

# My Notes....

## NATIONAL

### SC UPHELD EWS RESERVATION

The **Supreme Court** has upheld the **103rd Constitution Amendment** providing for **10% quota for the economically weaker sections (EWS)** from unreserved categories. A **five-judge constitution bench**, in a 3-2 verdict, held that the provisions of the amendment are **not in violation of the Constitution**. It examined the angle as the Constitution does not talk about **the concept of preferential treatment** on the basis of a person's economic status.

#### What is the law on EWS reservations?

1. The **103rd Amendment of 2019** inserted **Articles 15(6) and 16(6)** in the Constitution **to provide 10 per cent reservation to EWS** other than backward classes, SCs, and STs in higher educational institutions and initial recruitment in government jobs.
2. The **rationale** was that the amendment **could empower state governments** to provide reservations on the basis of **economic backwardness** – determined by criteria such as land size owned, annual income, etc.
3. **Article 15** prohibits **discrimination on grounds of religion, race, caste, sex, or place of birth**. **Article 16** guarantees **equal opportunity** in matters of public employment.
4. The additional clauses gave Parliament the power **to make special laws for EWS** as it does for SCs, STs, and OBCs.
5. The **EWS reservation** was granted based on the recommendations of a commission headed by **Major General (retd) S R Sinho**.
6. The commission, which was constituted by the UPA government in March 2005, submitted its report in July 2010.
7. The **Sinho Commission** recommended that **all below-poverty-line (BPL) families** within the general category as notified from time to time, and also all families whose annual family income from all sources is below the taxable limit, should be identified as **EBCs (economically backward classes)**.

#### Why is EWS reservation under challenge?

1. Calling the amendment “**an attack on the constitutional vision of social justice**” and “**a fraud on the Constitution**”, those petitioning against it contend that if upheld, it will be the end of equality of opportunity.
2. They also argue that **it violates the basic structure of the Constitution and breaches the 50 per cent ceiling** for reservation fixed by the Supreme Court ruling in the **Mandal Commission case**.

### 22ND LAW COMMISSION CONSTITUTED

The Centre on 7 November 2022 constituted the **Law Commission of India** with Justice (retired) **Rituraj Awasthi**, former Chief Justice of Karnataka High Court, at its head. **Justice Awasthi took over as CJ of the Karnataka High Court in October 2021**, and retired in July this year.

#### 22nd Law Commission

1. The Commission headed by **Justice Awasthi** is the **22nd Law Commission of India**. The tenure of the 21st Law Commission, which was headed by former Supreme Court judge Justice B S Chauhan, came to an end on 31 August 2018.
2. The **22nd Commission has been constituted two and a half years** after it was approved by the Union Cabinet on 19 February 2020, just before the outbreak of the Covid-19 pandemic.

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3. A petition had been moved in the Supreme Court subsequently against the delay in constituting the **22nd Commission**.
4. The Commission shall, among other things, **“identify laws which are no longer needed or relevant and can be immediately repealed; examine the existing laws in the light of Directive Principles of State Policy and suggest ways of improvement and reform and also suggest such legislations as might be necessary to implement the Directive Principles and to attain the objectives set out in the Preamble of the Constitution”**; and **“revise the Central Acts of general importance so as to simplify them and remove anomalies, ambiguities and inequities”**.

#### Law Commission of India

1. The Law Ministry describes the **Law Commission of India as a non-statutory body** that is constituted by a notification of the Government of India, with definite terms of reference to carry out research in the field of law.
2. The Commission makes **recommendations to the Government** (in the form of Reports) as per its terms of reference.
3. The **Law Commission was first constituted in 1955**, and has **so far submitted 277 reports**.
4. According to the Law Ministry’s website, the **“Law Commission of India provides excellent thought provoking and vital review of the laws in India”**.

## INDIA’S POSITION IN UN POPULATION REPORT

The **human population touched 8 billion** on 15 November 2022, a milestone that heralds **both opportunities and challenges** — especially **for India**, which is set to become the **world’s most populous country next year** by surpassing China. While the **United Nations** hailed the **8-billion figures** as **“a testament to humanity’s achievements”**, it also sounded a note of caution.

### How India is placed

1. **India** is projected **to overtake China as the world’s most populous country in 2023**, “with prospects to reap the demographic dividend as the **median age of an Indian this year was 28.7 years**, compared to **38.4 for China** and **48.6 for Japan** against a global value of 30.3 years.
2. The **population prospects report** had said that **India’s population stands at 1.412 billion in 2022**, compared to **China’s 1.426 billion**.
3. **India is projected to have a population of 1.668 billion in 2050** way ahead of China’s 1.317 billion people by the middle of the century.
4. According to UNFPA estimates, **68 per cent of India’s population** is between **15-64 years old in 2022**, while people aged 65

#### What UN said?

1. The **UN population report** said the **global population is growing** at its slowest rate since 1950, having fallen **under 1 per cent in 2020**.
2. The world’s population could grow to around **8.5 billion in 2030** and **9.7 billion in 2050**. It is projected to reach a peak of around 10.4 billion people during the 2080s and to remain at that level until 2100.
3. More than half of the projected increase in the global population up to 2050 will be **concentrated in eight countries**: the **Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and the United Republic of Tanzania**.
4. Countries of **sub-Saharan Africa** are expected to contribute more than half of the increase anticipated through 2050, the report said.

and above comprise seven per cent of the population.

- As per UN estimates, **over 27 per cent of the country's population** is between the ages of **15-29**. At 253 million, **India** is also home to the **world's largest adolescent population (10-19 years)**.
- UNFPA has noted that **India has its largest ever adolescent and youth population**. According to UNFPA projections, India will continue to have **one of the youngest populations** in the world till 2030 and is currently experiencing a demographic window of opportunity, a "**youth bulge**" that will last till 2025.

## INDIA RANKS HIGH IN CLIMATE PROTECTION

**India** on 15 November 2022 **climbed two spots to bag eighth position out of 63** in the **Climate Change Performance Index (CCPI) 2023**. The jump can be attributed to **India's low emissions** and the **increasing use of renewable energy**. The report was published by **Germanwatch, NewClimate Institute** and the **Climate Action Network**.

### More about ranking

- The rankings are based on **how well the countries are doing to halve their emissions by 2030** -- an essential aspect to **keep the 1.5-degree Celsius** goal within reach and prevent dangerous climate change.
- The CCPI**, which has been **published since 2005**, aims to **enhance transparency** in international climate politics and it enables comparison of individual countries' climate protection efforts and progress.
- The report leaves the first three places empty as "**no country performed well enough in all index categories to achieve an overall very high rating**". It puts **Denmark in fourth place**, followed by **Sweden and Chile**.
- India earned a high rating in the GHG Emissions and Energy Use categories**, while it got a **medium rating in Climate Policy and Renewable Energy sections**.
- China**, which is the **world's biggest polluter** now, fell 13 places to 51st in this year's CCPI and received an overall very-low rating due to plans for new coal-fired power plants.
- The **US rose by three ranks to the 52nd place**. Iran (63rd), Saudi Arabia (62nd) and Kazakhstan (61st) fared the worst.

### Flashback

- Since the **last CCPI**, **India** has updated its **Nationally Determined Contribution (NDC)** and announced a **net-zero target for 2070**. **Net zero** means achieving a balance between the greenhouse gases put into the atmosphere and those taken out.
- The **NDCs are national plans to limit global temperature rise** to well below 2 degrees Celsius, **preferably to 1.5 degrees Celsius** in accordance with the **Paris Agreement**.
- In August, **India released its updated NDCs** and now stands committed to reducing emissions intensity of its GDP by **45 per cent by 2030 from the 2005 level**.
- It aims to achieve about **50 per cent cumulative electric power** installed capacity from **non-fossil fuel-based energy resources** by 2030. These NDCs are, however, contingent on delivery of finance and technology transfer.

## INDIA JOINED THE MANGROVE ALLIANCE FOR CLIMATE

**India** on 8 November 2022 joined the **Mangrove Alliance for Climate (MAC)** at the **27th Summit of the Conference of Parties (COP27)** at Sharm el-Sheikh in Egypt. UAE, Indonesia, Australia, Japan, Spain and Sri Lanka are the other MAC supporters. The

**mangroves can absorb four to five times more carbon emissions** than the tropical forests and can help create new carbon sinks.

#### What are mangrove forests?

1. A **mangrove is a shrub or a small tree** that grows along the **coastlines** and has roots in **salty sediments**, often **underwater**.
2. They also grow in swamps. **Mangrove forests** can **survive extreme weather conditions** and require low oxygen levels to survive.
3. **The mangroves cannot survive freezing temperatures** and thus are found mainly in **tropical and subtropical latitudes**. **Sundarbans in West Bengal in India** is the largest mangrove forest in the world.
4. UNESCO celebrates **26 July as the International Day for the Conservation of the Mangrove Ecosystem** to raise awareness about mangrove ecosystems and to promote their conservation.

#### What is the Mangrove Alliance for Climate (MAC)?

1. Spearheaded by the **United Arab Emirates (UAE)** in partnership with Indonesia, **MAC was launched at the COP27 Summit in Egypt** to scale up and accelerate the conservation and restoration of the mangrove forests.
2. The alliance will raise awareness about the role of mangroves as a "**nature-based solution to climate change**".
3. The MAC seeks to **scale up, accelerate conservation, restoration and growing plantation efforts of mangrove ecosystems** for the benefit of communities globally, and **recognize the importance of these ecosystems** for climate change mitigation and adaptation," MAC's official website said about its aim.

#### What is the relationship between India and mangroves?

1. **India contributes to nearly half of the total mangrove cover in South Asia.**
2. According to the **Forest Survey report 2021** released in January, mangroves cover in the country is 4,992 square km, which is **0.15 per cent of the country's total geographical area**. Since 2019, the cover has risen by only 17 sq km.
3. **West Bengal has the highest percentage of mangrove cover in India**, mainly because it has Sundarbans, the largest mangrove forest in the world.
4. It is followed by Gujarat and Andaman, and Nicobar islands. Other states that have mangrove cover are **Maharashtra, Odisha, Andhra Pradesh, Tamil Nadu, Goa and Kerala**.

### CDRI ANNOUNCES IRAF AT COP27

The **Coalition for Disaster Resilient Infrastructure (CDRI)** on 9 November 2022 announced the **Infrastructure Resilience Accelerator Fund (IRAF)**, a **CDRI multi-partner trust fund** during the India Pavilion, at the **27th session of the Conference of the Parties (COP27)** at Sharm El-Sheikh in Egypt.

#### More about IRAF

1. The **IRAF will enable CDRI** to achieve its mandate of resilience through **risk-informed investments** and **infrastructure development** resulting in the reduced vulnerability of populations and **reduced impact of extreme events and isasters** on infrastructure systems.
2. **IRAF, a multi-donor trust fund**, established with the support of the **United Nations Development Programme (UNDP)** and **United Nations Office for Disaster Risk Reduction (UNDRR)**, will be managed by the **United Nations Multi-Partner Trust Fund Office (UN MPTFO)**.



- It will support global action on disaster resilience of infrastructure systems, especially in **developing countries** and **Small Island Developing States (SIDS)**.
- Around **\$50 million in financial commitments** have already been announced for IRAF over an initial duration of five years.
- Supported by the **Governments of India, the United Kingdom, Australia, and the European Union**, IRAF's multi-pronged program focus will offer customised technical assistance, capacity building, research, knowledge management, and advocacy across the infrastructure life cycle for countries at all stages of development.

#### Flashback

- CDRI** was launched by the Prime Minister of India at the **UN Climate Action Summit in New York in 2019**.
- CDRI** promotes the **rapid development of resilient infrastructure** to respond to the **Sustainable Development Goals' imperatives** of expanding universal access to basic services and enabling prosperity

## INTERNATIONAL

### PM UNVEILS G20 LOGO

Prime Minister on 8 November 2022 **unveiled the logo, theme and website of India's G20 presidency**. The **logo bears a lotus** and the **message of 'Vasudhaiva Kutumbakam — One Earth, One Family, One Future'**. **India will assume the presidency of the powerful G20 grouping** from the current chair, **Indonesia**, on 1 December 2022, and **hold the post for a year**. The G20 Leaders' Summit at the level of Heads of State/Government is scheduled to be held on 9 and 10 September 2023 in New Delhi.

#### What is G20?

- The **G20 was formed in 1999** in the **backdrop of the financial crisis** of the late 1990s that hit East Asia and Southeast Asia in particular.
- Its aim was **to secure global financial stability** by involving middle-income countries. Its prominent members are: Australia, Brazil, China, France, Germany, India, Japan, Republic of Korea, Russia, Saudi Arabia, South Africa, Turkey, the UK, the US, and the EU. Spain is invited as a permanent guest.
- G20 is the premier forum for international economic cooperation** representing around **85 per cent of the global GDP**, over 75 per cent of the global trade, and about **two-thirds of the world population**. During the course of its G20 Presidency, **India will be holding about 200 meetings in 32 different sectors** in multiple locations across India.
- The G20 Summit to be held next year would be **one of the highest profile international gatherings** to be hosted by India.
- The **presidency of the G20 rotates every year among members**, and the country holding the presidency, together with the previous and next presidency-holder, forms the **'Troika'** to ensure continuity of the G20 agenda.



6. During **India's presidency**, **India, Indonesia and Brazil will form the troika**. This would be the first time when the **troika would consist of three developing countries and emerging economies**.

## ANNUAL SUMMIT OF THE ASEAN

The **annual summit** of the **Association of South East Asian Nations (ASEAN)** under the **chairmanship of Cambodia** was held from 10 November 2022 to 13 November 2022. Amid the **war in Ukraine** and **contestation between US and China**, the **10-member regional grouping** stressed its common interest and concern, such as **strengthening energy cooperation** and **people-to-people connectivity**.

### What is India's link with ASEAN?

1. Apart from **the individual ties** that India has had with these countries, Prime Minister Narendra Modi has said **ASEAN is central to India's Act East policy**, which **focuses on the extended neighbourhood** in the Asia-Pacific region.
2. The policy was originally conceived as an **economic initiative** but has gained political, strategic and cultural dimensions including the **establishment of institutional mechanisms** for dialogue and cooperation. **In 2018, ASEAN leaders** were the **chief guests** at **India's republic day parade**.
3. **India is part of the ASEAN Plus Six grouping**, which includes **China, Japan, South Korea, New Zealand** and **Australia** as well.
4. In 2010 a **Free Trade Agreement** was also signed and entered into force between **India and ASEAN**.
5. While India was part of negotiations to join the **Regional Comprehensive Economic Partnership (RCEP)** in 2020, it ultimately decided not to do so.
6. However, in the largest seven years trade has grown in terms of value, barring the pandemic years of 2020 and 2021.
7. **ASEAN itself has recently faced issues** that complicate coordination, such as the **rise of China** and its claims over the **South China Sea** (many of which compete with claims of ASEAN members like the Philippines) and the issue of **military conflict** in Myanmar.

## WORLD DAY FOR PREVENTION OF CHILD SEXUAL ABUSE

The **UN General Assembly** has adopted a resolution **to designate 18 November every year** as the **World Day for the prevention of and healing from child sexual exploitation, abuse and violence**.

### More about the resolution

1. The **resolution** invites **all member states, relevant organisations of the UN system** and **other international organisations**, world leaders, faith actors, civil society, and **other relevant stakeholders** to commemorate this World Day each year in a manner that each considers most appropriate.
2. It encourages commitments to **raising public awareness** of those affected by **child sexual abuse** and the need to prevent and **eliminate child sexual exploitation, abuse and violence**.
3. The **imperative to hold perpetrators to account**; ensuring the access of survivors and victims' to justice and remedies; as well as facilitating open discussion on the need to prevent and eliminate their stigmatisation, promote their healing, **affirm their dignity** and **protect their rights**.

## ECONOMY

### INDIA'S FIRST GREEN BONDS RELEASED

The government on 9 November 2022 released the **sovereign green bonds framework** with the **funds raised** through the instrument to be used for projects including **renewable energy, supporting electric vehicles and promotion of public transport through its electrification and transport subsidies, biodiversity conservation and climate change mitigation.**

#### More about the bonds

1. **Green bonds are financial instruments** that generate proceeds for investment in environmentally sustainable and **climate-suitable projects.**
2. The proceeds from **green bonds will not be used to fund hydropower plants larger than 25 MW, nuclear projects and any biomass-based power generation** with biomass originating from protected areas.
3. They **command a relatively lower cost of capital**, compared to **regular bonds** and necessitate credibility and commitments associated with the process of raising bonds.
4. The **issue of sovereign green bonds** will help the Centre in **tapping funds from potential investors** for deployment in public sector projects aimed at reducing the carbon intensity of the economy.
5. **Every year, the finance ministry will inform RBI about the spending on green projects** for which the funds raised through these bonds will be used.
6. The government said that the framework has been **reviewed by CICERO**, an independent Norway-based second party opinion provider, with an annual third-party review planned.
7. **CICERO** has rated India's green bonds framework as "**medium green**" with good governance score.

### SPECIAL VOSTRO ACCOUNTS PERMITTED

On 15 November 2022, the government announced that **nine special Vostro accounts** have been opened with **two Indian banks** after permission from the RBI to **facilitate trade in rupee** in the wake of sanctions on Russia by the **US and European countries.**

#### What is a Vostro account?

1. A **Vostro account** is an account that a **domestic bank holds for a foreign bank in the domestic bank's currency** — which, in the case of India, **is the rupee.**
2. The RBI allowed **nine such accounts**, including **IndusInd Bank and Uco Bank.**
3. In the **case of trade with Russia**, payments in rupee for the **export and import** of goods will go to these **Vostro accounts.**
4. The **owners and beneficiaries of this money will be the exporters and importers** in both the countries. The banks will keep the record of money transferred.

#### What is a Nostro account?

1. Two kinds of accounts, **Vostro and Nostro**, are often mentioned together. Both **Vostro and Nostro are technically the same type of account**, with the difference being **who opens the account and where.**
2. So, if an **Indian bank like the SBI wants to open an account in the United States**, it will get in touch with a bank in the US, which will open a **Nostro account** and accept payments for SBI in dollars.
3. The **account opened by the Indian bank in the US** will be a **Nostro account** for the Indian bank, while for the **US bank** the account will be considered a **Vostro account.**
4. Literally, **Nostro means 'ours'** and **Vostro means 'yours'** in Latin. Therefore, the accounts opened by **IndusInd and UCO are Vostro**, and the ones opened by **Russia's Sberbank and VTB Bank are Nostro accounts.**

## NPCI INTRODUCES BHIM APP OPEN SOURCE LICENSE

The **National Payments Corporation of India (NPCI)** on 9 November 2022 introduced the **BHIM app open-source license model**, under which the **source code of the BHIM App** will be **licensed to regulated entities** that do not have a UPI app of their own.

### What

1. Currently, a **large number of banks** do not have a **mobile banking app** and by licensing the source code of the BHIM app to such banks.
2. **NPCI wants to bridge this gap by extending all the readily available features of UPI** to these entities which will be an economical and quick-to-market solution for these entities.
3. Presently, **these banks are missing out on extending the benefits** of the country's largest retail payment system – **UPI**, to their customer base.
4. Further, **under this model new features** that get launched on BHIM App in the future will also be extended to these entities for them to continue accessing the **BHIM app's latest features**.

### Flashback

1. **National Payments Corporation of India (NPCI)** was **incorporated in 2008** as an umbrella organisation for operating retail payments and settlement systems in India.
2. **NPCI** was initiated for creating a robust payment and settlement infrastructure in the country.
3. It has **changed the way payments are made in India** through a bouquet of retail payment products such as Bharat BillPay, RuPay card, Immediate Payment Service (IMPS), **Unified Payments Interface (UPI)**, **Bharat Interface for Money (BHIM)**, **BHIM Aadhaar and National Electronic Toll Collection (NETC)**
4. An **initiative of RBI and IBA**, NPCI is focused on bringing innovations in the retail payment systems through use of technology and is relentlessly working to transform India into a digital economy.
5. It is **facilitating secure payments solutions** with nationwide accessibility at minimal cost in furtherance of India's aspiration to be a **fully digital society**.

## SCIENCE AND TECHNOLOGY

### CORONAL HOLES IN SUN'S SURFACE

Recently, the **NASA** shared an **image of the sun** seemingly 'smiling'. Captured by the **NASA Solar Dynamics Observatory**, the image has **dark patches on the sun's surface** resembling eyes and a smile. NASA explained that the patches are called **coronal holes**, which can be seen in **ultraviolet light** but are **typically invisible to our eyes**.

#### What are coronal holes?

1. These are **regions on the sun's surface** from where **fast solar wind gushes out into space**.
2. Because they **contain little solar material**, they have **lower temperatures** and thus **appear much darker than their surroundings**.
3. Here, the **magnetic field is open to interplanetary space**, sending solar material out in a high-speed stream of solar wind. **Coronal holes** can last between a **few weeks to months**.
4. The **holes are not a unique phenomenon**, appearing throughout the sun's approximately **11-year solar cycle**.



- They can last much longer during **solar minimum** – a period of time when activity on the Sun is substantially diminished, according to NASA.

#### What do they tell us?

- These '**coronal holes**' are important to understanding the **space environment** around the earth through which our technology and astronauts travel, NASA had said in **2016 when coronal holes** covering "**six-eight per cent of the total solar surface**" were spotted.
- While it is unclear **what causes coronal holes**, they correlate to areas on the sun where **magnetic fields soar up and away**, without **looping back down to the surface** as they do elsewhere.
- Scientists study these **fast solar wind streams** because they sometimes interact with **earth's magnetic field**, creating what's called a **geomagnetic storm**, which can expose satellites to radiation and interfere with communications signals.

## RISAT-2 MAKES UNCONTROLLED REENTRY INTO ATMOSPHERE

**RISAT-2**, launched by **Indian Space Research Organisation in 2009**, made an **uncontrolled re-entry** into the **Earth's atmosphere** at the predicted impact point. Weighing **only about 300 kg**, the satellite made an uncontrolled re-entry into the Earth's atmosphere at the predicted impact point in **Indian Ocean near Jakarta** on 30 October 2022.

#### More about RISAT-2

- RISAT-2 Satellite** carried **30 Kg fuel** for an initial **designed life of four years**. With the proper maintenance of orbit and mission planning by the spacecraft operations team in ISRO, by **economical usage of fuel RISAT-2 provided very useful payload data for 13 years**.
- Since its injection, **RISAT-2's radar payload services** were provided for various space applications.
- On re-entry, **there were no fuel left in the satellite** and hence there are no contaminations or explosion by fuel is expected.
- Studies confirmed that the pieces generated due to **aero-thermal fragmentation** would not have survived **re-entry heating** and hence no fragments would have impacted on Earth.
- RISAT-2** is a clear example of **ISRO's capability to carry out spacecraft orbital operations** in an efficient and optimal way.
- As **RISAT-2 re-entered within 13.5 years**, it complied with all necessary international mitigation guidelines for **Space Debris**, showing ISRO's commitment towards long term sustainability of Outer Space as well.

## INDIA'S FIRST NATIONAL REPOSITORY FOR LIFE SCIENCE DATA

**India's first national repository for life science data**, generated from publicly-funded research in the country, was unveiled on 10 November 2022 by Science and Technology Minister Jitendra Singh. The '**Indian Biological Data Centre**' (**IBDC**), established in Faridabad Haryana at the **Regional Centre of Biotechnology**, has data storage capacity of four petabytes and is also home to the '**Brahm**' High Performance Computing facility.

#### What

- A **data disaster recovery site** has been set up at the **National Informatics Centre, Bhubaneswar**.

2. The **life sciences data** was till now stored in **data repositories in Europe and the US**, and a need were felt to house the data within the country.
3. The **computational infrastructure at IBDC** has also been made available for researchers interested in performing **computational-intensive analysis**.
4. **IBDC** has started **nucleotide data submission services** via two data portals viz. the '**Indian Nucleotide Data Archive (INDA)**' and '**Indian Nucleotide Data Archive - Controlled Access (INDA-CA)**' and has accumulated over 200 billion (one billion = 100 crore) bases from 2,08,055 submissions from more than 50 research labs across the country.
5. The Centre also hosts an online 'Dashboard' for the **genomic surveillance data** generated by the **INSACOG labs** that provides customised data submission, access, data analysis services, and **real-time SARS-CoV-2 variant monitoring across India**.
6. Fundamentally, IBDC is committed to the spirit of data sharing as per **FAIR (Findable, Accessible, Interoperable, and Reusable) principles**.

## NASA'S CAPSTONE MISSION REACHED THE MOON

**NASA's CAPSTONE mission** reached the Moon on 13 November 2022, becoming the **first spacecraft** to enter into a **special elongate orbit** that **could support future space missions**. The microwave oven-sized satellite weighs just around **25 kilograms** and also become the **first CubeSat to fly and operate on the Moon**.

### What is the CAPSTONE mission?

1. **CAPSTONE** stands for **Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment**.
2. The **mission's CubeSat** was sent into space to test a **unique lunar orbit** called a **near rectilinear halo orbit, (NRHO)** which is very elongated and is located at a precise balance point between the **gravities of the Earth and the Moon**.
3. Over the course of the past four months, the **CAPSTONE spacecraft** has been navigating an offbeat but efficient deep space path to the moon.
4. This route is called a **ballistic lunar transfer** and it follows the gravitational contours in space to help the spacecraft reach its destination while spending very little energy.
5. The **CAPSTONE spacecraft** will soon **reach the end of its gravity-driven track** and will arrive at the Moon, where its approach will have to be perfectly aligned for **NRHO insertion**, which is the critical point of the mission.

### NRHO and CAPS

1. Since the **NRHO orbit exists at a precise balance point between the gravities of the Earth and the Moon**, it required minimal energy to maintain, meaning that it can be an ideal staging area for missions to the Moon and beyond.
2. By verifying this orbit, **CAPSTONE will help reduce risks for future spaceflight**, and could also help establish long-term missions like the Gateway space station.
3. Apart from NRHO, CAPSTONE will also demonstrate a **key software technology**— the **Cislunar Autonomous Positioning System (CAPS)**.
4. CAPSTONE can directly communicate with **NASA's Lunar Reconnaissance Orbiter** to determine its own position in space. This software solution will support NASA's Artemis missions.

## MAIDEN FLIGHT-TEST OF BALLISTIC MISSILE DEFENCE INTERCEPTOR

India on 2 November 2022 successfully conducted **maiden flight test** of **Phase-II Ballistic Missile Defence (BMD) interceptor AD-1 missile** with large kill altitude bracket from APJ Abdul Kalam Island, Odisha. The ministry stated that flight-test was carried out **with participation of all BMD weapon system** elements located at **different geographical locations**.

### More about AD-1

1. The **AD-1** is a **long-range interceptor missile** designed for both **low exo-atmospheric and endo-atmospheric interception** of long-range ballistic missiles as well as aircraft.
2. It is propelled by a **two-stage solid motor** and equipped with indigenously-developed **advanced control system**, navigation and guidance algorithm to precisely guide the vehicle to the target.
3. According to the Defence Ministry, during the flight-test, **all the sub-systems performed as per expectations** and were validated by the data captured by a number of range sensors including **Radar, Telemetry and Electro Optical Tracking stations** deployed to capture the flight data.
4. The development of **anti-ballistic missiles** is said to have **started by the DRDO around the 2000s** in view of the development of ballistic assets by Pakistan and China.
5. The **phase-1 of the programme** is said to have been completed towards the **end of 2010s** and consisted of the **advanced air defence systems** and **air defence systems** based on the **Prithvi missile**.
6. The **second phase**, focuses on the development of **anti-ballistic defence systems** like the **US's Theatre High-Altitude Area Defence system**, which can neutralise intermediate-range ballistic missiles.
7. The **AD-II**, which is capable of **neutralising missiles of even higher ranges**, is also said to be **under development**.

## BIO ENERGY PROGRAMME NOTIFIED

The **Ministry of New & Renewable Energy** on 7 November 2022 said it will continue **National Bio Energy Programme** till 2025-26 with a budget outlay of **Rs 858 crore for the first phase**. The programme will aid the use of **huge surplus biomass, cattle dung**, and industrial and **urban biowaste** available in the country for energy recovery.

### What

1. The **Ministry of New and Renewable Energy (MNRE)** has notified the **National Bioenergy Programme** on 2 November 2022, an MNRE statement said.
2. The MNRE has continued the **National Bioenergy Programme** for **2021-22 to 2025-26**. The programme was recommended for implementation in **two Phases**. Phase-I has been approved with a **budget outlay of Rs 858 crore**.
3. The **National Bioenergy Programme** will include the **three Sub-schemes: Waste to Energy Programme, Biomass Programme and Biogas Programme**.
4. The **Waste to Energy Programme** (Programme on Energy from Urban, Industrial and Agricultural Wastes /Residues) will support the setting up of **large Biogas, BioCNG and Power plants** (excluding MSW (municipal solid waste) to power projects).
5. **Biomass Programme** (Scheme to Support Manufacturing of Briquettes & Pellets and Promotion of Biomass (non-bagasse) based cogeneration in Industries) will support the setting up of **pellets and briquettes** for use in power generation and non-bagasse-based power generation projects.
6. The **biogas programme** will also support the **setting up of family and medium size Biogas** in rural areas.

- The MNRE has been **promoting bioenergy in India since the 1980s** to utilise huge **surplus biomass, cattle dung**, and industrial and urban biowaste available in the country for the recovery of energy.
- One major support extended by the MNRE has been **central financial assistance** provided for **setting up Bioenergy projects**, such as Biogas, BioCNG, power from urban, Industrial and Agricultural Waste / Residues for reducing their capital cost/ interest on loans, therefore, increasing project viability.

## EXERCISE GARUDA CONCLUDED

The **seventh edition of Exercise Garuda**, the **bilateral air exercise** between **Indian Air Force (IAF)** and **French Air and Space Force (FASF)**, concluded at Air Force Station in Rajasthan's Jodhpur on 12 November 2022.

### What

- The **FASF participated in the exercise** with **Rafale fighter aircraft** and **A-330 multi-role tanker transport (MRTT) aircraft**, while the IAF contingent comprised **Su-30 MKI, Rafale, light combat aircraft (LCA) Tejas** and **Jaguar fighter aircraft**.
- This fighter element was complemented by the IAF's flight refuelling aircraft, **airborne early warning and control systems**, as well as **Mi-17 helicopters**, and the newly inducted **light combat helicopter (LCH) Prachand**.
- Exercise Garuda VII** was the first occasion for the **LCA Tejas** and the **LCH Prachand** to participate in any international exercise.
- Exercise Garuda-VII** provided the two Air Forces with the **opportunity for professional interaction** and sharing of operational knowledge and experience.
- With meticulous planning and execution of various phases of the exercise, personnel of the IAF and the FASF were exposed to **realistic air combat simulations** and the **associated Combat Support Operations**.
- The exercise also provided a **platform for cultural exchange** between the Air Force personnel of both countries.

### Flashback

- The **first, third and fifth editions** were conducted in India in **2003, 2006 and 2014** at Air Force stations Gwalior, Kalaikunda and Jodhpur, respectively.
- The **second, fourth and sixth editions** were conducted in France in **2005, 2010 and 2019**.

## MISCELLANEOUS

### SECOND JANJATIYA GAURAV DIVAS

On the occasion of the **birth anniversary** of **tribal leader Birsa Munda**, the Centre marked the **second Janjatiya Gaurav Divas** on 15 November to **celebrate the contributions of tribal communities** to Indian culture. President **Droupadi Murmu**, who was appointed **India's first tribal woman president this year**, visited Ulihatu village in the Khunti district of Jharkhand – the birthplace of '**Bhagwan**' **Birsa Munda** – and paid floral tributes.

### What was the situation of Jharkhand's tribals in the 18th century?

- The **Munda tribe inhabited the Chota Nagpur region** of today's Jharkhand. When **Birsa Munda was born in 1875**, the British were attempting to establish control over and exploit forest lands, disrupting the tribal way of life.
- This was done in part **by allying with local zamindars**, who helped force the tribals into bonded labour.



3. A **feudal zamindari system** was introduced, destroying the tribal “**Khuntkatti**” agrarian and land ownership system that was more community-based.
4. The Raj brought in outsiders — **moneylenders and contractors**, as well as **feudal landlords** — to aid them.

#### What was the role Birsa Munda played?

1. **Munda** received his early education under the guidance of his teacher **Jaipal Nag**. Influenced by him, **Birsa converted to Christianity** in order to join the German Mission School. He, however, opted out of the school after a few years.
2. With the **impact of British rule in the region**, as well as the activities of Christian missionaries, many tribals became critical of the British and missionaries’ presence.
3. **Birsa soon emerged as a tribal leader** who brought people together on fighting for these issues.
4. **He became a God-like figure**, with him leading the faith of ‘**Birsait**’. Soon, members of the Munda and Oraon communities started joining the Birsait sect and it turned into a challenge to British conversion activities.

#### What was the Ulgulan movement?

1. The **Ulgulan movement of 1899** also involved the **use of weapons and guerrilla warfare** to drive out foreigners. Munda encouraged the tribals to refuse following colonial laws and paying rent.
2. He encouraged changes in the social sphere too; challenging religious practices to fight against **superstition**, and became known as ‘**Bhagwan**’ (God) and ‘**Dharati Aba**’ (Father of the earth) by his followers.
3. But the British were soon able to halt the movement. On 3 March 1900, **Munda was arrested by the British police** while he was sleeping with his tribal guerilla army at Jamkopai forest in Chakradharpur.
4. It is believed **he died in Ranchi jail due to an illness** on 9 June 1900, at the young age of 25.

## SPACE FORCE MISSION LAUNCHED

**Elon Musk's SpaceX** on 1 November 2022 launched the **first Falcon Heavy mission in over three years**, a towering rocket that is the **most powerful currently in operation**. The **secretive USSF-44 mission**, the first operational national security mission for Falcon Heavy, is being launched by SpaceX's rocket for the **American Space Force**.

#### What

1. The **Space Test Program-2 (STP-2) mission**, launched in **June 2019**, carried experimental satellites on a test flight for the Pentagon.
2. The rocket was lifted off from a launchpad at the **NASA Kennedy Space Center** in Florida.
3. To achieve the **Space Force's high-performance criteria** for this mission, the corporation only plans to land the side pair of the three rocket boosters, with the centre core falling into the ocean as typical rockets do. **Falcon Heavy's base is reusable**.
4. The corporation has only accomplished **three Falcon Heavy launches** since the rocket made its **debut in February 2018**, primarily attributable to its clients' preparedness about its timeline.
5. This **USSF-44 mission** was initially planned for late 2020, and two additional Falcon Heavy flights, one for NASA and the other for the **Space Force** are also awaiting customer payloads. Falcon Heavy still has roughly a dozen missions on the backlog.

## CLIMATE COMPENSATION ON AGENDA FOR FIRST TIME

Delegates at the **U.N.'s COP27 climate summit** in Egypt **agreed** to discuss whether rich nations should **compensate poor countries most vulnerable** to climate change for their suffering. This creates for the **first time** an institutionally stable space on the **formal agenda of COP** and the **Paris Agreement** to discuss the pressing issue of funding arrangements needed to deal with **existing gaps**, responding to **loss and damage**.

### What

1. The item was adopted to the agenda in Sharm el-Sheikh, Egypt, on 6 November 2022, as world leaders arrived for the negotiations scheduled to run through 18 November 2022.
2. Much of the tension at COP27 is expected to **relate to loss and damage** — funds provided by **wealthy nations to vulnerable lower-income countries** that bear little responsibility for **climate-warming emissions**.
3. At **COP26 in 2021 in Glasgow**, high-income nations blocked a proposal for a loss and damage financing body, instead supporting a **new three-year dialogue** for funding discussions.
4. The **loss and damage discussions** now on the agenda at COP27 will not involve liability or binding compensation, but they are intended to lead to a conclusive decision “**no later than 2024**”.
5. Negotiators spent a frantic two days ahead of the meeting discussing whether to formally consider the **issue of loss and damage**, or reparations, to vulnerable nations **suffering from climate change**.
6. The issue, which has weighed on the talks for years, was agreed just hours before the meeting officially opened.
7. The **U.N.'s top climate official** also appealed to countries both **to engage constructively** in the negotiations and take the necessary action back home.

## UNEP ADAPTATION GAP REPORT 2022

**Adaption Gap report 2022** titled “**The Adaptation Gap Report 2022: Too Little, Too Slow – Climate adaptation failure puts world at risk**” was released by the **United Nations Environment Programme (UNEP)**. It is global efforts in **adaptation planning; financing and implementation** to address the growing climate related risks.

### Findings of the Report

1. The **current global efforts** in **adaptation planning, financing and implementation** are **insufficient** to address the growing climate-related risks.
2. At least **84% of parties to the UNFCCC** (UN Framework Convention on Climate Change) have adaptation plans, strategies, policies and laws in place. This is a **5% increase** when compared with the previous year.
3. **More than 8 out of 10 countries** have at least **one national adaptation planning instrument** that is improving and becoming more inclusive.

### Flashback

1. The **Adaptation Gap Report (AGR)** has been published **each year since 2014** by the **UNEP** to provide **science-based assessment** of the global progress on adaptation planning, financing and implementation.
2. **Adaptation** is the **process of adjustment to actual or expected climate** and its effects.
3. In human systems, adaptation seeks **to moderate or avoid harm or exploit** beneficial opportunities.
4. In some natural systems, **human intervention** may facilitate adjustment to expected climate and its effects.

4. **International funding** for the developing countries' adaptation requirements is **5 to 10 times below** the estimated needs and this gap continues to widen.
5. Currently, **governments' adaptation actions** are concentrated in agriculture, water, ecosystems and cross-cutting sectors.
6. However, **in the absence of financial support**, adaptation actions could be outstripped by accelerating climate risks.

## 'GREENWASHING' CONDEMNED BY UN

UN Secretary General **Antonio Guterres** on 8 November 2022 warned companies and other non-state entities **pursing net-zero goals** for themselves against **indulging in 'greenwashing'**, and said there **would be zero tolerance for 'greenwashing'**. An expert-group constituted by him last year submitted its report on 8 November 2022, recommending a **range of measures to prevent greenwashing**.

### What is greenwashing

1. It refers to the **growing tendency of companies, organisations** and even countries to **mark all kinds of activities as climate-friendly**, often with dubious, unverifiable or misleading claims.
2. In their bid to **showcase their concern for the environment** and nature, they often resort to short-cuts, obtain untrustworthy certifications, or indulge in **plain intentional misinformation**.
3. While the UN Secretary General spoke about **greenwashing in the context of net-zero targets** being taken by companies, **greenwashing is prevalent across the whole range of environmental activities**.
4. Developed countries, for example, are often accused of greenwashing their investments in developing countries, by highlighting **climate co-benefits of the financial flows**, often with little justification.
5. Companies are accused of **greenwashing their image by sponsoring a green award** or conference, while carrying on with their environment-damaging business activities elsewhere.
6. **Double counting** — when two or more entities claim the climate benefits of the same action — is also considered **greenwashing**. The generation, certification and trade of carbon credits in voluntary settings often leads to lot of greenwashing.

#### Why does it happen?

1. **Greenwashing is relatively easy** in the **absence of universal or rigorous regulations and standards**.
2. The processes, methodologies and institutions to measure, report, create standards, verify claims, and grant certifications are still being created.
3. In the meanwhile, **large number of organisations** has sprung up claiming to offer these services.
4. Many of these **lack integrity and robustness**, but their services are availed by corporations, because it makes them look good.

**FACT TO REMEMBER:**

1. SC UPHELD EWS RESERVATION
2. 22ND LAW COMMISSION CONSTITUTED
3. INDIA'S POSITION IN UN POPULATION REPORT
4. INDIA JOINED THE MANGROVE ALLIANCE FOR CLIMATE
5. PM UNVEILS G20 LOGO
6. INDIA'S FIRST GREEN BONDS RELEASED
7. INDIA'S FIRST NATIONAL REPOSITORY FOR LIFE SCIENCE DATA
8. BIO ENERGY PROGRAMME NOTIFIED
9. SECOND JANJATIYA GAURAV DIVAS
10. CLIMATE COMPENSATION ON AGENDA FOR FIRST TIME

**LINK TO FOLLOW:**

[HTTPS://WWW.FREEPRESSJOURNAL.IN/ANALYSIS/THE-ONLY-WAY-TO-END-CASTE-BASED-RESERVATIONS](https://www.freepressjournal.in/analysis/the-only-way-to-end-caste-based-reservations)

[HTTPS://WWW.LIVEMINT.COM/OPINION/COLUMNS/FACIAL-RECOGNITION-TECHNOLOGY-HAS-SHRUGGED-OFF-PROTESTS-11668444305981.HTML](https://www.livemint.com/opinion/columns/facial-recognition-technology-has-shrugged-off-protests-11668444305981.html)

[HTTPS://WWW.ALJAZEERA.COM/OPINIONS/2022/11/14/COP27-WHY-WOMENS-RIGHTS-MATTER-COP27-CLIMATE](https://www.aljazeera.com/opinions/2022/11/14/cop27-why-womens-rights-matter-cop27-climate)

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**Previous Year Questions 2022**

- Q. "Rapid Financing Instrument" and "Rapid Credit Facility" are related to the provisions of lending by which one of the following?
- (a) Asian Development Bank
  - (b) International Monetary Fund
  - (c) United Nations Environment Programme Finance Initiative
  - (d) World Bank

My Notes, April 1-15, 2022