

## Prelim Bits 19-02-2024 | UPSC Daily Current Affairs

### Santali Language

Recently, a book '10 Indian Languages and How They Came to Be' was published that traced the evolution, transformation and development of Santali language.

- It is the predominant *language of the Santals*.
- **Native speakers** - Majority of its speakers are spread across 4 states with about 44% in Jharkhand followed by West Bengal, Odisha and Bihar.
- Besides India, they are also found in Nepal and Bangladesh.
- 2011 Census - It recorded about **7.3 million speakers**, an increase from 6.4 million of 2001 Census.
- **Family** - Austro-Asiatic language.
- **Literature** -The 1<sup>st</sup> attempts to write were made in the 19th century with scripts like Bangla, Devanagari, Odia and Roman.
- Jeremiah Phillips, an American missionary, devised a writing system for Santali using the Bangla script.
- **Ol Chiki (Alchiki) script** - It was devised by Pandit Raghunath Murmu (Guru Gomke) in 1925 which used signs and symbols from their environment like hills, rivers, trees, plough, and sickle.
- **Recognition** - It was included in the **8th Schedule in 2003** and is an additional official language in Jharkhand and West Bengal.

*Santal is India's largest tribal community and are also referred as Santoor.*

#### Santhal Rebellion/ Hul rebellion

- **Time period** - June 1855 and January 1856.
- **Damin-i-koh** - It is a region in Rajmahal hills where Santals were relocated by British from 1790s up until 1810 to practice agriculture.
- **Cause** - Entry of outsiders and exploitation of Santhal.
- It began as a reaction against the moneylenders and merchants and eventually became a full-fledged war against the British.
- **Led by** - The brothers Sidhu and Kanhu Murmu.
- **Course of war** - The superior firepower of the British forces overwhelmed natives and close to 20,000 Santals perished.
- Sidhu and Kanhu were captured and executed.
- **Consequences** - Nevertheless, the British introduced Santhal Parganas Tenancy Act in 1876, offering protection.

#### Reference

[Down To Earth| Evolution and Development of Santali](#)

# Coffee Varieties in India

A recent study in the journal 'Nature Communications, reported that genetically cultivated Arabica coffees offer better brews.

- **Coffee** - A health drink particularly when mixed with hot milk.
- **Growing conditions**
  - Hot and humid climate, Temperature 15°C to 28°C, and Rainfall 150 to 250 cm.
  - Well-drained loamy soils, fertile volcanic red earth, and presence of humus and minerals (iron, calcium).
- **Origin** - It came from Ethiopia, where they called it **qahve**.
- **Development in India** - Arab traders introduced this with coffee plantations in South India and Sri Lanka.
- A *Sufi, Baba Budan*, grew coffee plants around Chikamagaluru, Karnataka.
- **Coffee varieties in India**

|               | Arabica  | Robusta   |
|---------------|--|---|
| Name origin   | Arab traders traded qahve to Europe                          | A disease resistant variety from West Africa.           |
| Cultivation   | At high altitudes  | In lower reaches  |
| Caffeine      | About 1.2% to 1.5%   | About 2.2% to 2.7%                                      |
| Strength      | Lesser Acidic bean and greater aroma.                        | Higher chlorogenic acid acts as a shield against pests. |
| Limitations   | More susceptible to pests and diseases.                      | Lesser flavours than Arabica                            |
| In India      | About 70% of the coffee-growing regions                      | About 30% of India's coffee production.                 |
| Best in India | Grown in Coorg, Araku Valley, Chikmagalur and Bababudangiris | Wayanaad Robusta Coffee                                 |

- **Chicory coffee** - It is made from *minced and roasted chicory root* which is an herb native to Europe and Asia.
- *India is the 3<sup>rd</sup> largest producer of chicory* which is grown in far Eastern states (Assam, Meghalaya, Sikkim).
- It has *lower content of caffeine*.

**Caffeine** is a molecule that stimulates the central nervous system.

**Kumbakonam Degree Coffee** is famous because of its pure Arabica variety without usage of Chicory. Kumbakonam is a city in Tamil Nadu.

## References

[The Hindu| Best Coffee in India](#)

## Rheumatoid Arthritis (RA)

A recent study published in 'The Lancet' proposed to repurpose an existing drug to treat rheumatoid arthritis and as to prevent it.

- It is a ***chronic, autoimmune condition***, causing inflammation around the body and commonly presents with pain in the joints.
- It often occurs in a symmetrical pattern, meaning that if one knee has the condition, the other knee is also often affected.
- **Causes** - It is ***unknown yet***, but there is probability of genetic condition.
- **Risk factors** - Smoking, obesity and exposure to air pollution.
- ***Women and older people have a higher risk*** of developing RA.
- **Symptoms** - A patient experiences ***pain, swelling of joints*** and loss of function and mobility as a result of stiffness.
- Fatigue, occasional fevers, and a loss of appetite and may also affect ***heart, lungs, blood nerves, eyes and skin***.
- **Prevention and control** - Reducing exposure to inhaled silica, dusts and occupational risks.
- ***Lifestyle changes*** like prevention of smoking, healthy nutrition, physical activity and maintaining normal BMI.
- **Treatment** - It is ***not curable***.
- If diagnosed timely, symptoms and disease progression can be controlled with ***pharmacological treatment***, and optimal functioning can be maintained through ***rehabilitation***.
- In cases with severe joint damage, ***surgical procedures***, including joint replacement, may help to restore movement or manage pain.
- **Medicines** - It is used to reduce inflammation, pain and swelling
  - Non-steroidal anti-inflammatory drugs (NSAIDs)
  - Glucocorticoids
  - Disease-modifying anti-rheumatic drugs (DMARDs)
  - Biological agents.

*According to World Health Organisation, about 18 million people worldwide were living with rheumatoid arthritis in 2019. About 70% of people living with rheumatoid arthritis are women, and 55% are older than 55 years.*

### References

1. [The Hindu| Preventing the Onset of Rheumatoid Arthritis](#)
2. [WHO| Rheumatoid Arthritis](#)

## GSLV - The Naughty Boy

Recently, ISRO has launched a new-generation meteorological satellite, INSAT-3DS by GSLV-F14 rocket.

- **GSLV** - Geosynchronous Satellite Launch Vehicle, formerly known as GSLV-MkII.
- **Features** - It is a ***3 stage vehicle***.
- It uses ***cryogenic engine at the 3<sup>rd</sup> stage***, indigenously developed by reverse-engineering a Russian design.

- **Payload** - It can carry more than 2,200 kg to geostationary orbits, and over 6,000 kg to the low earth orbits.

*3 main rockets used by ISRO for carrying its satellites are GSLV, PSLV and LVM3 (earlier called GSLV-MkIII).*

- **The Naughty Boy** - It is named so, during its initial days for its *inconsistent performance*.
- It has had a **very high failure rate** for any rocket used by ISRO.
  - Before this launch, it had **failed 4 times among the 15 launches**.
  - It's most recent failure was in August 2021, while carrying an earth observation satellite EOS-03 into space.

*PSLV, which has used the maximum number of times by ISRO has failed only twice in its 60 launches while the LVM3 rocket has flown 7 times and never failed.*

- **Reason for failure** - It is mainly **due to the cryogenic engine**.
- Using both Hydrogen and Oxygen as a fuel is possible only in liquid state to keep them stable.
- Liquefaction is possible only at very low temperatures.
  - Oxygen liquifies at -183 degree Celsius and Hydrogen at -253 degree Celsius

### Quick Facts

- **INSAT-3DS** - It will augment 2 existing meteorological satellites, INSAT-3D and INSAT-3DR.
- It will monitor the Earth's surface, atmosphere, oceans and environment to boost India's weather & climate prediction services, early warnings, and disaster management services.
- **Cryogenics** - A science relating to the behaviour of materials at very low temperatures.
- **Missile Technology Control Regime** - It is an international legal framework meant to stop the proliferation of missile technology.
- **NISAR** - An earth observation satellite NASA-ISRO Synthetic Aperture Radar (NISAR) is a 1<sup>st</sup> of its kind collaboration between ISRO and NASA.

### References

1. [The Indian Express| Successful launch of 'GSLV -The Naughty Boy'](#)
2. [ISRO| Cryogenic Engine](#)

## Starlink

*The Starlink, low-Earth orbit (LEO) broadband service has played a crucial role in assisting Ukraine's armed forces when Russia invaded Ukraine in 2022.*

- It is a constellation of many satellites that orbit the Earth, at about 550km, and cover the entire globe.
- It is a satellite internet network, the world's 1<sup>st</sup> and largest satellite constellation which was

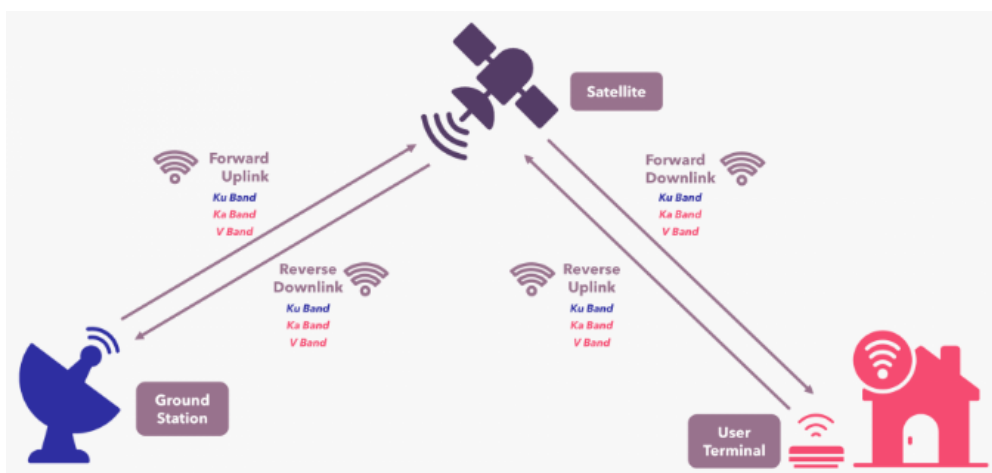
launched in 2019.

**Satellite broadband technology** is also known as satellite telephony, a satellite communication technology using satellite constellations in the Low Earth Orbit (LEO). StarLink, Kuiper and OneWeb are some of the forerunners in this technology.

- **Operated by** - SpaceX, an American aerospace company.
- **Coverage** - Over 70 countries
- **Objective** - To provide high-speed internet coverage to every part of the world and to provide global mobile phone service after 2023.
- It plans to deploy a total of 12,000 satellites in the short-term, and another 30,000 in the long-term.

As on February 16, 2024, SpaceX has 5,459 Starlink satellites in orbit, out of 5,850 launched.

- **Features** - Less mass, more compact, autonomous collision avoidance with single solar array that simplifies the system.
- **Working** - It involves beaming internet data via radio signals through the vacuum of space.
- Ground stations then broadcast those signals to orbiting satellites, which relay the data back to Earth-side users.



- **Advantages** - Higher coverage, speed with low latency.
- **Disadvantages** - Light pollution of night sky, interference with other radio signals and increases the probability of space collisions.
- **Role in Russia-Ukraine War** - It delivered high-speed Internet supporting streaming and video calls.
- It provide strategic advantage to the military by connecting defence forces to uninterrupted, secure communication channels and helping them deploy state-of-the-art weapon systems.

## Reference

[The Hindu| Starlink usage in Russia-Ukraine War](#)

## Other Important Topics

### World's Highest Railway Bridge

*PM Narendra Modi will inaugurate in Jammu, the world's highest single arch railway bridge which is said to be higher than the Eiffel Tower.*

- It is being built across River Chenab and acts as a crucial link between Katra to Banihal.
- The bridge is part of Indian Railways' Udhampur-Srinagar-Baramulla Railway Link (USBRL) project which aims to boost connectivity in Jammu and Kashmir.

### Misinformation Combat Alliance (MCA)

*MCA and Meta have jointly announced a dedicated fact-checking helpline on WhatsApp to combat deepfakes and deceptive AI-generated content.*

- The MCA is a cross industry collaborative effort bringing companies, organisations, institutions, industry associations and entities together.
- It currently has 16 members including fact-checking organisations, media outlets, and civic tech.

### Neem Summit

*The Neem Summit is being organized by collaboration with ICAR-Central Agroforestry Research Institute, Jhansi in New Delhi.*

- The World Neem Organisation (WNO) is hosting the WNO Neem Summit in New Delhi, India.
- This summit serves as a key platform for experts and enthusiasts to explore neem's diverse applications and contributions to sustainable practices.
- **Theme** - Neem for sustainable Agriculture, health and Environment.

### Aspides Mission

*European Union launches Aspides, a non-military mission to protect cargo ships in Red Sea from Houthi attacks.*

- Aspides, the mission will be run out of Larissa in central Greece.
- Larissa is home to the Hellenic Air Force and a NATO headquarters.
- The mission will work under the command of Greek Commodore Vasilios Griparis.

### INYAS

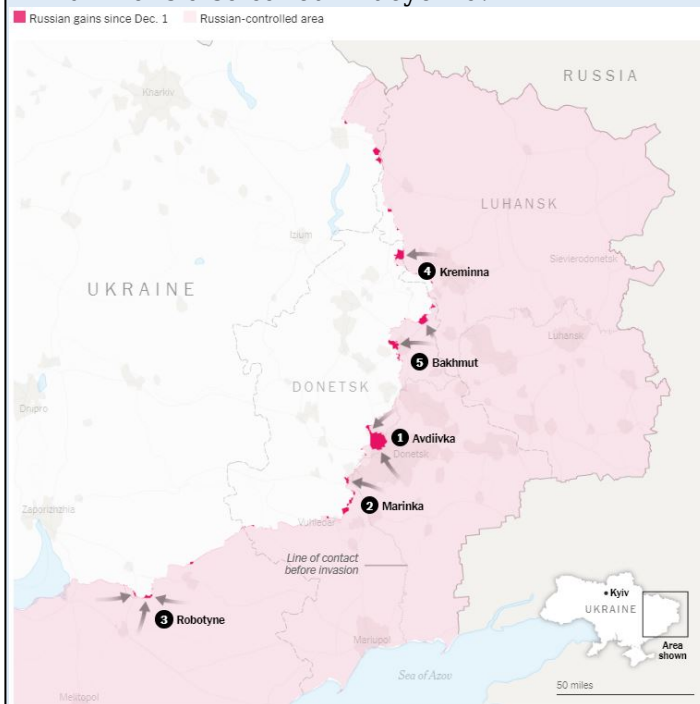
*Indian National Young Academy of Science (INYAS) organised its 9<sup>th</sup> Annual general Body Meeting.*

- INYAS was founded by Indian National Science Academy (INSA) in December 2014 with a vision to promote Science education and networking among Young Scientists.
- INYAS is the only recognised academy of young scientists in India.

### Avdiivka

*Russian forces captured the longtime Ukrainian stronghold of Avdiivka.*

- Avdiivka is a city in Ukraine in the industrial Donbas region, north of the Russian-occupied city of Donetsk.
- Avdiivka is also called Avdeyevka.



## Sora

*Open AI has built an artificial intelligence (AI) model that can create near flawless one-minute-long videos based on text prompt.*

- This model is built on the foundation of transformer architecture, similar to large language models like ChatGPT.
- It can create images and videos with near-accuracy on a given subject.
- It can construct a video from an image and also fill gaps in existing video clips.

## ASEAN-India Trade in Goods Agreement (AITIGA)

*The 3rd meeting of AITIGA was hosted by India.*

- Delegates from ASEAN countries viz. Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand & Vietnam participated in the meeting.
- The AITIGA was signed in Bangkok in 2009 and entered into force in 2010.
- The agreement paved the way for the creation of one of the world's largest free trade areas.

## Molai Forest

*Molai Forest is a 550 hectare forest single-handedly created by a visionary creator, Jadav.*

- Molai forests are named after its visionary creator, Jadav Molai Payeng.
- The forest stands as a verdant sanctuary in Assam's Majuli district.

## Senegal

*Senegal's legacy as the only coup-free West African nation is hanging by a thread.*

- The region today known as Senegal was long a part of the ancient Ghana and Djolof kingdoms and an important node on trans-Saharan caravan routes.
- The country is located at the westernmost point of the continent.
- Senegal is known as the Gateway to Africa.
- The country lies at an ecological boundary where semiarid grassland, oceanfront, and tropical rainforest converge.
- Senegal is part of the Sahel region.

