

ENVIRONMENT

- ❖ **Saving the vultures of Tamil Nadu**
- ❖ **CONTEXT:** Recently the Tamil Nadu government formed a committee to set up an institutional framework for the effective conservation of vultures. The State is home to four species of vultures — the white-rumped vulture (*Gyps bengalensis*), long-billed vultures (*Gyps indicus*), the Asian king-vulture (*Sarcogyps calvus*) and the Egyptian vulture (*Neophron percnopterus*).
- ❖ **Which areas in Tamil Nadu have vulture populations?**
 - While there have been reported sightings of vultures in other districts including Dharmapuri; essentially the Nilgiris, Erode and Coimbatore districts are believed to form one of the largest contiguous expanses where vultures are spotted.
 - Home to the nesting sites of three of the four species of vultures seen in the State, the Mudumalai Tiger Reserve, parts of the Nilgiris forest division and the Sathyamangalam Tiger Reserve are crucial strongholds for the vultures in southern India.
 - Occasional migrants such as the Himalayan griffon vulture and the Cinerous vulture are also spotted each year. Tamil Nadu boasts the largest population of vultures south of the Vindhyia Mountain Range.
 - In the Nilgiris, there are between 100 and 120 white-rumped vultures, 10 and 15 long-billed vultures and less than 10 Asian king vultures.
 - Though Egyptian vultures are spotted in the Sigur plateau, encompassing the Nilgiris and Erode districts, they are not believed to use the landscape to breed, while researchers still remain unsuccessful in tracing the breeding sites of the critically endangered Asian king-vulture.
- ❖ **Are vulture numbers decreasing?**
 - While the population of the vultures in the Nilgiris, Erode and Coimbatore districts has remained largely stable, experts state that the numbers are still extremely low, and that even a single poisoning event could lead to several of the species going locally extinct, especially the long-billed and Asian king vulture. Over the last few years, breeding seasons have also seen fewer hatchings than is the norm, with experts attributing the cause to lesser availability of prey as well as erratic weather.
 - The use of some Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) to treat cattle, such as diclofenac, nimesulide, ketoprofen among others, has led to the crash in vulture populations across India.
- ❖ **What role do vultures play in the local ecosystem?**
 - As scavengers, vultures help prevent the spread of many diseases and can remove toxins from entering the environment by consuming carcasses of dead cattle/wildlife before they decompose. Unfortunately, their tolerance for harmful substances does not extend to man-made drugs.
- ❖ **What are the challenges which impact vultures in the State?**
 - There are multiple. For one, temple tourism in the Sigur plateau is centred primarily around vulture habitats, such as Siriyur, Anaikatty and Bokkapuram. Over the last few years, there have been recorded instances of vultures abandoning nesting sites located too close to temples inside these reserves, with activists calling for strict controls on the amount of people allowed to attend these festivals.
 - Another threat is the spread of invasive weeds such as the Lantana camara in vulture-landscapes, which hinder the birds from scavenging as their large wing-spans require plenty of open area to safely land and to take to the skies in case of any major threats.
 - Due to the illegal tapping of water along the streams running through these areas, possible climate change, and forest fires, the Terminalia arjuna trees, that many vultures use as nesting sites are disappearing. Only through a multipronged approach of increasing the amount of food available to the birds and managing invasive species can vulture numbers start rebounding.
- ❖ **What are the steps taken to protect vultures in the State?**
 - The State government has banned the use of diclofenac, a drug, to treat cattle, while there are strict restrictions for the sale of other NSAIDs in the Nilgiris, Erode and Coimbatore districts.
 - Additionally, as the vultures in the Sigur plateau utilise landscapes in neighboring Karnataka and Kerala, experts have called for a synchronous vulture census to accurately identify vulture populations and nesting sites.

IMPORTANT INTERNATIONAL AFFAIRS

- ❖ **How is the energy crisis in Europe shaping up?**
- ❖ **CONTEXT:** As winter approaches, Europe faces an energy problem. The numerous leaks — apparently caused by explosions — to the Nord Stream 1, which is an energy pipeline connecting Russia to Germany, has driven supplies to a halt. Amid anxieties about building up energy reserves, the gas field in Groningen in the Netherlands has once again come under the spotlight.
- ❖ **Why is this gas field relevant?**

- The region of Groningen in the Netherlands has a gas field that began operations in 1963. During the 1980s, the area saw numerous earthquakes — minor enough to avoid large damage but big enough for local buildings to develop cracks. Following these quakes, the Dutch government had earlier said that it would shutter the field in response to local protests. The closure date was also advanced to 2022 from 2030.
- However, due to recent geopolitical tensions, the Dutch government wants to keep options open. In June the Dutch Cabinet expressed that it would like to be in a position to close down the Groningen gas field in 2023, as this is the only way to restore safety in Groningen and to reassure residents in the long run. However, the uncertain geopolitical developments have prompted to refrain from permanently closing down any wells in 2022.
- According to a report, if allowed, the additional supply from the field could go up to a level that would make up for what Germany imported in 2021 from Russia. The field still had potential for about 450 billion cubic metres (bcm) of gas to be extracted.
- ❖ **Can oil or gas exploration cause earthquakes?**
- Experts agree that man-made or induced earthquakes can be pretty damaging.
- Examples of human activity that could lead to 'induced seismicity' are damming of rivers to create reservoirs, oil or gas extraction, and mining.
- Fluid extraction from hydrocarbon reservoirs (rocks that hold hydrocarbons which are oil and gas) causes an increase in net effective stresses, which, when supported by the geomechanics of the rock, may lead to development of new faults and fractures.
- In the case of Groningen, the ground subsiding has been caused by extraction alone over several years. Such extraction causes rocks to contract — as the pores get to hold less and less hydrocarbons over time.
- ❖ **Should India be concerned about gas in the Netherlands?**
- India's domestic gas price is determined from the average of four global indices viz U.S.'s Henry Hub, the U.K.'s National Balancing point, Canada's Alberta and Russian gas.
- Compared with pre-pandemic times, the average domestic price of gas has more than doubled from \$5.08/MMBTU to \$11.62 and according to CARE Edge, estimates that this is bound to rise again when the six-monthly reset takes place for April-September 2023.
- India consumed about 63.9 bcm in FY22, about 3.1 bcm more than in the previous year. Imports alone accounted for close to 50% of consumption, at about 30 bcm.
- Global production is estimated to decline from 4,109 bcm in calendar 2021 to 4,089 bcm in 2022. The situation would become challenging for the government unless the formula for determining domestic gas price is reviewed.
- Till then, the government has to bear the higher subsidy burden on fertilizer — in the manufacture of which natural gas is used — as well as for the LPG sector.

PRELIMS

1. **Rustom-2 UAV**

- ❖ **Context: The indigenous medium altitude long endurance (MALE) unmanned aerial vehicle (UAV) Rustom-2 is expected to complete all user trials by August 2023.**
- It is developed by Defence Research and Development Organisation.
- Rustom 2 is part of the Rustom line of Unmanned Aerial Vehicles (UAVs) that includes Rustom-I, Rustom-H and Rustom-C.
- The drone was developed for use by all three services of the Indian armed forces, primarily for intelligence, surveillance and reconnaissance (ISR) operations.
- The medium-altitude prototype can fly at over 22,000 ft and is a long-endurance (MALE) UAV that has an approximate flight time of 20 hours.
- The drone has been modelled on the Rustom-H UCAV with a light airframe.
- The Rustom 2 is propelled by two 3-bladed NPO saturn engines.
- The UAV's tail section comes with a T-type vertical stabiliser and a high-mounted horizontal tailplane.
- It can fly at around 280 km/h and carry a variety of payloads like:
 - Medium Range Electro Optic (MREO),
 - Long Range Electro Optic (LREO),
 - Synthetic Aperture Radar (SAR),
 - Electronic Intelligence (ELINT),
 - Communication Intelligence (COMINT) and
 - Situational Awareness Payloads (SAP).
- MREO and LREO sensors are placed inside a modular payload under the nose for capturing imagery and video.

- The drone's data link transmits the ISR data to the armed forces' ground control station in real time allowing prompt action.
- Rustom 2 can fly missions on manual as well as autonomous modes.

2. October storm in Bay of Bengal

❖ **CONTEXT: The first tropical cyclone of the post-monsoon season of 2022 is likely to form in the Bay of Bengal on October 24 2022. If realised, this will be the first cyclone to develop in the Bay of Bengal in October since 2018, and will be called Sitrang, as named by Thailand. The last October cyclone in the Bay of Bengal was Titli in 2018.**

❖ **Why storms in October**

- The months of October–November and May–June see storms of severe intensity develop in the North Indian Ocean — comprising the Bay of Bengal and the Arabian Sea — with an average of five developing in a calendar year.
- In the past 131 years, October saw 61 storms develop in the Bay of Bengal, according to the Regional Specialised Meteorological Centre (RSMC). The east coast, notably Odisha, has faced many of its severest storms in October, including the Super Cyclone of 1999.
- After the withdrawal of the Southwest monsoon, there is a rise in ocean heating, which leads to rise in sea surface temperature over the Bay of Bengal. The atmospheric moisture availability over the ocean region, too, is higher. So, when remnant systems from the South China Sea reach the Bay of Bengal, they get conducive conditions, aiding the formation and intensification of cyclones in October.
- In some years, ocean-atmospheric factors hinder this phenomenon. For instance, in 2020, weak La Nina conditions along the equatorial Pacific Ocean prevented a cyclonic formation near India's coasts.

❖ **Cyclone Sitrang**

- The name Sitrang (read Si-trang) has been given by Thailand, and features in the list of tropical cyclone names prepared by the RSMC being followed since April 2020.
- The IMD is one of the world's six RSMCs mandated to provide cyclone advisories and alerts to 13 member countries — Bangladesh, India, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, United Arab Emirates and Yemen.

❖ **Which states are likely to be affected?**

- The IMD is yet to release the probable cyclone track, but as per the latest updates, the prevailing low pressure system will strengthen and move towards India's east coast in the coming four days. Gale winds and enhanced rainfall are expected mainly over Andaman and Nicobar islands, Odisha, West Bengal and Bangladesh, particularly the coastal districts.

❖ **Cyclones in the Arabian Sea**

- In comparison with the Bay of Bengal, only 32 storms have developed in the Arabian Sea in October since 1891. Climatologically too, the IMD states that of the five storms formed in the North Indian Ocean in a calendar year, four are in the Bay of Bengal and one in Arabian Sea.

3. Mission LiFE

❖ **CONTEXT: Prime Minister Narendra Modi launched Mission LiFE (Lifestyle for Environment), in the presence of the UN Secretary General António Guterres, at the Statue of Unity, Ekta Nagar, Gujarat.**

- The mantra of Mission Life is 'Lifestyle for Environment'. The concept of LiFE was introduced by the Prime Minister at COP26 at Glasgow on 1 November 2021.
- On World Environment Day, India furthered the vision of LiFE by launching the LiFE Global Movement, inviting academicians, researchers and start-ups across the world to think about specific and scientific ways in which the full potential of collective action can be harnessed to address the environment crisis.
- Mission LiFE will action the ideas and ideals of LiFE through a mission-mode, scientific and measurable programme and demonstrate India's commitment to walk the talk on climate change.
- Mission LiFE is designed with the objective to mobilise at least one billion Indians and other global citizens to take individual and collective action for protecting and preserving the environment in the period 2022 to 2027.
- Within India, at least 80% of all villages and urban local bodies are aimed to become environment-friendly by 2028.
- Mission LiFE believes that the environment can be protected by making changes in our lifestyle.

4. Forest (Conservation) Rules, 2022

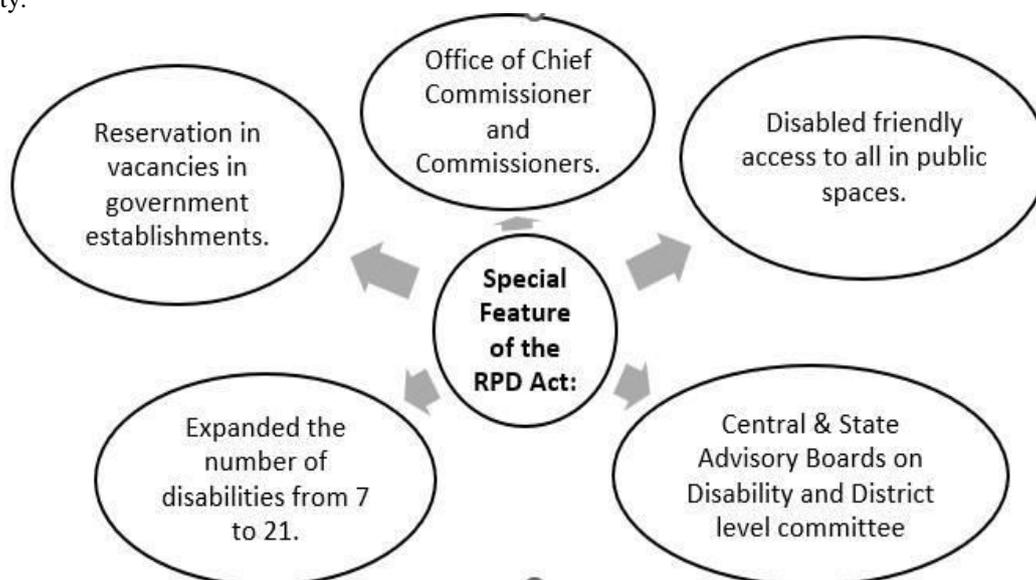
❖ **CONTEXT: Forest Conservation Rules infringe upon land rights of tribes people said NCST chief**

- Harsh Chouhan, Chairperson of the National Commission for Scheduled Tribes (NCST) stated that It is the duty of the commission to “caution the government” when its policies have the potential to affect the well-being and rights of tribal people.
- Soon after the rules were issued, the NCST formed a six-member working group that included members of the commission and experts to look into whether the rules issued in June violated any provisions in the Forest Rights Act (FRA) and if they infringed upon the rights of tribal people.
- Based on the conclusion of this working group and repeated dialogue with villagers in forest areas and other stakeholders, the commission decided to recommend that the new rules be put on hold.
- It is conferred by Section 4 of the Forest (Conservation) Act, 1980 and in supersession of the Forest (Conservation) Rules, 2003.
- ❖ Provisions of Forest (Conservation) Rules,2022
- Formation of Committees: It constituted an Advisory Committee, a regional empowered committee at each of the integrated regional offices and a screening committee at State/Union Territory (UT) government-level.
- Advisory Committee: The role of the Advisory Committee is restricted to advise or recommend with regards to grant of approval under relevant sections in respect of proposals referred to it and any matter connected with the conservation of forests referred to it by the Central government.
- Project Screening Committee: The MoEFCC has directed the constitution of a project screening committee in each state/UT for an initial review of proposals involving diversion of forest land.
 - The five-member committee will meet at least twice every month and will advise the state governments on projects in a time bound manner.
 - All non-mining projects between 5-40 hectares must be reviewed within a period of 60 days and all such mining projects must be reviewed within 75 days.
 - For projects involving a larger area, the committee gets some more time — 120 days for non-mining projects involving more than 100 hectares and 150 days for mining projects.
- Regional Empowered Committees: All linear projects (roads, highways, etc), projects involving forest land up to 40 hectares and those that have projected a use of forest land having a canopy density up to 0.7 — irrespective of their extent for the purpose of survey — shall be examined in the Integrated Regional Office.
- Compensatory Afforestation: The applicants for diverting forest land in a hilly or mountainous state with green cover covering more than two-thirds of its geographical area, or in a state/UT with forest cover covering more than one-third of its geographical area, will be able to take up compensatory afforestation in other states/UTs where the cover is less than 20%.

ANSWER WRITING

Q. The Rights of Persons with Disabilities Act, 2016 remains only a legal document without intense sensitisation of government functionaries and citizens regarding disability. Comment.

The Right to Persons with Disability Act came into force on 19th April 2017 to give an effect to the United Nations Conventions on Rights with Persons with Disability. With this the focus on disabilities has been shifted from the individual to society, i.e., from a medical model of disability to a social or human rights model of disability.



Challenges Associated with RPD Act, 2016

- Lax Implementation: Most buildings in India are not disability-friendly, despite the Accessible India Campaign. quota of reservation but the majority of these posts are vacant.
- Health, Education and Employment: Lack of awareness, care, and accessible medical facilities. Lack of availability of special schools and lower employment rates than others.
- Discrimination and Problem of Dual Burden: Stigma attached, compounded by a lack of understanding of their rights, makes it difficult for them to attain their valued 'functioning'.
- Political Participation: Lack of live aggregate data, Inaccessibility of the voting process, Barriers to participation in Party Politics.

Need for Sensitisation

- To lessen institutional hindrances and upheld the judicial pronouncements.
- To process schemes and initiatives launched by the governments, thoroughly and speedily.
- People should treat disabled with empathy and institution focus on providing livelihood.
- Respect for inherent dignity, individual autonomy and freedom to make one's own choices.
- To ensure Non-discrimination, Accessibility and Equality of opportunity
- Respect for difference and acceptance of persons with disabilities as part of humanity

Way forward

- Community-Based Rehabilitation (CBR) Approach and societal awareness.
- Increasing Public Awareness and Understanding of Disability to change attitude.
- Collaboration with States and proper scrutiny and tracking of allocated funds.

While the government and the judiciary have adopted a right based approach with respect to disabled people, the implementation of the Act would require regular monitoring to ensure that the provisions of the Act are implemented in their letter and spirit.

MCQs

1. "Groningen Gas Field" frequently mentioned in news recently is located in which country?
 - a) Switzerland
 - b) Ireland
 - c) **Netherland**
 - d) Germany
2. Consider the following statements
 1. Bangladesh has become the first country in the world to ban the drug ketoprofen, veterinary drug known to be fatal to vultures when consumed.
 2. Tamil Nadu became the first state in India to ban the veterinary use of ketoprofen in Nilgiri, Erode and Coimbatore districts.
 3. The first-ever fully 'vulture safe zone' (VSZ) was declared in Nepal.
 4. India does not have any 'Vulture Safe Zone'.

Which of the above statement/s is/are not correct?

 - a) 1 and 2 only
 - b) 2,3 and 4 only
 - c) 3 only
 - d) **4 only**
3. The 'honesty shops' opened as a part of the Student Police Cadet (SPC) project, the project is related to which of the following state?
 - a) Karnataka
 - b) **Kerala**
 - c) Tamil Nadu
 - d) Andhra Pradesh
4. With reference to Rustom 2 consider the following
 1. It is an indigenous Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV)
 2. It has been designed and developed by the Aeronautical Development Establishment (ADE)

Choose the correct statement using the codes given below

 - a) 1 only
 - b) 2 only
 - c) **Both 1 and 2**
 - d) Neither 1 nor 2
5. With reference to mission LiFE consider the following statements
 1. The Prime Minister elaborated that Mission LiFE emboldens the spirit of the P3 model, i.e. Pro Planet People.
 2. It functions on the basic principles of 'Lifestyle of the planet, for the planet and by the planet'.

Which of the above statement/s is /are not correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2**

6. Consider the following statements with respect to naming of Tropical Cyclones

1. Regional Specialized Meteorological Centre (RSMC), New Delhi is responsible to name tropical cyclones forming over the North Indian Ocean including Bay of Bengal & the Arabian Sea following a standard procedure.
2. The names of the tropical cyclones over the north Indian Ocean, once used, will cease to be used again.

Which of the statement/s given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2**
- d) Neither 1 nor 2

7. Consider the following statements:

1. As per recent amendment to the Indian Forest Act, 1927, forest dwellers have the right to fell the bamboos grown on forest areas.
2. As per the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, bamboo is a minor forest produce.
3. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 allows ownership of minor forest produce to forest dwellers.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only**
- c) 3 only
- d) 1, 2 and 3

8. The Interpol launched the first-ever metaverse specifically designed for law enforcement agencies worldwide during its 90th General Assembly in Delhi. With reference to Metaverse consider the following statements

1. Author Neal Stephenson coined the term "metaverse" in his novel "Snow Crash".
2. The metaverse combines aspects of virtual reality (VR) and augmented reality (AR) only

Which of the above statement/s is /are correct?

- a) 1 only**
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

9. The Indian Space Research Organisation, along with the Ministry of Science and Technology (MoST), is set to organise a two-day conference on 'ancient science' in Dehradun , what is the theme of this conference?

- a) Akash Tatva (the element Akash)**
- b) Vayu Tatva (the element Vayu)
- c) Jal Tatva (the element Jal)
- d) Antariksh Tatva (the element Antatiksh)

10. Which of the following committee or commissions are related to Schedule cast or schedule tribes?

- a) K.G. Balakrishnan
- b) Lokur Committee
- c) Bhuria Commission
- d) All of the above**