

## 18 Apr 2021: UPSC Exam Comprehensive News Analysis

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## Category: ENVIRONMENT AND ECOLOGY

### 1. Bustard poaching in Pakistan shocks activists

#### Context:

- The recent shooting of two Great Indian Bustards (GIBs) in Pakistan's Cholistan desert.

#### Background:

##### Great Indian Bustard:

- The **Great Indian Bustard (Ardeotis nigriceps)** is found on the Indian subcontinent.
- The great Indian bustard bird is **among the heaviest of the flying birds**. It is also the largest land bird in its native range.
- It is the **State bird of Rajasthan**.

##### *Habitat:*

- It's habitat is characterized by large expanses of arid and semi-arid grasslands, open country with thorn scrub, tall grass interspersed with cultivation. It **avoids irrigated areas**.
- This species was formerly widespread in India and Pakistan.
  - In India, the bird was historically found in Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha, Andhra Pradesh, Rajasthan, Gujarat, Maharashtra, Karnataka and Tamil Nadu. Today the bustard is restricted to **isolated pockets in Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Madhya Pradesh and Rajasthan**.
    - The **Desert National Park** is one of the Great Indian Bustard's last remnant wild habitat. The GIB's population of fewer than 100 in Rajasthan accounts for 95% of its total world population.
  - A few birds have also been detected in **Cholistan Desert in Pakistan**.
    - The grassland habitat with grass cover in the Cholistan desert is similar to the habitat in Rajasthan's Desert National Park.
- The major areas where they are known to breed are in **central and western India and eastern Pakistan**.
- These birds are often found associated in the same habitat as blackbuck.

##### *Threat:*

- The GIB was once common on the dry plains of the Indian subcontinent. But, today there **habitat has reduced drastically**.
- The International Union for Conservation of Nature and Natural Resources (IUCN), a global authority on species survival, which categorised the GIBs as "endangered" in 1994, was forced to upgrade the species to the status of "**critically endangered**" in 2011 because of continued threats faced by this species. In fact it is **considered India's most critically endangered bird**.
- The main threats are **hunting and habitat loss**.

- This species has been heavily hunted for their meat and for sport.
- In some places, such as Rajasthan, increased irrigation by the **Indira Gandhi canal** has led to increased agriculture and the altered habitat has led to the disappearance of the species from these regions. The migrating population into Pakistan face pressure due to hunting.
- Other critical threats to the species include the development of **linear infrastructure intrusions such as roads and electric power lines** in the desert that lead to collision-related mortality.

*Conservation:*

- It is protected under **Wildlife Protection Act 1972** of India.
- The state of **Rajasthan initiated “Project Great Indian Bustard”**, aimed at conservation efforts for the Great Indian Bustard.

Details:

- A group of hunters, allegedly led by a retired Major of the Pakistan Army, shot down two GIBs in a protected area of southern Punjab’s Cholistan game reserve in Pakistan.
- This event has left wildlife activists in Rajasthan outraged.

Concerns:

- There is an ongoing captive breeding of GIB in the DNP through a project executed by the **Wildlife Institute of India**.
  - The project is being supported by the **Houbara Breeding Centre of UAE**.
- As Rajasthan shares the international border with Pakistan’s Sindh and Punjab provinces, it is suspected that Indian-bred GIBs will fly across to Pakistan’s desert and may fall prey to the poachers there.

## Category: SCIENCE AND TECHNOLOGY

### 1. ARIES facility will host the support centre for Aditya-L1

Background:

**Aditya-L1 mission:**

*Mission objective:*

- The Indian programme Aditya-L1 aims to **study the Sun and the region between the Sun and the Earth**. It is due to be launched in 2022.
- Initially Aditya-1 was meant to observe only the solar corona.
  - The **outer layers of the Sun, extending to thousands of km above the disc (photosphere) is termed as the corona**. It has a temperature of more than a million degree Kelvin which is much higher than the solar disc temperature of around 6000K. How the corona gets heated to such high temperatures is still an unanswered question in solar physics.

- However, later the scope of the project was enhanced and the satellite now carries additional six payloads with enhanced science scope and objectives.
  - Aditya-L1 with additional experiments can now provide observations of **Sun's Corona, Chromosphere and photosphere**.
- In addition, **particle payloads** will study the particle flux emanating from the Sun and reaching the L1 orbit, and the **magnetometer** payload will measure the variation in magnetic field strength at the halo orbit around L1.

*Satellite placement:*

- The Satellite would be placed in the halo orbit around the **Lagrangian point 1 (L1) of the Sun-Earth system**, which is 1.5 million km from the Earth. The major advantage of such a placement is that it would allow the satellite to **continuously view the Sun without any occultation/ eclipses**.

*Significance:*

- Aditya-L1 mission provides an opportunity to solar scientists from multiple institutions within the country to participate in **space based instrumentation and observations**.
- The enhanced Aditya-L1 project will enable a **comprehensive understanding of the dynamical processes of the sun**. It will enable the understanding of the long-term evolution of the dynamic processes and underlying physical mechanisms responsible for them.
- The Mission will enable the availability of a detailed compendium of the location and duration of different features on the solar surface such as **coronal holes, prominences, flares, Coronal Mass Ejection (CMEs) and sunspots**. Continuous monitoring of the location and duration of these features will help in monitoring the Earth directed CMEs and thereby, the **space weather**.

Details:

- The **ARIES facility (short for Aryabhata Research Institute for observational Sciences)**, situated near Nainital, will provide the ground support centre to monitor and coordinate the work on the various payloads of the Aditya-L1 mission.

Significance:

- ARIES plans to allow every interested individual to be able to perform scientific analysis of the data procured by the Aditya-L1 mission.
  - Researchers who may not even be associated with core Aditya-L1 team will be able to book a specific payload to conduct observations for a particular time. This will enable every researcher in India perform analysis over scientific data obtained from Aditya-L1.
- The Aditya-L1 Support Centre (ASC) will also provide training through regular workshops for the guest users.
- The collaboration with ARIES will not only expand the visibility of Aditya-L1 within India, it will also ensure the reach of Aditya-L1 reaches beyond India at the international level.

## Category: **ECONOMY**

### 1. Not quite a fair deal for farmers

**Context:**

- The article discusses **concerns associated with the grain procurement process in the state of Haryana.**

**Concerns:**

- Seamless procurement ensuring Minimum Support Price (MSP) has been a major challenge for the Haryana government during the harvesting season year after year.

**Delayed payment:**

- Though farmers have been getting Minimum Support Price, they complain about **delayed payment from the government.**
- Despite promises such as transferring money directly to the accounts of the farmers within 48 hours and assurance of paying 9% interest in case of delayed payments, these continue to remain “empty promises” for many farmers.
- **Timely payment matters most to the mostly small and marginal farmers**

**Lack of amenities at mandis:**

- There has been a **severe lack of basic amenities for farmers and labourers at the mandi** for a long time.
- Repeated complaints to the market committee, has also not resulted in any remedies.

**Movement regulation:**

- The state regulates the number of farmers reaching the mandis every day.
- This is a big challenge to farmers given the fact that it is **difficult for the farmers to store the crop at home after harvesting.** They prefer to come straight to the market to sell it off.
- The regulation of the movement seems to be a hindrance to the farmers of the state.

## D. GS 4 Related

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## E. Editorials

### Category: SCIENCE AND TECHNOLOGY

#### 1. Copyright war

**Context:**

- The recent U.S. Supreme Court ruling in the **copyright case between Google and Oracle.**

**Background of the case:**

**Oracle’s acquisition of Sun Microsystems:**

- Oracle's acquired Sun Microsystems, which had developed the Java language.
- Consequently, it came to own the copyright in **Java SE (standard edition)**, a **platform that programmers use to build programs that work on any personal computer**.

#### Oracles' charge:

- Oracle had accused Google of violating the country's **copyright law**.
  - 'Copyright' is a legal term. **Copyright acts as a safeguard to protect an original creation legally**. All created works are Copyrighted. Computer Programming Code can be registered as 'literary works' under the Copyright Act.
- Oracle's charge was that Google copied a part of the Java SE program while developing the Android platform for programmers.

#### Case in the lower judiciary:

- Prior to Google bringing the case to the Supreme Court, the Federal Circuit, an appeals court, had ruled in Oracle's favour.
- The lower courts had focused on **two major questions. The copyrightability of the code and whether the copying constituted fair use**.
- In ruling in Oracle's favour, the Federal Circuit had held that the portion of the copied code is copyrightable and that Google's act did not constitute fair use.

#### Fair use:

- According to the U.S. Copyright Office, "Fair use is a legal doctrine that **promotes freedom of expression by permitting the unlicensed use of copyright-protected works in certain circumstances**."
- Activities such as "criticism, comment, news reporting, teaching, scholarship, and research" may qualify under fair use. **Such activities can be exempt from copyright infringement charges**.
- Section 107 of the U.S. copyright law provides a framework to judge fair use. It contains four factors, in the following order — the purpose of the use, the nature of the copyrighted work, the substantiality of the portion used in relation to the whole work, and the effect of the usage upon the potential market.

#### Details:

#### U.S. Supreme Court ruling:

- The Court noted that Google had in fact copied roughly 11,500 lines of code from the Java SE program.
- The Supreme Court decided to sidestep the question on copyrightability of the code, assuming it to be copyrightable, and ruled that **Google's copying of a part of the code constituted fair use, and therefore it did not violate the copyright law**.

#### Judiciary's take on the issue:



- The court while **considering the nature of the copyrighted work**, noted that what lines Google copied, were merely the lines of an **API (application programming interface)**, which allows programmers to call upon prewritten computing tasks for use in their own programs. It termed Google's move as being transformative, as it allowed programmers to work in a different computing environment" (which is Android) using a familiar programming language (Java).

#### Implication of this ruling:

- The Supreme Court's differentiation between the type of code Google copied, i.e., software interface, and other creative codes is bound to be welcomed by the software industry, given that this decision gives **more legal certainty to software developers' common practice of using, re-using, and re-implementing software interfaces written by others**, a custom that underlies most of the internet and personal computing technologies in use today.
- Notably, however the **copyrightability of the codes remains unanswered** and this could lead to future litigations and uncertainty.

#### Additional information:

- In India, the **Copyright Act 1957 protects the Intellectual Property Rights (original expression) of computer software**. Computer programs are literary works as per the definition in the Indian Copyright Act.
- Computer software can have copyright unless it leads to a technical effect. **The computer software with a technical effect has a registration for a patent under the Indian Patent Act 1970.**

## F. Prelims Facts

### 1. The story of 220-million-year-old rat-like creatures via microfossils

#### Context:

- The Tiki Formation in Madhya Pradesh, considered a treasure trove of vertebrate fossils, has now yielded a new species and two genera of cynodonts.

#### Details:

- The researchers from the Indian Institute of Technology Kharagpur, who studied about 10 teeth samples collected from **Tihki, Madhya Pradesh**, have announced the finding of a new species, naming it **Rewaconodon indicus**.
- The team has also identified **two new genera under the cynodont species**. The first was named **Inditherium floris** and the second was named **Tikiodon cromptoni**.

#### Cynodonts:

- The cynodonts are **small rat-like animals** that lived about 220 million years ago.
- Cynodonts are important in evolutionary studies as this group ultimately **gave rise to the present-day mammals**.
- Cynodonts and living mammals both belong to a group of **egg-laying vertebrates (amniotes)** called synapsids. The close relationship of cynodonts with living mammals is seen in their bones. They also

have **differentiated teeth**, a secondary palate in their mouths, which, like humans, allowed them to breathe and eat at the same time.

## G. Tidbits

### 1. 'Pharma exports grew 18.7% in FY21'

- India's pharmaceutical exports grew 18.7% to \$24.44 billion in the financial year ended March 31, spurred by strong demand for the country's generic drugs.
- Notably, this performance came amid global contraction and the global pharma market shrinking by 1-2% in 2020.
- **Drug formulations and biologicals remained the second-largest commodity exported by India.**
- The record growth was due to a surge in **demand for made-in-India generics**, owing to their quality and affordability.

#### Major markets:

- **North America remains the largest market for Indian pharmaceuticals**, accounting for a more than 34% share.
- South Africa emerged as the second-largest market for Indian pharmaceuticals.
- **Europe accounts for the third-largest market for Indian pharmaceutical exports.**
- There is a growing demand for Indian pharmaceutical products in non-traditional markets such as Latin America, CIS countries and Middle East.

### 2. PLI scheme for ACs, LED lights to exclude 'mere assembly'

- The **production linked incentive (PLI) scheme for white goods — Air Conditioners (ACs) and LED lights** will be implemented over 2021-22 to 2028-29.
- Support under the scheme will be provided to companies/entities engaged in manufacturing of components of ACs (such as copper tubes, aluminium foil and compressors) and LED lights (like LED chip packaging, resistors, ICs, and fuses).
- The **department for promotion of industry and internal trade (DPIIT)** has said that selection of companies to avail the incentives would be done to support manufacturing of components which are not made in India presently. It said that mere assembly of finished goods would not be incentivised and companies investing in basic/core components would get a higher priority.

## H. UPSC Prelims Practice Questions

Q1. Which of the following statements is/are correct with respect to the Great Indian Bustard?

1. It is the largest land bird in its native range.
2. It is the State bird of Rajasthan.
3. It has been designated as critically endangered by the International Union for Conservation of Nature and Natural Resources.



**Options:**

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1,2 and 3

**Answer: d**

**Explanation:**

**Great Indian Bustard:**

- The Great Indian Bustard (*Ardeotis nigriceps*) is found on the Indian subcontinent.
- The great Indian bustard bird is among the heaviest of the flying birds. It is also the largest land bird in its native range.
- It is the State bird of Rajasthan.

*Habitat:*

- It's habitat is characterized by large expanses of arid and semi-arid grasslands, open country with thorn scrub, tall grass interspersed with cultivation. It avoids irrigated areas.
- In India, the bird was historically found in Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha, Andhra Pradesh, Rajasthan, Gujarat, Maharashtra, Karnataka and Tamil Nadu. Today the bustard is restricted to isolated pockets in Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Madhya Pradesh and Rajasthan.
  - The Desert National Park is one of the Great Indian Bustard's last remnant wild habitat. The GIB's population of fewer than 100 in Rajasthan accounts for 95% of its total world population.
- The major areas where they are known to breed are in central and western India and eastern Pakistan.
- These birds are often found associated in the same habitat as blackbuck.

*Threat:*

- The GIB was once common on the dry plains of the Indian subcontinent. But, today there habitat has reduced drastically.
- The International Union for Conservation of Nature and Natural Resources (IUCN), a global authority on species survival, which categorised the GIBs as "endangered" in 1994, was forced to upgrade the species to the status of "critically endangered" in 2011 because of continued threats faced by this species. In fact it is considered India's most critically endangered bird.
- The main threats are hunting and habitat loss.
  - This species has been heavily hunted for their meat and for sport.

- In some places, such as Rajasthan, increased irrigation by the Indira Gandhi canal has led to increased agriculture and the altered habitat has led to the disappearance of the species from these regions. The migrating population into Pakistan face pressure due to hunting.
- Other critical threats to the species include the development of linear infrastructure intrusions such as roads and electric power lines in the desert that lead to collision-related mortality.

**Q2. What is/are the advantages of placing the Aditya mission satellite in the Lagrangian point 1 (L1) of the Sun-Earth system?**

1. Reduce fuel consumption
2. Provides an uninterrupted view of sun.

**Options:**

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

**Answer: c**

**Explanation:**

Lagrange points:

- Lagrange points are positions in space where objects sent there tend to stay put. At Lagrange points, the gravitational pull of two large masses precisely equals the centripetal force required for a small object to move with them.

*Significance:*

- These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.
- The L1 point of the Earth-Sun system affords an uninterrupted view of the sun. The major advantage of such a placement is that it would allow the satellite to continuously view the Sun without any occultation/ eclipses.

**Q3. Which of the following statement/s is/are correct with respect to pharmaceutical exports from India?**

1. On a continental basis, Africa remains the largest market for Indian pharmaceuticals.
2. Drug formulations and biologicals remained the second-largest commodity exported by India.

**Options:**

- a. 1 only

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

**Answer: b**

**Explanation:**

- India's pharmaceutical exports grew 18.7% to \$24.44 billion in the financial year ended March 31, spurred by strong demand for the country's generic drugs. The record growth was due to a surge in demand for made-in-India generics, owing to their quality and affordability.
- Drug formulations and biologicals remained the second-largest commodity exported by India.
- North America remains the largest market for Indian pharmaceuticals, accounting for a more than 34% share.
- South Africa emerged as the second-largest market for Indian pharmaceuticals.
- Europe accounts for the third-largest market for Indian pharmaceutical exports.
- There is a growing demand for Indian pharmaceutical products in non-traditional markets such as Latin America, CIS countries and Middle East.

**Q4. Which of the following statement/s is/are correct with respect to cynodonts?**

1. These are small rat-like animals that lived about 220 million years ago.
2. Cynodonts are important in evolutionary studies as this group ultimately gave rise to the present-day mammals.

**Options:**

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

**Answer: c**

**Explanation:**

**Cynodonts:**

- The cynodonts are small rat-like animals that lived about 220 million years ago.
- Cynodonts are important in evolutionary studies as this group ultimately gave rise to the present-day mammals.
- Cynodonts and living mammals both belong to a group of egg-laying vertebrates (amniotes) called synapsids. The close relationship of cynodonts with living mammals is seen in their bones. They also have differentiated teeth, a secondary palate in their mouths, which, like humans, allowed them to breathe and eat at the same time.

## I. UPSC Mains Practice Questions

1. Discuss the major challenges being faced by the Indian farmers with respect to forward linkages of the agricultural sector. Also suggest measures to address these challenges. (15 marks, 250 words)[GS-3,Economy]
2. Enumerate the initiatives being taken by the Government to encourage domestic production in India. Also analyze the significance of such initiatives especially in the post pandemic phase. (10 marks, 150 words)[GS-3,Economy]

