

**GOVERNANCE**

**Reserved Forest**

Recently, the Delhi government has notified forest land in two villages in South Delhi as 'reserved forest', which will give them legal status. It was notified under Section 20 (declaration of reserved forest) of Indian Forest Act, 1927.

**What are the Different Types of Forests?**

- **Reserved Forests:** Reserve forests are the most restricted forests and are constituted by the State Government on any forest land or wasteland which is the property of the Government. In reserved forests, local people are prohibited, unless specifically allowed by a Forest Officer in the course of the settlement.
- **Protected Forests:** The State Government is empowered to constitute any land other than reserved forests as protected forests over which the Government has proprietary rights and the power to issue rules regarding the use of such forests. This power has been used to establish State control over trees, whose timber, fruit or other non-wood products have revenue-raising potential.
- **Village forest:** Village forests are the one in which the State Government may assign to 'any village community the rights of Government to or over any land which has been constituted a reserved forest'.

**How are Forests Categorised Based on Rainfall in India?**

**Tropical Evergreen and Semi Evergreen Forests:**

- These forests are found in the western slope of the Western Ghats, hills of the northeastern region and the Andaman and Nicobar Islands.
- They are found in warm and humid areas with an annual precipitation of over 200 cm and mean annual temperature above 22°C.
- Tropical evergreen forests are well stratified, with layers closer to the ground and are covered with shrubs and creepers, with short structured trees followed by a tall variety of trees.
- In these forests, trees reach great heights up to 60 m or above. There is no definite time for trees to shed their leaves, flowering and fruition. As such these forests appear green all the year round.
- The semi evergreen forests are found in the less rainy parts of these regions. Such forests have a mixture of evergreen and moist deciduous trees. The undergrowing climbers provide an evergreen character to these forests.

**Tropical Deciduous Forests:**

- These are the most widespread forests in India. They are also called the monsoon forests. They spread over regions which receive rainfall between 70-200 cm. On the basis of the availability of water, these forests are further divided into moist and dry deciduous.

**Montane Forests:**

- In mountainous areas, the decrease in temperature with increasing altitude leads to a corresponding change in natural vegetation.
- Mountain forests can be classified into two types, the northern mountain forests and the southern mountain forests.

**Tropical Thorn forests:**

- Tropical thorn forests occur in the areas which receive rainfall less than 50 cm. These consist of a variety of grasses and shrubs. It includes semi-arid areas of south west Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh and Uttar Pradesh.
- In these forests, plants remain leafless for most part of the year and give an expression of scrub vegetation.

**Swamp Forests:**

- They are found along the Andaman and Nicobar Islands and the delta area of the Ganga and the Brahmaputra. Other areas of significance are the Mahanadi, the Godavari and the Krishna deltas.
- Some of these forests are dense and impenetrable. Only a limited number of plants are found in these evergreen forests.
- They have roots that consist of soft tissue so that the plant can breathe in the water.
- It consists mainly of whistling pines, mangrove dates, palms, and bulletwood.

### What is the Status of Forest Cover in India?

- According to the India State of Forest Report-2021, the forest and tree cover in the country continues to increase with an additional cover of 1,540 square kilometres over the past two years.
- Madhya Pradesh has the largest forest cover in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
- In terms of forest cover as percentage of total geographical area, the top five States are Mizoram, Arunachal Pradesh, Meghalaya, Manipur and Nagaland.
- The states that have shown the highest increase in forest cover are Telangana (3.07%), Andhra Pradesh (2.22%) and Odisha (1.04%).
- Five states in the Northeast – Arunachal Pradesh, Manipur, Meghalaya, Mizoram and Nagaland have all shown loss in forest cover.

## ECONOMY

### India Bans Import of Foreign Drones

Recently, the Directorate General of Foreign Trade (DGFT) under the Ministry of Commerce and Industry has banned the import of foreign drones. The move comes after the Union Budget 2022 proposed the Drone Shakti scheme to facilitate application and use of 'drones as service' in the country.

- The import of drone components, however, has not been banned and will not require any approvals. The import of drones for defense and security purposes will also be allowed subject to approval from the DGFT. The move aims to promote made-in-India drones.

### What is the Background?

- **Drone Rules:** In 2021, the Ministry notified liberalized drone rules with the aim to encourage R&D and to make India a drone hub.
  1. It abolished several permissions and approvals. The number of forms that need to be filled was reduced from 25 to five and the types of fee brought down from 72 to 4.
  2. No permission is required for operating drones in green zones and no remote pilot licence is necessary for non-commercial use of micro and nano drones.
  3. Payloads up to 500kg have been allowed so the drones can be used as unmanned flying taxis.
  4. Further, foreign ownership of companies operating drones has also been permitted.
- **PLI Scheme for Drones:** The government also approved a Production-Linked Incentive (PLI) scheme for Drones and their components with an allocation of Rs. 120 crore for three financial years. The PLI Scheme for the drones and drone components industry addresses the strategic, tactical, and operational uses of this revolutionary technology.
- In September 2021, the DGCA (Directorate General of Civil Aviation) launched an interactive airspace map to help drone operators check for no-fly zones or where they need to undergo certain formalities before flying a drone.
- The Indian government has chosen drones to help achieve its ambition of creating a comprehensive e-property ledger under the SVAMITVA (Survey of Villages and Mapping with Improved Technology in Village Areas) scheme launched in April 2020.

### What is the Drone Shakti Scheme?

- The Union Budget pushed for promotion of drones through startups and skilling at Industrial Training Institutes (ITIs).
- Startups will be promoted to facilitate 'Drone Shakti' through varied applications and for Drone-As-A-Service (DrAAS). Courses for skilling will also be started in selected ITIs across all States.
  1. DrAAS allows enterprises to avail various services from drone companies, removing the need for them to invest in drone hardware or software, pilots, and training programmes.
  2. Sectors where drones can be employed are endless. These include photography, agriculture, mining, telecom, insurance, telecom, oil & gas, construction, transport, disaster management, geo-spatial mapping, forest and wildlife, defence and law enforcement to name a few.
- Drones will also be promoted for crop assessment, digitisation of land records, spraying of insecticides and nutrients (Kisan Drones).
- The drone services industry is expected to grow to over Rs 30,000 crore in next three years and generate over five lakh jobs.

### What is a Drone?

- It is a layman terminology for Unmanned Aircraft (UA).
- Originally developed for the military and aerospace industries, drones have found their way into the mainstream because of the enhanced levels of safety and efficiency they bring.
- A drone's autonomy level can range from remotely piloted (a human controls its movements) to advanced autonomy, which means that it relies on a system of sensors and LiDAR (Light Detection and Ranging) detectors to calculate its movement.

### What are the various Applications of Drones?

- **Agriculture:** Drones have a plethora of applications in Agriculture, which consists of carrying out everyday tasks like fertilizing crop fields on an automated basis, monitoring traffic incidents, surveying hard-to-reach places among others.
- **Healthcare:** Drones can make medicine delivery more accessible and faster, especially in distant locations. Drone delivery of medical goods and time-sensitive transplant organs will also aid in improved resource management of limited supplies. E.g. Telangana government's 'Medicine from the sky' programme.
- **Inventory Management:** Drones are being used to scan inventory at warehouses. These machines, which are coupled with sensors, can quickly monitor and transmit data in real-time to enterprises, allowing them to manage warehouses efficiently.
- **Security and Surveillance:** Drones can be used for critical surveillance and intelligence gathering as well, thanks to their remote monitoring capabilities. They can also be used to inspect and offer real-time footage at construction sites.
- **Disaster Management:** In the event of a natural disaster, such as an earthquake or flood, authorities can dispatch drones to monitor the affected areas. Drones can potentially be used as a social rescue device, detecting and directing trapped persons to safe regions.

## BIODIVERSITY & ENVIRONMENT

### Human Immunodeficiency Virus (HIV)

Recently, a US patient with leukemia has become the first woman and the third person to date to be cured of HIV after receiving a stem cell transplant from a donor who was naturally resistant to the virus that causes Acquired ImmunoDeficiency Syndrome (AIDS). Leukemia is a blood cancer caused by a rise in the number of white blood cells in the body.

- AIDS is a set of symptoms or syndrome caused by HIV. But it is not necessary that a person infected with HIV will definitely develop AIDS.

### What is Human Immunodeficiency Virus (HIV)?

- HIV attacks CD4, a type of White Blood Cell (T cells) in the body's immune system. T cells are those cells that move around the body detecting anomalies and infections in cells.
- After entering the body, HIV multiplies itself and destroys CD4 cells, thus severely damaging the human immune system. Once this virus enters the body, it can never be removed.
- The CD4 count of a person infected with HIV reduces significantly. In a healthy body, CD4 count is between 500- 1600, but in an infected body, it can go as low as 200.

### What is the Prevalence of HIV/AIDS in India?

- As per the India HIV Estimation 2019 report, the estimated adult (15 to 49 years) HIV prevalence trend has been declining in India since the epidemic's peak in the year 2000 and has been stabilising in recent years. In 2019, HIV prevalence among adult males was estimated at 0.24% and among adult females at 0.20% of the population.
- There were 23.48 lakh Indians living with HIV in 2019. Maharashtra had the maximum numbers followed by Andhra Pradesh and Karnataka.

### What are Stem Cells?

- Stem cells are special cells that can make copies of themselves and change into the many different kinds of cells that the body needs. They have two unique properties that enable them to do this:
  1. They can divide over and over again to produce new cells.
  2. As they divide, they can change into the other types of cell that make up the body.
- There are several kinds of stem cells and they are found in different parts of the body at different times.

- Cancer and cancer treatment can damage the hematopoietic stem cells. Hematopoietic stem cells are stem cells that turn into blood cells.

#### **Why are Stem Cells useful?**

- **Research:** It helps in understanding the basic biology of how living things work and what happens in different types of cell during disease.
- **Therapy** – In replacing lost or damaged cells that the bodies can't replace naturally.

#### **What are the Three Main Types of Stem Cell?**

- **Embryonic Stem Cells:**
  1. They supply new cells for an embryo as it grows and develops into a baby.
  2. These stem cells are said to be pluripotent, which means they can change into any cell in the body.
- **Adult Stem Cells:**
  1. They supply new cells as an organism grows and to replace cells that get damaged.
  2. Adult stem cells are said to be multipotent, which means they can only change into some cells in the body, not any cell, for example: Blood (or 'haematopoietic') stem cells can only replace the various types of cells in the blood.
- **Induced Pluripotent Stem Cells:**
  1. 'Induced' means that they are made in the lab by taking normal adult cells, like skin or blood cells, and reprogramming them to become stem cells.
  2. Just like embryonic stem cells, they are pluripotent so they can develop into any cell type.

#### **What is Stem Cells Transplant?**

- A bone marrow transplant is a medical treatment that replaces one's bone marrow with healthy cells. The replacement cells can either come from the person's own body or from a donor.
- A bone marrow transplant is also called a stem cell transplant or, more specifically, a hematopoietic stem cell transplant. Transplantation can be used to treat certain types of cancer, such as leukemia, myeloma, and lymphoma, and other blood and immune system diseases that affect the bone marrow.

### **PRELIMS FACT**

#### **Tarapur Massacre of Bihar**

Recently, Bihar Chief Minister has announced that 15th February would be commemorated as "Shahid Diwas" in memory of the 34 freedom fighters who were killed by police in Tarapur town (now subdivision) of Bihar's Munger district 90 years ago. The Tarapur massacre was the biggest carried out by the British police after the one in Jallianwala Bagh in Amritsar in 1919.

#### **What Happened in Tarapur?**

- On 15th February, 1932, a group of young freedom fighters planned to hoist an Indian national flag at Thana Bhawan in Tarapur.
- Police were aware of the plan, and several officers were present at the spot.
- A 4,000-strong crowd pelted the police with stones, injuring an officer of the civil administration.
- The police responded by opening indiscriminate fire on the crowd. After about 75 rounds were fired, 34 bodies were found at the spot, even though there were claims of an even larger number of deaths.
- But only 13 of the dead could be identified.

#### **What Triggered the Protest?**

- The hanging of Bhagat Singh, Sukhdev, and Rajguru in Lahore on 23th March, 1931, sent a wave of grief and anger around the country.
- Following the collapse of the Gandhi-Irwin Pact, the Mahatma was arrested in early 1932. By this Pact, Gandhiji consented to participate in a Round Table Conference (the Congress had boycotted the first Round Table Conference) in London and the government agreed to release the political prisoners.
- The Congress was declared an illegal organization, and Nehru, Patel, and Rajendra Prasad were also thrown into jail.
- In Munger, freedom fighters Srikrishna Singh, Nemdhari Singh, Nirapad Mukherjee, Pandit Dasrath Jha, Basukinath Rai, Dinanath Sahay, and Jaymangal Shastri were arrested.



- A call given by the Congress leader Sardar Shardul Singh Kavishwar to raise the tricolour over government buildings resonated in Tarapur.

**DAILY ANSWER WRITING PRACTICE**

**Qns. The dual objectives of security concerns and Atmanirbhartha behind banning the import of drones must be carefully implemented so as to not stifle growth of UAV ecosystem in India. Critically analyze. (250 words)**

**Introduction**

Last week, the government banned the import of drones and their assembly kits, unless needed for research and development, defence or security purposes. The message was loud and clear: Jobs created by our buzzy skies should be held within the country to the extent possible.

**Body**

**Background: Statistics**

- The Civil Aviation Ministry estimates India's drone sector to achieve a total turnover of 120-150 billion (US\$ 1.63-2.04 billion) by 2026, from its current turnover of about Rs. 800 million (US\$ 10.88 million).
- In addition, the government plans to attract investments of Rs. 5,000 crore (US\$ 669.07 million) in the next three years in the drone manufacturing industry and create >10,000 job opportunities.
- The government is also encouraging start-ups and MSMEs (Micro, Small and Medium Enterprises) to invest in drone technology by easing the eligible annual sales bracket at a minimum level—Rs. 2 crore (US\$ 267.63 thousand) for drones and Rs. 50 lakh (US\$ 66.91 thousand) for drone components.

**Impetus to drones in India before the ban**

- Last year, the Centre eased its rules for private drone operations in the country.
- Amid talk of revolutionary use cases, from the delivery of wifi and vaccines to the scanning and spraying of farms, India's ministry of civil aviation snipped away red tape and opened up more airspace for us to fly our own little whirligigs and pilotless aircraft more freely.
- 'Air freight' took on a new meaning; even air-taxi services were envisioned.
- Not only had Indian skies been opened nice and wide, state incentives worth ₹120 crore over three years were held out for the local manufacture of drones and their parts.

**Is ban detrimental to drone ecosystem in India?**

- Globally, the market for these aerial devices is dominated by DJI, a Chinese firm that far outsells the rest, although the likes of Intel and Boeing are also in contest.
- As with any hot sector that's rising rapidly, drone evolution looks set for a heady incline in technology, especially of the fixed-wing variety.
- Fierce rivalry is expected over payload, endurance, flight range, etc, apart from cost efficiency, in a rush to counter DJI's mass-market edge.
- With drone imports barred, however, local operators will lose the benefits of all this action overseas.
- They must rely solely on domestic suppliers now for their needs. This would clearly be far costlier.
- Should big capital be invested, local competition could plausibly cheapen Indian drones.
- Foreign drone-makers could set up plants to compete with, say, Reliance's Asteria venture. But this will not happen overnight. Nor can it assure us world-class output.
- Drone usage weighed down by an import ban may seem like a small price to pay for a thriving industry at home.
- Yet, unless this barrier is preset to decline over the years, a shielded industry might never be able to offer top-notch drones at low prices, as available elsewhere.
- Not for any lack of expertise, strategic intent or money, but as a result of the missing external pressure on its performance.

**Conclusion and way forward**

- Till we opened up our markets in 1991, a vain pursuit of self-sufficiency across sectors had held the economy back by raising our cost base and depriving it of a global edge.
- World trade has taken a mercantilist turn since then, with its win-win gains no longer a theme song, while India remains broadly open.

- Even so, just a few chosen fields kept insulated on state support could shield inefficiency, overburden other markets and thus weigh overall job generation down.
- India's self-reliant aims would best be realized by the rise of our own world champs.
- On a zoom-out view of likely scenarios, though, a reduced role for global forces of demand and supply in local market outcomes looks unlikely to achieve that.

**DAILY QUIZ**

Q1. Consider the following statements:

1. Advaita Vedanta advocates the idea that Brahman alone is ultimately real.
2. Sri Ramanujacharya was the exponent of the qualified non-dualism.

Which of the given above statements is/are correct?

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

Q2. In which State of India is the Statue of Equality situated?

- a. Gujarat
- b. **Telangana**
- c. Karnataka
- d. Tamil Nadu

Q3. The 'Means-Test and Creamy Layer' first finds expression in the Supreme Court's landmark judgment in

- a. Kesavananda Bharati Case (1973)
- b. **Indra Sawhney Case (1992)**
- c. S R Bommai Case (1994)
- d. M Nagaraj Case (2006)

Q4. The Mandal Commission report (1980) was in news recently, is related to which of the following?

- a. Electoral Reforms in India
- b. Police Reforms in India
- c. Civil Services reforms in India
- d. **None of the above**

Q5. Consider the following statements about Rooftop Solar Scheme:

1. This scheme is being implemented in the state by distribution companies (DISCOMs).
2. The aim of the scheme is to achieve the final capacity of 40,000 MW from Rooftop Solar Projects by 2025.

Which of the statements given above is/are correct?

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