative federalism. Under Grand Challenge 1, a unified tender for 5,450 buses across five major Indian cities was issued. This is for the 1st time that a unified tender to address the challenging issue of climate change has been issued.
- **Coordination among states:** The respective expertise, strengths, and needs of Union Ministries and States informed the process and the successful outcomes which need to be appreciated.

- **Coordination with the center:** Convergence Energy Services Limited (CESL), a nodal agency of the Union government, acted as the programme manager in this effort at centralized procurement in concert, with State-led demand and customization.
  - ▶ This coordination among central and state governments led to the discovery of the low price required to operate the buses.
  - ▶ On a cost-per-kilometer basis, the prices discovered were 40% lower than diesel and 34% less than CNG (without factoring in the subsidy through FAME-II).

### The success of Unified Tender:

This change in the unified tender was enabled by **three key factors** collaboration, pace, and transparency.

- **Consultative process:** The tender itself was a fully consultative process. The different contributions by participants helped in influencing the design of future tenders also.
- **Pace:** There was a sense of climate urgency that shaped this collaboration.

**Transparency:** Transparency was the strongest aspect of this tender. There was clarity about the intention to build trust and build a publicly available process that invited bids from automakers and operators.

### Climate change and Indian Federalism:

- India cannot address climate change without re-imagining Indian federalism as the division of powers in the Indian Constitution gives states a crucial role in several arenas of climate action.
- This spans water, agriculture, cities, and transport – solely the responsibility of the states – and crucial levers in mitigation like forests and electricity, that are the joint responsibility of the federal government (hereafter referred to as 'the Centre') and the states.

### Merits of decentralization decision in improving the climate conditions:

- **Different state has different levels of vulnerability:** India's States and districts vary vastly in their vulnerability to climate impacts, and decentralized decision-making and locally-led adaptation will help reduce potential damage to the environment.
  - ▶ The role of urban local bodies and gram panchayats can be instrumental in the efforts towards climate action.
- **Need for Balance:** Excessive centralization has limitations and contradicts the federal principles enshrined in the Constitution. However, in cases such as, where States lack size and financial clouts, such as the electrification of mass mobility, centralized procurement, and programme management can deliver architectural transformations rather than just incremental transitions.

## TAMING INFLATION WITHOUT INHIBITING GROWTH

### CONTEXT:

The World Bank has come out with a report that holds out the prospect of a global recession in 2023. The report calls for some very delicately-balanced trade-offs in emerging markets and developing economies between fighting inflation and preserving growth.

### ◎ BACKGROUND

India's GDP growth rate had been decelerating sharply over the three years leading up to the Covid-19 pandemic.

It decelerated from more than 8% in 2016-17 to less than 4% in 2019-20.

**Issues faced by India:** Currently, India faces the problem of:

- ▶ chronically low employment



- ▶ high fiscal deficit (targeted 6.4 percent in fiscal 2023 versus the norm of 4 percent of GDP)
- ▶ low private capital investment
- ▶ a slow post-pandemic economic recovery
- ▶ very shallow and leaky social and unemployment support systems

## ◎ ANALYSIS

### What is the essential problem?

- If RBI continues to tighten monetary policy, it will weaken economic recovery at a time when growth is already faltering and unemployment is already quite high.
- If RBI ignores inflation then it hits the poor immediately without necessarily guaranteeing that growth and unemployment will be resolved.

### What is the trade-off between growth and inflation?

- In any economy, there are two overwhelming concerns for policymakers: promoting fast economic growth, and maintaining price stability. Both are important.
- If fast economic growth comes with a high level of inflation then it undermines future growth in two broad ways.
  - ▶ **Change in consumer behaviour:** if prices are rising fast, it makes sense to buy things today rather than wait for tomorrow. But when everyone — or at least a large number of people — starts behaving like this, it only stokes inflation further. Prices rise faster because everyone starts demanding goods today even when they do not need them.
  - ▶ **Change in producer behaviour:** If the price of inputs rises fast, it can eat into the producer's profitability. If the producer passes on the higher prices to consumers — and not every producer is in a position to do that — it can bring down the demand for the product, and they can lose crucial market share that took years, even decades to build.

### How RBI manages the situation?

- **Raises interest rates:** To contain inflation, RBI makes it costlier for consumers to borrow and consume and for producers to borrow and produce — thus slowing down overall economic activity.
- **Reduces interest rates:** To promote growth, it reduces interest rates, thus giving a boost to credit-driven consumption and production.

### What if the inflation becomes high at a time when economic growth is faltering?

- This is one of the worst scenarios for policymakers.
- That's because measures to contain inflation — such as raising interest rates — now risk running the economy aground.

### Suggestive measures

The WHO report urges the following measures, apart from monetary, and fiscal measures:

- ease labour-market constraints, increase labour-force participation, and reduce price pressures
- boost the global supply of commodities, in particular, supplies of food and energy, while accelerating the transition to low-carbon energy sources economising on energy consumption
- Strengthen global trade, removing global supply bottlenecks, and guarding against the threat of protectionism and fragmentation that could further disrupt trade networks.

# PM UNVEILS NATIONAL LOGISTICS POLICY

## CONTEXT:

- ❑ The Prime Minister unveiled the National Logistics Policy that seeks to address challenges facing the transport sector and bring down the logistics cost for businesses from 13-14% to a single digit.
- ❑ The policy was announced for the first time in the Union Budget 2020.

## Key-features

- The draft policy provides for the government creating a single point of reference for all logistics and trade facilitation matters, reducing costs for the logistics sector to 10 per cent in five years.
- Its focus areas are Integration of Digital System (IDS), Unified Logistics Interface Platform (ULIP), Ease of Logistics (ELOG) and System Improvement Group (SIG).
  - ▶ The IDS will integrate 30 different systems of seven different departments, such as customs, aviation, road transport, railways, international trade and commerce ministries.
  - ▶ The ULIP aims to ensure continuous monitoring of cargo movement.
  - ▶ The ELOG would seek to simplify procedures and achieve ease of doing business.
  - ▶ The SIG would monitor all projects related to logistics on a regular basis and ensure the removal of hurdles faced in the sector.
- An empowered group of secretaries (EGoS) has been constituted under the PM Gati Shakti to monitor and review the implementation of the NLP.
- The policy is an endeavour to improve the competitiveness of Indian goods, enhancing economic growth and increasing employment opportunities.

## Logistics demystified:

- Logistics encompasses planning, coordinating, storing, and moving resources —people, raw materials, inventory, equipment, etc., from one location to another, from the production points to consumption, distribution, or other production points.

## Aims and Objectives

### The National Logistics Policy aims to:

- Promote smooth movement of goods across India
- boost competitiveness of the Indian goods in the domestic and international markets
- bring down the logistics cost, which in turn would improve efficiency of various sectors of the economy, boosting value addition and economic growth

### How government is strengthening the logistics sector?

- The government is using technology to strengthen the logistics sector.
- Faceless assessment has started in customs and e-way bills and FASTag are bringing efficiency in the logistics sector.
- Sagarmala project to connect ports and dedicated freight corridors have started to improve logistics connectivity and systematic infrastructure development work.
- Budgetary Allocation - Government allocated Rs 5.54 trillion

## About India's logistics sector

- India's current logistics cost as a proportion of the GDP is some 13-14 per cent.
- The sector's present market size is 160 billion USD.
  - ▶ Its improvement can ensure a 10 per cent decrease in indirect logistics cost and increase the growth of exports by 5 to 8 per cent.
- India's logistics sector provides jobs for more than 22 million people.

towards capital expenditure across various ministries in the Union Budget 2021-22, a 34.5% jump from the previous year.

- **Mission Gati-Shakti** – The mission has been launched as a national master plan for multi-modal connectivity.
  - ▶ This will bring nearly 16 different ministries and departments of the government together to promote coordinated planning and execution of projects.
  - ▶ This will aid in development of an integrated logistics and transport policy providing end-to-end connectivity.
- **Bharatmala Pariyojana** - 34,000 km of road infrastructure works would be undertaken, of which, 11,000 km have been targeted to be completed by March 2022.
- Eastern and Western Dedicated Freight Corridors - Commissioning of such corridors can be a game-changer for boosting railway freight share.
  - ▶ It will not only decongest the existing rail network but would allow for longer rakes to carry higher loads at an average speed of nearly 70 km/hr.
  - ▶ The National Air Cargo Policy has also been formulated that seeks to build air transport shipment hubs in all major airports by 2025.

## RBI VARIABLE RATE REPO AUCTIONS FOR BALANCING OUT THE LIQUIDITY

### CONTEXT:

With the banking system liquidity slipping into a deficit, the Reserve Bank of India (RBI) will conduct an overnight variable rate repo auction (VRRR) for Rs 50,000 crore.

### ● ABOUT

#### What is Variable rate repo auction?

- The VRRR is usually undertaken to reduce the money flow by taking out existing cash present in the system.
- The central bank performs it to rebalance the surplus liquidity in the system by shifting it out of the fixed-rate overnight reverse repo window to VRRR auctions of longer maturity.

- **Repo rate:** Repo rate is the rate at which the central bank of a country (Reserve Bank of India in case of India) lends money to commercial banks in the event of any shortfall of funds. Repo rate is used by monetary authorities to control inflation.
- **Reverse Repo rate:** A reverse repo is a rate at which RBI borrows money from banks. RBI borrows a part of this money at a fixed rate and some of it at variable rate.

#### What is the role of RBI?

- Under the Reserve Bank of India, Act,1934 (RBI Act,1934) (as amended in 2016), RBI is entrusted with the responsibility of conducting monetary policy in India with the primary objective of maintaining price stability while keeping in mind the objective of growth.
- RBI controls the flow of money through repo rates and reverse repo rates.
- It plays multi-facet role by executing multiple functions such as overseeing monetary policy, issuing currency, managing foreign exchange, working as a bank of government and as banker of scheduled commercial banks, among others.
- It also works for overall economic growth of the country.

## ◎ ANALYSIS

### Why there is a need for auctioning the rate repo?

- The Reserve Bank does a continuous rebalancing the liquidity conditions in a non-disruptive manner while maintaining adequate liquidity to meet the needs of the productive sectors of the economy.
- With larger than anticipated collections under the goods and services tax (GST), system liquidity has tightened.
- Banks have been borrowing increasing amounts from the marginal standing facility (MSF).
- The call money rate has reduced below the repo rate.
- This is also reflected in the hardening of overnight money market rates, and in amounts under the fixed rate reverse repo of the liquidity adjustment facility (LAF).

**Liquidity Adjustment Facility (LAF)** is a tool used in monetary policy by the RBI that allows banks to borrow money through repurchase agreements (repos) or for banks to make loans to the RBI through reverse repo agreements.

### Factors affecting inflow of money

- Economic activity can influence market trends, for the better or for the worse.
- Government policy and geopolitical events are factors that can lead to either stability or instability in markets.
- Market participant expectations and the natural balance of supply and demand are other important factors.

### What will happen after auctioning VRRR?

- RBI will infuse liquidity through different tools like variable repo etc. and the liquidity that has gone out due to advance taxes and the goods and services tax will flow back into the system.
- Further, the coming festive season can boost the economic imbalances, as estimated.
- Liquidity will stay around neutral levels as Inflation will be brought into control via repo operations.

### Suggestive measures

- Balancing Inflation for sustained benefits after auction.
- Cash reserve ratio (CRR) to be balanced.

## ECOLOGICAL NICHE MODELLING

### CONTEXT:

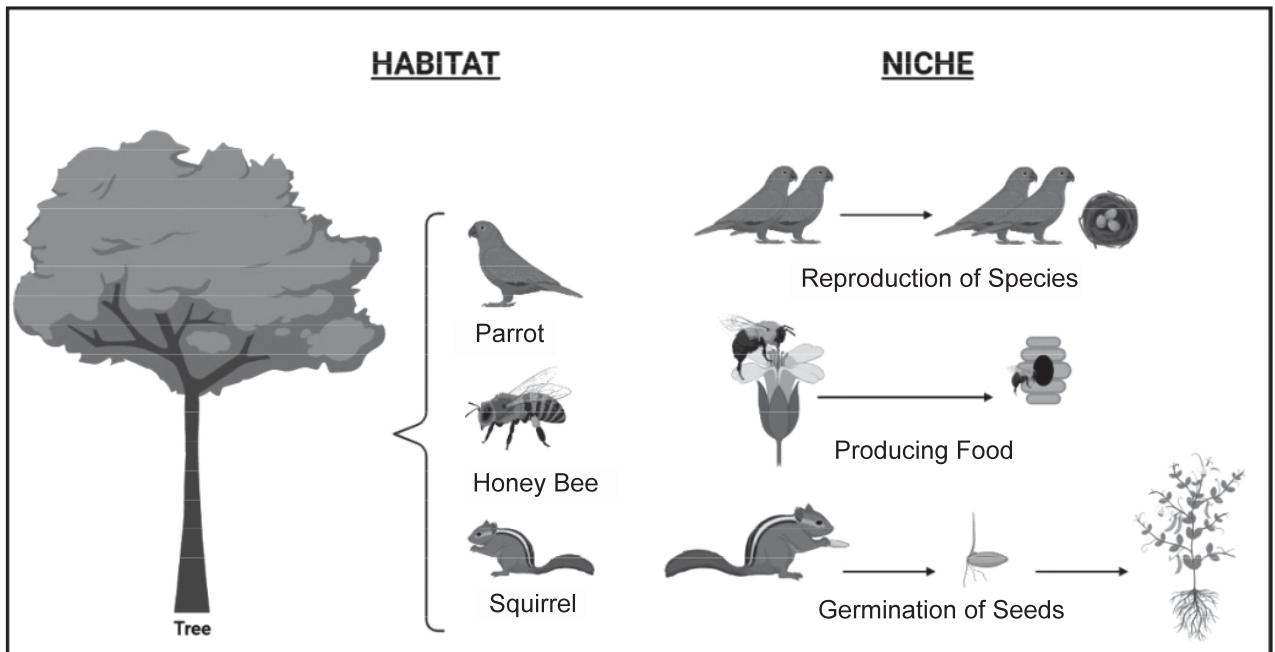
The use of Ecological niche modelling has been started in India, and trying to develop crops and species to grow with the help of technology to reduce the effect of climate change and balance out the demands of the population too.

## ◎ ABOUT

### What is an Ecological Niche?

- **Niche:** An ecological niche is the right set of environmental conditions under which an animal or plant species will thrive or grow.
- A range of ecological niches can occur within an ecosystem.
- Biodiversity is the result of these niches being occupied by species that are uniquely suited to them.

- **For example:** Desert plants are suited for dry, arid ecological niches because they have the ability to store water in their leaves.



### What is Ecological Niche Modelling?

- Ecological niche modelling is a predictive tool for identifying new possibilities or new inhabitants for an existing habitat, and even for new geographical locations where a desirable plant may grow well.
- The modelling involves the use of computer algorithms to compare data about the environment and to make forecasts about the ideal conditions for a given ecological niche.

### Significance of Ecological Niche modelling

- Ecologists use information obtained from modelling for conservation efforts as well as for future developments in Agriculture.
- Ecological niche modelling can be used to examine economic feasibilities within the context of changing ecological scenarios.

#### Saffron Plant:

- **Scientific Name:** *Crocus sativus*
- The saffron plant is propagated through underground stems **called corms**.
- It is best suited **in Mediterranean climatic conditions**.
- The **flower** of the plant has three **bright crimson stigmata**, which are handpicked and dried for the commercial saffron.
- Ancient Indian medical texts prescribed saffron for treating disorders of the **nervous system**.
- It adds **flavour and essence** to food items.

### How this can be applied in Indian context?

- A recent paper highlights the uses that ecological niche modelling can be put to within the context of India's geographies and agricultural economies in Himachal Pradesh's Saffron cultivation strategies.
- Saffron plant is native to Greece; however, it can be grown in soils in parts of Jammu and Kashmir and several states in India.

- India produces 5% of the world's saffron.
- The temperate climate of Jammu and Kashmir is well-suited with a well-drained soil of high pH value (6.3 to 8.3), summer temperatures (when flowers develop) of around 25°C and good soil nutrient availability.
- Similarly applying this strategy for other native crops can bring economic benefits for other regions too.

### What are the stages of development for Niche Modelling?

- **Surveying:** Firstly, the surveying is to be conducted to analyse the conditions of soil, pH, Temperature and other resources for the crop to be grown.
  - ▶ For Example; Terrain data for saffron crops (slope, aspect and elevation) came from the Space shuttle radar topography mission (SRTM) Digital Elevation Model.
- **Selection of sites:** selection of sites by developing sample plant crops in the region.
- **Availability of resources:** Resources like funds, scientists and researchers, conservation practices from wild animals etc.

### Impacts of Ecological Modelling

Positive impacts	Negative impacts
<ul style="list-style-type: none"> <li>• Agricultural development in the region</li> <li>• Development of new niche</li> <li>• Supporting economy</li> <li>• Harness the potential of India's Technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Can harm local species in the development region.</li> <li>• Can be destroyed by wild animals and insects.</li> <li>• Human-wildlife conflict as the unexplored areas in the forests can be used for crop cultivation.</li> </ul>

### ◎ WAY FORWARD

Governance agencies must be employed for scrutinizing the illegal use of these modelling technologies. More expenditure in research and development (R & D) before implementing for different crops.

## JOYMALA'S CASE FLAGS GAPS IN PRIVATE OWNERSHIP NORMS FOR ELEPHANTS

### CONTEXT:

The on-going dispute between the Governments of Tamil Nadu and Assam over the alleged mistreatment of a temple elephant named Joymala has brought into focus the prevailing lacunae over private ownership of elephants in India.

### ◎ ABOUT

#### Asian Elephants:

- There are about 50,000 - 60000 Asian elephants in the world. More than 60% of the population is held in India.
- There are three subspecies of Asian elephant which are the Indian, Sumatran and Sri Lankan.
- The Indian subspecies has the widest range and accounts for most of the remaining elephants on the continent.

#### Protection Status:

- IUCN Red List: Endangered
- Wildlife (Protection) Act, 1972: Schedule I
- CITES: Appendix I

## ◎ ANALYSIS

### Why private ownership of elephants is a concern?

- As per the MoEFCC, it's illegal to hold elephants in captivity without ownership certificates.
- Kerala, Uttar Pradesh, Karnataka, Assam, Tripura and Madhya Pradesh account for 96% of elephants in captivity without ownership certificates.
- Captive elephants are provided a poor diet and inadequate food. Due to a limited diet, elephants can suffer from intestinal infections, lung-related infections, or impactions.
- It also leads to an increase in "black marketing" of elephants.
- Other threats to Elephants:
  - ▶ Escalation of poaching
  - ▶ Habitat loss
  - ▶ Human-elephant conflict
  - ▶ Mistreatment in captivity
  - ▶ Abuse due to elephant tourism
  - ▶ Rampant mining, Corridor destruction

### Why it is happening?

- Lack of law enforcement or governance of the private ownership of elephants in many States.

### Important Animal Rights Organisation

- Animal Welfare Board of India
- People for the Ethical Treatment of Animals (PETA)
- People for Animals
- Federation of Indian Animal Protection Organizations (FIAPO)

### What do the rules say regarding Ownership of Elephants in India?

- Rules only allow for elephants to be exchanged or donated to temples or between private individuals.
- However, without an ownership certificate, the keeping of any elephant in captivity by a private individual is illegal, as per the new amendments to the Wildlife Prevention Act.

### Impacts

- **Illegal Elephant trafficking & trade:** Elephants are also poached for meat, leather, and body parts with the illegal wildlife trade putting elephants increasingly in danger.
- **Threat to Elephant habitat:** The loss of habitat due to deforestation increases in mining and agricultural activities has become problematic, especially for Asian elephants.

#### Important Government Initiatives:

- Project RE-HAB
- Use of LiDAR technology

#### About Project Elephant

- It is a flagship programme of the Ministry of Environment and Forests (MoEF). It was launched in 1992 as a Centrally-sponsored scheme.
- The project aims-
  - ▶ To protect elephants, their habitat & corridors.
  - ▶ To address issues of man-animal conflict.
  - ▶ The welfare of captive elephants.
- It addresses issues of man-animal conflict and welfare of domesticated elephants.

## MOON LIGHTING AND ETHICS

### CONTEXT:

Recently, IT sector of India has broken with the debate w.r.t. moonlighting, which has been triggered by the comment of Wipro Chairman. He called 'moonlighting' as cheating and considered it unethical for Employees.

#### What does Moonlighting means?

- The practice of working for one organisation while also taking up extra responsibilities and jobs, typically without the employer's knowledge, is referred to as moonlighting.
- It is called so the side employment is typically performed at night or on the weekends.

#### Legality of Moonlighting in India

- Yes, it is legal, subjected to restrictions by the Institution of employment and depends upon the employer conditions.
- A person can work more than one job in India without breaking the law. However, a person with a similar set of jobs could give rise to concerns about a violation of confidentiality because many employers include such restrictions in their employment agreements in addition to prohibitions against holding down multiple jobs.
- **Contractual provisions:** Moonlighting could be considered cheating if an employee's contract calls for non-compete and single employment, which is the situation with the majority of conventional employment contracts.

#### Criteria to Judge the ethics related to moonlighting

<b>Moonlighting as Ethical</b>	It is considered ethical when working with other Institution or company does not hamper the efficiency of the employee and in any cost he/she will not affect the decorum of the Employment place.
<b>Moonlighting as Unethical</b>	Moonlighting is considered Unethical, when working with other Institution or engagement in other work hampers the cost, revenue, efficiency and legality of the Employer by employee.

#### Ethical dilemmas for different Stakeholders

Every company's ethical dilemmas may be unique to their industry or company; however, other types of ethical issues affect all types of businesses.

- For IT sector, ethical dilemmas are to be focused because they pay more to their employees and possess contract relationship for a period of time.
- For other private institutions, ethical concerns must be addressed with wisdom so to reduce the impact of moonlighting.
- For Public institutions, Moonlighting is unethical for government institutions as it is restricted by the government agencies for their employees to work outside the organisation or for another institution.

#### Factors responsible for Moonlighting

Influence Moonlighting	To control Moonlighting
<ul style="list-style-type: none"> <li>• Lack of employee friendly conditions</li> <li>• Insufficient pay to employees</li> <li>• Exploitation at workplace</li> <li>• less responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>• Providing adequate pay</li> <li>• Incentivising Employment benefits</li> <li>• Awareness regarding Ethical concerns</li> <li>• To Provide more responsibility</li> </ul>



### Techniques to be adopted by Institutions to resolve ethical dilemmas

- **Ethical relativism:** It refers to multinational corporations doing business in a country by strictly adhering to its culture or ethics.
- For example, if bribery is a culture or ethics of doing business in a specific host country, multinational corporations must adhere to the local culture or ethics in order to survive.
  - ▶ Ethical relativism may assist multinational companies in surviving in the host country's market without barriers, but it also has drawbacks.
- **Ethical universalism:** It refers to a set of ethical standards that apply to all countries.
  - ▶ Ethical universalism has an advantage because it is seen as having a higher moral responsibility because corporations are said to be more ethical and stricter in following human rights.
  - ▶ In terms of disadvantages, in some cases, it may lead to a form of cultural imperialism, in which multinational corporations believe that a certain country's culture is immoral and inferior.

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**Section: B**  
**(SPECIALS)**

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**CURRENT AFFAIRS**

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# RE-LOCATION OF CHEETAHS AND THE QUESTION OF BIODIVERSITY

## CONTEXT

The decision of relocating African cheetahs from Namibia to India requires much more analysis for conservation of biodiversity and Grassland ecosystem.

### ◎ BACKGROUND

- The **fastest land animal** in the world was declared extinct in the India.
- The country's last spotted cheetah died in Chhattisgarh in undivided Madhya Pradesh in 1947 and the wild animal was declared extinct in the country in 1952.
- It has been declared that it will be related in **Kuno-Palpur National Park (KNP)** in Sheopur district of Madhya Pradesh.
- The Kuno National Park, located in the **Chambal region**, has the right environmental conditions for hosting cheetahs.

#### African Cheetahs:

- **Scientific Name:** Acinonyx Jubatus
- **Characteristics:** They have slightly brownish and golden skin which is thicker than the Asiatic Cheetahs.
- **Distribution:** Found all over the African continent in thousands of numbers.
- Protection:
  - ▶ IUCN Red List: Vulnerable.
  - ▶ CITES: Appendix 1.
  - ▶ WPA: Schedule-2.

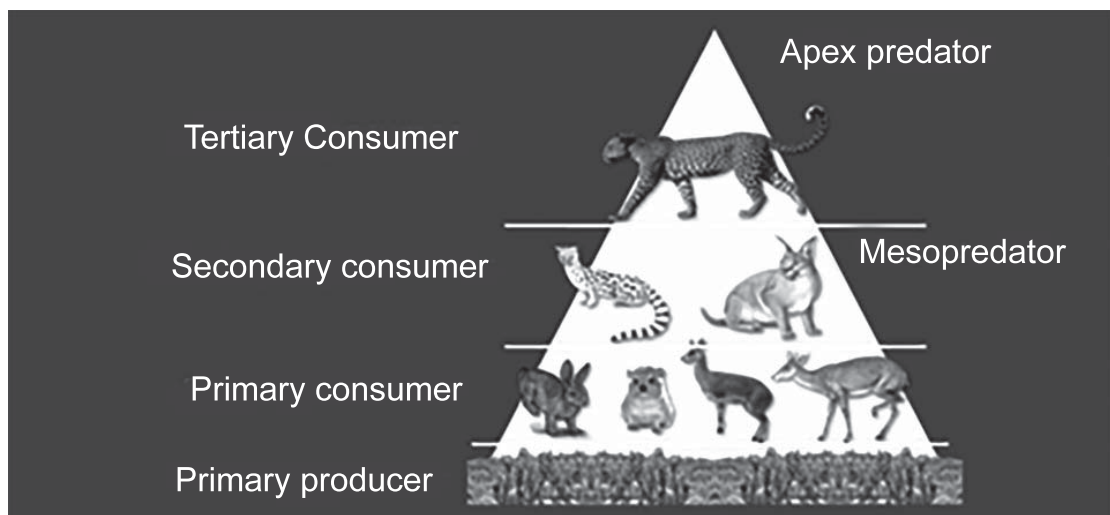
### Need for a Relocation project

- '**Reintroduction**' of a species means releasing it in an area where it is '**capable of surviving**'.
- Reintroductions of large carnivores have increasingly been recognised as a strategy to conserve threatened species and restore ecosystem functions.
- The cheetah is the **only large carnivore** that has been eliminated, mainly by over-hunting in India in historical times.
- The conservation of the cheetah will revive grasslands and their biomes and habitat, much like '**Project Tiger**' has done for forests and all the species that have seen their numbers go up.

### ◎ ANALYSIS

#### What is the government's strategy for the relocation project?

- As per the Ministry of Environment had in the 19<sup>th</sup> meeting of the **National Tiger Conservation Authority (NTCA)** released an "**Action Plan for Introduction of Cheetah in India**".
- The National Tiger Conservation Authority (NTCA) has decided to bring **50 African Cheetah** from Namibia within the next 5 years to India.



### Benefits of relocation

- **Habitat conservation:** Cheetah population forms keystone species in the grassland ecosystem. Its revival will conserve the habitat in dry forests in India.
- **Grassland ecosystem:** Governments plan to relocate cheetah is to conserve the dry grasslands which forms a major portion of India's **Central and Southern peninsular** region.

#### Past success of relocation Project: Gaur translocation

- In February 2011, translocation of **19 gaur (Indian bison)** at **Bandhavgarh National Park** in India.
- The project saw the first successful reversal of a **local extinction** by means of the mass translocation of wild animals in the country.
- It also laid the foundation for **further specialised wildlife translocations** in the central state of Madhya Pradesh, including the subsequent movement of another 31 gaur in January 2012 by Indian wildlife authorities.

### The unexplored areas by the Conservationists:

- **Unrealistic estimates:** The estimate for large relocation is a bit illogical in such a small area.
  - ▶ Cheetah in their best habitat exists in very less density as calculated to be 1 in 100 sq. km with average female density to be 750 Sq. kilometres.
- **Resource diversion:** The project will be a major distraction and divert much-needed attention and resources from priority conservation initiatives that are part of India's National Wildlife Action Plan (2017-2031), which, by the way, does not even mention the introduction of African cheetahs.

- **Potential for a success:** The success rate of the relocation is very less and there exists a threat of failure of the project and resources.
  - ▶ As, cheetahs are expected to establish themselves as a population in Kuno sanctuary after about **15 years**.
  - ▶ However, the area of Kuno palpur which is **748 sq. km** can at best accommodate only about **10 adult** cheetahs, against the estimated **21 adults** by the government

### Concerns associated with the relocation Project:

- **Lack of Space for habitat development:** Wild and free-ranging population of cheetahs will not be able to establish itself in India when there is no suitable habitat of sufficient size.
- **Relocation Numbers estimated:** The government has estimated to establish about 1000 cheetah in India, which is worrying as unlike other cats they tend to live in large spaces.
- **Biological objective for Conservation:** The basis for relocation is to conserve the grassland habitat; however, the aim will only be achieved when there is large numbers of cheetah adults.

### ◎ WAY FORWARD

- Focus on conservation should be of species like Great Indian Bustard, caracal and Asiatic lion for Biodiversity conservation in Open grasslands and dry forests.
- Distribution of Cheetah in more spacious and other grasslands across India.

### ◎ CONCLUSION:

The scientific foundation of the Action Plan to introduce African cheetahs in India is flawed. It also disregards our national conservation priorities and the rule of law as well as making exaggerated and unfeasible conservation claims.

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# **Section: C**

## **(PRELIMS)**

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**CURRENT AFFAIRS**

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## HERITAGE CAMP AT RAMAPPA TEMPLE

◎ **CONTEXT:** A 12-day World Heritage Volunteers (WHV) Camp-2022 is set to be organised under the aegis of the Warangal-based Kakatiya Heritage Trust at the historic Ramappa temple in Palampet of Mulugu district.

◎ **ABOUT:** **About Ramappa Temple**

- **Ramappa Temple, also known as the Rudreshwara (Lord Siva) temple,** is a UNESCO World Heritage Site located in the state of Telangana.
- It lies in a **valley in Palampet village of Venkatapur Mandal of Mulugu district,** a tiny village long past its days of glory in the **13th and 14th centuries.**
- An inscription in the temple dates it to the **year 1213 CE** and says it was built by a **Kakatiya General Recharla Rudra Deva,** during the period of the **Kakatiya ruler Ganapati Deva.**
- This temple was constructed by **Kakatiya king Ganapati Deva's general Recharla Rudra.**



- Kakatiya Dynasty was the South Indian dynasty that ruled Andhra Pradesh in India from 1083 CE to 1323 CE.
- **Ramalingeswara Swamy** is the presiding deity of this temple.
- **Marco Polo,** during his visit to the Kakatiya Empire, allegedly called the temple **“the brightest star in the galaxy of temples”.**

### Architecture

- The temple complexes of Kakatiyas have a distinct style, technology, and decoration exhibiting the influence of the Kakatiyan sculptor.
- The temple stands on a 6 feet high star-shaped platform with walls, pillars, and ceilings adorned with intricate carvings that attest to the unique skill of the Kakatiyan sculptors.
- The foundation is built with the **“sandbox technique”,** the flooring is granite, and the pillars are basalt.

- The technique involved filling the pit — dug up for laying the foundation — with a mixture of sand-lime, jaggery (for binding) and karakkaya (black myrobalan fruit) before the buildings were constructed on these 'sandboxes'.
- The sandbox in the foundation acts as a cushion in case of earthquakes.
- Most of the vibrations caused by earthquakes lose their strength while passing through the sand by the time they reach the actual foundation of the building.
- The lower part of the temple is **red sandstone** while the **white gopuram** is built with light bricks that reportedly float on water.
- The Kakatiya temples, dedicated mostly to Shiva, reveal in their construction a happy blending of the styles of North India and South India which influenced the political life of the Deccan.
- They adopted both the **North Indian Nagara Bhumija style** and the **South Indian Dravida style**.
- The most important of these temples are those at **Palampet (Ramappa temple)**, **Hanamkonda (Thousand Pillared temple)** and the temples in the Warangal fort including the big ruined temple complex — **Swayambhunadha temple**.

#### About United Nations Educational, Scientific and Cultural Organization (UNESCO)

- UNESCO was formed in 1945, is a specialized agency of the United Nations (UN) based in Paris.
- It works for achieving peace and security by promoting international collaboration through educational, scientific, and cultural reforms in order to increase universal respect for justice, the rule of law, and human rights along with fundamental freedom proclaimed in the United Nations Charter.
- It has 195 member states and ten associate members.
- India is a founding member of the Organisation.
- India now has 40 world heritage sites, including 32 cultural heritage sites, 7 natural sites and 1 mixed site.
- It makes India seventh ranked country in the list of world heritage properties.

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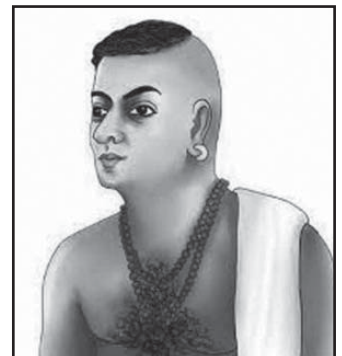
## ARATTUPUZHA VELAYUDHA PANICKER

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© **CONTEXT:** Recently-released Malayalam film *Pathonpatham Noottandu* is based on the life of **Arattupuzha Velayudha Panicker**, a social reformer from the Ezhava community in Kerala in 19th century.

#### Who was Arattupuzha Velayudha Panicker?

- He was a social reformer from the Ezhava community in Kerala who lived in the 19th century.
- He was born into a well-off family of merchants in Kerala's Alappuzha district.
- He was given the title of 'Panicker' by the then-king of Travancore in 1869.
- Panicker was murdered by a group of upper-caste men in 1874 at the age of 49. This makes him the 'first martyr' of the Kerala renaissance.



**Panicker's role in initiating social reforms:**

- Panicker is credited with building two temples dedicated to the Hindu god Shiva, in which members of all castes and religions were allowed entry.
  - One was built in his own village Arattupuzha in 1852

**Post Death Recognition:**

- In 2005, the Kerala government inaugurated the Arattupuzha Velayudha Panicker Research Foundation and Cultural Centre in Thiruvananthapuram
  - One in Thanneermukkom in 1854, another village in the Alappuzha district
- Some of his most significant contributions were in protesting for the rights of women belonging to Kerala's backward communities.
- In 1858, he led the Achippudava Samaram strike at Kayamkulam in Alappuzha.
  - This strike aimed to earn women belonging to oppressed groups the right to wear a lower garment that extended beyond the knees.
- In 1859, this was extended into the Ethappu Samaram, the struggle for the right to wear an upper body cloth by women belonging to backward castes.
- In 1860, he led the Mukkuthi Samaram at Pandalam in the Pathanamthitta district, for the rights of lower-caste women to wear 'mukkuthi' or nose-ring, and other gold ornaments.
- These struggles played an important role in challenging the social order and in raising the dignity of women belonging to the lower strata of society in public life.

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## 'TRIPLE DIP' LA NINA AND ITS IMPACT ON INDIA'S MONSOON

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- © **CONTEXT:** Australia's Bureau of Meteorology (BOM) predicted that a third consecutive event of La Niña could be underway.

**What is La Niña?****El Nino-Southern Oscillation (ENSO)**

- ENSO is the interaction between the atmosphere and ocean in the tropical Pacific.
- It is a series of linked weather and ocean-related phenomena.
- La Niña involves the large-scale cooling of the ocean surface temperatures in the central and eastern equatorial Pacific Ocean coupled with changes in the tropical atmospheric circulation (winds), pressure, and rainfall.
- It usually has the opposite impact on weather and climate as El Niño.
- La Niña is characterized by lower-than-normal air pressure over the western Pacific.
- These low-pressure zones contribute to increased rainfall.
- La Niña years are associated with above-average trade winds, pushing the warmer waters towards Asia and drawing in cooler than normal water temps to the equatorial Pacific.
- Causes: La Niña is caused by a build-up of cooler-than-normal waters in the tropical Pacific, the area of the Pacific Ocean between the Tropic of Cancer and the Tropic of Capricorn.



- Unusually strong, eastward-moving trade winds and ocean currents bring this cold water to the surface, a process known as upwelling.
- Effects: La Niña affects; patterns of rainfall, atmospheric pressure and global atmospheric circulations.

### What does a triple La Niña mean?

- A triple La Niña or a 'triple dip' La Niña is a rare occurrence, lasting for three years in a row. It has happened only twice since 1950.
- On the contrary, the occurrence of two consecutive La Niña winters in the Northern Hemisphere is common.

### Impact of El Nino and La Nina

- El Nino is associated with drought or weak monsoons.
- La Nina is associated with strong monsoons and above average rains and colder winters.

### Impact on India

- **Monsoon:** India may experience an extended monsoon lasting up to October due to La Niña.
- **Agriculture:** La Nina could have negative impacts on Indian agriculture. Farmers will be at risk of losing their standing Kharif crops if it rains during this period.

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## CHINA CALLS TO PREVENT 'COLOUR REVOLUTION'

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### ◎ CONTEXT:

**Chinese President Xi Jinping has warned his Central Asian neighbors against allowing outsiders to destabilize them with "colour revolutions."**

- The statement was made during the recent SCO Summit in Samarkand.

### What is Colour revolution?

In 2019, Beijing had said the protests in Hong Kong had taken on "colour revolution characteristics"

- Colour revolutions refer to a series of uprisings that first began in former communist nations in Eastern Europe in the early 2000s, but are also used in reference to popular movements in the Middle East and Asia.
- Most have involved large-scale mobilisation on the streets, with demands for free elections or regime change, and calls for removal of authoritarian leaders.

### Important colour revolutions

- **Orange Revolution:** It refers to a series of protests that occurred in Ukraine between November 2004 and January 2005.
- **Tulip Revolution:** Also called the First Kyrgyz Revolution, the movement led to the ouster of Kyrgyzstan's President Askar Akayev in early 2005.
- **Jasmine Revolution:** The popular uprising occurred during December 2010 to January 2011 in Tunisia. It was in response to the underlying corruption, unemployment, inflation and lack of political freedoms in the country.



### Why this method is criticised?

- They are said to destabilise influences to overthrow regimes in order to further their own geopolitical interests.

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## CONTEMPT OF COURT

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◎ **CONTEXT:** The Madras High Court recently found activist and YouTuber A.Shankar, popularly known as 'Savukku' Shankar, guilty of criminal contempt and sentenced him to six months' imprisonment for his remarks About the higher judiciary.

◎ **ABOUT:** What is Contempt of Court?

- Contempt of Court can be easily understood as when we are **disrespectful or disobedience towards the court of law** which means that we wilfully fail to obey the court order or disrespect the legal authorities.
- According to the Contempt of Courts Act, 1971, contempt of court can either be civil contempt or criminal contempt.
  - **Civil Contempt** means wilful disobedience of any judgment, decree, direction, order, writ or other process of a court, or wilful breach of an undertaking given to a court.
  - **Criminal contempt**, on the other hand, means the publication (whether by words, spoken or written, or by signs, or by visible representations, or otherwise) of any matter or the doing of any other act whatsoever which;
    - ▶ i.scandalises or tends to scandalise, or lowers or tends to lower the authority of, any court; or
    - ▶ ii.prejudices, or interferes or tends to interfere with, the due course of any judicial proceeding; or
    - ▶ iii.Interferes or tends to interfere with, or obstructs or tends to obstruct, the administration of justice in any other manner.
- **Punishment:** Contempt of court may be punished with simple imprisonment for a term which may extend to six months, or with a fine of maximum Rs 2,000, or with both,

provided that the accused may be discharged or the punishment awarded may be remitted on apology being made to the satisfaction of the court.

### Essentials of Contempt of Court:

Contempt of Court also has certain essentials and these are as follows:

- Disobedience to any type of court proceedings, its orders, judgment, decree, etc should be done '**willfully**' in case of Civil Contempt.
- In Criminal Contempt '**publication**' is the most important thing and this publication can be either spoken or written, or by words, or by signs, or by visible representation.
- The court should make a '**valid order**' and this order should be in '**knowledge**' of the respondent.
- The action of contemnor should be deliberate and also it should be clearly disregard of the court's order.

These essentials should be fulfilled while making someone accused of Contempt of Court

#### Provision in Indian Constitution:

- Article 129 says that the Supreme Court shall be the 'Court of Record' and it has all the powers of such courts including the power to punish for contempt of itself.
- The 'Court of Record' means a Court having its acts and proceedings registered for everlasting memory or that memory which has no end and as evidence or proof.

#### Article 142(2)

- When any law is made by the Parliament on the provisions mentioned in clause 1 of this Article, the Supreme Court has all the power to make an order for securing any person's attendance, production of any documents or has the power to give punishment to anyone for its contempt.
- This also does not mean that the Supreme Court can do anything against the right of personal liberty if it has power to punish under Contempt of Court.

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## NITI AAYOG CELEBRATES ONE-YEAR ANNIVERSARY OF 'SHOONYA CAMPAIGN'

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### ◎ CONTEXT:

NITI Aayog to commemorate the one-year anniversary of Shoonya, India's zero pollution e-mobility campaign.

#### About Shoonya Campaign:

- The Shoonya campaign aims to improve air quality in India by accelerating the deployment of electric vehicles (EVs) for ride hailing and deliveries.
- The Shoonya campaign brings together consumers and industry, to reduce emissions from the commercial passenger and urban freight sector by promoting EV adoption.
- The campaign is administered by NITI Aayog and RMI in partnership with leading industry players.

The goal of the campaign is to raise awareness About EVs among consumers and recognise industry efforts through an integrated combination of corporate branding, impact assessment and consumer awareness.

**Major Components: 'Three' components to the Campaign**

Corporate Branding Programme	Consumer Awareness Drive	Resource Toolkit
The corporate branding programme recognises efforts made by industry partners to promote vehicle electrification.	A public-facing awareness drive is designed to highlight the health and environmental benefits of EV adoption.	The resource toolkit provides EV users with online tools to assess the costs and impact of electric vehicle adoption.

## DELAY IN IMPLEMENTATION OF PMAYG SCHEME TO INVITE PENALTY

◎ **CONTEXT:** Union Ministry of Rural Development has come up with a set of penalties that the State governments will have to bear for any further delay in implementation of Pradhan Mantri Awas Yojana (Gramin).

◎ **ABOUT:** Pradhan Mantri Awas Yojana-Gramin:

- **Launched by:** Ministry of Rural Development in 2016
- **Aim:** To provide a pucca house with basic amenities to all rural families by the end of March 2022. People who are homeless or living in kutcha or dilapidated houses are eligible for benefits.
- **At present,** the minimum size of the houses to be built under the PMAY-G scheme has been increased to 25 sq. mt. from 20 sq. mt.
- **Under PMAY,** the cost of unit assistance is to be shared between Central and State Governments in the ratio 60:40 in plain areas and 90:10 for North Eastern and hilly states.

**Key Features of the Scheme:**

- **Beneficiaries:** Beneficiaries are identified as per the housing deprivation parameters and exclusion criteria prescribed under Socio-Economic Caste Census (SECC) 2011. Gram Sabha verifies the eligible beneficiaries.
- **Target:** The scheme had a target of construction of 2.95 crore pucca houses for eligible rural households by March 2022.
- **Fund sharing pattern:** The Centre and the state share the grants under the scheme in the ratio of 90:10 in case of NE States, Himalayan States & Himalayan UTs.
  - For all other States, funds are shared in the ratio of 60:40 by the Centre and the States.
  - In cases of other UTs, entire funds are provided by the Centre.
- **Monitoring:** The programme implementation is being monitored not only electronically but also through community participation (Social Audit), Member of Parliament (DISHA Committee), Central and State Government officials, National Level Monitors, etc.

**Subsidies under PMAY – G scheme**

These include:

- Loans up to Rs. 70,000 from financial institution

- Interest subsidy of 3%
- Subsidy for the maximum principal amount is Rs. 2 lakh

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## CABINET APPROVES ADDITION OF FOUR TRIBES TO ST LIST

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◎ **CONTEXT:** The Union Cabinet approved the addition of four tribes to the list of Scheduled Tribes.

### Newly added tribes:

- **Himachal Pradesh:** Hatti tribe
- **Tamil Nadu:** Narikoravan and Kurivikkaran hill tribes
- **Chhattisgarh:** Binjhia (They were listed as ST in Jharkhand and Odisha but not in Chhattisgarh)
- **Karnataka:** Kadu Kuruba community

### What is the process to include tribes in ST list?

- **State Government:** The process begins with the recommendation from the respective State governments.
- **Ministry of Tribal Affairs:** The request is made to the Tribal Affairs Ministry, which reviews and sends them to the Registrar General of India for approval.
- **NCST:** This is followed by the National Commission for Scheduled Tribes' approval before the list is sent to the Cabinet for a final decision.

### Scheduled Tribes in India

#### Important Constitutional Provisions

- Article 366 (25) defined scheduled tribes as "such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution".
  - Article 342, which is reproduced below, prescribes procedure to be followed in the matter of specification of scheduled tribes.
- The tribal population of the country, as per 2011 census, is 10.43 crore, constituting 8.6% of the total population.
  - 89.97% of them live in rural areas and 10.03% in urban areas.
  - The decadal population growth of the tribal's from Census 2001 to 2011 has been 23.66% against the 17.69% of the entire population.
  - Broadly the STs inhabit two distinct geographical area – the Central India and the North-Eastern Area.
    - More than half of the Scheduled Tribe population is concentrated in Central India, i.e., Madhya Pradesh (14.69%), Chhattisgarh (7.5%), Jharkhand (8.29%), Andhra Pradesh (5.7%), Maharashtra (10.08%), Orissa (9.2%), Gujarat (8.55%) and Rajasthan (8.86%).
    - The other distinct area is the North East (Assam, Nagaland, Mizoram, Manipur, Meghalaya, Tripura, Sikkim and Arunachal Pradesh).
  - More than two-third of the ST population is concentrated only in the seven States of the country, viz. Madhya Pradesh, Maharashtra, Orissa, Gujarat, Rajasthan, Jharkhand and Chhattisgarh.

- There is no ST population in 3 States (Delhi NCR, Punjab and Haryana) and 2 UTs (Puducherry and Chandigarh), as no Scheduled Tribe is notified.

## INTERNATIONAL DAY OF DEMOCRACY 2022

© **CONTEXT:** September 15th is celebrated annually across the world as International Day of Democracy.

### International Day of Democracy:

- **The day is observed globally to mark the importance of democracy and create awareness among people About democratic rights.**

Article 19 of the Universal Declaration of Human Rights- 'the right to freedom of expression is a fundamental human right'

- The ideal of democracy can only be realised as a reality to be enjoyed by everyone, everywhere with full participation, cooperation, and support of the international community, civil society, national governing bodies, and individuals.
- **History:** The day was established after a resolution was passed by the United Nations General Assembly in 2007.
- According to the Inter-Parliamentary Union (IPU), the resolution was geared toward strengthening and consolidating democracy.
- The International Day of Democracy was first celebrated in 2008 and since then, numerous parliamentary events have been organised worldwide.
- **Theme:** The theme for International Day of Democracy 2022 is "the importance of media freedom to democracy, peace, and delivering on the Sustainable Development Goals".

### Inter-Parliamentary Union (IPU):

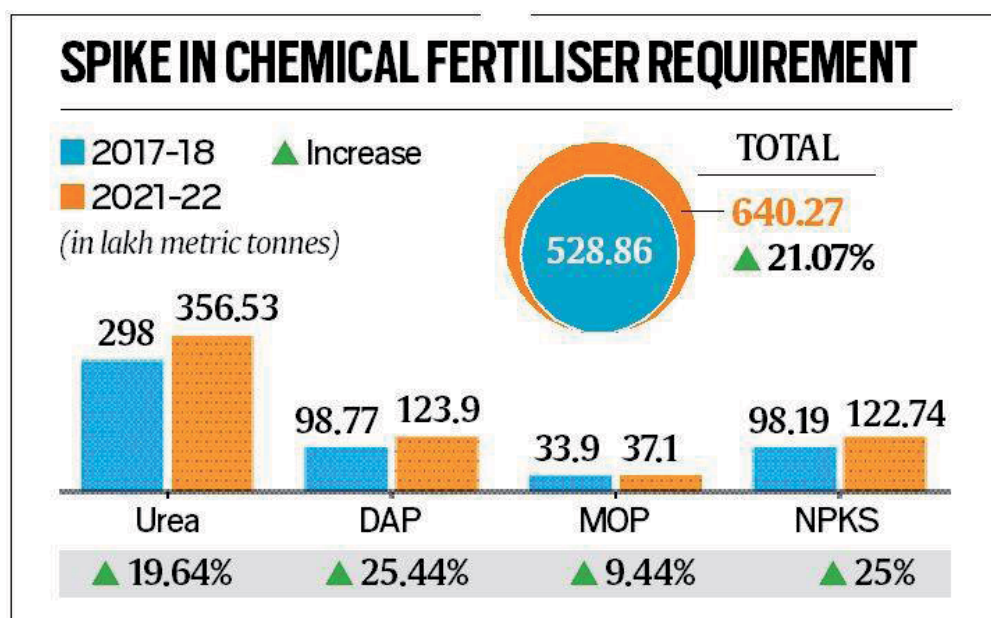
- IPU is **global inter-parliamentary institution**.
- It was established **in 1889** and was the first permanent forum for political multilateral negotiations.
- It is **headquartered in Geneva, Switzerland**.
- Its initial objective was **arbitration of conflicts**.
- It played important **role in setting up Permanent Court of Arbitration in The Hague**.
- Over time, its mission has evolved towards **promotion of democracy and inter-parliamentary dialogue**.
- It has worked for establishment of institutions at inter-governmental level, including UN.
- Initially, IPU was for individual parliamentarians, but has since transformed into international organization of parliaments of sovereign states.
- The national parliaments of **178 countries** are its members and 14 regional parliamentary assemblies are its associate members.
- The **IPU has permanent observer status at UNGA**.
- **Slogan of IPU is "For democracy. For everyone."**

## PM PRANAM

◎ **CONTEXT:** The Union government intends to launch a scheme — named PM PRANAM — to reduce the use of chemical fertilizers by incentivising states.

### What is in the proposed scheme?

- **PM PRANAM** is short for PM Promotion of Alternate Nutrients for Agriculture Management Yojana.
- The scheme aims to:
  - to reduce the use of chemical fertilisers
  - to bring down the subsidy burden on chemical fertilisers, which is estimated to reach Rs 2.25 lakh crore in 2022-23 — 39 per cent higher than last year's figure of Rs 1.62 lakh crore.
- The move is in line with the government's focus on promoting a balanced use of fertilisers or alternative fertilisers in the last few years.



◎ **ABOUT**

### Indian Fertilizer Sector

- Indian soils are generally deficient in **nitrogen, phosphorus, and potassium** and do not give high yields. Hence, the need for fertilizers.
- **Green Revolution (Use of chemical fertilizers was one component)** has made a significant impact on Indian agriculture.
  - Thus, India was able to **achieve self-sufficiency in food production**.
- **Fertilizer Manufacturing Sectors**
  - **Fertilizer Manufacturing Companies (PSUs):** National Fertilizers Limited, Rashtriya Chemicals & Fertilizers Limited, etc
  - **Fertilizer Manufacturing Co-operatives:** IFFCO, KRIBHCO, etc
  - **Position in the World:** 3<sup>rd</sup> in terms of production and 2<sup>nd</sup> in terms of consumption
  - **Decision-Making Body:** Department of Fertilizers, Ministry of Chemicals & Fertilizers, Govt of India

**India is among the world's largest buyers of fertiliser, besides China, Brazil, and the US.**

- India imports four types of fertilisers:
- Urea
- diammonium phosphate (DAP)
- muriate of potash (MOP)
- nitrogen-phosphorous-potassium (NPK)

### Important Government Initiatives and Schemes

- **“One Nation One Fertiliser” scheme:** The scheme would be done by introducing a “Single Brand for Fertilisers and Logo” under the fertiliser subsidy scheme named “Pradhanmantri Bhartiya Janurvarak Pariyojna” (PMBJP).
- The scheme would extend to all four fertilisers – Urea, Di-Ammonium Phosphate, Muriate of Potash and complex NPK – with BHARAT pre-fixed.
- **Neem Coating of Urea:** The Department of Fertilizers (DoF) has made it mandatory for all the domestic producers to produce 100% urea as Neem Coated Urea (NCU).
- **New Urea Policy (NUP) 2015:** Objectives of the policy are-
  - To maximize indigenous urea production.
  - To promote energy efficiency in the urea units.
  - To rationalize the subsidy burden on the Government of India.
- **Policy on Promotion of City Compost:** The Government of India approved a policy on promotion of City Compost, notified by the DoF in 2016 granting Market Development Assistance of Rs. 1500/- for scaling up production and consumption of city compost.
- **Nutrient Based Subsidy (NBS) Scheme:** It has been implemented from April 2010 by the DoF. Under NBS, a fixed amount of subsidy decided on an annual basis, is provided on each grade of subsidized Phosphatic & Potassic (P&K) fertilizers depending on its nutrient content.

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## 26TH MEETING OF THE FINANCIAL STABILITY AND DEVELOPMENT COUNCIL (FSDC).

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© **CONTEXT:** The Union Minister of Finance and Corporate Affairs chaired the 26th Meeting of the Financial Stability and Development Council (FSDC).

### What is Financial Stability and Development Council?

- It is an apex regulatory body constituted by the Government of India.
- FSDC was created after the global financial crisis of 2008 when some similar institutions were created in some other countries.
- FSDC has replaced the High-Level Coordination Committee on Financial Markets, which was facilitating the regulatory coordination functions prior to setting up of FSDC, though it was not a formal body.
- It was constituted on the recommendations of the **Raghuram Rajan Committee on Financial Sector Reforms in 2008**. The FSDC is an autonomous body which deals with the financial regularities in the entire financial sector of India.



### What are the functions of FSDC?

- FSDC is responsible for the financial stability and the development of financial sector in India.
- It is also responsible for Inter-regulatory coordination, financial literacy and financial inclusion within the country.
- No funds are allocated separately to the council for undertaking its activities.

### Who are the members of FSDC?

- The Finance Minister of India is the chairman of Financial Stability and Development Council.

Members from Regulatory Bodies	Members from Government Departments
<ul style="list-style-type: none"> <li>• RBI Governor (RBI Governor is also the head of FSDC Sub-committee).</li> <li>• Chairman of Securities and Exchange Board of India i.e. SEBI.</li> <li>• Chairman of Insurance Regulatory and Development Authority of India i.e. IRDAI.</li> <li>• Chairman of Pension Fund Regulatory and Development Authority i.e. PFRDA.</li> <li>• Chairman of Insolvency and Bankruptcy Board of India i.e. IBBI.</li> </ul>	<ul style="list-style-type: none"> <li>• Finance Secretary or Secretary of Department of Economic Affairs.</li> <li>• Secretary of Department of Financial Services.</li> <li>• Secretary of Ministry of Corporate Affairs.</li> <li>• Chief Economic Advisor, Ministry of Finance.</li> <li>• Secretary of Ministry of Electronics &amp; Information Technology i.e. MeitY.</li> </ul>

## SIGNIFICANT RISE IN TRAFFICKING OF SEA CUCUMBERS

### ◎ CONTEXT:

A new analysis by the Wildlife Conservation Society-India (WCS-India) has shown that Sea cucumbers were the most frequently trafficked marine species in India between 2015 and 2021.

### What are Sea Cucumbers?

- Sea cucumbers are an important constituent of the marine ecosystem as they play an important role in maintaining the health of the ecosystem.
- In India, sea cucumber is treated as an endangered species listed under schedule 1 of Wildlife Protection Act of 1972.

### Smuggling

- It is consumed as food and used in medicine.
- Illegal harvesting and overexploitation of these animals leads to poorer sediment health, reduces nutrient recycling and impacts biodiversity.

### Significance of the species

- **Enhancing life:** By excreting inorganic nitrogen and phosphorus, they enhance the productivity of benthic animals - those living on the ocean floor.



- **Preserving corals:** One of the by-products of the sea cucumber's digestion of sand is calcium carbonate, a key component of coral reef, thus, sea cucumbers play a vital role in their preservation.
- **Cleaning:** They maintain the transparency of seawater by eating sewage. Feeding and excretion by them also increases alkalinity, which counteracts ocean acidification.

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## FUNGAL OUTBREAK THREATENS TRICOLOURED BAT WITH EXTINCTION

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◎ **CONTEXT:** US officials have announced recently to list the tricoloured bat as endangered.

- A fungal disease that attacks while bats are hibernating has brought the tricolored bat to the brink of extinction.

### About the species:

- The tricolored bat, formerly known as the **eastern pipistrelle**, is one of the smallest bats in North America.
- Tricolored bats are a hibernating species and have the **longest hibernation period** of any bat species in their range.
- When not hunkering down for the winter, they may be found in a wide variety of habitats to roost and forage.
- When feeding, these bats can catch insects in the air as often as every 2 seconds and increase their body mass by 25 percent in only half an hour.

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## UNEP LAUNCHES DIGITAL PLATFORM TO ENCOURAGE SUSTAINABLE MARINE TOURISM

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◎ **CONTEXT:** The United Nations Environmental Programme (UNEP), along with UK-based charity Reef-World Foundation, recently launched the Green Fins Hub, a global digital platform they said would give sustainable marine tourism a 'major boost'.

### About Green Fins

- Green Fins is a proven **conservation management approach** which leads to a measurable reduction in the **negative environmental impacts** associated with the marine tourism industry.
- It is spearheaded by **The Reef-World Foundation** in partnership with the UN Environment Programme.
- The initiative aims to protect and conserve coral reefs through environmentally friendly guidelines that promote a sustainable diving and snorkelling tourism industry.
- It provides the **only internationally recognised environmental standards** for the diving and snorkelling industry and has a robust assessment system to measure compliance.

### Green Fins Hub:

- It is a digital platform to help diving and snorkelling operators worldwide to make simple, cost-efficient changes to their daily practices by utilising tried and tested solutions.
- It would also help them keep track of their annual improvements and communicate with their communities and customers.
- Throughout every year of membership, operators will receive environmental scores based on a detailed online self-evaluation and progress made on their action plans.

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## GLOBAL REGISTRY OF FOSSIL FUELS

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### ◎ CONTEXT:

A first-of-its-kind database for tracking the world's fossil fuel production, reserves and emissions launched recently to coincide with climate talks taking place at the United Nations General Assembly in New York.

### ◎ ABOUT

#### About Global Registry of Fossil Fuels:

##### The registry is developed by

- **Carbon Tracker**, a non-profit think tank that researches the energy transition's effect on financial markets, and
  - **Global Energy Monitor**, an organization that tracks a variety of energy projects around the globe.
- The Global Registry of Fossil Fuels is an **open, transparent repository of data on fossil fuel production** worldwide, expressed in terms of its embedded carbon dioxide emissions.

#### Important features of the Registry:

- Aggregates data into a comprehensive **open-source database**, drawing from government and private-sector sources
- Includes both country-level and project level data
- **Integrates reserves, production, and emissions** data with third-party scenarios to provide essential data for policymakers and others to make 1.5°C aligned production decisions;
- Includes **life-cycle emissions from fossil fuel** projects for both carbon dioxide and methane
- Contains **data for over 50,000 fields in 89 countries** representing projects covering **75% of global production**.

- Ranks countries based on **absolute emissions and emissions intensities**
- Establishes an evolving database to serve as a **trusted, policy-neutral tool to manage carbon budgets**.

### The earlier system

- Until now there has been **private data available for purchase, and analysis** of the world's fossil fuel usage and reserves.
- The **International Energy Agency** also maintains public data on oil, gas and coal, but it **focuses on the demand for those fossil fuels**, whereas this **new database looks at what is yet to be burned**.

### Carbon budget:

- Carbon budget refers to the remaining carbon the world can afford to emit before the 1.5°C temperature goal of the Paris Agreement is missed.
- According to the estimates of the United Nations, the Earth's remaining carbon budget is around 360 billion tonnes of CO<sub>2</sub> equivalent or nine years at the current emission levels.

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## ISRO'S NEW HYBRID PROPULSION SYSTEM

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### ◎ CONTEXT:

The Indian Space Research Organisation (ISRO) has successfully tested a hybrid motor, ISRO at Propulsion Complex (IPRC), Tamil Nadu.

### About the tested hybrid motor:

- The motor used **Hydroxyl-terminated polybutadiene (HTPB) as fuel** and **liquid oxygen (LOX) as the oxidiser**.
- While both HTPB and LOX are green, **LOX is safer to handle**.
- The hybrid motor demonstrated **ignition and sustained combustion** for the intended duration of 15 seconds.

### Features of the motor:

- The 30 kN hybrid motor is **scalable and stackable**.
- The use of liquids helps **throttling and the control over the flow rate of LOX** enables the re-start capability.
- Unlike solid-solid or liquid-liquid combinations, a **hybrid motor uses solid fuel and liquid oxidiser**.

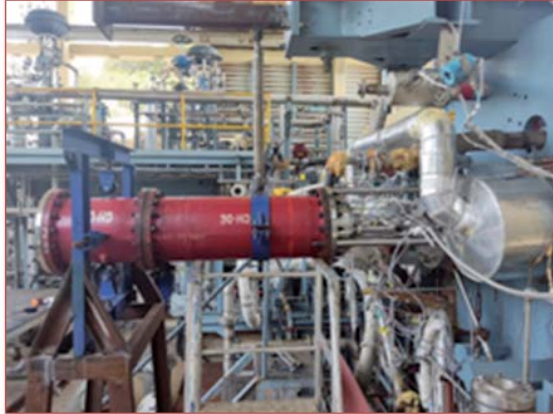
### ISRO Propulsion Complex (IPRC)

- **ISRO Propulsion Complex (IPRC)** formerly Liquid Propulsion Systems Centre, Mahendragiri (LPSC-M), is located near Kanyakumari at Mahendragiri Hills, Tamil Nadu.
- It is the major **testing hub of ISRO's liquid propulsion systems**.
- The role of IPRC is to carry out research for the development of liquid propulsion systems both for Satellites and Satellite Launch Vehicles.
- It is responsible for the **development, qualification and acceptance testing of sub-systems** and systems for launch vehicles and spacecraft projects.

## 30 kN Hybrid Motor Successfully Tested at IPRC on 20/09/2022

- Ignition and sustained combustion achieved in the flight equivalent hybrid motor for 15 s.

30 kN hybrid motor in test bed



Fuel	HTPB + 20%Al
Oxidizer	Liquid oxygen
Oxidizer flow rate	8.3 kg/s

Hot Test



Chamber Pressure	2.5 MPa
Action time	15 s
Thrust	30 kN

### Advantages

- Safe propulsion system
- Restartable
- Throttleble
- Green propulsion

## IISC SCIENTISTS DEVELOP GOLD-COATED VESICLES TO FIGHT TUBERCULOSIS

### ◎ CONTEXT:

A team of scientists from the Indian Institute of Science (IISc) has developed a new method to deliver a vaccine candidate for Tuberculosis (TB).

### The new method

- This new method involves using spherical vesicles secreted by bacteria coated on gold nanoparticles which can then be delivered to immune cells.
- This method is claimed to potentially trigger an immune response and offer protection against the disease.

### Outer Membrane Vesicles (OMVs)

- Scientists have earlier developed **subunit vaccines** based on just a handful of proteins from the disease-causing bacteria, but none of them have been effective so far. Instead, the new group decided to use **Outer Membrane Vesicles (OMVs)**.
- OMVs are spherical membrane-bound particles released by some bacteria, and contain an assortment of proteins and lipids which could induce an immune response against the pathogen.
- Mycobacterium-derived OMVs are usually unstable and come in different sizes, making them unsuitable for vaccine applications.

- But the OMVs coated on gold nanoparticles (OMV-AuNPs) by the IISc team were found to be uniform in size and stable.
- The researchers also found that human immune cells showed a higher uptake of OMV-AuNPs than of OMVs or gold nanoparticles alone.
- To synthesise OMV-AuNPs, the OMVs and the gold nanoparticles are forced together through a 100 nm filter.
- The OMVs break up in the process and encapsulate the gold nanoparticles.

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## ATOMIC CLOCKS

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### ◎ CONTEXT:

**Given the technological advances of the present, we need clocks that will keep time to a very high accuracy. The answer to this requirement is the 'atomic clock'.**

#### Atomic Clock:

- An atomic clock is a clock that uses the resonance frequencies of atoms as its resonator.
- A clock is simply an apparatus that counts a repetitive event, e.g. in a mechanical clock, a pendulum might swing once every second and by counting the number of swings, one knows how many seconds have passed.
- Atomic clocks use atoms, more precisely the electronic transition from one state to another as their 'pendulum'.
- They take advantage of the fact that all atoms of a particular element (e.g. Caesium and Rubidium) have the same electron configuration.
- In 1945, Columbia University physics professor Isidor Rabi suggested that a clock could be made from a technique he developed in the 1930s called atomic beam magnetic resonance.
- By 1949, the National Bureau of Standards (now the National Institute of Standards and Technology) announced the world's first atomic clock using the ammonia molecule as the source of vibrations.
- By 1952 it announced the first atomic clock using cesium atoms as the vibration source, NBS-1.
- With an error of only 1 second in up to 100 million years, atomic clocks are among the most accurate timekeeping devices in history.

#### Types of Atomic Clocks:

##### ■ The various types of atomic clocks include:

- Cesium atomic clocks employ a beam of cesium atoms. The clock separates cesium atoms of different energy levels by magnetic field.
- Hydrogen atomic clocks maintain hydrogen atoms at the required energy level in a container with walls of a special material so that the atoms don't lose their higher energy state too quickly.
- Rubidium atomic clocks, the simplest and most compact of all, use a glass cell of rubidium gas that changes its absorption of light at the optical rubidium frequency when the surrounding microwave frequency is just right.

#### Why Do We Need Atomic Clocks?

- Some 400 atomic clocks around the world contribute to the calculation of International Atomic Time (TAI), one of the time standards used to determine Coordinated Universal Time (UTC) and local times around the world.

- Satellite navigation systems like GPS, GLONASS, and Galileo also rely on precise time measurements to calculate positions accurately.

**Important terms**

- Cesium 133 - An isotope of cesium used especially in atomic clocks and one of whose atomic transitions is used as a scientific time standard
- SI Second (atomic second) - The interval of time taken to complete 9,192,631,770 oscillations of the cesium 133 atom exposed to a suitable excitation

## SCIENTISTS CREATE WORLD’S FIRST CLONED WILD ARCTIC WOLF ‘MAYA’

© **CONTEXT:**

A wild Arctic wolf was successfully cloned for the first time in the world by a Beijing-based gene firm.

**About the first cloned wolf**

- Cloned Arctic wolf is the first case of its kind in the world. It is named ‘Maya’.
- The donor cell of the wolf came from the skin sample of a wild female Arctic wolf and its oocyte was taken from a female dog.
- Maya’s surrogate mother was a beagle, a dog breed.
- The dog was selected as the surrogate as it shares genetic ancestry with ancient wolves and hence, ensures success in cloning.

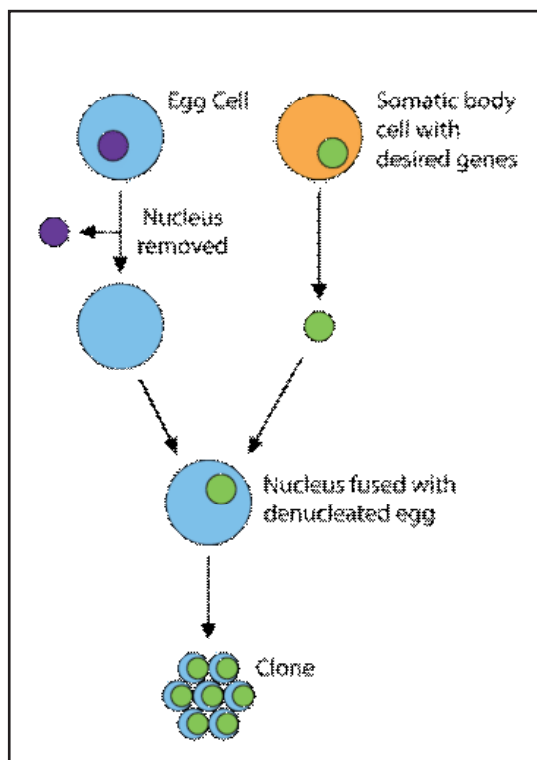
In 1996, Scottish scientists cloned the first animal, a sheep they named Dolly. She was cloned using an udder cell taken from an adult sheep.

**What is Cloning?**

- The term cloning describes a number of different processes that can be used to produce genetically identical copies of a biological entity.
- The copied material, which has the same genetic makeup as the original, is referred to as a clone.

**Artificial Cloning**

- There are three **different types of artificial cloning**: gene cloning, reproductive cloning and therapeutic cloning.
- **Gene cloning** produces copies of genes or segments of DNA.
- **Reproductive cloning** produces copies of whole animals
- **Therapeutic cloning** produces embryonic stem cells for experiments aimed at creating tissues to replace injured or diseased tissues.



- **Natural clones**, also known as identical twins, occur in humans and other mammals.
  - These twins are produced when a fertilized egg splits, creating two or more embryos that carry almost identical DNA.
  - Identical twins have nearly the same genetic makeup as each other, but they are genetically different from either parent.

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**Section: D**  
**(QUICK BYTES)**

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**CURRENT AFFAIRS**

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## VARANASI NOMINATED AS SCO TOURISM AND CULTURAL CAPITAL

### ◎ CONTEXT:

Varanasi has been nominated as the first-ever SCO Tourism and Cultural Capital during the recent meeting of Shanghai Cooperation Organization (SCO) Council of Heads of State in Samarkand, Uzbekistan.

**Varanasi – India’s ancient city:**

*“Banaras is older than history, older than tradition, older even than legend and looks twice as old as all of them put together.” – Mark Twain*



- Varanasi, also popularly known as **Banaras or Kashi** is **one of the oldest living cities** in the world.
- It is known as the **land of Lord Shiva**, and is an important pilgrimage spot on the tourism map of the country.
- Associated with **spiritualism, mysticism, Sanskrit, and Yoga**, Varanasi is also a **center of learning**.
- Varanasi is also called the **cultural capital of India**.
- Moreover, **Gautam Buddha preached his first sermon after enlightenment, just 10 km away from Varanasi in the village of Sarnath**.
- Dasaswamedh Ghat, Ganga aarti, Dhamek Stupa, Banaras Hindu University, Kashi Vishwanath Temple, Durga Temple, Ramnagar Fort among several others, make an important part of Varanasi’s culture.

### The title

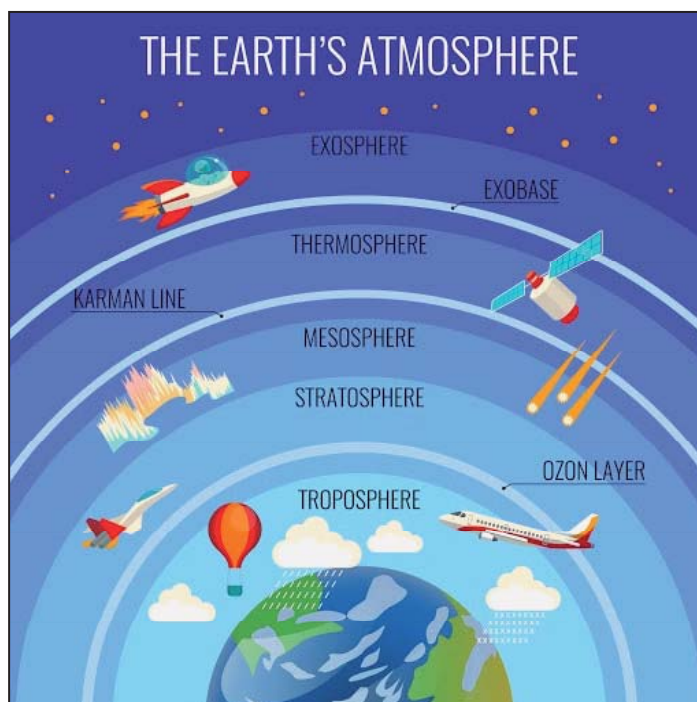
- **Every year, a city having cultural heritage from the member country that takes over the rotating Presidency of the organization will be bestowed with the title.**
- The title will help in **promoting the cultural values of the city** and add to values-economic, social, and more.
- India will chair SCO from September 2022 to September 2023.

## INDIA'S PRESIDENCY EXTENDED AT AIBD

© **CONTEXT:** India's presidency of the Asia-Pacific Institute for Broadcasting Development was unanimously extended for another year by AIBD member countries at the two-day general conference of the institute.

### Asia-Pacific Institute for Broadcasting Development (AIBD):

- AIBD was established in 1977 under the auspices of the United Nations Educational, Scientific and Cultural Organisation (UNESCO).
- It is a unique regional inter-governmental organisation servicing countries of the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) in the field of electronic media development.
- It is hosted by the Government of Malaysia and the secretariat is located in Kuala Lumpur.
- The AIBD is mandated to achieve a vibrant and cohesive electronic media environment in the Asia-Pacific region through policy and resource development.
- Founding Organisations: The International Telecommunication Union (ITU), the United Nations Development Programme (UNDP), and the United Nations Educational, Scientific and Cultural Organisation (UNESCO) are the founding organisations of the Institute and they are non-voting members of the General Conference.
- Members: The AIBD currently has 26 Full Members (countries), represented by 43 organisations, and 50 Affiliate Members (organisations) with a total membership of 93 representing 46 countries and regions.



## WORLD OZONE DAY

© **CONTEXT:** September 16 of each year is observed as World Ozone Day, also known as the International Day for the Preservation of the Ozone Layer.

## World Ozone Day

- World Ozone Day is celebrated to draw attention to one of the biggest threats that humanity faces, the depletion of the ozone layer, and the dangers of ozone depletion.
- This **2022 marks the 35th year of implementation of the Montreal Protocol**, UN is observing the Ozone Day with the theme "**Montreal Protocol@35**" and the worldwide collaboration safeguarding life on earth is the topic for this year's World Ozone Day.

### Ozone layer

- Ozone layer is a fragile shield of gas which protects the Earth by absorbing harmful ultraviolet (UV) radiation of Sun and thus helps preserve life on the planet.
- Stratospheric ozone is not harmful, but its presence in troposphere is harmful.
- Substances like Chlorofluorocarbons, Halons, Carbon-tetrachloride are considered as Ozone Depleting Substances (ODSs)
- **Dobson unit** is a unit which is used to measure the ozone in the atmosphere at a standard temperature and pressure.

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## SOVA VIRUS

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### © CONTEXT:

The new mobile banking 'Trojan' virus -- SOVA -- which can stealthily encrypt an Android phone for ransom and is hard to uninstall is targeting Indian customers.

### What can it do?

- SOVA can add false overlays to a range of apps and "mimic" over 200 banking and payment applications in order to con the Android user.
- The latest version of this malware hides itself within fake Android applications that show up with the logo of a few famous legitimate apps like Chrome, Amazon, NFT (non-fungible token linked to crypto currency) platform to deceive users into installing them.
- The malware is distributed via smishing (phishing via SMS) attacks, like most Android banking Trojans.



### India's regulatory authority: CERT-In

- The **Indian Computer Emergency Response Team or CERT-In** is a nodal agency of the Indian Government involved in addressing cyber security threats like hacking and phishing. It comes under the aegis of the Ministry of Electronics and Information Technology.

**Section: E**  
**(MISCELLANEOUS)**

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**CURRENT AFFAIRS**

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## THE INTERNATIONAL DAY OF PEACE

© **CONTEXT:** The International Day of Peace is observed globally on September 21.

© **ABOUT**

- The International Day of Peace was **established in 1981** by the United Nations General Assembly.
- Two decades later, in 2001, the General Assembly unanimously voted to designate the Day as a **period of non-violence and cease-fire**.
- The UN General Assembly has declared this as a day devoted to strengthening the ideals of peace, through observing 24 hours of non-violence and cease-fire.
- The United Nations invites all nations and people to honour a cessation of hostilities during the Day, and to otherwise **commemorate the Day through education and public awareness on issues related to peace**.
- **2022 Peace Day Theme:** End Racism. Build Peace.

### Symbol of international peace day

- The Peace Bell was donated by the United Nations Association of Japan in 1954. It has become tradition to ring the bell twice a year: on the first day of spring, at the Vernal Equinox, and on 21 September to celebrate the International Day for Peace.



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