



**JUNE – 2026**

**RAPID**

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### IMPORTANT DAYS

| Date   | Important Day                                                                       | Theme 2026                                                                                                               | Significance                                                                                                 |
|--------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1 June | World Milk Day                                                                      | <b>Let's Celebrate the Power of Dairy</b>                                                                                | Recognises the importance of milk and dairy products in nutrition, food security, and livelihoods worldwide. |
| 1 June | Global Day of Parents                                                               | <b>"Together for Parents"</b>                                                                                            | Honours parents for their lifelong commitment and sacrifices in nurturing children.                          |
| 3 June | World Bicycle Day                                                                   | <b>"Cycling for a Greener Future"</b>                                                                                    | Promotes cycling as an affordable, healthy, and environmentally friendly mode of transport.                  |
| 4 June | International Day of Innocent Children Victims of Aggression                        | <b>No official theme announced</b>                                                                                       | Raises awareness about the suffering and protection of children affected by violence and armed conflicts.    |
| 5 June | World Environment Day                                                               | <b>Inspired by Nature. For Climate. For Our Future</b> <i>(Campaign centred on climate action; hosted by Azerbaijan)</i> | Encourages global action to combat climate change and protect the environment through sustainable practices. |
| 5 June | International Day for the Fight against Illegal, Unreported and Unregulated Fishing | <b>No official theme announced</b>                                                                                       | Promotes sustainable fisheries and combats illegal fishing practices that threaten marine ecosystems.        |
| 7 June | World Food Safety Day                                                               | <b>"From burden to solutions – safe food everywhere"</b>                                                                 | Highlights the importance of safe food practices in preventing food-borne diseases and ensuring              |



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|                |                                                 |                                                                                                                                                                                             |                                                                                                             |
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|                |                                                 |                                                                                                                                                                                             | public health.                                                                                              |
| <b>8 June</b>  | World Oceans Day                                | <b>"Reimagine: Beyond the world we know, a new relationship with our ocean"</b> Alongside the ongoing international call to action <b>Strong Marine Protected Areas for Our Blue Planet</b> | Promotes ocean conservation and sustainable use of marine resources.                                        |
| <b>12 June</b> | World Day Against Child Labour                  | <b>"Red card to child labour: Fair play for children, decent work for adults"</b>                                                                                                           | Calls for the elimination of child labour and protection of children's rights to education and development. |
| <b>13 June</b> | International Albinism Awareness Day            | <b>No official theme announced</b>                                                                                                                                                          | Raises awareness about the rights, dignity, and inclusion of persons with albinism.                         |
| <b>14 June</b> | World Blood Donor Day                           | <b>One Drop of Humanity. Give Blood. Save Lives.</b>                                                                                                                                        | Encourages voluntary blood donation and recognises blood donors for saving lives.                           |
| <b>15 June</b> | World Elder Abuse Awareness Day                 | <b>"Beyond Awareness: Making Elder Abuse Prevention Work."</b>                                                                                                                              | Raises awareness about preventing abuse, neglect, and exploitation of older persons.                        |
| <b>16 June</b> | International Day of Family Remittances         | <b>"Beyond Transfers: Turning Remittances into Rural Resilience, Entrepreneurship and Employment"</b>                                                                                       | Recognises the contribution of migrant workers whose remittances support millions of families worldwide.    |
| <b>17 June</b> | World Day to Combat Desertification and Drought | <b>"Rangelands: Recognize. Respect. Restore."</b>                                                                                                                                           | Promotes sustainable land management and restoration to combat desertification and                          |



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|                |                                                                      |                                                                                                                |                                                                                                           |
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|                |                                                                      |                                                                                                                | drought.                                                                                                  |
| <b>18 June</b> | Sustainable Gastronomy Day                                           | <b>"Celebrating Food Heritage."</b>                                                                            | Promotes sustainable food production, consumption, and preservation of traditional cuisines.              |
| <b>18 June</b> | International Day for Countering Hate Speech                         | <b>"Hate Speech and Artificial Intelligence"</b>                                                               | Encourages global efforts to prevent hate speech and promote tolerance, dialogue, and human rights.       |
| <b>19 June</b> | International Day for the Elimination of Sexual Violence in Conflict | <b>"Conflict-Related Sexual Violence Against Children: Safeguarding Futures and Empowering Caregivers."</b>    | Raises awareness about conflict-related sexual violence and supports survivors' rights and justice.       |
| <b>20 June</b> | World Refugee Day                                                    | <b>"Solidarity with Refugees," which is coupled with the global campaign message: "Until Everyone Is Safe"</b> | Honours the courage and resilience of refugees and promotes international solidarity.                     |
| <b>21 June</b> | International Day of Yoga                                            | <b>"Yoga for Healthy Ageing"</b>                                                                               | Promotes yoga as a holistic approach to physical health, mental well-being, and harmony.                  |
| <b>21 June</b> | International Day of the Celebration of the Solstice                 | <b>No official theme announced</b>                                                                             | Celebrates cultural traditions associated with the summer solstice across different civilizations.        |
| <b>23 June</b> | United Nations Public Service Day                                    | <b>"Transforming Public Institutions: Advancing innovation, Participation, and Inclusion".</b>                 | Recognises the value of public service and encourages innovation in governance and public administration. |
| <b>23</b>      | International                                                        | <b>"You Can Do This! Let's Move."</b>                                                                          | Promotes sports                                                                                           |



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| <b>June</b>    | Olympic Day                                                  |                                                                                                                                                                                                                                                                                    | participation, Olympic values, and healthy lifestyles.                                                                                   |
| <b>26 June</b> | International Day against Drug Abuse and Illicit Trafficking | <b>"World Drug Problem: Persisting Issues, New Challenges, Innovative Responses."</b>                                                                                                                                                                                              | Raises awareness about drug abuse prevention and international cooperation against illicit trafficking.                                  |
| <b>26 June</b> | International Day in Support of Victims of Torture           | <b>"Torture: a crime against humanity".</b><br>The United Nations (UN) also operates with a specialized, focused campaign and mechanism message for the year: <b>"UN Mechanisms call for gender-sensitive torture prevention, accountability and redress for women and girls".</b> | Reaffirms global commitment to ending torture and supporting victims' rights and rehabilitation.                                         |
| <b>27 June</b> | MSME Day                                                     | <b>"Empowering MSMEs through Innovation and Sustainable Industrial Development."</b>                                                                                                                                                                                               | Highlights the contribution of Micro, Small and Medium Enterprises to employment, innovation, and economic growth.                       |
| <b>29 June</b> | National Statistics Day (India)                              | <b>"Unlocking the Potential of Administrative Data"</b>                                                                                                                                                                                                                            | Commemorates the birth anniversary of Prof. P. C. Mahalanobis and promotes the importance of statistics in policymaking and development. |

## APPOINTMENTS AND PERSONALITIES:

### Somnath Temple – Important GK

- One of the **12 Jyotirlingas** of Lord Shiva.
- Located on the **Saurashtra coast** of Gujarat.



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- Nearby rivers include **Hiran, Kapila, and Saraswati (Triveni Sangam)**.
- Close to **Gir National Park**, the only natural habitat of the **Asiatic Lion**.
- The present temple is built in the **Chalukya (Kailash Mahameru Prasad)** style.

### Rabindranath Tagore

- **Rabindranath Tagore (1861–1941)** was a poet, philosopher, novelist, painter, composer, and educationist of the **Bengal Renaissance**.
- He became the **first Asian Nobel Laureate** by winning the **Nobel Prize in Literature (1913)** for **Gitanjali**.
- He composed **India's National Anthem "Jana Gana Mana"** and **Bangladesh's National Anthem "Amar Shonar Bangla"**.
- He founded **Visva-Bharati University** at **Santiniketan** based on the ideals of humanism and holistic education.
- He was popularly known as **Gurudev, Kabiguru, and Biswakabi**.

### Visva-Bharati University

- Founded in **1921** by **Rabindranath Tagore**.
- Located at **Santiniketan, West Bengal**.
- Declared a **Central University** in **1951**.
- Santiniketan was inscribed as a **UNESCO World Heritage Site** in **2023**.
- It promotes Indian and international cultural exchange.

### Lt Gen N.S. Raja Subramani – Chief of Defence Staff (CDS)

- **Lt Gen N.S. Raja Subramani** was appointed as **India's third Chief of Defence Staff (CDS)**.
- He also serves as **Secretary, Department of Military Affairs (DMA)** under the Ministry of Defence.
- He was commissioned into the **8th Battalion, Garhwal Rifles** in **1985**.
- He has served as **Vice Chief of Army Staff, GOC-in-C Central Command**, and Military Adviser at the **National Security Council Secretariat**.
- He has been awarded **PVSM, AVSM, SM, and VSM**.



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### Chief of Defence Staff (CDS)

- The post was created in **2019** following the recommendations of the **Kargil Review Committee**.
- CDS is the **Principal Military Adviser** to the Government.
- Serves as the **Permanent Chairman of the Chiefs of Staff Committee**.
- Heads the **Department of Military Affairs (DMA)**.
- Promotes **jointness and theatre command integration** among the Army, Navy, and Air Force.

### Baba Banda Singh Bahadur

- Born as **Lachman Dev** in **1670** in present-day **Jammu & Kashmir**.
- He became a disciple of **Guru Gobind Singh** and led the Sikh forces against the Mughals.
- He defeated **Wazir Khan** at the **Battle of Sirhind (1710)** and established the **first Sikh State** with **Lohgarh** as its capital.
- He abolished the **zamindari system** and distributed land among peasants.
- He was captured in **1715** and executed in **1716**, becoming a symbol of Sikh courage and sacrifice.

### Sukhdev Thapar

- **Sukhdev Thapar** was born on **15 May 1907** in **Ludhiana, Punjab**.
- He was a key member of the **Hindustan Socialist Republican Association (HSRA)**.
- Along with **Bhagat Singh** and **Rajguru**, he participated in the assassination of **J.P. Saunders** in **1928**.
- He was associated with the **Naujawan Bharat Sabha** and mobilised youth for India's freedom struggle.
- He was executed on **23 March 1931**, observed as **Shaheed Diwas (Martyrs' Day)**.

### Shaheed Veer Gundadhar

- **Veer Gundadhar** belonged to the **Dhurva tribe** of **Bastar, Chhattisgarh**.
- He led the famous **Bhumkal Rebellion (1910)** against British colonial rule.





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- The revolt opposed oppressive forest laws, forced labour, excessive taxation, and interference in tribal traditions.
- The rebellion used the secret communication system called "**Dara Miri**", involving **red chillies and mango twigs**.
- Though the revolt was suppressed, Gundadhur was never captured and remains a symbol of tribal resistance.

### Bhumkal Rebellion

- Took place in **1910** in **Bastar**.
- "Bhumkal" means **earthquake** in the local tribal dialect.
- Led by **Veer Gundadhur**.
- It was a tribal uprising against British colonial policies.
- It is one of India's important tribal resistance movements.

### Vice Admiral Krishna Swaminathan

- **Vice Admiral Krishna Swaminathan** was appointed as the **Chief of the Naval Staff (Navy Chief)**.
- He succeeded **Admiral Dinesh Kumar Tripathi**.
- He previously served as **Flag Officer Commanding-in-Chief, Western Naval Command**.
- Commissioned into the **Indian Navy in 1987**, he is a specialist in **Communication and Electronic Warfare**.
- He has commanded **INS Vikramaditya** and **INS Mysore** and has been awarded the **AVSM** and **VSM**.

### Western Naval Command

- Headquarters: **Mumbai**.
- It is the **largest and most powerful command** of the Indian Navy.
- Responsible for operations in the **Arabian Sea** and western maritime region.
- It controls the **Western Fleet**.
- Plays a major role in India's maritime security.





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### Saurabh Vijay – CEO of UIDAI

- **Saurabh Vijay**, a **1998-batch IAS officer of the Maharashtra cadre**, assumed charge as the **CEO of UIDAI**.
- He previously served as **Principal Secretary (Expenditure)** in Maharashtra's Finance Department.
- He will oversee **Aadhaar operations, digital identity infrastructure, and authentication services**.
- His appointment was approved by the **Appointments Committee of the Cabinet (ACC)**.
- UIDAI manages the **Aadhaar programme**, the world's largest biometric digital identity system.

### Unique Identification Authority of India (UIDAI)

- Established in **2009**.
- Functions under the **Ministry of Electronics and Information Technology (MeitY)**.
- Headquarters: **New Delhi**.
- Issues the **12-digit Aadhaar number** to residents of India.
- Aadhaar is the world's **largest biometric identity programme**.

## DEFENCE :

### Project Brahmark

- **Project Brahmark** is a flagship initiative of the **Border Roads Organisation (BRO)** responsible for constructing and maintaining roads in **Eastern Ladakh**.
- The project was raised in **2010**, with headquarters at **Leh, Ladakh**, and celebrated its **16th Raising Day** in 2026.
- It is responsible for developing strategic roads, bridges, tunnels, and border infrastructure along the **Line of Actual Control (LAC)** with China.
- The project enhances rapid military mobilisation, logistics, and connectivity in high-altitude border areas.
- It plays a crucial role in supporting India's border security and socio-economic development of remote Himalayan regions.



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### Border Roads Organisation (BRO)

- **BRO** was established on **7 May 1960**.
- It functions under the **Ministry of Defence**.
- Headquarters: **New Delhi**.
- Motto: "**Shramena Sarvam Sadhyam**" (**Everything is Achievable through Hard Work**).
- BRO constructs roads, bridges, tunnels, and airfields in India's border and strategic regions and also undertakes projects in friendly neighbouring countries.

### ICGS Akshay

- **ICGS Akshay** is an **Adamya-class Fast Patrol Vessel (FPV)** commissioned into the **Indian Coast Guard**.
- It has been built by **Goa Shipyard Limited (GSL)** with more than **60% indigenous content**.
- The vessel is designed for **coastal surveillance, anti-smuggling, anti-poaching, search and rescue, and maritime law enforcement**.
- It is equipped with advanced navigation, communication, and surveillance systems.
- The induction strengthens India's coastal security and maritime domain awareness.

### Adamya-class Fast Patrol Vessel

- Adamya-class FPVs are designed and built by **Goa Shipyard Limited**.
- They have high-speed interception capability for coastal security missions.
- The vessels support pollution response, fisheries protection, and humanitarian operations.
- They are fitted with modern radar, electro-optical sensors, and automatic guns.
- The class significantly enhances the operational capability of the Indian Coast Guard.

### Sukhoi Su-30MKI with BrahMos Missile

- The **Indian Air Force** has integrated **BrahMos-A** supersonic cruise missiles with **40 Sukhoi Su-30MKI** fighter aircraft.
- The integration provides long-range precision strike capability against land and maritime targets.
- **BrahMos-A** has a range of over **450 km** and travels at around **Mach 2.8–3.0**.





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- The combination significantly strengthens India's conventional deterrence.
- The aircraft can strike heavily defended targets without entering enemy air-defence zones.

### Sukhoi Su-30MKI

- The **Su-30MKI** is a **4.5-generation multirole fighter aircraft**.
- It is jointly developed by **Russia's Sukhoi** and **Hindustan Aeronautics Limited (HAL)**.
- It forms the backbone of the Indian Air Force.
- The aircraft is capable of carrying **BrahMos, Astra, and various precision-guided munitions**.
- It possesses super-maneuvrability with thrust-vectoring engines.

### Indigenous Hovercraft H-561

- **H-561** is the **first indigenously developed hovercraft** inducted into the **Indian Coast Guard**.
- It has been developed to enhance surveillance in **shallow waters, marshes, estuaries, and coastal regions**.
- The hovercraft supports search and rescue, anti-smuggling, disaster response, and coastal patrolling.
- It can operate over both land and water using an air cushion.
- The induction strengthens India's indigenous maritime capabilities under **Aatmanirbhar Bharat**.

### Hovercraft

- A hovercraft travels on a cushion of air generated beneath it.
- It can operate over water, mudflats, marshes, sand, and ice.
- Hovercraft are widely used for coastal patrol, rescue operations, and amphibious transport.
- They are particularly useful in shallow coastal regions.
- They offer high mobility where conventional boats cannot operate.

### INS Agray

- **INS Agray** is a **Survey Vessel (Large)** commissioned into the Indian Navy.



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- It is designed for hydrographic surveys and nautical chart preparation.
- The vessel supports maritime navigation, coastal mapping, and oceanographic research.
- It enhances India's hydrographic capabilities in the Indian Ocean Region.
- The ship has been built with a high level of indigenous content.

### INS Dunagiri

- **INS Dunagiri** is the **fourth Project 17A stealth-guided missile frigate** of the Indian Navy.
- It has been built by **Garden Reach Shipbuilders & Engineers (GRSE), Kolkata**.
- It is equipped with **BrahMos missiles, Barak-8 air defence system, advanced radar, and anti-submarine warfare systems**.
- The frigate features advanced stealth characteristics.
- It strengthens India's blue-water naval capability.

### INS Sanshodhak

- **INS Sanshodhak** is a **Survey Vessel (Large)** commissioned into the Indian Navy.
- It is designed for hydrographic surveys, navigation safety, and maritime charting.
- The vessel also supports humanitarian assistance and disaster relief operations.
- It enhances India's maritime domain awareness.
- The ship has been built indigenously under the **Make in India** initiative.

### Jonathan – World's Oldest Known Land Animal

- **Jonathan**, a **Seychelles Giant Tortoise**, is recognised as the **world's oldest known living land animal**, aged about **194 years**.
- He lives on **Saint Helena Island**, a British Overseas Territory in the South Atlantic Ocean.
- Jonathan hatched around **1832**, before the invention of the telephone and electric light bulb.
- Despite advanced age, he remains active and is closely monitored by veterinarians.
- He holds a **Guinness World Record** for longevity.

### Seychelles Giant Tortoise





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- Scientific name: **Aldabrachelys gigantea**.
- Native to the **Aldabra Atoll** of Seychelles.
- It is one of the largest tortoise species in the world.
- **IUCN Status:** Vulnerable.
- Aldabra Atoll is a **UNESCO World Heritage Site**.

### Long Range Land Attack Cruise Missile (LRLACM)

- **DRDO** successfully flight-tested the **Long Range Land Attack Cruise Missile (LRLACM)** from **Odisha**.
- The missile is capable of precision strikes against high-value land targets at long ranges.
- It flies at low altitude using terrain-hugging capability to evade enemy radar.
- It is equipped with indigenous navigation and guidance systems.
- The missile significantly strengthens India's long-range conventional strike capability.

### Cruise Missile

- Cruise missiles fly within the atmosphere using aerodynamic lift.
- They are guided throughout the flight using GPS, INS, TERCOM, or radar guidance.
- They can be launched from land, sea, submarines, or aircraft.
- India has developed cruise missiles such as **BrahMos** and **Nirbhay**.
- Cruise missiles differ from ballistic missiles, which follow a ballistic trajectory.

### Exercise Khaan Quest 2026

- **Exercise Khaan Quest** is a **multinational peacekeeping exercise** hosted annually by **Mongolia**.
- The **Indian Army** participated alongside armed forces from several countries.
- The exercise focuses on **United Nations Peacekeeping Operations (UNPKO)**.
- It includes counter-terrorism, humanitarian assistance, disaster response, and joint tactical drills.
- The exercise enhances interoperability among participating nations.



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### Mongolia – Important GK

- **Capital:** Ulaanbaatar.
- **Currency:** Tögrög.
- It is a **landlocked country** situated between **Russia** and **China**.
- The **Gobi Desert** occupies much of southern Mongolia.
- Mongolia is known as the "**Land of the Eternal Blue Sky**."

### DRDO Ballistic Missile Defence (BMD) Test

- **DRDO** successfully tested an advanced **Ballistic Missile Defence (BMD)** interceptor system.
- The BMD system is designed to intercept hostile ballistic missiles during flight.
- India follows a **two-tier BMD architecture** using **PAD/PDV** and **AAD/AD-1/AD-2** interceptors.
- The system strengthens India's strategic missile defence capability.
- India is among the few countries possessing indigenous BMD technology.

### NASM-MR Missile

- **NASM-MR (Naval Anti-Ship Missile – Medium Range)** is an indigenously developed anti-ship missile by **DRDO**.
- It is designed for launch from **Indian Navy helicopters**.
- The missile uses an indigenous **Imaging Infrared Seeker (IIR)** for terminal guidance.
- It can engage enemy warships with high precision.
- It significantly enhances India's maritime strike capability.

### Arjun Mk-1A Main Battle Tank

- **Arjun Mk-1A** is India's latest indigenous **Main Battle Tank (MBT)** developed by **DRDO**.
- It is equipped with a **120 mm rifled gun**, advanced fire-control system, and explosive reactive armour.
- The tank features more than **70 major improvements** over the Arjun Mk-1.





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- It provides enhanced mobility, protection, and battlefield survivability.
- It is manufactured by **Heavy Vehicles Factory, Avadi, Chennai**.

### SIPRI Report 2026

- The **Stockholm International Peace Research Institute (SIPRI)** reported that **India possesses around 190 nuclear warheads**, more than **Pakistan's estimated 170**.
- SIPRI is an independent international institute established in **1966**.
- Headquarters: **Stockholm, Sweden**.
- It publishes the annual **SIPRI Yearbook** on global armaments, arms control, and international security.
- SIPRI is one of the world's leading authorities on defence and strategic affairs.

### Rudram-II Missile

- **Rudram-II** is an indigenously developed **air-to-surface missile** developed by **DRDO**.
- It is capable of engaging enemy **radars, bunkers, command centres, and other high-value ground targets**.
- The missile can be launched from fighter aircraft such as the **Su-30MKI**.
- It possesses long-range precision strike capability with advanced guidance systems.
- Rudram-II significantly enhances the Indian Air Force's **Suppression of Enemy Air Defence (SEAD)** capability.

## INDICES AND REPORTS:

### National Family Health Survey-6 (NFHS-6)

- The **National Family Health Survey-6 (NFHS-6)** was conducted during **2023–24** by the **Ministry of Health & Family Welfare**, with the **International Institute for Population Sciences (IIPS), Mumbai**, as the nodal agency. It covered **6.79 lakh households across 715 districts**.
- **Institutional deliveries** increased to **90.6%**, while **four or more Antenatal Care (ANC) visits** rose to **65.2%**, reflecting improvements in maternal healthcare.
- Child nutrition indicators improved significantly, with **stunting declining to 29.3%**, **severe wasting to 5.2%**, and **underweight children** also showing a decline compared to NFHS-5.



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- **Full immunisation coverage** among children increased, while **health insurance coverage** rose to **60.2%** and **women's bank account ownership** reached **89%**, indicating better financial and healthcare inclusion.
- The survey also highlighted emerging concerns such as rising **overweight, obesity, and non-communicable diseases (NCDs)**, indicating India's dual burden of malnutrition and lifestyle diseases.

### National Family Health Survey (NFHS) – Important GK

- **NFHS** is India's largest nationwide survey on **health, nutrition, fertility, family welfare, and population**.
- It is conducted under the **Ministry of Health & Family Welfare**.
- The **International Institute for Population Sciences (IIPS), Mumbai**, is the nodal agency.
- The survey provides **district-level data** for evidence-based policy formulation.
- NFHS is conducted approximately every **five years**.

### Global Housing Crisis 2026

- The **Global Housing Crisis 2026** report estimates that around **3.4 billion people** worldwide are trapped in a **housing affordability crisis**, lacking access to safe, affordable, and adequate housing.
- Rapid **urbanisation**, rising property prices, stagnant wage growth, and increasing construction costs have widened the affordability gap in both developed and developing countries.
- Low-income households are increasingly forced into **overcrowded housing, informal settlements, or homelessness**, while middle-income families also face declining housing affordability.
- The report emphasizes the need for **affordable housing policies, increased housing supply, sustainable urban planning, and innovative financing mechanisms** to address the crisis.
- The housing affordability challenge is considered a major obstacle to achieving **Sustainable Development Goal (SDG) 11 – Sustainable Cities and Communities**.

### Affordable Housing – Important GK





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- **Affordable housing** generally refers to housing where a household spends **no more than 30% of its income** on housing costs (some countries use different thresholds).
- **SDG 11** aims to make **cities and human settlements inclusive, safe, resilient, and sustainable**.
- The **UN-Habitat** programme is the principal United Nations agency working on sustainable urban development and housing.
- In India, affordable housing is promoted through schemes such as **Pradhan Mantri Awas Yojana (PMAY-Urban and PMAY-Gramin)**.
- Major causes of housing crises include **rapid urbanisation, population growth, limited land availability, supply constraints, and rising construction costs**.

## SCIENCE AND TECHNOLOGY:

### ISRO Successfully Conducts 175-Tonne Semi-Cryogenic Engine Hot Test

- **ISRO** successfully conducted the **8th hot test** of the **Semi-Cryogenic Engine Power Head Test Article (PHTA)** at **175-tonne (88%) thrust** at the **ISRO Propulsion Complex (IPRC), Mahendragiri, Tamil Nadu**.
- The test validated stable engine performance, pre-burner ignition, and turbopump operation, paving the way for the **full 200-tonne thrust test**.
- The **SE2000 engine** will power the **SC120 Semi-Cryogenic Stage**, replacing the **L110 core stage** of the **LVM3** launch vehicle.
- The engine uses **Liquid Oxygen (LOX)** and **Isrosene (purified kerosene)**, providing cleaner combustion, higher efficiency, and increased payload capacity.
- The technology will strengthen future missions including **Gaganyaan**, heavy satellite launches, and India's next-generation launch vehicles.

### Semi-Cryogenic Rocket Engine

- A semi-cryogenic engine uses **Liquid Oxygen (LOX)** as the oxidizer and **Kerosene (RP-1/Isrosene)** as fuel.
- It delivers **higher thrust** than cryogenic upper-stage engines and is suitable for booster stages.



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- LOX is stored at cryogenic temperatures, while kerosene remains liquid at normal temperatures.
- Semi-cryogenic propulsion is cheaper and easier to handle than hydrogen-based cryogenic propulsion.
- Major space agencies including **NASA, Roscosmos, and SpaceX** use semi-cryogenic propulsion.

### India's First Approved Radioligand Therapy for Advanced Prostate Cancer

- India has approved its **first Radioligand Therapy (RLT)** for treating **advanced metastatic prostate cancer**.
- The therapy combines a **radioactive isotope** with a molecule that specifically targets **Prostate-Specific Membrane Antigen (PSMA)** on cancer cells.
- It delivers targeted radiation directly to tumour cells while minimizing damage to healthy tissues.
- It is mainly used for patients with **metastatic castration-resistant prostate cancer (mCRPC)**.
- The approval marks a major advancement in **precision oncology** and nuclear medicine.

### Radioligand Therapy (RLT)

- Radioligand Therapy is a **targeted cancer treatment** using radioactive molecules.
- It combines **diagnostic imaging** and **targeted therapy**, making it a form of **theranostics**.
- Radioisotopes commonly used include **Lutetium-177 (Lu-177)** and **Actinium-225**.
- It is increasingly used in treating **prostate cancer** and **neuroendocrine tumours**.
- The treatment causes less damage to surrounding healthy tissues than conventional radiotherapy.

### India Launches World's First Nuclear Process Heat-Based Hydrogen Production Facility

- India commissioned the **world's first nuclear process heat-based hydrogen production facility** at the **Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, Tamil Nadu**.
- The facility uses **nuclear heat** instead of fossil fuels to produce hydrogen.



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- It supports India's **National Green Hydrogen Mission** by enabling low-carbon hydrogen production.
- The technology improves energy efficiency compared to conventional electrolysis.
- It demonstrates India's leadership in advanced nuclear and clean energy technologies.

### Indira Gandhi Centre for Atomic Research (IGCAR)

- **IGCAR** is located at **Kalpakkam, Tamil Nadu**.
- It functions under the **Department of Atomic Energy (DAE)**.
- It is India's premier research centre for **Fast Breeder Reactor (FBR)** technology.
- It develops advanced nuclear reactors, fuel cycles, and materials.
- The **Prototype Fast Breeder Reactor (PFBR)** is located at Kalpakkam.

### National Green Hydrogen Mission

- Approved in **2023**.
- Implemented by the **Ministry of New and Renewable Energy (MNRE)**.
- Aims to make India a global hub for **Green Hydrogen** production and exports.
- Supports decarbonization of **steel, fertilizers, refineries, shipping, and heavy transport**.
- Contributes towards India's **Net Zero 2070** target.

### Varya – India's AI Video Generation Model

- **Varya** is an indigenous **AI-powered video generation model** developed to create high-quality videos from text prompts.
- It enables faster and lower-cost content creation for education, media, advertising, and digital communication.
- The model supports multilingual content generation, including Indian languages.
- It reduces dependence on foreign generative AI platforms.
- Varya represents India's growing capability in **Generative Artificial Intelligence** and indigenous AI development.

### Generative Artificial Intelligence (GenAI)





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- Generative AI creates **text, images, videos, audio, and code** using machine learning models.
- It is powered mainly by **Large Language Models (LLMs)** and **Diffusion Models**.
- Applications include education, healthcare, entertainment, software development, and governance.
- Challenges include misinformation, copyright issues, deepfakes, and AI ethics.
- India promotes responsible AI through the **IndiaAI Mission**.

### Artemis III Mission

- **NASA** announced the crew for **Artemis III**, scheduled for launch in **2027**.
- Artemis III is planned to be the **first crewed Moon landing since Apollo 17 (1972)**.
- Astronauts will land near the **Moon's South Pole**, a region believed to contain water ice.
- The mission will use NASA's **Space Launch System (SLS)** rocket and the **Orion spacecraft**, with a lunar lander developed under the Artemis programme.
- Artemis aims to establish a long-term human presence on the Moon and prepare for future **Mars missions**.

### Artemis Programme

- Artemis is NASA's programme for returning humans to the Moon.
- It is supported by international partners through the **Artemis Accords**.
- **Artemis I** was an uncrewed lunar mission.
- **Artemis II** will be the first crewed lunar flyby mission.
- **Artemis III** aims to land astronauts on the lunar surface near the South Pole.

### MAVEN Mission

- **MAVEN (Mars Atmosphere and Volatile Evolution)** was launched by **NASA** in **2013** to study the Martian atmosphere.
- The mission investigated how Mars lost much of its atmosphere to space over billions of years.



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- It helped explain the transformation of Mars from a potentially habitable planet into the cold, dry world seen today.
- MAVEN studied the interaction between the **solar wind** and the Martian atmosphere.
- After more than a decade of successful operations, NASA officially concluded the mission.

### Mars – Important GK

- Mars is known as the **Red Planet** due to iron oxide on its surface.
- It has **two moons**—**Phobos** and **Deimos**.
- **Olympus Mons** is the largest volcano in the Solar System.
- **Valles Marineris** is one of the largest canyon systems in the Solar System.
- India's **Mars Orbiter Mission (Mangalyaan)** made India the first Asian nation to reach Mars orbit successfully.

### Loktak Protocluster

- An international team led by an **Indian scientist** discovered the ancient **Loktak Protocluster**, one of the earliest known galaxy protoclusters in the Universe.
- The protocluster is observed as it existed when the Universe was only a small fraction of its present age.
- It contains numerous young galaxies that are expected to evolve into a massive galaxy cluster.
- The discovery provides valuable insights into the **formation and evolution of large-scale cosmic structures**.
- It demonstrates India's growing contribution to observational astronomy and international astrophysical research.

### Protocluster

- A **Protocluster** is a group of young galaxies that eventually evolves into a massive **galaxy cluster**.
- They are found in the early Universe at very high redshifts.
- Studying protoclusters helps scientists understand **galaxy formation, dark matter distribution, and cosmic evolution**.



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- They are detected using powerful optical, infrared, and radio telescopes.
- Galaxy clusters are the **largest gravitationally bound structures** in the Universe.

## SPORTS:

### Indian Women's Hockey Team wins FIH Nations Cup 2026

- The **Indian Women's Hockey Team** won the **FIH Hockey Women's Nations Cup 2026** by defeating **New Zealand 2–0** in the final held at **Auckland, New Zealand**.
- **Navneet Kaur** and **Sunelita Toppo** scored the goals in the final, while India remained **unbeaten throughout the tournament**.
- The victory secured **promotion to the 2026–27 FIH Pro League**, the highest annual international league in hockey.
- It was **India's second Women's FIH Nations Cup title**, showcasing the team's consistent rise in world hockey.
- **Captain:** Salima Tete; the team was widely praised for its disciplined defence and attacking efficiency.

### Fédération Internationale de Football Association (FIFA)

- **FIFA (Fédération Internationale de Football Association)** is the **world governing body of football**, founded on **21 May 1904**.
- **Headquarters:** Zürich, Switzerland.
- It has **211 Member Associations**, making it one of the world's largest international sports organizations.
- FIFA organizes major tournaments including the **FIFA World Cup, FIFA Women's World Cup, FIFA Club World Cup, FIFA U-17 and U-20 World Cups**, and **FIFA Futsal World Cup**.
- The **2026 FIFA Men's World Cup** will be jointly hosted by **Canada, Mexico, and the United States**, and will feature **48 teams** for the first time.

### FIFA World Cup – Important GK

- The **FIFA World Cup** is held **every four years**.
- The inaugural tournament was held in **1930** in **Uruguay**.
- **Brazil** has won the most World Cup titles (**5**).





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- The **Jules Rimet Trophy** was awarded until **1970**; since **1974**, winners receive the **FIFA World Cup Trophy**.
- The **2022 FIFA World Cup** was won by **Argentina**, led by **Lionel Messi**.

### Indian Athletics Awards 2025

- **Neeraj Chopra** was named **Best Male Athlete**, while **Parul Chaudhary** received the **Best Female Athlete** award at the **Indian Athletics Awards 2025**.
- The awards recognize outstanding performances by Indian athletes in national and international competitions.
- **Neeraj Chopra** is India's first **Olympic gold medallist in athletics** (Javelin Throw, Tokyo 2020).
- **Parul Chaudhary** is a leading Indian **middle-distance and steeplechase runner**, holding multiple national records.
- The awards encourage excellence and promote athletics across India.

### Neeraj Chopra – Important GK

- Event: **Javelin Throw**.
- **Olympic Gold Medal**: Tokyo 2020.
- **World Athletics Championships Gold**: 2023 (Budapest).
- First Indian to win a **World Athletics Championship Gold Medal**.
- Recipient of the **Major Dhyan Chand Khel Ratna Award** and **Padma Shri**.

### Parul Chaudhary – Important GK

- Specializes in the **3000 m Steeplechase** and **5000 m** events.
- Holds multiple **National Records** in long-distance events.
- Won medals at the **Asian Games** and **Asian Athletics Championships**.
- Represents **Uttar Pradesh**.
- One of India's leading female distance runners.

### World Yogasana Championship 2026



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- **India** topped the medal tally at the **World Yogasana Championship 2026**, winning a record **114 medals**.
- Indian athletes dominated across **individual, artistic, rhythmic, and traditional Yogasana events**.
- The championship highlighted India's global leadership in **competitive Yogasana**.
- The performance strengthened India's campaign for wider international recognition of Yogasana as a competitive sport.
- The event promoted physical fitness, mental well-being, and India's traditional knowledge systems.

### Yogasana – Important GK

- **Yogasana** refers to the physical postures practiced in Yoga.
- **International Day of Yoga** is observed annually on **21 June**.
- The proposal for International Yoga Day was adopted by the **United Nations General Assembly in 2014**.
- India established the **National Yogasana Sports Federation** to promote competitive Yogasana.
- Yoga originated in **ancient India** and forms an integral part of the country's cultural heritage.

### French Open 2026

- The **French Open (Roland Garros) 2026** was held on **clay courts** at **Paris, France**.
- **Alexander Zverev (Germany)** won the **Men's Singles** title.
- **Mirra Andreeva (Russia)** won the **Women's Singles** title.
- The French Open is the **second Grand Slam** tournament of the calendar year.
- It is the only Grand Slam played on **clay courts**, making endurance and baseline play especially important.

### Grand Slam Tournaments – Important GK

- **Australian Open** – Hard Court – January.
- **French Open (Roland Garros)** – Clay Court – May/June.



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- **Wimbledon** – Grass Court – June/July.
- **US Open** – Hard Court – August/September.
- Winning all four majors in the same calendar year is called a **Calendar Grand Slam**.

### Praggnanandhaa wins Norway Chess 2026

- **R. Praggnanandhaa** became the **first Indian** to win the **Norway Chess Tournament**, capturing the **2026 title**.
- The tournament was held in **Stavanger, Norway**, one of the world's strongest elite chess events.
- He finished ahead of several top-ranked Grandmasters through consistent performances.
- The victory further established Praggnanandhaa as one of the world's leading young chess players.
- His achievement marked another milestone in India's rise as a global chess powerhouse.

### Norway Chess

- **Norway Chess** is an annual elite international chess tournament held in **Stavanger, Norway**.
- It features many of the world's highest-rated Grandmasters.
- The tournament follows a unique format with **classical games** and **Armageddon tie-breaks** for drawn classical games.
- **Magnus Carlsen** has won the tournament multiple times.
- It is regarded as one of the most prestigious invitational chess events in the world.

## MISCELLANEOUS:

### Mongolia

- Mongolia is a **landlocked country** situated between **Russia (north)** and **China (south)** in East Asia.
- The capital and largest city is **Ulaanbaatar**, while the **Gobi Desert** occupies much of southern Mongolia.
- It follows a **parliamentary democratic system**, and the currency is the **Mongolian Tögrög (MNT)**.





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- India and Mongolia share a **Strategic Partnership (2015)** and celebrate close **Buddhist cultural ties**.
- Mongolia is known for vast reserves of **coal, copper, gold, uranium, and rare earth minerals**, making it strategically important.

### Khaan Quest 2026

- Khaan Quest** is a **multinational military exercise** hosted annually by **Mongolia**.
- It focuses on **UN peacekeeping operations**, humanitarian assistance, disaster relief, and multinational interoperability.
- India regularly participates through the **Indian Army**, enhancing defence cooperation with partner nations.
- The exercise is supported by the **United States Indo-Pacific Command (USINDOPACOM)**.
- It promotes military coordination, peacekeeping skills, and regional security cooperation.

### Gobi Desert

- The **Gobi Desert** extends across **southern Mongolia and northern China**.
- It is a **cold desert**, receiving very low rainfall and experiencing extreme seasonal temperatures.
- The desert is famous for rich **dinosaur fossil discoveries**, including dinosaur eggs.
- Vegetation mainly consists of shrubs and grasses adapted to arid conditions.
- It is one of the world's largest deserts after the Sahara and Arabian Deserts.

### International Big Cat Alliance (IBCA)

- The **International Big Cat Alliance (IBCA)** is an India-led initiative for the conservation of the world's seven major big cat species.
- The seven species are **Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma**.
- India announced the initiative during the **50th anniversary of Project Tiger (2023)**.
- The Alliance promotes conservation, research, capacity building, funding, and cooperation among range countries.
- The headquarters of IBCA is located in **India**.



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### G7 Summit

- The **Group of Seven (G7)** consists of **Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States**.
- The **European Union** participates but is not a formal member.
- It discusses global issues such as economic stability, climate change, energy security, technology, and international peace.
- India frequently participates as an **outreach partner** despite not being a member.
- There is **no permanent secretariat or headquarters**; the presidency rotates annually among members.

### Anji Khad Bridge

- The **Anji Khad Bridge** is India's **first cable-stayed railway bridge**.
- It is located in the **Reasi district of Jammu & Kashmir** on the **Udhampur–Srinagar–Baramulla Rail Link (USBRL)**.
- The bridge spans the **Anji River**, a tributary of the **Chenab River**.
- It has been designed to withstand strong winds, earthquakes, and challenging Himalayan terrain.
- The project significantly improves rail connectivity between the Kashmir Valley and the rest of India.

### Global Alliance Against Hunger and Poverty

- The alliance was launched during the **G20 Summit hosted by Brazil (2024)**.
- It aims to accelerate efforts to eliminate **hunger, poverty, and malnutrition** worldwide.
- It promotes cooperation among governments, international organizations, financial institutions, and civil society.
- The initiative supports **Sustainable Development Goals (SDGs)**, particularly **SDG 1 (No Poverty)** and **SDG 2 (Zero Hunger)**.
- India supports global initiatives for food security through digital public infrastructure and nutrition programmes.

### Saka Calendar



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- The **Saka Era** is India's official national calendar, adopted in **1957**.
- It begins from **78 CE** and is used alongside the Gregorian calendar for official purposes.
- **Chaitra** is the first month of the Saka calendar.
- It was prepared by the **Calendar Reform Committee** headed by astrophysicist **Meghnad Saha**.
- Government notifications, All India Radio, and Doordarshan often use both Gregorian and Saka dates.

### Starlink Satellite Internet

- **Starlink** is a satellite-based broadband internet service developed by **SpaceX**.
- It operates through a constellation of **Low Earth Orbit (LEO)** satellites placed at an altitude of about **550 km**.
- LEO satellites provide **low latency (20–40 ms)** and high-speed internet compared to traditional geostationary satellites.
- Starlink is particularly useful for **remote, rural, mountainous, and maritime regions** where conventional internet infrastructure is unavailable.
- **SpaceX** was founded by **Elon Musk** in **2002** and is headquartered in **Hawthorne, California, USA**.

### LEO (Low Earth Orbit) Satellites

- LEO extends from about **160 km to 2,000 km** above Earth's surface.
- Satellites in this orbit complete one revolution around Earth in approximately **90–120 minutes**.
- They are widely used for **communication, Earth observation, remote sensing, weather monitoring, and military reconnaissance**.
- Examples include **Starlink, OneWeb, and ISRO's Earth observation satellites**.
- Compared to **Geostationary Orbit (GEO)** satellites (35,786 km), LEO satellites provide **lower communication delay**.

### BRICS





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- **BRICS** is a grouping of major emerging economies aimed at promoting economic cooperation and reforms in global governance.
- Original members were **Brazil, Russia, India, China, and South Africa**; the group has expanded to include additional members.
- The **New Development Bank (NDB)**, headquartered in **Shanghai, China**, is the financial institution established by BRICS.
- BRICS advocates reforms in institutions such as the **IMF, World Bank, and United Nations Security Council**.
- Annual BRICS Summits rotate among member countries.

### New Development Bank (NDB)

- The **New Development Bank** was established in **2014** during the **6th BRICS Summit at Fortaleza, Brazil**.
- Headquarters: **Shanghai, China**.
- It finances **infrastructure and sustainable development projects** in BRICS and other developing countries.
- Every founding member initially contributed an equal share to the bank's capital.
- India has received NDB assistance for projects related to **transport, renewable energy, and urban infrastructure**.

### PM E-Drive Scheme

- The **PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM E-Drive)** Scheme promotes the adoption of **electric vehicles (EVs)** in India.
- It aims to reduce **air pollution, dependence on fossil fuels, and greenhouse gas emissions**.
- The scheme supports **electric two-wheelers, three-wheelers, buses, ambulances, and charging infrastructure**.
- It is implemented by the **Ministry of Heavy Industries**.
- India aims to increase EV adoption as part of its clean mobility transition.

### Battery Swapping



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- **Battery swapping** allows an electric vehicle to exchange a discharged battery for a fully charged one within a few minutes.
- It significantly reduces charging time and improves vehicle utilization.
- Battery swapping is especially suitable for **electric two-wheelers, three-wheelers, taxis, and commercial fleets**.
- It reduces the need for large battery packs and extensive charging infrastructure.
- India released a **Battery Swapping Policy draft** to promote interoperability and standardization.

### National Green Hydrogen Mission

- Launched in **2023**, the mission aims to make India a global hub for the **production, utilization, and export of Green Hydrogen**.
- Green Hydrogen is produced using **electrolysis powered by renewable energy**, producing no carbon emissions.
- The mission seeks to reduce dependence on imported fossil fuels and support India's net-zero goals.
- It is implemented by the **Ministry of New and Renewable Energy (MNRE)**.
- Green hydrogen is expected to play a major role in sectors like **fertilizers, steel, refining, shipping, and heavy transport**.

### Shukrayaan-1

- **Shukrayaan-1** is **ISRO's planned mission to Venus**.
- The mission aims to study **Venus' atmosphere, surface, geological evolution, and interaction with the solar wind**.
- Venus is often called **Earth's Twin** because of its similar size and mass.
- Venus rotates **east to west (retrograde rotation)**, opposite to most planets.
- Venus is the **hottest planet** in the Solar System due to its dense **carbon dioxide atmosphere** and runaway greenhouse effect.

### Venus – Important GK

- Venus is the **second planet from the Sun**.



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- It has **no natural satellites**.
- A day on Venus is **longer than its year**.
- The atmospheric pressure is about **90 times** that of Earth.
- Major missions to Venus include **Magellan (NASA), Akatsuki (Japan), Venera (USSR), and Shukrayaan-1 (planned by ISRO)**.

### World Bank

- The **World Bank** was established in **1944** under the **Bretton Woods Agreement**.
- Headquarters: **Washington, D.C., USA**.
- It consists of **five institutions**, including the **International Bank for Reconstruction and Development (IBRD)** and the **International Development Association (IDA)**.
- Its primary objective is to reduce poverty and promote sustainable economic development.
- India is one of the founding members of the World Bank.

### Artificial Intelligence (AI)

- **Artificial Intelligence (AI)** refers to the ability of machines to perform tasks that normally require human intelligence.
- AI applications include **healthcare, defence, education, finance, agriculture, cybersecurity, and autonomous vehicles**.
- **Machine Learning (ML)** and **Deep Learning** are major branches of AI.
- India launched the **IndiaAI Mission** to strengthen AI research, computing infrastructure, and innovation.
- AI is considered one of the critical technologies of the **Fourth Industrial Revolution (Industry 4.0)**.

### Mission Senehgori

- **Mission Senehgori** is an initiative of the **Government of Assam** to revive and strengthen the **Muga silk industry** through scientific cultivation and financial support.
- It promotes large-scale plantation of **Som (Persea bombycina)** and **Soalu (Litsea monopetala)**, the primary host plants of the Muga silkworm.



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- **Muga silk** is endemic to Assam and is known for its natural golden colour, durability, and high commercial value.
- India is the **only country in the world** that produces commercial Muga silk.
- Assam is also the leading producer of **Eri silk**, another important variety of silk.

### Muga Silk

- Muga silk is produced by the **Antheraea assamensis** silkworm, which is endemic to Assam.
- It has received the **Geographical Indication (GI) Tag**.
- Unlike mulberry silk, Muga silk becomes more lustrous with repeated washing.
- Major silk varieties produced in India are **Mulberry, Tasar, Eri, and Muga**.
- India is the **second-largest producer of silk** after China.

### Prime Minister Research Chair (PMRC) Scheme

- The **Prime Minister Research Chair (PMRC) Scheme** aims to attract distinguished researchers, including eminent Indian-origin scientists working abroad, to Indian institutions.
- It seeks to strengthen India's research ecosystem and improve innovation capacity.
- The scheme supports advanced research in strategic and emerging technologies.
- It complements national initiatives such as the **National Research Foundation (NRF)**.
- The scheme promotes collaboration between academia, industry, and research institutions.

### RudraM-II Missile

- **RudraM-II** is an indigenously developed **air-to-surface missile** designed by the **Defence Research and Development Organisation (DRDO)**.
- It is capable of destroying enemy **radars, air-defence systems, bunkers, and strategic ground targets**.
- The missile can be launched from fighter aircraft such as the **Sukhoi Su-30 MKI**.
- It enhances the Indian Air Force's **Suppression of Enemy Air Defence (SEAD)** capability.
- DRDO headquarters is located in **New Delhi**, and it functions under the **Ministry of Defence**.





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### RTX Spark Chip

- **RTX Spark** is an advanced AI computing chip developed for high-performance artificial intelligence applications.
- It supports faster processing of AI models while improving power efficiency.
- Such AI chips are increasingly used in autonomous systems, robotics, defence, healthcare, and data centres.
- AI accelerators are designed specifically for machine learning and deep learning workloads.
- AI semiconductor technology has become a strategic sector for technological self-reliance.

### Pavona clavus (Potato Patch Coral)

- **Pavona clavus** is one of the **largest known coral species** in the world.
- A giant colony of this coral, popularly called the "**Potato Patch**", was recently documented in the **Lakshadweep Islands**.
- Corals are marine invertebrates that live in symbiosis with microscopic algae called **zooxanthellae**.
- Coral reefs are highly sensitive to rising sea temperatures, which can cause **coral bleaching**.
- India has major coral reef regions in **Lakshadweep, Gulf of Mannar, Gulf of Kachchh, Andaman & Nicobar Islands, and Palk Bay**.

### Tylosaurus rex

- **Tylosaurus rex** was a giant marine reptile belonging to the **Mosasaur** group.
- It lived during the **Late Cretaceous Period**, around **66–90 million years ago**.
- Despite resembling crocodiles, mosasaurs were **marine lizards**, not dinosaurs.
- They were apex predators that fed on fish, turtles, ammonites, and other marine reptiles.
- Their fossils have been discovered mainly in **North America**.

### Agasthyamalai Ecological Landscape

- **Agasthyamalai** is part of the **Western Ghats** and extends across **Kerala and Tamil Nadu**.
- It is recognized as a **UNESCO World Network of Biosphere Reserves** site.
- The region is one of India's richest biodiversity hotspots, with numerous endemic species.



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- Important rivers such as the **Tamiraparani, Karamana, and Neyyar** originate from this landscape.
- It is named after the sage **Agastya** and is home to several wildlife sanctuaries and reserve forests.

### Bhashini

- **Bhashini (BHASHa INterface for India)** is India's AI-powered language translation platform launched under the **Digital India Programme**.
- It is implemented by the **Ministry of Electronics and Information Technology (MeitY)** through the **Digital India Bhashini Division (DIBD)**.
- The platform enables **speech-to-speech, speech-to-text, text-to-text, and text-to-speech** translation across multiple Indian languages.
- It supports e-governance, education, healthcare, banking, and judicial services by reducing language barriers.
- Bhashini promotes the vision of **"One Nation, Many Languages"** through indigenous AI models.

### Pralay Missile

- **Pralay** is an indigenously developed **surface-to-surface quasi-ballistic missile** designed by **DRDO**.
- It has a strike range of approximately **150–500 km** and is capable of carrying conventional warheads.
- The missile follows a **maneuverable trajectory**, making interception by enemy air defence systems difficult.
- It is intended for deployment by the **Indian Army** to strengthen tactical strike capability.
- Pralay uses advanced navigation and guidance systems for high-precision strikes.

### Quasi-Ballistic Missile

- A **quasi-ballistic missile** follows a low-altitude, maneuverable flight path unlike a traditional ballistic missile.
- It can change direction during flight, increasing survivability against missile defence systems.



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- Such missiles provide high accuracy against strategic military targets.
- Examples include **India's Pralay**, **Russia's Iskander**, and **China's DF-12**.
- They are widely used for tactical battlefield operations.

### Jan Aushadhi Kendras

- **Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP)** provides quality generic medicines at affordable prices.
- The scheme is implemented by the **Pharmaceuticals and Medical Devices Bureau of India (PMBI)** under the **Department of Pharmaceuticals**.
- Medicines sold through Jan Aushadhi Kendras are significantly cheaper than branded medicines.
- The scheme aims to reduce out-of-pocket healthcare expenditure and improve access to medicines.
- PMBJP was originally launched in **2008** and later expanded nationwide.

### National Quantum Mission

- The **National Quantum Mission (NQM)** was approved in **2023** to make India a global leader in quantum technologies.
- It focuses on **quantum computing, quantum communication, quantum sensing, and quantum materials**.
- The mission supports the development of secure communication networks using **Quantum Key Distribution (QKD)**.
- It aims to establish advanced quantum research hubs across the country.
- The mission is implemented by the **Department of Science and Technology (DST)**.

### Quantum Computing

- Quantum computers use **qubits** instead of classical bits (0 and 1).
- Qubits can exist in **superposition**, enabling multiple computations simultaneously.
- **Quantum entanglement** allows correlated behaviour between distant qubits.
- Quantum computing has applications in cryptography, drug discovery, weather forecasting, finance, and defence.



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- Major countries investing heavily in quantum technology include **India, USA, China, Canada, and Japan.**

### Axiom Mission

- Axiom Space** is a private American space company developing commercial human spaceflight missions.
- It collaborates with **NASA** to send private astronauts to the **International Space Station (ISS)**.
- Axiom also plans to build the world's first commercial space station.
- India has partnered with Axiom for future human spaceflight cooperation and astronaut training initiatives.
- Headquarters: **Houston, Texas, USA.**

### International Space Station (ISS)

- The **ISS** is the world's largest permanently inhabited space laboratory.
- It orbits Earth at an altitude of about **400 km** in **Low Earth Orbit (LEO)**.
- The station is jointly operated by **NASA (USA), Roscosmos (Russia), ESA (Europe), JAXA (Japan), and CSA (Canada)**.
- Astronauts conduct research in microgravity across biology, physics, medicine, and material sciences.
- The ISS completes one orbit around Earth in approximately **90 minutes**.

### OPEC+

- OPEC+** consists of the **Organization of the Petroleum Exporting Countries (OPEC)** and major oil-producing partner countries led by **Russia**.
- It coordinates oil production policies to stabilize global crude oil prices.
- OPEC headquarters is located in **Vienna, Austria**.
- Major OPEC members include **Saudi Arabia, Iraq, Iran, Kuwait, UAE, Algeria, Libya, Nigeria, and Venezuela**.
- India is not a member** of OPEC or OPEC+ but is one of the world's largest crude oil importers.





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### Indian Pangolin

- The **Indian Pangolin (Manis crassicaudata)** is the only scaly mammal found in the Indian subcontinent.
- It is distributed across **India, Sri Lanka, Nepal, and Pakistan**.
- It feeds mainly on **ants and termites** using its long sticky tongue.
- It is listed under **Schedule I of the Wildlife (Protection) Act, 1972, Appendix I of CITES**, and is classified as **Endangered** by the IUCN.
- Pangolins are among the **most trafficked mammals in the world** due to illegal demand for their scales and meat.

### Screw Pine

- **Screw Pine (Pandanus spp.)** is a tropical plant commonly found in **coastal regions, wetlands, riverbanks, and marshes** of India and Southeast Asia.
- It is **not a true pine**; it belongs to the **Pandanaceae** family and is recognized by its long spiny leaves and distinctive prop roots.
- The fragrant flowers are used in perfumes, traditional medicines, and flavouring food, while the leaves are used for making **mats, baskets, ropes, and handicrafts**.
- In India, Screw Pine is commonly found in **Kerala, Tamil Nadu, Odisha, Andhra Pradesh, West Bengal, and the Andaman & Nicobar Islands**.
- The plant plays an important ecological role by **preventing coastal soil erosion** and stabilizing sand dunes.

### National Awards for e-Governance (NAeG)

- The **National Awards for e-Governance (NAeG)** were instituted in **2003** to recognize excellence in digital governance and public service delivery.
- The awards are presented by the **Department of Administrative Reforms and Public Grievances (DARPG)** under the **Ministry of Personnel, Public Grievances and Pensions**.
- They encourage innovation in **digital governance, AI-based citizen services, cybersecurity, data analytics, and grassroots digital initiatives**.
- Eligible participants include **Central Ministries, State Governments, Union Territories, District Administrations, and Gram Panchayats**.



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- DARPG is also responsible for initiatives such as **CPGRAMS (Centralized Public Grievance Redress and Monitoring System)**.

### Agricultural and Processed Food Products Export Development Authority (APEDA)

- APEDA** is a **statutory body** established under the **APEDA Act, 1985**, which came into force on **13 February 1986**.
- It functions under the **Department of Commerce, Ministry of Commerce and Industry** and is headquartered in **New Delhi**.
- APEDA promotes the export of **agricultural and processed food products**, including fruits, vegetables, meat products, cereals, floriculture, dairy products, and organic products.
- It registers exporters, prescribes quality standards, provides financial assistance, and promotes value-added agricultural exports.
- APEDA serves as the Secretariat of the **National Accreditation Board (NAB)** for the **National Programme for Organic Production (NPOP)**.

### National e-Vidhan Application (NeVA)

- National e-Vidhan Application (NeVA)** is a digital platform designed to make the functioning of **State and Union Territory Legislatures completely paperless**.
- It is one of the **44 Mission Mode Projects** under the **Digital India Programme**.
- NeVA works on the concept of "**One Nation, One Application**", providing a common digital platform for all legislative bodies.
- The platform is hosted on **MeghRaj 2.0 (Government Community Cloud)** and enables digital handling of bills, notices, questions, agendas, bulletins, and legislative proceedings.
- It improves transparency, efficiency, and accessibility while reducing paper consumption and administrative delays.

### MeghRaj Cloud

- MeghRaj** is the Government of India's **GI Cloud (Government Community Cloud)** initiative for hosting e-Governance applications.
- It is implemented by the **Ministry of Electronics and Information Technology (MeitY)** through the **National Informatics Centre (NIC)**.



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- MeghRaj provides secure cloud infrastructure for Central and State Government departments.
- It reduces IT infrastructure costs and enables scalable digital public services.
- Major government platforms such as **NeVA** are hosted on **MeghRaj 2.0**.

### Jan Samarth Portal

- **Jan Samarth Portal** is a **digital platform for credit-linked Government schemes**, launched in **2022** to provide a single-window system for availing loans under various schemes.
- It connects beneficiaries, banks, NBFCs, Central and State Government agencies, and nodal agencies on one platform, promoting financial inclusion and ease of doing business.
- The portal supports **15 Central Government credit-linked schemes** and is integrated with over **250 lending institutions**, including all Public Sector Banks.
- It uses the **India Stack** ecosystem, including **Aadhaar e-KYC, DigiLocker, UPI, and Account Aggregator**, enabling digital eligibility checks and in-principle loan approval.
- The portal is available in **8 Indian languages** and provides online application tracking and grievance redressal.

### Jai Prakash Narayan Bird Sanctuary (Surha Tal)

- **Jai Prakash Narayan Bird Sanctuary**, also known as **Surha Tal**, is located in **Ballia district, Uttar Pradesh**, and has become **India's 100th Ramsar Site**.
- It is a **natural perennial oxbow lake** formed from an old meander of the **Ganga River** and lies in the middle Ganga basin.
- The sanctuary is an important wintering ground for migratory birds along the **Central Asian Flyway**.
- It supports rich biodiversity, including over **220 plant species, 66 fish species**, reptiles, amphibians, and numerous resident and migratory birds.
- India joined the **Ramsar Convention** in **1982**, while the Convention was adopted in **1971** at **Ramsar, Iran**.

### Ramsar Convention



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- The **Ramsar Convention on Wetlands** is the first international treaty dedicated exclusively to wetland conservation.
- It was adopted in **1971** at **Ramsar (Iran)** and entered into force in **1975**.
- The Convention promotes the **wise use**, conservation, and international cooperation for wetlands.
- India became a Contracting Party in **1982**.
- **Tamil Nadu** has the highest number of Ramsar Sites in India.

### E85 Fuel

- **E85** is a fuel blend containing **80–85% ethanol** and **15–20% petrol**, designed for **Flex-Fuel Vehicles (FFVs)**.
- Flex-fuel vehicles can operate on ethanol blends ranging from **E20 to E100** without engine modification.
- E85 produces significantly **lower greenhouse gas emissions** and cleaner combustion than conventional petrol.
- Ethanol has a **Research Octane Number (RON)** of around **108**, providing better engine performance and knock resistance.
- India aims to reduce crude oil imports by promoting ethanol blending under the **National Biofuel Policy**.

### Software Technology Parks of India (STPI)

- **Software Technology Parks of India (STPI)** is an autonomous society established in **1991** under the **Ministry of Electronics and Information Technology (MeitY)**.
- Its primary objective is to promote **software exports** and strengthen India's IT and IT-enabled services sector.
- STPI implements the **Software Technology Park (STP)** and **Electronics Hardware Technology Park (EHTP)** schemes.
- It provides incubation facilities, export support, customs clearance, regulatory assistance, and startup promotion through **Centres of Entrepreneurship (CoEs)**.
- STPI has played a major role in developing India's software export ecosystem.

### Eklavya Model Residential Schools (EMRS)





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- **Eklavya Model Residential Schools (EMRS)** were launched in **1998** by the **Ministry of Tribal Affairs** to provide quality education to **Scheduled Tribe (ST)** students.
- The schools provide **free residential education** from **Class VI to XII** following the **CBSE curriculum**.
- EMRS are established in blocks having **more than 50% ST population** and at least **20,000 tribal population**.
- They are managed by the **National Education Society for Tribal Students (NESTS)**, an autonomous body under the Ministry of Tribal Affairs.
- Each school has a capacity of **480 students** with equal seats for boys and girls.

### Solar Cycle

- The **Solar Cycle** is an approximately **11-year cycle** of changing solar activity driven by the Sun's magnetic field.
- It is measured primarily by the **number of sunspots** visible on the Sun's surface.
- During **Solar Maximum**, the Sun experiences more sunspots, solar flares, and coronal mass ejections.
- The Sun's magnetic poles reverse approximately every **11 years**, completing a full magnetic cycle in about **22 years**.
- Solar activity can influence satellite communication, GPS, radio communication, and Earth's space weather.

### Nilgiri Tahr

- The **Nilgiri Tahr (Nilgiritragus hylocrius)** is the **only mountain ungulate** found in southern India and is endemic to the **Western Ghats**.
- It is commonly known as the **Nilgiri Ibex** and is locally called **Varayaadu**.
- The species is found mainly in **Eravikulam National Park, Mukurthi National Park, Anamalai Tiger Reserve**, and surrounding hill ranges.
- It is classified as **Endangered** by the **IUCN** and protected under **Schedule I of the Wildlife (Protection) Act, 1972**.
- **Project Nilgiri Tahr** was launched by the Government of Tamil Nadu for its long-term conservation.



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### Anusandhan National Research Foundation (ANRF)

- The **Anusandhan National Research Foundation (ANRF)** was established under the **ANRF Act, 2023**, replacing the **Science and Engineering Research Board (SERB)**.
- It aims to strengthen scientific research, innovation, and collaboration among academia, industry, and government.
- ANRF has a planned funding target of **₹50,000 crore** during **2023–2028**.
- It supports research in science, engineering, technology, social sciences, and interdisciplinary fields.
- The foundation seeks to enhance India's global competitiveness in research and innovation.

### Venezuela

- **Venezuela** is located on the **northern coast of South America** with its capital at **Caracas**.
- It shares borders with **Colombia, Brazil, and Guyana**, and has a coastline along the **Caribbean Sea**.
- The **Orinoco River** is its principal river, while **Lake Maracaibo** is the largest lake in South America.
- **Angel Falls**, the **world's highest uninterrupted waterfall**, is located in Venezuela.
- Venezuela possesses the **largest proven crude oil reserves** in the world.

### Foraminifera

- **Foraminifera** are **single-celled marine protozoans** that have existed in Earth's oceans for over **500 million years**.
- They possess intricate shells called **tests**, often made from calcium carbonate or mineral grains.
- They inhabit the **open ocean, coastal waters, estuaries, and sea floor**, where they play a crucial ecological role.
- Scientists use fossil foraminifera to study **past climates, ocean conditions, and geological history**.
- A new species, **Portatrochammina bharatensis**, was recently discovered by researchers at the **Agharkar Research Institute, Pune**.



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### Economic Advisory Council to the Prime Minister (EAC-PM)

- The **Economic Advisory Council to the Prime Minister (EAC-PM)** is an **independent advisory body** that provides advice to the Prime Minister on economic and related issues.
- It analyses macroeconomic issues, prepares policy recommendations, and may take up matters **suo motu** or those referred by the Prime Minister.
- The recommendations of the EAC-PM are **advisory and not binding** on the Government.
- The Council is headed by a **Chairperson** (holding the rank of a Cabinet Minister) and comprises eminent economists and experts.
- **NITI Aayog** acts as the **nodal agency** for providing administrative and logistical support to the Council.

### Digital India BHASHINI Division (DIBD)

- The **Digital India BHASHINI Division (DIBD)** functions under the **Digital India Corporation (DIC)** of the **Ministry of Electronics and Information Technology (MeitY)**.
- **BHASHINI** stands for **BHASHa INterface for India** and is India's AI-based multilingual language platform.
- It provides **speech-to-speech, speech-to-text, text-to-text, and text-to-speech** translation services across Indian languages.
- The platform supports over **800 Government websites**, processes **millions of AI inferences daily**, and supports **36 Indian text languages, 23 Indian voice languages, and 35 international languages**.
- It promotes AI research, Natural Language Processing (NLP), open-source innovation, digital governance, and multilingual digital public infrastructure.

### Slovenia

- **Slovenia** is located in **Central and South-Eastern Europe** with its capital at **Ljubljana**.
- It shares borders with **Austria, Italy, Hungary, and Croatia** and has a short coastline along the **Adriatic Sea**.
- The country includes parts of the **Alps, Dinaric Alps, Pannonian Plain, and Mediterranean region**, giving it diverse physical geography.
- **Mount Triglav (2,864 m)** is the highest peak and is the national symbol of Slovenia.



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- Major rivers include the **Sava** and **Drava**, both important tributaries of the **Danube River**.

### Adriatic Sea

- The **Adriatic Sea** is an arm of the **Mediterranean Sea** located between the **Italian Peninsula** and the **Balkan Peninsula**.
- It is bordered by **Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, and Albania**.
- It is connected to the **Ionian Sea** through the **Strait of Otranto**.
- Important ports include **Venice (Italy), Split (Croatia), and Koper (Slovenia)**.
- The Adriatic Sea is strategically important for maritime trade and naval activities in Southern Europe.

### Sea of Azov

- The **Sea of Azov** is bordered by **Ukraine** and **Russia** and is one of the **shallowest seas in the world**.
- It is connected to the **Black Sea** through the **Kerch Strait**, located between the **Crimean Peninsula** and the **Taman Peninsula**.
- Major rivers flowing into the sea are the **Don** and **Kuban**, which contribute most of its freshwater.
- Important ports include **Mariupol, Berdyansk (Ukraine), and Taganrog (Russia)**.
- Through the **Black Sea–Mediterranean Sea** route, it is indirectly connected to the **Atlantic Ocean**.

### Black Sea

- The **Black Sea** is bordered by **Turkey, Bulgaria, Romania, Ukraine, Russia, and Georgia**.
- It is connected to the **Mediterranean Sea** through the **Bosporus Strait, Sea of Marmara, and Dardanelles Strait**.
- Major rivers draining into it include the **Danube, Dnieper, Dniester, and Don**.
- It is an important region for energy transport, shipping, and geopolitical affairs.
- The **Crimean Peninsula** projects into the northern part of the Black Sea.

### Kerch Strait





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- The **Kerch Strait** connects the **Sea of Azov** with the **Black Sea**.
- It separates the **Crimean Peninsula** from Russia's **Taman Peninsula**.
- The strait is strategically important for commercial shipping and military movements.
- The **Crimean Bridge**, Europe's longest bridge, spans the Kerch Strait.
- It has gained strategic significance due to the **Russia–Ukraine conflict**.

### Kuno National Park

- **Kuno National Park** is located in **Sheopur district, Madhya Pradesh**, and is named after the **Kuno River**, a tributary of the **Chambal River**.
- It was established as a **Wildlife Sanctuary in 1981** and upgraded to a **National Park in 2018**.
- The park consists of **tropical dry deciduous forests, riverine forests, and savannah grasslands**.
- Kuno is the site of **Project Cheetah**, under which African cheetahs were reintroduced into India in **2022**.
- Important fauna include **Cheetah, Caracal, Leopard, Sloth Bear, Indian Wolf, Striped Hyena, Dhole, Golden Jackal, Bengal Fox, and over 120 bird species**.

### Caracal

- The **Caracal (Caracal caracal)** is a medium-sized wild cat known as the "**Flying Cat**" because of its remarkable jumping ability.
- It is found in **India, Africa, the Middle East, and Central Asia**.
- In India, it survives mainly in **Rajasthan, Gujarat, and parts of Madhya Pradesh**.
- It preys on birds, hares, rodents, and small mammals by leaping several metres into the air.
- It is listed as **Least Concern** globally by the **IUCN**, but in India it is protected under **Schedule I of the Wildlife (Protection) Act, 1972**.

### Kirthai-II Hydroelectric Project

- **Kirthai-II** is a **930 MW run-of-the-river hydroelectric project** being developed on the **Chenab River** in **Kishtwar district, Jammu & Kashmir**.



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- The project is being developed by **Chenab Valley Power Projects Ltd. (CVPPL)**, with **NHPC (51%)** and **J&K State Power Development Corporation (49%)** as stakeholders.
- Major components include a **121 m high concrete gravity dam, 4.29 km headrace tunnel, 840 MW underground powerhouse, and 90 MW toe powerhouse.**
- It was revived after the Government placed the **Indus Water Treaty (IWT)** in abeyance.
- Other major hydropower projects on the Chenab include **Salal, Baglihar, Dul, Pakal Dul, Ratle, and Kiru.**

### Chenab River

- The **Chenab** is one of the **major western tributaries of the Indus River.**
- It originates from the confluence of the **Chandra** and **Bhaga** rivers at **Tandi** in **Lahaul & Spiti, Himachal Pradesh.**
- In its upper course, it is known as the **Chandrabhaga.**
- It flows through **Himachal Pradesh, Jammu & Kashmir**, enters **Pakistan**, and eventually joins the **Sutlej** before meeting the Indus.
- Important tributaries include **Marusudar, Tawi, Ans, Miyar Nalla, Neeru, and Niru.**

### Indus Water Treaty (IWT)

- The **Indus Water Treaty** was signed in **1960** between **India and Pakistan** with the **World Bank** as the mediator.
- The **Eastern Rivers (Ravi, Beas, Sutlej)** were allocated to **India**, while the **Western Rivers (Indus, Jhelum, Chenab)** were allocated primarily to **Pakistan.**
- India is permitted to build **run-of-the-river hydroelectric projects** on the western rivers subject to treaty provisions.
- The treaty is regarded as one of the world's most successful transboundary water-sharing agreements.
- The **Permanent Indus Commission** is the bilateral mechanism for implementing the treaty.

### Autoimmune Blistering Diseases (AIBDs)

- **Autoimmune Blistering Diseases (AIBDs)** are a group of rare disorders in which the immune system attacks the **skin and mucous membranes**, producing blisters.



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- Common forms include **Pemphigus Vulgaris** and **Bullous Pemphigoid**.
- Symptoms include painful or itchy blisters affecting the skin, mouth, eyes, nose, and genital regions.
- If untreated, they may lead to **severe infections, fluid loss, malnutrition, and vision problems**.
- Treatment involves **corticosteroids, immunosuppressants, biologic drugs (e.g., Rituximab), and wound care**.

### Rituximab

- **Rituximab** is a **monoclonal antibody** used to treat autoimmune diseases and certain blood cancers.
- It works by destroying **CD20-positive B lymphocytes**, thereby reducing abnormal immune activity.
- It is widely used in diseases such as **Pemphigus Vulgaris, Rheumatoid Arthritis, and Non-Hodgkin Lymphoma**.
- It is administered through **intravenous infusion**.
- Rituximab is considered one of the important biologic therapies in modern immunology.

### Jhajjar-Bachauli Wildlife Sanctuary

- **Jhajjar-Bachauli Wildlife Sanctuary** is located in **Rupnagar (Ropar) district, Punjab**, in the **Shivalik foothills**.
- The sanctuary forms part of the **Shivalik Elephant Reserve** and supports rich biodiversity.
- Important fauna include **Leopard, Sambar, Barking Deer, Wild Boar, Nilgai, Pangolin, and Indian Python**.
- The sanctuary contains **seasonal streams (choes)** that support local ecosystems.
- It serves as an important habitat for resident and migratory bird species.

### Shivalik Hills

- The **Shivalik Hills** are the **outermost range of the Himalayas**.
- They extend from the **Indus River** in the west to the **Brahmaputra River** in the east.
- Average elevation ranges between **600 and 1,500 metres**.



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- They consist mainly of **unconsolidated sediments**, making them highly prone to erosion.
- The famous **Doon Valleys** such as **Dehradun** lie between the **Shivalik** and **Lesser Himalayas**.

### Kanger Valley National Park

- **Kanger Valley National Park** is located in **Bastar district, Chhattisgarh**.
- It derives its name from the **Kanger River**, a tributary of the **Kolab River**.
- The park is known for its **dense sal forests, limestone caves, waterfalls, and rich tribal biodiversity**.
- Famous caves include **Kutumsar Cave, Kailash Cave, and Dandak Cave**.
- Important wildlife includes **Leopard, Sloth Bear, Wild Dog, Mouse Deer, Giant Squirrel, and Bastar Hill Myna**, the State Bird of Chhattisgarh.

### Project 18 Programme

- **Project 18 (P-18)** is the Indian Navy's **Next Generation Destroyer (NGD)** programme, intended to succeed the **Visakhapatnam-class (Project 15B)** destroyers.
- The project is overseen by the **Warship Design Bureau (WDB)** in collaboration with **Mazagon Dock Shipbuilders Limited (MDL)** and **Garden Reach Shipbuilders & Engineers (GRSE)**.
- Each destroyer will have a displacement of **over 13,000 tonnes**, making it one of India's largest surface combatants and placing it in the **cruiser category** by international standards.
- The ships will feature **integrated electric propulsion**, stealth design, advanced automation, 360° radar coverage up to **500 km**, and the ability to operate unmanned underwater vehicles and kamikaze drones.
- They will carry indigenous missiles including **BrahMos, BrahMos-NG, LR-LACM, PGLRSAM, SRSAM, and SMART**.

### Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)

- **PMSMA** was launched on **9 June 2016** by the **Ministry of Health & Family Welfare** to provide quality antenatal healthcare to pregnant women.





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- Free antenatal check-ups are conducted on the **9th of every month** at designated government health facilities.
- The scheme focuses on pregnant women in the **second and third trimesters** and emphasizes early identification of **High-Risk Pregnancies (HRPs)**.
- Screening is carried out for **25 high-risk conditions**, with referral to appropriate healthcare centres for safe delivery.
- Obstetricians, gynaecologists, and trained medical officers provide comprehensive antenatal care under the programme.

### Wangchhu Hydroelectric Project

- The **Wangchhu Hydroelectric Project** is a **570 MW run-of-the-river** hydropower project being developed in **Chukha District, Bhutan**.
- It is being developed by **Wangchhu Hydroelectric Power Limited (WHPL)**, a joint venture between **Druk Green Power Corporation (51%)** and **Adani Power (49%)**.
- The project follows the **Build-Own-Operate-Transfer (BOOT)** model and is valued at around **₹6,000 crore**.
- It is located on the **Wangchu (Raidak) River**, a tributary of the **Brahmaputra River**.
- It will help meet Bhutan's winter electricity demand while exporting surplus power to **India** during summer.

### Wangchu (Raidak) River

- The **Wangchu**, known as the **Raidak River** in India, originates in **Tibet** and flows through **Bhutan** into **West Bengal**.
- It is an important **tributary of the Brahmaputra River**.
- The river supports several hydropower projects in Bhutan.
- It plays a significant role in irrigation and electricity generation.
- It eventually joins the **Brahmaputra basin** in Assam.

### Maharaja Chhatrasal

- **Maharaja Chhatrasal (1649–1731)** was a **Bundela Rajput** ruler who established an independent kingdom in **Bundelkhand** by resisting Mughal rule.



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- He launched his revolt against **Aurangzeb** at the age of **22** and built a powerful kingdom in Central India.
- In **1729**, he sought assistance from **Peshwa Baji Rao I** against **Muhammad Khan Bangash**, strengthening the Maratha presence in Bundelkhand.
- He granted part of his territory to the Marathas and is traditionally associated with the marriage alliance involving **Mastani** and **Baji Rao I**.
- He was honoured with the title "**Maharaja**" by **Sant Prannath** for his leadership and administration.

### Aurora Borealis (Northern Lights)

- **Aurora Borealis** is a natural light display produced when charged particles from the **solar wind** interact with Earth's magnetic field and upper atmosphere.
- Auroras occur mainly in the **thermosphere/ionosphere** near the **North and South Poles**.
- **Oxygen** produces **green and red** colours, while **nitrogen** produces **blue and purple** colours.
- Strong **solar flares** and **coronal mass ejections (CMEs)** can trigger geomagnetic storms, making auroras visible at lower latitudes.
- The Southern Hemisphere equivalent is called the **Aurora Australis**.

### Gallantry Awards

- India's **Gallantry Awards** recognize acts of exceptional bravery by the **Armed Forces, CAPFs, and Police personnel**.
- They are announced **twice every year** on **Republic Day** and **Independence Day**.
- Wartime gallantry awards are **Param Vir Chakra, Maha Vir Chakra, and Vir Chakra**.
- Peacetime gallantry awards are **Ashoka Chakra, Kirti Chakra, and Shaurya Chakra**.
- **Param Vir Chakra** is India's highest wartime gallantry award, while **Ashoka Chakra** is the highest peacetime gallantry award.

### Food Safety and Standards Authority of India (FSSAI)

- **FSSAI** is a **statutory body** established under the **Food Safety and Standards Act, 2006**.
- It functions under the **Ministry of Health and Family Welfare**.



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- It regulates the **manufacture, storage, distribution, sale, and import** of food products in India.
- It formulates food safety standards, licenses food businesses, accredits food testing laboratories, and promotes consumer awareness.
- FSSAI recently directed food business operators **not to use newspapers for packing or serving food** because of health risks from printing ink.

### Japan

- **Japan** is an island nation in **East Asia**, comprising four major islands—**Honshu, Hokkaido, Kyushu, and Shikoku**.
- The capital is **Tokyo**, and the currency is the **Japanese Yen**.
- It lies on the **Pacific Ring of Fire**, making it highly prone to earthquakes, tsunamis, and volcanic eruptions.
- Japan is a member of the **G7, Quad, OECD**, and **APEC**.
- India and Japan signed the **Civil Nuclear Cooperation Agreement** in **2016**.

### Shiveluch Volcano

- **Shiveluch Volcano** is located on the **Kamchatka Peninsula** in **Russia**, one of the world's most volcanically active regions.
- It is a **stratovolcano** with a summit height of about **3,283 metres**.
- It has experienced nearly **60 major eruptions** during the last **10,000 years**.
- The volcano is characterized by **lava domes, pyroclastic flows, ash eruptions, and frequent dome collapses**.
- The **Kamchatka Peninsula** is part of the **Pacific Ring of Fire** and contains more than **300 volcanoes**, many of them active.

### Pseudocapritermes novus

- **Pseudocapritermes novus** is a **new species of termite** recently discovered in the **Western Ghats**, one of the world's biodiversity hotspots.
- It belongs to the family **Termitidae**, the largest family of termites.



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- Termites are **eusocial insects** that live in colonies consisting of queens, kings, workers, and soldiers.
- They play an important ecological role by **decomposing dead wood and recycling nutrients**, thereby improving soil fertility.
- India is home to over **300 species of termites**, many of which are endemic to forest ecosystems.

### Termites

- Termites are commonly called "**white ants**", although they are more closely related to **cockroaches** than ants.
- They feed mainly on **cellulose** found in wood, leaves, and plant debris with the help of symbiotic microorganisms in their gut.
- Colonies have a caste system comprising **reproductive, worker, and soldier** termites.
- They are considered **ecosystem engineers** because they improve soil aeration and nutrient cycling.
- Some termite species construct large **mounds** that regulate internal temperature and humidity.

### PM e-Drive Scheme

- The **PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM e-Drive)** Scheme promotes the adoption of **electric vehicles (EVs)** across India.
- It provides incentives for **electric two-wheelers, three-wheelers, buses, ambulances, trucks, and charging infrastructure**.
- The scheme is implemented by the **Ministry of Heavy Industries**.
- It aims to reduce fossil fuel consumption, air pollution, and carbon emissions while strengthening domestic EV manufacturing.
- It supports India's goals of **clean mobility** and **energy security**.

### Battery-as-a-Service (BaaS)

- **Battery-as-a-Service (BaaS)** allows EV users to **lease batteries** instead of purchasing them with the vehicle.



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- Users can replace discharged batteries with fully charged ones at **battery swapping stations**.
- The model reduces the **initial purchase cost** of electric vehicles.
- It is particularly useful for **commercial fleets, taxis, delivery vehicles, and electric three-wheelers**.
- BaaS promotes faster EV adoption by reducing charging time and battery ownership costs.

### Central Pollution Control Board (CPCB)

- The **Central Pollution Control Board (CPCB)** is a **statutory organization** established under the **Water (Prevention and Control of Pollution) Act, 1974**.
- It functions under the **Ministry of Environment, Forest and Climate Change (MoEFCC)**.
- CPCB monitors **air quality, water quality, noise pollution, and industrial pollution** across India.
- It coordinates the activities of **State Pollution Control Boards (SPCBs)**.
- CPCB also implements the **National Air Quality Monitoring Programme (NAMP)**.

### Hoolock Gibbon

- The **Hoolock Gibbon** is **India's only ape** and is found in the forests of **Arunachal Pradesh, Assam, Meghalaya, Mizoram, Manipur, Nagaland, and Tripura**.
- India has two species: **Western Hoolock Gibbon** and **Eastern Hoolock Gibbon**.
- It is an **arboreal** and **diurnal** primate that moves through trees using **brachiation**.
- It is classified as **Endangered** by the **IUCN** and is protected under **Schedule I of the Wildlife (Protection) Act, 1972**.
- Major habitats include **Namdapha National Park, Hollongapar Gibbon Wildlife Sanctuary, and Dibru-Saikhowa National Park**.

### Hollongapar Gibbon Wildlife Sanctuary

- It is located in **Jorhat district, Assam** and is the **only sanctuary in India named after a primate**.
- It was established primarily for the conservation of the **Western Hoolock Gibbon**.
- The sanctuary consists mainly of **tropical semi-evergreen forests**.





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- Important fauna include **Stump-tailed Macaque, Pig-tailed Macaque, Slow Loris, and Asian Elephant.**
- It is surrounded by **tea gardens and villages**, making habitat conservation particularly important.

### United Nations Ocean Conference (UNOC)

- The **United Nations Ocean Conference (UNOC)** supports the implementation of **Sustainable Development Goal 14 (Life Below Water).**
- It promotes international cooperation for **marine conservation, sustainable fisheries, and protection of ocean biodiversity.**
- The conference is organized jointly by the **United Nations** and host countries.
- Key issues include **marine pollution, plastic waste, overfishing, climate change, and blue economy.**
- SDG 14 aims to conserve and sustainably use oceans, seas, and marine resources.

### Blue Economy

- The **Blue Economy** refers to the sustainable use of **ocean resources** for economic growth, livelihoods, and ecosystem health.
- Major sectors include **fisheries, aquaculture, shipping, ports, offshore energy, marine biotechnology, and coastal tourism.**
- India has a coastline of about **7,516 km** and an **Exclusive Economic Zone (EEZ)** of over **2 million sq. km.**
- The **Ministry of Earth Sciences** is the nodal ministry for India's Blue Economy initiatives.
- Sustainable management of marine resources is essential for food security and climate resilience.

### Cocos (Keeling) Islands

- The **Cocos (Keeling) Islands** are an **external territory of Australia** located in the **eastern Indian Ocean.**
- They consist of **27 coral islands**, of which only **two are inhabited.**
- The capital is **West Island.**



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- The islands lie southwest of **Indonesia** and relatively close to **India's Andaman & Nicobar Islands**, giving them strategic importance in the Indian Ocean.
- The economy is based mainly on **tourism, coconut cultivation, and fisheries**.

### Mount Etna

- **Mount Etna** is an **active stratovolcano** located on the **island of Sicily, Italy**.
- It is **Europe's highest and most active volcano**.
- The volcano lies near the boundary of the **African Plate** and the **Eurasian Plate**.
- It has been designated a **UNESCO World Heritage Site**.
- Frequent eruptions produce **lava flows, ash clouds, and volcanic gases**, but the surrounding volcanic soils are highly fertile.

### Sjögren's Disease

- **Sjögren's Disease (Sjögren's Syndrome)** is a **chronic autoimmune disorder** in which the immune system attacks the body's **moisture-producing glands**.
- It mainly affects the **tear glands and salivary glands**, causing **dry eyes and dry mouth**, but may also involve the skin, joints, lungs, kidneys, and nervous system.
- It occurs predominantly in **women (about 90% of cases)** and is commonly diagnosed after the age of **40 years**.
- It may occur alone (**Primary Sjögren's Syndrome**) or along with autoimmune diseases such as **Rheumatoid Arthritis** and **Systemic Lupus Erythematosus (SLE)**.
- There is **no permanent cure**; treatment focuses on relieving symptoms using artificial tears, saliva substitutes, and immunosuppressive medicines.

### Angkor Thom

- **Angkor Thom** was the **last capital of the Khmer Empire**, located in present-day **Cambodia**, and was established by **King Jayavarman VII** in the late 12th century.
- It was designed mainly as a **Mahayana Buddhist city**, although it also contains significant **Hindu architectural influences**.
- The city is enclosed by **8-metre-high walls**, surrounded by a moat, and covers an area of about **9 sq. km**.



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- The famous **Bayon Temple**, known for its giant stone faces, is located at the centre of Angkor Thom.
- It forms part of the **Angkor Archaeological Park**, a **UNESCO World Heritage Site** since **1992**.

### Marshall Islands

- The **Republic of the Marshall Islands (RMI)** is located in the **Central Pacific Ocean** and consists of **29 coral atolls** and over **1,100 islands and islets**.
- The capital is **Majuro**, the official languages are **English and Marshallese**, and the currency is the **US Dollar**.
- The islands are arranged into two chains: **Ratak (Sunrise) Chain** and **Ralik (Sunset) Chain**.
- The country became independent in **1986** under the **Compact of Free Association** with the **United States**, which provides defence and financial assistance.
- It is among the world's most vulnerable countries to **sea-level rise and climate change** due to its low-lying coral atolls.

### Doctrine of Forum Non Conveniens

- **Forum Non Conveniens** is a **common law doctrine** that allows a court to decline jurisdiction if another court is more appropriate to hear the case.
- The Latin phrase "**Forum Non Conveniens**" means "**Inconvenient Forum**."
- It is widely applied in **private international law** involving cross-border legal disputes.
- Courts consider factors such as **location of evidence, convenience of parties, applicable law, and interests of justice** before applying the doctrine.
- The **Supreme Court of India** recently observed that this doctrine rarely applies where **constitutional remedies under Article 226** are involved.

### RISA – Timeless Tribal

- **RISA – Timeless Tribal** is a premium brand launched by the **Ministry of Tribal Affairs** through **TRIFED** to promote tribal textiles, embroidery, and handicrafts.
- It aims to strengthen the market identity of tribal products, improve livelihoods, and preserve indigenous craftsmanship.



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- The first phase includes **Eri Silk, Muga Silk, Santal Cotton, Changpa Pashmina, Kotpad Cotton, Dongria Embroidery, and Toda Embroidery.**
- It also promotes tribal handicrafts such as **Longpi Pottery (Manipur), Dokhra Art (Chhattisgarh), and Turtuk Brass Cutlery (Ladakh).**
- **TRIFED (Tribal Cooperative Marketing Development Federation of India)** was established in **1987** under the **Ministry of Tribal Affairs.**

### Tajikistan

- **Tajikistan** is a **landlocked country** in **Central Asia** bordered by **Afghanistan, China, Kyrgyzstan, and Uzbekistan.**
- The capital is **Dushanbe**, and the currency is the **Tajikistani Somoni.**
- About **93%** of the country's area is mountainous, dominated by the **Pamir Mountains** and **Alay Range.**
- Major rivers include the **Amu Darya** and **Syr Darya**, which are important for Central Asian irrigation.
- It possesses rich deposits of **gold, silver, uranium, coal, antimony, and hydropower resources.**

### Credit Guarantee Scheme for Microfinance Institutions (CGSMFI-2.0)

- **CGSMFI-2.0** was launched in **2026** to provide **credit guarantee support** to Banks and Financial Institutions lending to **NBFC-MFIs and Microfinance Institutions.**
- The guarantee is provided through the **National Credit Guarantee Trustee Company Ltd. (NCGTC).**
- The scheme supports lending to **small borrowers** who have limited access to formal banking.
- Guarantee coverage ranges from **70% to 80%**, depending on the size of the institution.
- It aims to improve financial inclusion and expand access to microcredit across India.

### Microfinance

- **Microfinance** refers to providing **small loans, savings, insurance, and other financial services** to low-income households and micro-entrepreneurs.
- It promotes **financial inclusion** by serving people without access to traditional banking.



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- Major institutions include **NBFC-MFIs, Self Help Groups (SHGs), Cooperative Banks, and Small Finance Banks.**
- The sector is regulated by the **Reserve Bank of India (RBI).**
- Microfinance plays a significant role in **women's empowerment, rural development, and poverty alleviation.**

### C-295 Transport Aircraft

- The **C-295** is a **medium tactical military transport aircraft** manufactured by **Airbus Defence and Space.**
- India signed a contract with **Airbus and Tata Advanced Systems Limited (TASL)** to manufacture **56 aircraft**, with assembly taking place in **Vadodara, Gujarat.**
- It is capable of carrying **71 troops or 9 tonnes of cargo** and has a flight endurance of about **11 hours.**
- The aircraft features **Short Take-Off and Landing (STOL)** capability, allowing operations from unprepared airstrips.
- It can perform **troop transport, cargo transport, medical evacuation, maritime patrol, surveillance, and humanitarian missions**, strengthening the **Indian Air Force's tactical airlift capability.**

### B-2 Spirit Stealth Bomber

- The **B-2 Spirit** is a long-range **strategic stealth bomber** developed by **Northrop Grumman** for the **United States Air Force (USAF).**
- It features a **flying-wing design** with low radar, infrared, acoustic, and visual signatures, enabling penetration of advanced air defence systems.
- The aircraft can carry both **conventional and nuclear weapons**, with an operational range of over **11,000 km** without refuelling.
- It is powered by **four General Electric F118 turbofan engines** and can be refuelled mid-air.
- Major stealth bombers include **B-2 Spirit, B-21 Raider (USA), H-20 (China - under development), and PAK DA (Russia - under development).**

### GBU-57 Massive Ordnance Penetrator (MOP)





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- The **GBU-57 Massive Ordnance Penetrator (MOP)** is the world's largest **conventional bunker-buster bomb** developed by the **United States**.
- It weighs about **13.6 tonnes (30,000 pounds)** and is designed to destroy deeply buried underground bunkers.
- It is primarily deployed from the **B-2 Spirit stealth bomber**.
- The bomb uses **GPS-guided precision navigation** to strike hardened military targets.
- It is intended for attacking underground command centres, missile silos, and nuclear facilities.

### Financial Action Task Force (FATF)

- The **Financial Action Task Force (FATF)** is an intergovernmental body established in **1989** during the **G7 Summit in Paris**.
- Its headquarters is located in **Paris, France**.
- FATF develops international standards to combat **money laundering, terrorist financing, and proliferation financing**.
- Countries are placed on the **Grey List** (enhanced monitoring) or **Black List** (high-risk jurisdictions).
- India became a **full member of FATF in 2010**.

### Grey List and Black List

- The **Grey List** includes countries with deficiencies in anti-money laundering measures but which are cooperating with FATF.
- The **Black List** includes countries with serious strategic deficiencies that pose high risks to the international financial system.
- Countries on the Black List face severe financial restrictions and increased international scrutiny.
- Removal from either list depends on implementing FATF's recommended reforms.
- Pakistan was previously on the Grey List before being removed after compliance improvements.

### Golden Dome Missile Defence System



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- The **Golden Dome** is a proposed **multi-layered missile defence system** intended to protect against **ballistic, cruise, and hypersonic missiles**.
- It integrates **ground-based interceptors, radar systems, satellites, and space-based sensors**.
- The concept is similar to Israel's **Iron Dome**, but designed for a much larger strategic area.
- Modern missile defence systems rely on early warning satellites and long-range tracking radars.
- Major missile defence systems include **THAAD, Patriot PAC-3, Aegis, S-400, and Iron Dome**.

### Iron Dome

- **Iron Dome** is Israel's short-range air defence system developed by **Rafael Advanced Defense Systems** and **Israel Aerospace Industries**.
- It intercepts rockets, artillery shells, and drones with high accuracy.
- The system consists of **Detection Radar, Battle Management & Weapon Control, and Missile Firing Units**.
- It uses **Tamir interceptor missiles**.
- It has been operational since **2011**.

### International Organization for Marine Aids to Navigation (IALA)

- The **International Organization for Marine Aids to Navigation (IALA)** promotes safe and efficient maritime navigation.
- It became an **intergovernmental organization (IGO)** in **2024** after functioning for decades as a non-governmental association.
- Its headquarters is located in **Saint-Germain-en-Laye, France**.
- It develops international standards for **lighthouses, buoys, beacons, vessel traffic services, and electronic navigation**.
- India is an active member through the **Directorate General of Lighthouses and Lightships (DGLL)**.

### Directorate General of Lighthouses and Lightships (DGLL)



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- The **DGLL** functions under the **Ministry of Ports, Shipping and Waterways**.
- It is responsible for maintaining **lighthouses, lightships, buoys, radio beacons, and marine navigation systems** along India's coastline.
- India has **200+ operational lighthouses**.
- DGLL contributes to maritime safety and coastal navigation.
- It also supports modern navigation technologies such as **Differential GPS (DGPS)**.

### Gyan Bharatam Mission

- **Gyan Bharatam Mission** aims to preserve, digitize, document, and promote **India's ancient manuscripts and knowledge systems**.
- It focuses on manuscripts written in **Sanskrit, Pali, Prakrit, Tamil, Persian, Arabic, and other classical languages**.
- The mission supports digitization, conservation, translation, and public accessibility.
- It complements the **National Mission for Manuscripts**, launched in **2003**.
- India possesses one of the world's largest collections of ancient manuscripts.

### National Mission for Manuscripts (NMM)

- The **National Mission for Manuscripts** was launched in **2003** by the **Ministry of Culture**.
- Its headquarters are at the **Indira Gandhi National Centre for the Arts (IGNCA), New Delhi**.
- The mission identifies, documents, conserves, digitizes, and disseminates India's manuscript heritage.
- India is estimated to possess **over 10 million manuscripts**, one of the largest collections globally.
- Manuscripts are written on materials such as **palm leaves, birch bark, paper, cloth, and copper plates**.

### Assam Rifles

- **Assam Rifles** is the **oldest paramilitary force** in India, raised in **1835** as the **Cachar Levy**.
- It functions under the **Ministry of Home Affairs**, while its operational control rests with the **Indian Army**.



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- Headquarters: **Shillong, Meghalaya**.
- It is known as the "**Sentinels of the North East**".
- Primary responsibilities include **border guarding along the India–Myanmar border**, counter-insurgency operations, and maintaining internal security.

### INS Baaz

- **INS Baaz** is an Indian Naval Air Station located near **Campbell Bay** on **Great Nicobar Island** in the **Andaman & Nicobar Islands**.
- It was commissioned on **31 July 2012** and is the **first naval air station in the Nicobar Islands** as well as the **southernmost military air station** of India.
- It functions under the **Andaman and Nicobar Command (ANC)**, India's only **tri-service command** comprising the Army, Navy, and Air Force.
- The air station overlooks the **Strait of Malacca** and the **Six Degree Channel**, making it strategically important for surveillance in the **Indian Ocean Region (IOR)**.
- It operates **Dornier Do-228** maritime reconnaissance aircraft and can also handle **C-130J Super Hercules** transport aircraft.

### Estonia

- **Estonia** is the northernmost of the **Baltic States** in **Northern Europe**, bordered by **Russia, Latvia, the Baltic Sea, and the Gulf of Finland**.
- The capital is **Tallinn**, the currency is the **Euro (€)**, and it follows a **parliamentary republic** system.
- It regained independence from the **Soviet Union in 1991** and joined both the **European Union (EU)** and **NATO** in **2004**.
- Estonia shares maritime boundaries with **Finland** and **Sweden** and has over **1,500 islands and islets**, including **Saaremaa** and **Hiiumaa**.
- It is recognized globally for its advanced **digital governance**, e-residency programme, and cybersecurity infrastructure.

### Chonala albistricta

- **Chonala albistricta** (Narrow-banded Wall) is a **new butterfly species** discovered at **Mayodia Pass** in **Lower Dibang Valley, Arunachal Pradesh**.



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- It belongs to the **genus Chonala**, a group of mountain butterflies inhabiting the **Himalayan high-altitude regions**.
- It is the **10th known species** of the genus globally and only the **second species recorded from India**.
- The butterfly is named after the **narrow white band** on its forewing and breeds **only once annually** during **June–August**.
- Arunachal Pradesh is one of India's richest butterfly diversity hotspots due to its location in the **Eastern Himalayas**.

### Ingerana occidens

- **Ingerana occidens** (Western Trickle Frog) is a **new frog species** discovered in the **Garo and Khasi Hills of Meghalaya**.
- It inhabits **canopy-covered hill streams** south of the **Brahmaputra River**.
- DNA analysis showed about **18% genetic divergence** from **Ingerana borealis**, confirming it as a distinct species.
- The frog has **smooth skin**, a visible **tympanum (eardrum)**, and a distinct coloured stripe along its body.
- The **Khasi and Garo Hills** are part of the **Meghalaya Plateau**, known for exceptional amphibian diversity.

### Slovakia

- **Slovakia** is a **landlocked country** in **Central Europe** bordered by **Poland, Czech Republic, Austria, Hungary, and Ukraine**.
- The capital is **Bratislava**, situated on the **Danube River**, and the currency is the **Euro (€)**.
- Slovakia became an independent nation on **1 January 1993** following the peaceful **Velvet Divorce** from Czechoslovakia.
- It is a member of both the **European Union (EU)** and **NATO**.
- Major mountain systems include the **Carpathians** and **Tatra Mountains**, with **Gerlach Peak** being the country's highest point.

### Varya AI Model





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- **Varya** is an indigenous **AI video generation model** developed by **Avataar.ai** with support from the **IndiaAI Mission**.
- It uses **distillation technology**, reducing video generation from around **50 steps to just 4**, significantly improving efficiency.
- The model generates AI videos at approximately **₹0.48 per second**, making it substantially cheaper than many global alternatives.
- It supports **text-to-video** and **image-to-video** generation for education, governance, and MSMEs.
- The **IndiaAI Mission** is implemented by the **Ministry of Electronics and Information Technology (MeitY)**.

### DigiDukaan

- **DigiDukaan** is an initiative under the **Open Network for Digital Commerce (ONDC)** to digitize **kirana stores** for **business-to-business (B2B) procurement**.
- It enables retailers to procure directly, improve inventory management, and increase profit margins.
- It helps distributors expand market reach while allowing brands to receive direct retailer demand signals.
- The initiative has already been piloted successfully in **Hyderabad**.
- **ONDC** was launched in **2022** by the **Department for Promotion of Industry and Internal Trade (DPIIT)** under the **Ministry of Commerce and Industry**.

### Global Peace Index (GPI)

- The **Global Peace Index (GPI)** is published annually by the **Institute for Economics and Peace (IEP)**.
- It ranks **163 countries and territories** based on their level of peacefulness.
- The index evaluates indicators such as **societal safety, ongoing conflicts, and militarization**.
- **India ranked 127th** in the **Global Peace Index 2026**.
- The GPI covers approximately **99.7% of the world's population**.

### Paraquat



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- **Paraquat** is a **highly toxic synthetic herbicide** widely used for weed control and as a crop desiccant before harvest.
- It has **no specific antidote**, and ingestion can severely damage the **lungs, liver, kidneys, and digestive tract**.
- More than **70% of paraquat poisoning cases** are fatal.
- It has been **banned in over 70 countries**, but there is **no nationwide ban in India**.
- **Kerala** was the **first Indian state** to ban Paraquat in **2011**, followed by states such as **Odisha, Telangana, and Andhra Pradesh**.

## ANCHOR (Atlas of Neurochemical Characterization of the Human Brainstem with 3D Reconstruction)

- **ANCHOR** is the **world's most detailed 3D atlas of the human brainstem**, developed by the **Sudha Gopalakrishnan Brain Centre (SGBC), IIT Madras**.
- It stands for **Atlas of Neurochemical Characterization of the Human Brainstem with 3D Reconstruction**.
- The atlas maps the human brainstem from the **prenatal stage to adulthood** using high-resolution multimodal imaging and neurochemical analysis.
- It will support research on neurological disorders such as **Parkinson's disease, Alzheimer's disease, epilepsy, and brainstem tumours**.
- The project is expected to aid neuroscience research, medical education, and precision medicine.

## Human Brainstem

- The **brainstem** connects the **brain with the spinal cord** and is essential for survival.
- It consists of **Midbrain, Pons, and Medulla Oblongata**.
- It controls involuntary functions such as **breathing, heartbeat, blood pressure, swallowing, and sleep**.
- Most **cranial nerves (III–XII)** originate from the brainstem.
- Damage to the brainstem can affect consciousness, respiration, and cardiovascular regulation.

## PM Vidyalaxmi Scheme



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- **PM Vidyalaxmi** is a Central Government scheme that provides **collateral-free and guarantor-free education loans** for meritorious students admitted to quality higher educational institutions.
- The scheme aims to ensure that **financial constraints do not prevent students from pursuing higher education**.
- It is implemented through a **digital portal** integrating banks and eligible institutions.
- Interest support is provided to eligible students belonging to economically weaker sections.
- The scheme covers students admitted to institutions identified on the basis of national rankings and quality parameters.

### Bureau of Indian Standards (BIS)

- **Bureau of Indian Standards (BIS)** is the **National Standards Body of India**, established under the **BIS Act, 2016**.
- It functions under the **Ministry of Consumer Affairs, Food and Public Distribution**.
- BIS formulates **Indian Standards (IS)** and operates product certification through the **ISI Mark**.
- It also administers the **Hallmark certification** for gold and silver jewellery.
- Headquarters: **New Delhi**.

### Hallmarking

- **Hallmarking** certifies the **purity of precious metal articles** such as gold and silver.
- In India, hallmarking is regulated by the **Bureau of Indian Standards (BIS)**.
- A BIS Hallmark contains the **BIS logo, purity grade, Assaying & Hallmarking Centre mark, jeweller's identification mark, and HUID (Hallmark Unique Identification)**.
- Hallmarking protects consumers against adulteration and ensures quality assurance.
- Gold purity is expressed in **karats (24K, 22K, 18K, etc.)**.

### Queen Alexandra's Birdwing Butterfly

- **Queen Alexandra's Birdwing (*Ornithoptera alexandrae*)** is the **largest butterfly in the world** by wingspan.
- It is **endemic to Papua New Guinea**.



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- Females have a wingspan of up to **28 cm**, considerably larger than males.
- The butterfly is classified as **Endangered** by the **IUCN Red List**.
- Habitat loss and illegal collection are the major threats to its survival.

### Papua New Guinea

- **Papua New Guinea** is located in the **southwestern Pacific Ocean**, occupying the eastern half of the island of **New Guinea**.
- Capital: **Port Moresby**.
- It shares a land border with **Indonesia**.
- The country lies on the **Pacific Ring of Fire**, making it prone to earthquakes and volcanic eruptions.
- Currency: **Papua New Guinean Kina**.

### Tardigrades (Water Bears)

- **Tardigrades** are microscopic invertebrates popularly known as **Water Bears** or **Moss Piglets**.
- They are famous for surviving extreme conditions including **vacuum, intense radiation, freezing temperatures, and extreme heat**.
- Their survival is possible through a dormant state called **Cryptobiosis**.
- Tardigrades inhabit **mosses, lichens, freshwater, marine environments, and soil**.
- They are widely studied in **space biology and astrobiology** because of their exceptional resilience.

### International Labour Organization (ILO)

- The **International Labour Organization (ILO)** was established in **1919** under the **Treaty of Versailles**.
- It became the **first specialized agency of the United Nations** in **1946**.
- Headquarters: **Geneva, Switzerland**.
- The ILO follows a unique **tripartite structure**, representing **governments, employers, and workers**.



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- It was awarded the **Nobel Peace Prize in 1969** for promoting social justice and workers' rights.

### Tetanus

- Tetanus (Lockjaw)** is a serious bacterial disease caused by **Clostridium tetani**, which affects the **nervous system**.
- The bacteria enter the body through **deep cuts, puncture wounds, burns, or contaminated injuries** and produce a powerful neurotoxin called **Tetanospasmin**.
- Early symptoms include **lockjaw, muscle stiffness, difficulty swallowing, and painful muscle spasms**; severe cases can cause respiratory failure.
- Tetanus **does not spread from person to person** and is preventable through **Tetanus Toxoid (TT/Td) vaccination**.
- The disease is more common where immunization coverage is poor and proper wound care is lacking.

### Clostridium tetani

- Clostridium tetani** is a **Gram-positive, spore-forming, anaerobic bacterium**.
- Its spores are commonly found in **soil, dust, and animal manure** and can survive for many years.
- It produces the neurotoxin **Tetanospasmin**, one of the most potent bacterial toxins known.
- The toxin blocks inhibitory nerve signals, leading to **continuous muscle contraction and spasms**.
- The organism grows best in **oxygen-deficient (anaerobic) conditions**, such as deep puncture wounds.

### Universal Immunization Programme (UIP)

- The **Universal Immunization Programme (UIP)** was launched in **1985** by the **Ministry of Health & Family Welfare**.
- It provides **free vaccination** against major vaccine-preventable diseases for children and pregnant women.
- India is one of the world's largest immunization programmes in terms of beneficiaries.





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- **Tetanus-containing vaccines** are routinely administered to pregnant women and children under UIP.
- **Mission Indradhanush** was launched to improve immunization coverage in underserved areas.

### Mission Indradhanush

- **Mission Indradhanush** was launched in **2014** to achieve full immunization coverage for children and pregnant women.
- **Intensified Mission Indradhanush (IMI)** focuses on districts with low vaccination coverage.
- The programme targets children who are **unvaccinated or partially vaccinated**.
- It complements the **Universal Immunization Programme**.
- India has significantly improved immunization coverage through successive IMI rounds.

### World Health Organization (WHO)

- The **World Health Organization (WHO)** was established on **7 April 1948**.
- Headquarters: **Geneva, Switzerland**.
- It is a **specialized agency of the United Nations** responsible for global public health.
- WHO coordinates international efforts to control infectious diseases, vaccination programmes, and health emergencies.
- **7 April** is observed every year as **World Health Day**.

### DHRUVA (Digital Hub for Reference and Unique Virtual Address)

- **DHRUVA** is a **national digital addressing framework** developed to provide every property in India with a **unique digital address**.
- It aims to improve **e-governance, emergency response, logistics, postal delivery, taxation, and urban planning**.
- The framework enables seamless integration of address data across government departments and private service providers.
- It supports Digital India by creating a standardized and interoperable address ecosystem.
- The initiative is expected to reduce errors caused by conventional postal addresses.



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### National Geospatial Policy

- The **National Geospatial Policy, 2022** aims to make India a global leader in the geospatial sector.
- It promotes the use of **GIS, remote sensing, drone mapping, and satellite imagery**.
- The policy encourages private sector participation and innovation in geospatial services.
- It supports sectors such as agriculture, disaster management, infrastructure, defence, and urban planning.
- The **Department of Science & Technology (DST)** is the nodal department for geospatial policy.

### G7 Outreach Summit

- The **G7** consists of **Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States**.
- The **European Union** participates in G7 meetings but is not a formal member.
- The presidency rotates annually among member countries.
- India regularly participates as an **Outreach Partner** despite not being a member.
- There is **no permanent headquarters or secretariat** for the G7.

### Slovakia

- **Slovakia** is a **landlocked country** in **Central Europe** with **Bratislava** as its capital.
- It shares borders with **Austria, Czech Republic, Poland, Ukraine, and Hungary**.
- It became independent on **1 January 1993** after the peaceful dissolution of **Czechoslovakia**.
- Slovakia is a member of the **European Union, NATO, Eurozone, OECD, and Schengen Area**.
- The **Danube River** flows through Bratislava, while the **Carpathian Mountains** dominate much of the country's terrain.

### India–Slovakia Relations

- India and Slovakia recently elevated bilateral ties to a **Comprehensive Partnership**.



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- Cooperation focuses on **defence, artificial intelligence, semiconductors, space technology, clean energy, and innovation.**
- Slovakia supports stronger India–EU strategic cooperation.
- Both countries cooperate in trade, education, research, and cultural exchanges.
- India maintains an Embassy in **Bratislava**, while Slovakia has an Embassy in **New Delhi**.

### National Critical Mineral Mission (NCMM)

- The **National Critical Mineral Mission (NCMM)** aims to strengthen India's **critical mineral security.**
- It focuses on exploration, mining, processing, recycling, and overseas acquisition of critical mineral assets.
- Critical minerals are essential for **electric vehicles, batteries, renewable energy, defence equipment, semiconductors, and electronics.**
- The mission seeks to reduce dependence on imports and strengthen strategic supply chains.
- Important critical minerals include **Lithium, Cobalt, Nickel, Graphite, Rare Earth Elements, and Copper.**

### Rare Earth Elements (REEs)

- Rare Earth Elements comprise **17 metallic elements**, including the **15 lanthanides, Scandium, and Yttrium.**
- They are essential for **missiles, fighter aircraft, electric vehicles, wind turbines, smartphones, and defence electronics.**
- **China** dominates global rare earth mining and processing.
- India possesses rare earth reserves mainly in the **coastal sands of Kerala, Tamil Nadu, Odisha, and Andhra Pradesh.**
- **IREL (India) Limited** is India's principal public sector company engaged in rare earth mineral production.

### Khichan Bird Sanctuary

- **Khichan Bird Sanctuary** is located in **Phalodi district, Rajasthan.**



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- It is internationally famous for the annual congregation of **Demoiselle Cranes** migrating from **Central Asia and Mongolia**.
- The sanctuary lies close to the **Thar Desert** ecosystem.
- Demoiselle Cranes usually arrive in India between **September and March**.
- The site is an important example of successful **community-led bird conservation**.

### Demoiselle Crane

- The **Demoiselle Crane (*Anthropoides virgo*)** is the **smallest species of crane** in the world.
- It migrates annually from **Central Asia, Mongolia, and southern Russia** to India.
- In India, it is commonly seen in **Rajasthan and Gujarat** during winter.
- It is classified as **Least Concern** by the **IUCN**.
- It is protected under the **Wildlife (Protection) Act, 1972**.

### Tasgaon Lift Irrigation Scheme

- Tasgaon Lift Irrigation Scheme** is a major irrigation project under the **Maharashtra Krishna Valley Development Corporation (MKVDC)** in **Satara district, Maharashtra**.
- It will provide irrigation to about **2,277 hectares** across **six villages**—Tasgaon, Varne, Karandwadi, Devkarwadi, Degaon, and Nigadi.
- Unlike gravity canals, it uses **electrically powered pumps** to lift water to higher-elevation agricultural fields.
- Major components include **pump houses, head works, switchyards, rising mains, delivery chambers, and closed-pipe distribution systems**.
- Lift irrigation is widely adopted in areas where farmland is situated above the water source.

### Lift Irrigation

- Lift irrigation** involves lifting water from rivers, reservoirs, or canals using **electric or diesel pumps**.
- It is suitable for **hilly and plateau regions** where gravity irrigation is not feasible.
- Water is supplied through **pressurized pipelines**, reducing seepage losses.
- It improves irrigation efficiency and supports cultivation in water-scarce regions.



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- Major lift irrigation projects are found in **Maharashtra, Karnataka, Telangana, and Andhra Pradesh.**

### Knob-billed Duck

- Knob-billed Duck (*Sarkidiornis melanotos*)**, also called the **African Comb Duck**, was recently recorded for the first time at **Pong Lake Wildlife Sanctuary, Himachal Pradesh.**
- The species is identified by the **large black knob** on the bill of adult males.
- It inhabits **freshwater lakes, marshes, wetlands, and floodplains** across **Africa and the Indian subcontinent.**
- It is one of the **largest duck species**, with males considerably larger than females.
- IUCN Status: Least Concern.**

### Pong Lake Wildlife Sanctuary

- Pong Lake Wildlife Sanctuary** is located in **Kangra district, Himachal Pradesh.**
- It is formed by the **Maharana Pratap Sagar Reservoir** on the **Beas River.**
- It is a **Ramsar Site** and one of North India's most important wetlands.
- The sanctuary attracts thousands of migratory birds from **Central Asia, Siberia, and Europe.**
- Important birds include **Bar-headed Goose, Northern Pintail, Common Teal, and Knob-billed Duck.**

### GRAPES-3 Telescope

- GRAPES-3 (Gamma Ray Astronomy PeV EnergieS–Phase 3)** is a cosmic ray observatory located at **Ooty, Tamil Nadu** and operated by the **Tata Institute of Fundamental Research (TIFR).**
- It studies the **origin, acceleration, and propagation of cosmic rays** using extensive air showers.
- The observatory houses one of the **world's largest muon telescopes**, covering about **560 square metres.**
- It also investigates **solar activity, geomagnetic storms, thunderstorms, and space weather.**





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- Recent studies used GRAPES-3 to understand how **Earth's upper atmosphere and the Sun's magnetic field influence cosmic-ray muons.**

### Cosmic Rays

- Cosmic rays** are **high-energy charged particles** originating from the **Sun, supernovae, and distant galaxies.**
- They mainly consist of **protons, alpha particles, and heavier atomic nuclei.**
- On entering Earth's atmosphere, they produce **secondary particles** such as **muons, electrons, neutrons, and photons.**
- Earth's **magnetic field** and atmosphere protect life by absorbing most cosmic radiation.
- Cosmic rays are important in studies of **astrophysics, particle physics, and space weather.**

### Muons

- Muons** are elementary particles belonging to the **lepton family**, similar to electrons but about **200 times heavier.**
- They are produced when **cosmic rays collide with atmospheric molecules.**
- Muons can penetrate several metres through rock and concrete because of their high energy.
- They are widely used in **particle physics, volcano imaging, archaeological exploration, and security scanning.**
- Their discovery helped advance the understanding of **subatomic particles** and cosmic radiation.

### RELOS (Recovery and Expenditure of Lost Objects and Salvage)

- RELOS** is a legal principle governing the recovery, ownership, and salvage of lost objects, especially in **maritime and underwater environments.**
- Salvage operations reward those who recover property at sea without transferring ownership automatically.
- It plays an important role in recovering shipwrecks, underwater archaeological remains, and valuable cargo.
- International maritime salvage is governed by conventions such as the **International Convention on Salvage, 1989.**



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- In India, underwater heritage is also protected under the **Ancient Monuments and Archaeological Sites and Remains Act**.

### United Nations High Seas Treaty (BBNJ Agreement)

- The **High Seas Treaty** is officially known as the **Agreement on Biodiversity Beyond National Jurisdiction (BBNJ)**.
- It was adopted under the **United Nations Convention on the Law of the Sea (UNCLOS)**.
- The treaty aims to conserve marine biodiversity in areas **beyond national jurisdiction**, which cover nearly **two-thirds of the world's oceans**.
- It enables creation of **Marine Protected Areas (MPAs)** and strengthens environmental impact assessment for activities on the high seas.
- The treaty supports the global target of protecting **30% of oceans by 2030**.

### United Nations Convention on the Law of the Sea (UNCLOS)

- **UNCLOS** was adopted in **1982** and entered into force in **1994**.
- It is often called the "**Constitution of the Oceans**."
- It defines **Territorial Sea (12 nautical miles)**, **Contiguous Zone (24 nm)**, **Exclusive Economic Zone (200 nm)**, and **Continental Shelf**.
- It governs navigation, marine resources, seabed mining, and dispute settlement.
- India is a **signatory** to UNCLOS.

### Exclusive Economic Zone (EEZ)

- The **Exclusive Economic Zone** extends up to **200 nautical miles** from a country's baseline.
- Coastal states have sovereign rights over **living and non-living marine resources** within the EEZ.
- Other countries retain freedom of navigation and overflight.
- India's EEZ covers approximately **2.37 million sq. km**.
- Offshore oil, natural gas, fisheries, and seabed minerals are important EEZ resources.

### National Sports Policy 2025



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- The **National Sports Policy 2025** aims to transform India into a **global sporting powerhouse**.
- It focuses on grassroots talent identification, sports infrastructure, sports science, and athlete welfare.
- The policy promotes greater participation of women, youth, and persons with disabilities.
- It encourages private investment and public-private partnerships in sports.
- The policy aligns with India's long-term ambition of hosting major international sporting events.

### Khelo India

- **Khelo India** was launched in **2018** by the **Ministry of Youth Affairs and Sports**.
- It promotes sports culture from the school and university levels.
- The programme identifies talented athletes and provides financial assistance and scientific training.
- It includes events such as **Khelo India Youth Games** and **Khelo India University Games**.
- The scheme aims to strengthen India's Olympic performance.

### International Atomic Energy Agency (IAEA)

- The **International Atomic Energy Agency (IAEA)** was established in **1957**.
- Headquarters: **Vienna, Austria**.
- It promotes the **peaceful use of nuclear energy** while preventing its military misuse.
- It conducts inspections under the **Nuclear Non-Proliferation Treaty (NPT)** safeguards.
- The IAEA received the **Nobel Peace Prize in 2005**.

### Nuclear Non-Proliferation Treaty (NPT)

- The **NPT** entered into force in **1970**.
- It aims to prevent the spread of nuclear weapons, promote peaceful nuclear energy, and encourage nuclear disarmament.
- It recognizes **five Nuclear Weapon States**—USA, Russia, UK, France, and China.
- **India is not a signatory** to the NPT.



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- The IAEA verifies compliance with the treaty through safeguards.

### International Big Cat Alliance (IBCA)

- The **International Big Cat Alliance (IBCA)** is an India-led initiative announced during the **50th anniversary of Project Tiger (2023)**.
- It focuses on conserving **Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma**.
- It promotes research, capacity building, funding, and international cooperation.
- India serves as the headquarters of the Alliance.
- The initiative strengthens global wildlife conservation efforts.

### Jammu & Kashmir Lavender Cultivation

- Lavender cultivation is promoted under the **CSIR Aroma Mission**.
- Jammu & Kashmir has emerged as India's **Lavender Capital**.
- Lavender is used in **perfumes, cosmetics, aromatherapy, pharmaceuticals, and essential oils**.
- The crop provides high income with relatively low water requirements.
- **CSIR-IIIM, Jammu** has played a major role in promoting lavender farming.

### Tolerance

- **Tolerance** is the ability to respect and accept differences in religion, language, culture, ethnicity, and opinions without discrimination.
- It is one of the core values expected from civil servants for ensuring impartial and inclusive governance.
- The **Preamble, Fundamental Rights, and Fundamental Duties** promote tolerance and fraternity.
- **Article 14** (Equality before Law), **Article 15** (Non-discrimination), **Article 19** (Freedom of Expression), and **Article 25** (Freedom of Religion) strengthen the principle of tolerance.
- **16 November** is observed as the **International Day for Tolerance** by UNESCO.

### UNESCO



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- **UNESCO (United Nations Educational, Scientific and Cultural Organization)** was established in **1945**.
- Headquarters: **Paris, France**.
- It promotes international cooperation in **education, science, culture, and communication**.
- UNESCO designates **World Heritage Sites, Biosphere Reserves, and Intangible Cultural Heritage**.
- India has **43 UNESCO World Heritage Sites** (current count).

### Fundamental Duties

- Fundamental Duties are contained in **Article 51A** under **Part IVA** of the Constitution.
- They were added by the **42nd Constitutional Amendment Act, 1976**.
- Originally there were **10 duties**; the **86th Constitutional Amendment (2002)** added the **11th duty**.
- They are **non-justiciable** but serve as moral obligations for citizens.
- They promote national unity, environmental protection, scientific temper, and preservation of cultural heritage.

### Article 25 of Indian Constitution

- **Article 25** guarantees the **Freedom of Conscience** and the right to freely profess, practice, and propagate religion.
- This right is subject to **public order, morality, health, and other Fundamental Rights**.
- The State can regulate **secular activities associated with religion**.
- It also permits laws for **social welfare and reform**.
- Sikhs are permitted to carry the **Kirpan** as part of religious practice.

### Financial Stability and Development Council (FSDC)

- The **Financial Stability and Development Council (FSDC)** was constituted in **2010**.
- It is chaired by the **Union Finance Minister**.
- Members include the **RBI Governor**, Chairpersons of **SEBI, IRDAI, PFRDA**, and senior officials of the Ministry of Finance.





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- It strengthens coordination among financial sector regulators and monitors systemic risks.
- The **FSDC Sub-Committee** is chaired by the **RBI Governor**.

### Financial Regulators of India

- **Reserve Bank of India (RBI)** regulates banking and monetary policy.
- **SEBI** regulates the securities and capital markets.
- **IRDAI** regulates the insurance sector.
- **PFRDA** regulates the National Pension System (NPS).
- **IFSCA** regulates financial services in the **GIFT IFSC, Gujarat**.

### GIFT IFSC

- **GIFT City (Gujarat International Finance Tec-City)** is India's first **International Financial Services Centre (IFSC)**.
- It is located in **Gandhinagar, Gujarat**.
- The financial regulator is the **International Financial Services Centres Authority (IFSCA)**.
- It aims to develop India as a global financial hub.
- Banking, insurance, aircraft leasing, bullion exchange, and fintech are major sectors operating in GIFT IFSC.

### INS Arnala

- **INS Arnala** is an **Anti-Submarine Warfare Shallow Water Craft (ASW-SWC)** built for the **Indian Navy**.
- It is designed to detect, track, and neutralize enemy submarines operating in coastal waters.
- The ship is equipped with **sonars, lightweight torpedoes, anti-submarine rockets, and advanced surveillance systems**.
- It has been built under the **Aatmanirbhar Bharat** initiative with significant indigenous content.
- The class is named after **Arnala Fort** located near **Vasai, Maharashtra**.

### Anti-Submarine Warfare (ASW)



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- **Anti-Submarine Warfare (ASW)** includes operations to detect, track, and destroy enemy submarines.
- ASW platforms include **warships, submarines, maritime patrol aircraft, and helicopters**.
- Sonar is the primary underwater detection technology.
- India uses systems such as **P-8I Poseidon aircraft, MH-60R helicopters, and ASW corvettes**.
- ASW is critical for protecting sea lanes and carrier battle groups.

### Vembanad Lake

- **Vembanad Lake** is the **longest lake in India** and the **largest lake in Kerala**.
- It extends across **Alappuzha, Kottayam, and Ernakulam districts**.
- The lake is designated as a **Ramsar Site**.
- It is connected with the famous **Kerala Backwaters**.
- The **Kumarakom Bird Sanctuary** is situated on its eastern bank.

### Kumarakom Bird Sanctuary

- Located on the banks of **Vembanad Lake** in **Kerala**.
- It is an important habitat for **resident and migratory birds**.
- Species include **Siberian Crane, Egret, Heron, Darter, Kingfisher, and Teal**.
- The sanctuary comprises wetlands, mangroves, and coconut groves.
- It is a popular destination for bird watching and ecotourism.

### Indian Coast Guard (ICG)

- The **Indian Coast Guard** was established on **18 August 1978** under the **Coast Guard Act, 1978**.
- It functions under the **Ministry of Defence**.
- Headquarters: **New Delhi**.
- It safeguards India's maritime interests, conducts search and rescue, anti-smuggling, marine pollution control, and coastal security.



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- The motto of the Indian Coast Guard is "**Vayam Rakshamah**" (We Protect).

### New Naval Platforms

- The **Indian Navy** recently inducted new indigenous naval platforms to strengthen maritime security and blue-water operational capability.
- These platforms enhance anti-submarine warfare, surveillance, coastal defence, and long-range maritime operations.
- Most new warships are being built under the **Aatmanirbhar Bharat** initiative with high indigenous content.
- Major Indian shipyards include **Mazagon Dock Shipbuilders Ltd. (MDL)**, **Garden Reach Shipbuilders & Engineers (GRSE)**, **Goa Shipyard Ltd. (GSL)**, and **Cochin Shipyard Ltd. (CSL)**.
- India aims to become a major maritime power under the vision of **SAGAR (Security and Growth for All in the Region)**.

### Project 17A Frigates

- **Project 17A** is the follow-on programme to the **Shivalik-class (Project 17)** stealth frigates.
- A total of **seven stealth frigates** are being constructed by **MDL** and **GRSE**.
- The ships are equipped with **BrahMos missiles, Barak-8 surface-to-air missiles, advanced radar, sonar, and anti-submarine warfare systems**.
- They incorporate stealth features that reduce radar, infrared, and acoustic signatures.
- These frigates significantly enhance the Indian Navy's multi-role combat capability.

### INS Udaygiri

- **INS Udaygiri** is the second stealth frigate under **Project 17A**.
- It is named after the earlier **INS Udaygiri**, a Nilgiri-class frigate.
- The ship is capable of anti-air, anti-surface, and anti-submarine warfare.
- It carries **BrahMos supersonic cruise missiles** and **Barak-8 air defence missiles**.
- It represents India's growing indigenous warship-building capability.

### BrahMos Missile



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- **BrahMos** is a **supersonic cruise missile** jointly developed by **India (DRDO)** and **Russia (NPO Mashinostroyenia)**.
- It has a speed of around **Mach 2.8–3.0**, making it one of the fastest operational cruise missiles.
- Variants include **land, sea, submarine, and air-launched** versions.
- The missile follows a **fire-and-forget** guidance system with high precision.
- The name is derived from the **Brahmaputra** and **Moskva** rivers.

### Barak-8 Missile

- **Barak-8** is a **long-range surface-to-air missile (LR-SAM)** jointly developed by **India and Israel**.
- It provides defence against **fighter aircraft, helicopters, anti-ship missiles, cruise missiles, and UAVs**.
- The missile is used by both the **Indian Navy** and **Indian Air Force**.
- It employs an **Active Radar Seeker** for terminal guidance.
- The system strengthens India's layered air-defence network.

### International Day of Yoga

- **International Day of Yoga** is observed every year on **21 June**.
- It was proclaimed by the **United Nations General Assembly (UNGA)** in **2014** following India's proposal.
- The first International Day of Yoga was celebrated in **2015**.
- The date coincides with the **Summer Solstice**, the longest day in the Northern Hemisphere.
- The objective is to promote physical health, mental well-being, and holistic living.

### United Nations General Assembly (UNGA)

- The **UNGA** is the principal deliberative body of the **United Nations**.
- Every UN member state has **one vote**, irrespective of size or population.
- It elects the **non-permanent members of the UNSC**, approves the UN budget, and appoints the **UN Secretary-General** on the recommendation of the Security Council.



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- Regular sessions begin annually in **September**.
- Headquarters: **New York, USA**.

### GAVI – The Vaccine Alliance

- **GAVI** was established in **2000** to improve access to vaccines in low-income countries.
- Headquarters: **Geneva, Switzerland**.
- It is a public-private partnership involving **WHO, UNICEF, the World Bank, vaccine manufacturers, donor governments, and philanthropic organizations**.
- GAVI supports immunization against diseases such as measles, polio, HPV, and pneumococcal infections.
- India has transitioned from GAVI support and is now an important vaccine supplier globally.

### Non-Methane Hydrocarbons (NMHCs)

- **Non-Methane Hydrocarbons (NMHCs)** are volatile organic compounds (VOCs) excluding methane that contribute significantly to **ground-level ozone** and **photochemical smog** formation.
- Major sources include **vehicle exhaust, petroleum refineries, chemical industries, biomass burning, paints, solvents, and fuel evaporation**.
- Exposure can cause **respiratory irritation, asthma, eye irritation, and reduced lung function**.
- NMHCs react with **Nitrogen Oxides (NO<sub>x</sub>)** in the presence of sunlight to produce tropospheric ozone.
- Reducing NMHC emissions is essential for improving urban air quality.

### Volatile Organic Compounds (VOCs)

- **VOCs** are carbon-containing compounds that evaporate easily at room temperature.
- Major sources include **paints, adhesives, aerosols, fuels, industrial solvents, and motor vehicles**.
- VOCs contribute to **ozone formation** and **secondary organic aerosols**.
- Important VOCs include **Benzene, Toluene, Xylene, Formaldehyde, and Ethylene**.
- Long-term exposure may lead to neurological disorders and increased cancer risk.





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### Ground-Level Ozone

- Ground-level ozone is a **secondary pollutant** formed by the reaction of **NOx and VOCs** under sunlight.
- Unlike the **stratospheric ozone layer**, ground-level ozone is harmful to humans and vegetation.
- It reduces agricultural productivity by damaging crops.
- It causes breathing difficulty, chest pain, coughing, and aggravates asthma.
- It is a major component of **photochemical smog**.

### Development Policy Financing (DPF)

- **Development Policy Financing (DPF)** is a lending instrument of the **World Bank** that provides budget support to countries implementing policy and institutional reforms.
- Funds are released after agreed policy reforms are implemented.
- DPF supports reforms in **governance, public finance, climate resilience, infrastructure, health, education, and social protection**.
- The assistance is generally untied, allowing governments flexibility in utilizing funds.
- It strengthens macroeconomic stability and long-term development.

### World Bank

- The **World Bank** was established in **1944** under the **Bretton Woods Agreement**.
- Headquarters: **Washington, D.C., USA**.
- Its principal institutions are the **IBRD** and **IDA**.
- It provides loans, grants, technical assistance, and policy advice to developing countries.
- India is one of the founding members of the World Bank.

### Indian Coast Guard (ICG)

- The **Indian Coast Guard** was established on **18 August 1978** under the **Coast Guard Act, 1978**.
- It functions under the **Ministry of Defence**.
- Headquarters: **New Delhi**.



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- Its responsibilities include **maritime law enforcement, search and rescue, anti-smuggling operations, marine pollution response, and coastal security.**
- Its motto is "**Vayam Rakshamah**" (We Protect).

### Search and Rescue (SAR)

- **Search and Rescue (SAR)** operations involve locating and rescuing people in distress at sea.
- The Indian Coast Guard is India's **Maritime Search and Rescue Coordinating Authority.**
- India has **Maritime Rescue Coordination Centres (MRCCs)** at **Mumbai, Chennai, and Port Blair.**
- SAR operations are coordinated with the **Indian Navy, DG Shipping, Ports, and Coastal Police.**
- India is responsible for a vast Search and Rescue Region (SRR) in the Indian Ocean.

### Maritime Zones of India

- **Territorial Sea** extends up to **12 nautical miles** where India exercises complete sovereignty.
- **Contiguous Zone** extends up to **24 nautical miles** for customs, immigration, and security enforcement.
- **Exclusive Economic Zone (EEZ)** extends up to **200 nautical miles** for resource exploitation.
- The **Continental Shelf** may extend beyond the EEZ under UNCLOS provisions.
- These maritime zones are governed by the **United Nations Convention on the Law of the Sea (UNCLOS).**

### National Disaster Response Force (NDRF)

- The **National Disaster Response Force (NDRF)** was constituted under the **Disaster Management Act, 2005.**
- It functions under the **Ministry of Home Affairs.**
- The force specializes in **natural disasters, chemical, biological, radiological, nuclear (CBRN) emergencies, and urban search & rescue.**



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- NDRF battalions are drawn from various **Central Armed Police Forces (CAPFs)**.
- Headquarters: **New Delhi**.

### Disaster Management Act, 2005

- The **Disaster Management Act, 2005** provides the legal framework for disaster management in India.
- It established the **National Disaster Management Authority (NDMA)** headed by the **Prime Minister**.
- It also created **State Disaster Management Authorities (SDMAs)** and **District Disaster Management Authorities (DDMAs)**.
- It provides for the establishment of the **National Disaster Response Force (NDRF)**.
- The Act covers prevention, mitigation, preparedness, response, relief, and recovery from disasters.

### New Development Bank (NDB)

- The **New Development Bank (NDB)** is a multilateral development bank established by the **BRICS countries—Brazil, Russia, India, China, and South Africa**.
- The decision to establish the bank was taken during the **6th BRICS Summit (Fortaleza, Brazil, 2014)**, and it became operational in **2015**.
- Headquarters: **Shanghai, China**.
- Its primary objective is to finance **infrastructure and sustainable development projects** in BRICS and other **Emerging Market and Developing Economies (EMDEs)**.
- The **authorised capital** of the bank is **USD 100 billion**, with an initial subscribed capital of **USD 50 billion** equally contributed by the founding members.

### Uzbekistan Joins New Development Bank

- **Uzbekistan** became the **10th member** of the **New Development Bank (NDB)** and the **first Central Asian country** to join the institution.
- Its entry expands the NDB's presence into **Central Asia**, a strategically important region.
- The membership is expected to improve financing for **infrastructure, transport, energy, and sustainable development** projects.



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- It strengthens the voice of the **Global South** in international financial governance.
- It also supports the use of **local currency financing**, reducing dependence on the **US Dollar**.

### BRICS

- **BRICS** is a grouping of major emerging economies aimed at promoting economic cooperation and reforming global financial governance.
- The founding members are **Brazil, Russia, India, China, and South Africa**.
- The group established the **New Development Bank (NDB)** and the **Contingent Reserve Arrangement (CRA)**.
- BRICS advocates reforms in institutions such as the **IMF, World Bank**, and the **United Nations Security Council**.
- Annual BRICS Summits are hosted on a **rotational basis** among member countries.

### Contingent Reserve Arrangement (CRA)

- The **Contingent Reserve Arrangement (CRA)** was established by **BRICS** in **2014**.
- It provides **financial support through currency swaps** during balance of payments or liquidity crises.
- The total committed size of the CRA is **USD 100 billion**.
- It aims to strengthen financial stability among BRICS countries.
- The CRA complements the work of the **New Development Bank** but functions independently.

### Uzbekistan

- **Uzbekistan** is a **doubly landlocked country** in **Central Asia**.
- Capital: **Tashkent**; Currency: **Uzbekistani Som (UZS)**.
- It shares borders with **Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, and Turkmenistan**.
- Major rivers include the **Amu Darya** and **Syr Darya**, which support agriculture and irrigation.



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- Uzbekistan is rich in **gold, uranium, natural gas, copper, and cotton**, and is one of the world's leading **gold producers**.

### Tashkent – Important GK

- Tashkent** is the capital and largest city of Uzbekistan.
- It hosted the **Tashkent Agreement (1966)** between **India and Pakistan** after the **1965 Indo-Pak War**.
- The agreement was mediated by the **Soviet Union**.
- Former Indian Prime Minister **Lal Bahadur Shastri** passed away in Tashkent shortly after signing the agreement.
- Tashkent is one of the oldest continuously inhabited cities in Central Asia.

### Tashkent Agreement (1966)

- Signed on **10 January 1966** after the **1965 India–Pakistan War**.
- It was signed by **Prime Minister Lal Bahadur Shastri** and **President Ayub Khan**.
- The agreement was mediated by **Soviet Premier Alexei Kosygin**.
- Both countries agreed to withdraw armed forces to pre-war positions and restore diplomatic relations.
- The agreement marked an important milestone in India's diplomatic history.

### Emerging Market and Developing Economies (EMDEs)

- EMDEs** are countries with rapidly growing economies that have not yet attained developed-country status.
- They account for a major share of global population, economic growth, and infrastructure demand.
- Institutions like the **New Development Bank** and **Asian Infrastructure Investment Bank (AIIB)** provide development finance to these economies.
- India is one of the largest EMDEs in the world.
- EMDEs play an increasingly important role in global trade and investment

### UN80 Initiative





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- The **UN80 Initiative** is a reform agenda launched to modernize and strengthen the **United Nations** as it approaches its **80th anniversary in 2025**.
- It focuses on improving **efficiency, transparency, accountability, digital transformation, and institutional effectiveness** across the UN system.
- The initiative aims to make the UN more responsive to emerging global challenges such as climate change, conflicts, pandemics, and sustainable development.
- It promotes stronger cooperation among member states and better utilization of financial and human resources.
- The reforms are aligned with the objectives of the **2030 Agenda for Sustainable Development**.

### United Nations (UN)

- The **United Nations (UN)** was established on **24 October 1945** after the Second World War.
- Headquarters: **New York, USA**.
- It has **193 Member States** and **6 principal organs**—General Assembly, Security Council, ECOSOC, International Court of Justice, Trusteeship Council, and Secretariat.
- The **Secretary-General** is the chief administrative officer of the UN.
- **24 October** is observed annually as **United Nations Day**.

### International Seabed Authority (ISA)

- The **International Seabed Authority (ISA)** is an autonomous organization established under the **United Nations Convention on the Law of the Sea (UNCLOS)**.
- Headquarters: **Kingston, Jamaica**.
- It regulates mineral-related activities in the **international seabed area** beyond national jurisdiction.
- The ISA ensures that seabed mineral resources are managed for the **benefit of all humankind**.
- India was among the **Pioneer Investors** for deep-sea mineral exploration and has exploration rights in the Central Indian Ocean Basin.

### Polymetallic Nodules



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- **Polymetallic Nodules** are potato-shaped mineral deposits found on the **deep ocean floor**.
- They contain valuable metals such as **Manganese, Nickel, Cobalt, Copper, and Iron**.
- These minerals are critical for **electric vehicle batteries, renewable energy technologies, and electronics**.
- India has been allotted an exploration area in the **Central Indian Ocean Basin (CIOB)**.
- Deep-sea mining raises concerns regarding marine biodiversity and ecosystem disturbance.

### Central Indian Ocean Basin (CIOB)

- The **Central Indian Ocean Basin** is one of the world's richest regions for **polymetallic nodules**.
- India has exclusive exploration rights granted by the **International Seabed Authority**.
- The area is being explored by the **Ministry of Earth Sciences**.
- The basin contains significant reserves of **Nickel, Cobalt, Copper, and Manganese**.
- It forms an important component of India's **Deep Ocean Mission**.

### Deep Ocean Mission

- The **Deep Ocean Mission** was approved in **2021** by the Government of India.
- It is implemented by the **Ministry of Earth Sciences (MoES)**.
- The mission aims to explore deep-sea minerals, marine biodiversity, deep-ocean technologies, and underwater robotics.
- It includes the development of the **MATSYA 6000** manned submersible capable of diving to **6,000 metres**.
- The mission supports India's **Blue Economy** and strategic resource security.

### IndiaAI Mission

- The **IndiaAI Mission** aims to make India a global leader in **Artificial Intelligence** through indigenous innovation.
- It focuses on AI computing infrastructure, datasets, research, startup support, and skill development.



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- The mission is implemented by the **Ministry of Electronics and Information Technology (MeitY)**.
- It promotes responsible and ethical AI while encouraging indigenous AI models.
- The initiative supports sectors such as healthcare, agriculture, education, governance, and defence.

### National e-Governance Division (NeGD)

- The **National e-Governance Division (NeGD)** functions under the **Ministry of Electronics and Information Technology (MeitY)**.
- It supports implementation of the **Digital India Programme**.
- NeGD develops digital public infrastructure and provides technical support for major e-governance projects.
- It plays a key role in initiatives such as **DigiLocker, UMANG, OpenForge, and Digital Government platforms**.
- It works closely with Central Ministries, States, and Union Territories to improve digital service delivery.

### Dhanushkodi

- **Dhanushkodi** is located at the **south-eastern tip of Pamban Island** in **Ramanathapuram district, Tamil Nadu**.
- It lies between the **Bay of Bengal** and the **Gulf of Mannar**.
- The town was devastated by the **1964 Rameswaram Cyclone** and was subsequently declared unfit for habitation.
- It is situated near **Adam's Bridge (Rama Setu)**, a chain of limestone shoals extending towards Sri Lanka.
- Dhanushkodi is an important tourist destination and holds religious significance in the **Ramayana**.

### Antaram Idukki

- **Antaram Idukki** is a **newly identified gecko species** discovered in the **Idukki district of Kerala** in the **Western Ghats**, a global biodiversity hotspot.
- It belongs to the genus **Cnemaspis**, commonly known as **Day Geckos**.



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- The species inhabits **rocky outcrops and forested hill ecosystems**.
- The Western Ghats are recognized as a **UNESCO World Heritage Site** and one of the world's **36 biodiversity hotspots**.
- India has witnessed several new reptile discoveries in the Western Ghats due to its high level of endemism.

### Day Gecko (Cnemaspis)

- **Cnemaspis** is a genus of **diurnal (day-active) geckos** found mainly in **South and Southeast Asia**.
- These geckos possess **adhesive toe pads** that enable them to climb smooth rock surfaces.
- Most species are **insectivorous**, feeding on ants, termites, beetles, and small insects.
- The **Western Ghats** is one of the richest regions for Cnemaspis diversity.
- Many species are **micro-endemic**, occurring only in a single hill range or forest.

### Western Ghats

- The **Western Ghats** extend for about **1,600 km** from **Gujarat to Kerala**.
- They pass through **Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu**.
- They are the source of major peninsular rivers such as **Godavari, Krishna, Kaveri, and Tungabhadra**.
- The region is a **UNESCO World Heritage Site** and one of the world's **36 biodiversity hotspots**.
- The highest peak is **Anamudi (2,695 m)** in **Kerala**.

### National Statistics Day

- **National Statistics Day** is observed every year on **29 June** to commemorate the birth anniversary of **Professor Prasanta Chandra Mahalanobis**.
- It was first observed in **2007** by the Government of India.
- The day highlights the importance of statistics in evidence-based policymaking and national development.
- The Ministry of Statistics and Programme Implementation (**MoSPI**) organizes the observance.



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- Every year a specific theme is announced to promote statistical awareness.

### Prasanta Chandra Mahalanobis

- **P.C. Mahalanobis** was a renowned **Indian statistician** and founder of the **Indian Statistical Institute (ISI), Kolkata**.
- He developed the famous **Mahalanobis Distance**, widely used in statistics and machine learning.
- He played a key role in designing India's **Second Five-Year Plan**.
- He established the **National Sample Survey (NSS)** for scientific data collection.
- He was awarded the **Padma Vibhushan** in **1968**.

### Indian Statistical Institute (ISI)

- The **Indian Statistical Institute (ISI)** was established in **1931** by **P.C. Mahalanobis**.
- Headquarters: **Kolkata, West Bengal**.
- It is an **Institution of National Importance** under the **ISI Act, 1959**.
- ISI conducts research in **statistics, mathematics, computer science, economics, and quantitative social sciences**.
- It has campuses in **Delhi, Bengaluru, Chennai, Tezpur, Giridih, and Pune**.

### National Sample Survey (NSS)

- The **National Sample Survey (NSS)** was launched in **1950**.
- It conducts nationwide surveys on **employment, consumption, health, education, agriculture, and socio-economic conditions**.
- It functions under the **National Statistical Office (NSO)**.
- NSS data are extensively used for policy formulation and economic planning.
- The **NSO** operates under the **Ministry of Statistics and Programme Implementation (MoSPI)**.

### National Statistical Office (NSO)

- The **National Statistical Office (NSO)** was formed in **2019** by merging the **Central Statistics Office (CSO)** and the **National Sample Survey Office (NSSO)**.





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- It functions under **MoSPI**.
- NSO compiles **GDP, Consumer Price Index (CPI), Index of Industrial Production (IIP), and national statistical surveys**.
- It serves as India's principal statistical agency.
- NSO plays a crucial role in evidence-based governance.

### Shanghai Cooperation Organisation (SCO)

- The **Shanghai Cooperation Organisation (SCO)** was established in **2001**.
- Headquarters: **Beijing, China**.
- Members include **India, China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Pakistan, Iran, and Belarus**.
- India became a **full member in 2017**.
- The SCO focuses on **regional security, counter-terrorism, connectivity, economic cooperation, and cultural exchanges**.

### Regional Anti-Terrorist Structure (RATS)

- **RATS** is the permanent counter-terrorism wing of the **Shanghai Cooperation Organisation (SCO)**.
- Headquarters: **Tashkent, Uzbekistan**.
- It promotes cooperation against the **"Three Evils"—terrorism, separatism, and extremism**.
- Member countries share intelligence and conduct joint counter-terrorism exercises.
- India actively participates in RATS meetings and exercises.

### Sistan Sand Boa

- **Sistan Sand Boa (*Eryx sistansensis*)** is a **newly recorded sand boa species in India**, discovered in the **Thar Desert of Rajasthan**.
- It is a **non-venomous**, burrowing snake belonging to the **Boidae** family.
- The species spends most of its life beneath loose sand and emerges mainly to hunt small rodents, lizards, and other reptiles.



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- Sand boas are important in controlling rodent populations and maintaining ecological balance in arid ecosystems.
- Unlike venomous snakes, sand boas kill their prey by **constriction**.

### Sand Boas

- Sand boas belong to the family **Boidae**, which also includes pythons and boas.
- They are stout-bodied snakes adapted for **fossorial (burrowing)** life.
- Most species are **viviparous**, giving birth to live young instead of laying eggs.
- In India, important species include the **Red Sand Boa** and **Rough-scaled Sand Boa**.
- They are protected under the **Wildlife (Protection) Act, 1972**, and are frequently targeted by illegal wildlife trade.

### Thar Desert

- The **Thar Desert**, also called the **Great Indian Desert**, is the **largest desert in India**.
- About **85%** of the desert lies in **India**, while the remaining portion extends into **Pakistan**.
- It covers **Rajasthan, Gujarat, Punjab, and Haryana**.
- The **Luni River** is the largest river of the Thar Desert and flows into the **Rann of Kutch**.
- **Desert National Park (Rajasthan)** is an important protected area known for the **Great Indian Bustard**.

### Desert National Park

- **Desert National Park** is located near **Jaisalmer and Barmer** in Rajasthan.
- It conserves the fragile ecosystem of the **Thar Desert**.
- The park is one of the last strongholds of the **Great Indian Bustard**.
- Other fauna include **Chinkara, Desert Fox, Desert Cat, Spiny-tailed Lizard, and Monitor Lizard**.
- The park contains extensive sand dunes, rocky outcrops, and salt lake depressions.

### Great Indian Bustard

- The **Great Indian Bustard (*Ardeotis nigriceps*)** is one of India's **heaviest flying birds**.



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- It is found mainly in **Rajasthan**, with smaller populations in **Gujarat, Maharashtra, Karnataka, and Andhra Pradesh**.
- **IUCN Status: Critically Endangered**.
- It is listed in **Schedule I of the Wildlife (Protection) Act, 1972** and **Appendix I of CITES**.
- **Project Great Indian Bustard** has been launched for its conservation.

### PM MITRA Parks

- **PM Mega Integrated Textile Region and Apparel (PM MITRA) Parks** Scheme aims to establish world-class integrated textile manufacturing hubs in India.
- The scheme is implemented by the **Ministry of Textiles**.
- Each park follows the "**Farm to Fibre to Factory to Fashion to Foreign**" approach.
- The parks provide integrated infrastructure for spinning, weaving, processing, garment manufacturing, and exports.
- Seven PM MITRA Parks have been approved across different states to boost employment and textile exports.

### Technical Textiles

- **Technical Textiles** are textile products manufactured primarily for **functional and industrial applications** rather than aesthetics.
- Major segments include **Agrotech, Geotech, Meditech, Mobiltech, Protech, Sportech, and Buildtech**.
- They are widely used in **healthcare, defence, agriculture, construction, and transportation**.
- India promotes technical textiles through the **National Technical Textiles Mission (NTTM)**.
- The sector has significant export and employment potential.

### National Technical Textiles Mission (NTTM)

- The **National Technical Textiles Mission** was launched in **2020**.
- It aims to position India as a global leader in technical textile manufacturing.
- The mission focuses on **research, innovation, market development, exports, and skill development**.



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- It promotes indigenous manufacturing and import substitution.
- The mission is implemented by the **Ministry of Textiles**.

### Exercise Jal Rahat

- **Exercise Jal Rahat** is a **Humanitarian Assistance and Disaster Relief (HADR)** exercise conducted by the **Indian Navy**.
- It tests preparedness for **floods, cyclones, tsunamis, and other natural disasters**.
- The exercise involves coordination with civil administration, **NDRF**, Coast Guard, and other agencies.
- It demonstrates rapid deployment of ships, helicopters, diving teams, and relief material.
- HADR operations are an important component of India's maritime diplomacy and regional outreach.

### Humanitarian Assistance and Disaster Relief (HADR)

- **HADR** refers to military assistance provided during **natural disasters and humanitarian emergencies**.
- The **Indian Armed Forces**, especially the **Indian Navy** and **Indian Air Force**, play a major role in HADR operations.
- India has conducted HADR missions in countries such as **Nepal, Sri Lanka, Türkiye, Myanmar, and Mozambique**.
- HADR enhances regional cooperation and India's role as a **Net Security Provider** in the Indian Ocean.
- These missions include evacuation, medical aid, logistics, food distribution, and rescue operations.

### Netra Airborne Early Warning and Control System (AEW&C)

- **Netra AEW&C** is an **indigenously developed Airborne Early Warning and Control System** designed by **DRDO** for the **Indian Air Force**.
- It is mounted on the **Embraer EMB-145** aircraft and provides **360° surveillance**, early warning, and battle management capabilities.
- The system can detect **fighter aircraft, cruise missiles, helicopters, UAVs, and other aerial threats** at long ranges.



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- It significantly enhances India's **network-centric warfare**, air defence, and command-and-control capabilities.
- India is also developing the **Netra Mk-II** on the **Airbus A321 platform**, offering greater endurance and radar coverage.

### Airborne Early Warning and Control System (AEW&C)

- **AEW&C** is an airborne radar system used for **early detection, tracking, identification, and command of aerial threats**.
- It integrates **radar, Identification Friend or Foe (IFF), electronic intelligence (ELINT), communication systems, and mission control**.
- AEW&C aircraft act as "**eyes in the sky**", providing situational awareness far beyond ground-based radars.
- They coordinate fighter aircraft, monitor airspace, and support offensive and defensive air operations.
- Major AEW&C systems include **Netra (India), Phalcon (Israel), E-3 Sentry (USA), and KJ-500 (China)**.

### Defence Research and Development Organisation (DRDO)

- **DRDO** was established in **1958** under the **Ministry of Defence**.
- Headquarters: **New Delhi**.
- It is India's premier defence research organization responsible for developing indigenous military technologies.
- DRDO has developed systems such as **Agni, Prithvi, Akash, Astra, BrahMos (jointly), Arjun MBT, Pinaka, and Netra AEW&C**.
- Its motto is "**Strength's Origin is in Knowledge**."

### National Turmeric Board

- The **National Turmeric Board** has been established to promote the production, value addition, exports, and branding of **Indian turmeric**.
- Headquarters: **Nizamabad, Telangana**, one of India's major turmeric-producing regions.
- The Board works to improve farmers' income through better market access, quality standards, and export promotion.





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- It supports research, processing, GI promotion, and international marketing of turmeric products.
- India is the **largest producer, consumer, and exporter of turmeric** in the world.

### Turmeric

- Turmeric (*Curcuma longa*)** belongs to the **Zingiberaceae (Ginger)** family.
- The active compound **Curcumin** possesses antioxidant, anti-inflammatory, and medicinal properties.
- Major producing states include **Telangana, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Odisha, and West Bengal**.
- Turmeric is widely used in **Ayurveda, pharmaceuticals, cosmetics, food processing, and traditional medicine**.
- India accounts for nearly **80% of global turmeric production**.

### National Mission on Medicinal Plants (NMMP)

- The **National Mission on Medicinal Plants (NMMP)** promotes the cultivation and conservation of medicinal plants.
- It is implemented by the **National Medicinal Plants Board (NMPB)** under the **Ministry of AYUSH**.
- The mission supports farmers through financial assistance, quality planting material, and post-harvest infrastructure.
- It encourages sustainable harvesting of medicinal plants from forests.
- India possesses over **8,000 medicinal plant species**, many used in AYUSH systems.

### Mount Lewotobi Laki-Laki

- Mount Lewotobi Laki-Laki** is an **active stratovolcano** located on **Flores Island, Indonesia**.
- It forms a twin volcanic complex with **Mount Lewotobi Perempuan**.
- The volcano lies on the **Pacific Ring of Fire**, one of the world's most active seismic zones.
- Frequent eruptions produce **lava flows, ash plumes, pyroclastic flows, and volcanic gases**.



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- Indonesia has more than **120 active volcanoes**, the highest number of any country.

### Pacific Ring of Fire

- The **Pacific Ring of Fire** is a horseshoe-shaped belt surrounding the **Pacific Ocean**.
- Nearly **75% of the world's active volcanoes** and about **90% of global earthquakes** occur along this belt.
- It is formed due to **subduction and plate boundary interactions**.
- Countries located along the Ring of Fire include **Japan, Indonesia, Philippines, New Zealand, Chile, Peru, Mexico, Canada, and the USA**.
- It is associated with the **Pacific Plate** and several other tectonic plates.

### International Telecommunication Union (ITU)

- The **International Telecommunication Union (ITU)** is the **oldest specialized agency of the United Nations**, founded in **1865**.
- Headquarters: **Geneva, Switzerland**.
- It allocates **global radio-frequency spectrum**, satellite orbits, and develops international telecommunication standards.
- ITU promotes universal access to **digital communication and information technologies**.
- India is an active member and participates in global telecom standard-setting.

### ASPIRE Scheme

- ASPIRE (A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship)** was launched in **2015** by the **Ministry of Micro, Small and Medium Enterprises (MSME)**.
- The scheme promotes **innovation, entrepreneurship, and employment generation** in rural and agro-based sectors.
- It supports **Livelihood Business Incubators (LBIs)** and **Technology Business Incubators (TBIs)** to nurture startups and rural enterprises.
- Financial assistance is provided for setting up incubation centres, seed funding, mentoring, and technology support.



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- The scheme strengthens MSMEs by encouraging innovation-driven enterprises in rural India.

### Livelihood Business Incubators (LBIs)

- **LBIs** provide skill development and entrepreneurship training to rural youth.
- They promote self-employment through locally relevant enterprises.
- They focus on sectors such as agriculture, food processing, handicrafts, and rural services.
- LBIs are supported under the **ASPIRE Scheme**.
- Their objective is to create sustainable livelihoods in underserved regions.

### Rewa Sundarja Mango

- **Rewa Sundarja** is a premium **GI-tagged mango variety** cultivated mainly in **Rewa district, Madhya Pradesh**.
- It received the **Geographical Indication (GI) Tag** in **2023**.
- The fruit is known for its **fibreless pulp, creamy texture, vanilla-like aroma, and excellent shelf life**.
- It naturally ripens after the **first monsoon showers**, making it distinct from many other mango varieties.
- It has recently been exported to the **United Arab Emirates (UAE)** with the support of **APEDA**.

### Agricultural and Processed Food Products Export Development Authority (APEDA)

- **APEDA** is a **statutory body** established under the **APEDA Act, 1985**.
- It functions under the **Ministry of Commerce and Industry**.
- Headquarters: **New Delhi**.
- It promotes the export of agricultural and processed food products from India.
- APEDA also supports quality certification, branding, packaging, and export infrastructure.

### Corporate Mitra Scheme

- **Corporate Mitra Scheme** was announced in the **Union Budget 2026–27** to strengthen **MSMEs** through trained professional support.



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- It develops certified **Corporate Mitras** to assist MSMEs in GST, accounting, compliance, financial management, and secretarial services.
- The programme is jointly implemented with **ICAI, ICSI, and ICoAI**.
- Participants undergo **6 months of academic training** followed by **6 months of on-the-job training**.
- The scheme mainly targets **Tier-II and Tier-III cities** to improve MSME competitiveness.

### PM-RAHAT Scheme

- **PM-RAHAT (Road Accident Victim Hospitalization and Assured Treatment)** is a **Central Sector Scheme** under the **Ministry of Road Transport and Highways (MoRTH)**.
- It provides **cashless treatment up to ₹1.5 lakh** for eligible road accident victims for **up to seven days**.
- The scheme is integrated with **eDAR, TMS 2.0, and ERSS-112** for seamless emergency response.
- Hospital reimbursements are made through the **Motor Vehicle Accident Fund (MVAf)**.
- It aims to reduce fatalities by ensuring immediate access to emergency medical care.

### National War Memorial

- The **National War Memorial** was inaugurated in **2019** at **New Delhi** to honour Indian soldiers who sacrificed their lives after Independence.
- It consists of **four concentric chakras—Amar Chakra, Veerta Chakra, Tyag Chakra, and Rakshak Chakra**.
- The **Amar Chakra** contains the eternal flame and central obelisk.
- The **Tyag Chakra** bears the names of thousands of fallen soldiers.
- The complex also includes memorials dedicated to all **Param Vir Chakra** awardees.

### Brachybacterium netajii

- **Brachybacterium netajii** is a newly discovered bacterial species isolated from the **Hooghly River**, a tributary of the **Ganga**, in **West Bengal**.
- It can degrade **p-nitrophenol (PNP)**, a toxic industrial pollutant.
- The bacterium survives high concentrations of **arsenic, cadmium, lead, and mercury**.



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- It is **halotolerant**, capable of surviving in highly saline environments.
- The species has potential applications in **bioremediation** and industrial biotechnology.

### Seychelles

- **Seychelles** is an **archipelagic island nation** in the **western Indian Ocean**.
- Capital: **Victoria**.
- It consists of **115 islands**, divided into **granitic** and **coralline** island groups.
- The highest peak is **Morne Seychellois** on **Mahé Island**.
- **Aldabra Atoll**, a **UNESCO World Heritage Site**, is home to the world's largest population of **Giant Tortoises**.

### Lonar Lake

- **Lonar Lake** is located in **Buldhana district, Maharashtra**.
- It was formed by a **meteorite impact** around **50,000 years ago**.
- It is the **only known impact crater lake formed in basaltic rock** in the world.
- The lake is highly **saline and alkaline**, and its colour changes seasonally due to microorganisms.
- It is surrounded by ancient temples and lies within the **Deccan Plateau**.

### Euclid Space Telescope

- **Euclid** is a **1.2-metre space telescope** launched by the **European Space Agency (ESA)** in **2023**.
- It is positioned at the **Sun–Earth L2 Lagrange Point**.
- Its mission is to study **dark matter**, **dark energy**, and the large-scale structure of the Universe.
- It carries two instruments: **Visible Imager (VIS)** and **Near-Infrared Spectrometer and Photometer (NISF)**.
- The telescope will map **billions of galaxies** up to **10 billion light-years** away.

### Nongkhylllem Wildlife Sanctuary

- **Nongkhylllem Wildlife Sanctuary** is located in **Ri Bhoi district, Meghalaya**.





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- It was established in **1981** under the **Wildlife (Protection) Act, 1972**.
- The **Umtrew River** forms the western boundary of the sanctuary.
- Vegetation mainly consists of **Tropical Moist Deciduous** and **Semi-evergreen forests**.
- Important wildlife includes **Clouded Leopard, Asian Elephant, Himalayan Black Bear, Chinese Pangolin, Asian Palm Civet**, and the **Rufous-necked Hornbill**.

### **Tetrastichus narayandebnathi**

- **Tetrastichus narayandebnathi** is a **new species of parasitoid wasp** discovered in **Rajarhat, West Bengal**.
- It has been named in honour of renowned Bengali cartoonist **Narayan Debnath**, creator of **Batul the Great** and **Nonte-Fonte**.
- It is a **gregarious primary parasitoid** that develops inside the pupa of a **tortoise beetle**, eventually killing the host.
- Parasitoid wasps play an important role in **biological pest control** by naturally regulating insect populations.
- This is only the **second Indian record** of the genus **Tetrastichus** parasitizing **Cassidinae (tortoise beetles)**.

### **Parasitoid Wasps**

- Parasitoid wasps lay their eggs **on or inside another insect (host)**.
- The developing larvae consume the host and eventually kill it.
- They are widely used in **Integrated Pest Management (IPM)** to reduce dependence on chemical pesticides.
- Most parasitoid wasps are harmless to humans.
- Families include **Eulophidae, Braconidae, Ichneumonidae, and Trichogrammatidae**.

### **New GI-Tagged Tribal Crops of Madhya Pradesh**

- Four traditional crops of **Madhya Pradesh** have recently received the **Geographical Indication (GI) Tag**.
- They are **Sitahi Kutki, Nagdaman Kutki, Baigani Arhar, and Chhatriya Dhan**.



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- These crops have been preserved for generations by the **Baiga Tribe**, especially in **Dindori district**.
- The recognition promotes **tribal agriculture, biodiversity conservation, and farmers' income**.
- GI tagging also helps prevent misuse of traditional products and enhances export potential.

### Geographical Indication (GI) Tag

- A **GI Tag** identifies products originating from a specific geographical region with unique qualities or reputation.
- It is governed by the **Geographical Indications of Goods (Registration and Protection) Act, 1999**.
- The Act came into force in **2003**.
- The **GI Registry** is located in **Chennai, Tamil Nadu**.
- The first Indian product to receive a GI Tag was **Darjeeling Tea** (2004-05).

### FP-5 Flamingo Missile

- The **FP-5 Flamingo** is a **long-range, ground-launched cruise missile** developed by Ukraine's **Fire Point** defence company.
- It entered service in **2025** and has a reported range of up to **3,000 km**.
- The missile flies at **low altitude** to evade radar detection.
- It can carry a combat payload of up to **1,150 kg** and is resistant to electronic interference.
- It is designed for precision strikes against fixed ground targets.

### Cruise Missiles

- **Cruise missiles** fly within the atmosphere using **jet engines** and aerodynamic lift.
- They are guided throughout flight using **GPS, INS, TERCOM, or radar guidance**.
- They fly at **low altitudes** to avoid enemy radar.
- Cruise missiles may be **subsonic, supersonic, or hypersonic**.
- India's major cruise missiles include **BrahMos** and **Nirbhay**.

### Bharat Taxi



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- **Bharat Taxi** is India's **first cooperative-owned ride-hailing platform** registered under the **Multi-State Cooperative Societies Act, 2002**.
- It has been developed under the **Ministry of Cooperation** with technical support from the **National e-Governance Division (NeGD)**.
- Drivers become **shareholders ("Sarathis")** instead of merely service providers.
- The platform follows a **zero-commission model**, ensuring the entire fare reaches the driver.
- It integrates with **DigiLocker, UMANG, and API Setu** and follows Government cybersecurity standards.

### Multi-State Cooperative Societies Act, 2002

- The Act governs cooperative societies operating in **more than one State**.
- It is administered by the **Ministry of Cooperation**.
- It provides for democratic management and professional governance of cooperatives.
- Elections are conducted under the supervision of the **Central Registrar of Cooperative Societies**.
- Major multi-state cooperatives include **IFFCO, KRIBHCO, NAFED, and NCEL**.

### Dal Lake

- **Dal Lake** is an **urban freshwater lake** located in **Srinagar, Jammu & Kashmir**.
- It is popularly known as the **"Jewel in the Crown of Kashmir."**
- The lake is surrounded by the **Pir Panjal Range** and is fed mainly by the **Telbal Stream**.
- It is the **second-largest lake in Jammu & Kashmir** after **Wular Lake**.
- Famous attractions include **floating gardens (Rad), floating vegetable markets, lotus blooms, and houseboats (Shikaras)**.

### Pir Panjal Range

- The **Pir Panjal Range** is the **largest range of the Lesser Himalayas**.
- It extends through **Jammu & Kashmir** and **Himachal Pradesh**.
- It separates the **Kashmir Valley** from the **Jammu region**.
- Important mountain passes include **Pir Panjal Pass** and **Banihal Pass**.



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- The **Pir Panjal Railway Tunnel** is India's longest railway tunnel.

### e-Sushrut@Clinic

- **e-Sushrut@Clinic** is a **cloud-based Hospital Management Information System (HMIS)** developed for **small and medium outpatient clinics**.
- It has been developed by **C-DAC** under the **Ministry of Health & Family Welfare**.
- The platform digitizes **patient records, prescriptions, pharmacy management, billing, and outpatient services**.
- It forms part of the **Ayushman Bharat Digital Mission (ABDM)** ecosystem.
- It enables healthcare providers to register through the **Health Facility Registry (HFR)** and **Health Professional Registry (HPR)**.

### Ayushman Bharat Digital Mission (ABDM)

- **ABDM** was launched in **2021** to create a **National Digital Health Ecosystem**.
- It is implemented by the **National Health Authority (NHA)**.
- It provides every citizen with a unique **ABHA (Ayushman Bharat Health Account) ID**.
- It enables secure digital storage and sharing of health records.
- Key components include **ABHA ID, HPR, HFR, and Personal Health Records (PHR)**.

### ICGS Akshay

- **ICGS Akshay** is an **Adamy-class Fast Patrol Vessel (FPV)** commissioned into the **Indian Coast Guard**.
- It has been built by **Goa Shipyard Limited (GSL)** with around **60% indigenous content**.
- The vessel is designed for **coastal surveillance, search and rescue, anti-smuggling, anti-poaching, and maritime law enforcement**.
- It is equipped with advanced navigation, communication, and surveillance systems.
- The ship strengthens India's coastal security and maritime domain awareness.

### Amrabad Tiger Reserve

- **Amrabad Tiger Reserve** is located in the **Nallamala Hills** of the **Eastern Ghats** in **Telangana**.



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- It was carved out of the **Nagarjunasagar–Srisailem Tiger Reserve** after the bifurcation of Andhra Pradesh in **2014**.
- The **Krishna River** flows through the reserve and supports the **Srisailem** and **Nagarjunasagar** reservoirs.
- The **Chenchu Tribe**, a Particularly Vulnerable Tribal Group (PVTG), inhabits the reserve.
- Important wildlife includes **Tiger, Leopard, Sloth Bear, Gaur, Sambar, Chital, Wild Dog, and over 300 bird species**.

### Colombia

- **Colombia** is located in the **northwestern part of South America** and is known as the "**Gateway to South America**."
- Capital: **Bogotá**; Currency: **Colombian Peso**.
- It is the **only South American country** with coastlines on both the **Caribbean Sea** and the **Pacific Ocean**.
- It shares borders with **Panama, Venezuela, Brazil, Peru, and Ecuador**.
- Major rivers include the **Magdalena, Amazon, and Orinoco**, while **Pico Cristóbal Colón** is its highest peak.

### Murchison Widefield Array (MWA)

- **Murchison Widefield Array (MWA)** is a **low-frequency radio telescope** located at the **Murchison Radio-astronomy Observatory (MRO), Western Australia**.
- It consists of **4,096 antennas** operating in the **70–300 MHz** frequency range.
- It is an international collaboration led by **Curtin University (Australia)** with participation from **Australia, Canada, China, Japan, and the United States**.
- MWA is used to study the **early Universe, pulsars, solar activity, cosmic magnetism, and radio galaxies**.
- It serves as a precursor to the **Square Kilometre Array (SKA)**, the world's largest radio telescope.

### Millisecond Pulsars

- **Millisecond Pulsars (MSPs)** are rapidly rotating **neutron stars** that rotate **hundreds of times per second**.



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- They are formed when an old neutron star gains matter from a companion star, increasing its rotational speed.
- MSPs emit highly regular pulses of radio waves, making them extremely accurate cosmic clocks.
- They are used to detect **gravitational waves** and study **Einstein's General Theory of Relativity**.
- Most MSPs occur in **binary star systems**.

### Neutron Stars

- A **neutron star** is the collapsed core of a massive star after a **supernova explosion**.
- Despite having a diameter of only **20–25 km**, it possesses a mass greater than that of the Sun.
- It consists almost entirely of **densely packed neutrons**.
- Neutron stars exhibit extremely strong **magnetic fields** and rapid rotation.
- Some neutron stars are observed as **Pulsars**.

### Square Kilometre Array (SKA)

- The **Square Kilometre Array (SKA)** is the world's largest radio telescope project.
- It is being built in **Australia** and **South Africa**.
- The telescope will study the **origin of galaxies, dark matter, cosmic magnetism, and the early Universe**.
- It is expected to become the most sensitive radio observatory ever constructed.
- India participates in SKA through several scientific institutions.

### Exercise Shakti

- **Exercise Shakti** is a **bilateral military exercise between India and France**.
- It is conducted alternately in **India and France**.
- The exercise focuses on **counter-terrorism, joint tactical operations, urban warfare, and interoperability**.
- It strengthens defence cooperation and strategic partnership between the two countries.





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- It involves personnel from the **Indian Army** and the **French Army**.

### India–France Defence Cooperation

- India and France maintain a strong strategic partnership established in **1998**.
- France supplies major defence platforms including **Rafale fighter aircraft**, **Scorpene-class submarines**, and helicopter technologies.
- Important bilateral exercises include **Varuna (Navy)**, **Garuda (Air Force)**, and **Shakti (Army)**.
- France supports India's strategic interests in the **Indo-Pacific Region**.
- Both countries cooperate in **space, cyber security, artificial intelligence, and defence technology**.

### Rafale Fighter Aircraft

- **Rafale** is a **4.5-generation multirole fighter aircraft** manufactured by **Dassault Aviation (France)**.
- It is capable of **air superiority, ground attack, reconnaissance, and nuclear deterrence missions**.
- The aircraft carries **Meteor, SCALP, and MICA** missiles.
- India operates Rafale aircraft from **Ambala** and **Hasimara** Air Force Stations.
- Rafale significantly enhances the operational capability of the **Indian Air Force**.

### National Green Hydrogen Mission

- The **National Green Hydrogen Mission** was approved in **2023**.
- It aims to make India a global hub for **Green Hydrogen production, utilization, and export**.
- The mission is implemented by the **Ministry of New and Renewable Energy (MNRE)**.
- Green Hydrogen is produced through **electrolysis of water** using renewable energy.
- The mission supports India's goal of achieving **Net Zero emissions by 2070**.

### Green Hydrogen

- **Green Hydrogen** is produced by splitting water using **renewable electricity**.



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- It produces **zero carbon emissions** during production.
- It has applications in **fertilizers, steel production, refineries, shipping, and heavy transport.**
- Hydrogen has a very high **energy content per unit mass.**
- It is considered a key fuel for future clean energy transitions.

### PM Surya Ghar: Muft Bijli Yojana

- The scheme was launched to promote **rooftop solar installations** in households.
- It provides **financial assistance** for residential rooftop solar systems.
- The objective is to reduce electricity bills and promote renewable energy.
- It supports domestic solar manufacturing and employment generation.
- The scheme contributes towards India's renewable energy targets.

### Aditya-L1 Mission

- **Aditya-L1** is **India's first dedicated solar mission**, launched by **ISRO** on **2 September 2023** aboard **PSLV-C57**.
- It has been placed in a **halo orbit around the Sun–Earth L1 Lagrange Point**, about **1.5 million km** from Earth.
- The mission carries **seven scientific payloads** to study the **photosphere, chromosphere, corona, solar wind, and magnetic field.**
- It provides continuous observation of the Sun without eclipse interruptions, improving **space weather forecasting.**
- The mission supports studies on **solar flares, coronal mass ejections (CMEs), and their impact on Earth.**

### Sun–Earth L1 Lagrange Point

- The **L1 Lagrange Point** lies approximately **1.5 million km** from Earth towards the Sun.
- At L1, the gravitational forces of the **Sun and Earth** balance the orbital motion of a spacecraft.
- It provides an uninterrupted view of the Sun.



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- L1 is ideal for **solar observation** and **space weather monitoring**.
- Other important Lagrange points include **L2** (used by the James Webb Space Telescope) and **L4/L5** (gravitationally stable points).

### Coronal Mass Ejection (CME)

- A **Coronal Mass Ejection (CME)** is a massive eruption of **plasma and magnetic fields** from the Sun's corona.
- CMEs can trigger **geomagnetic storms** when they interact with Earth's magnetosphere.
- They may disrupt **satellite operations, GPS, radio communication, and power grids**.
- Strong CMEs are associated with periods of **solar maximum**.
- CMEs differ from **solar flares**, although both often occur together.

### Solar Wind

- **Solar Wind** is a continuous stream of **charged particles (mainly protons and electrons)** emitted from the Sun.
- It shapes the **heliosphere**, the protective bubble surrounding the Solar System.
- Interaction of solar wind with Earth's magnetic field produces **Auroras (Northern and Southern Lights)**.
- High-speed solar wind can affect satellite communication and navigation systems.
- It plays a key role in **space weather**.

### Carbon Border Adjustment Mechanism (CBAM)

- **CBAM** is a climate policy introduced by the **European Union (EU)** to prevent **carbon leakage**.
- It imposes a carbon price on imports based on the carbon emissions generated during production.
- Initially, it covers products such as **iron and steel, cement, aluminium, fertilizers, electricity, and hydrogen**.
- The mechanism encourages cleaner industrial production worldwide.
- CBAM may significantly affect exports from countries like **India** unless industries reduce carbon emissions.



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### Carbon Leakage

- **Carbon Leakage** occurs when industries shift production from countries with strict climate regulations to countries with weaker environmental standards.
- It can undermine global efforts to reduce greenhouse gas emissions.
- Policies such as **CBAM** seek to prevent carbon leakage.
- Energy-intensive sectors are particularly vulnerable.
- It is an important issue in international climate negotiations.

### United Nations Framework Convention on Climate Change (UNFCCC)

- The **UNFCCC** was adopted at the **Rio Earth Summit (1992)** and came into force in **1994**.
- Headquarters: **Bonn, Germany**.
- It provides the global framework for tackling climate change.
- The **Conference of the Parties (COP)** is its supreme decision-making body.
- The **Kyoto Protocol** and **Paris Agreement** operate under the UNFCCC.

### Black Carbon

- **Black Carbon** is a component of **fine particulate matter (PM2.5)** produced from incomplete combustion of fossil fuels and biomass.
- Major sources include **diesel engines, crop residue burning, forest fires, and household biomass cooking**.
- It absorbs sunlight strongly, contributing to **global warming**.
- Black carbon accelerates the melting of **Himalayan glaciers** by reducing snow reflectivity.
- Reducing black carbon emissions provides both **climate** and **public health** benefits.

### Mount Rinjani

- **Mount Rinjani** is an **active stratovolcano** located on **Lombok Island, Indonesia**.
- At **3,726 metres**, it is the **second-highest volcano in Indonesia** after **Mount Kerinci**.
- It lies along the **Pacific Ring of Fire**, making it highly volcanically active.



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- The volcano contains the crater lake **Segara Anak**, with a smaller active volcanic cone (**Barujari**) inside it.
- **Rinjani National Park** surrounding the volcano is known for its rich biodiversity and trekking routes.

### Segara Anak Lake

- **Segara Anak** is a **crater lake** situated inside the caldera of **Mount Rinjani**.
- It is one of Indonesia's most important volcanic lakes.
- The lake is considered sacred by **Balinese Hindus** and the indigenous **Sasak** community.
- The active cone **Mount Barujari** rises from within the lake.
- It is a major tourist and geological attraction.

### Barujari Volcano

- **Mount Barujari** is an active volcanic cone located within the **Segara Anak crater lake**.
- It formed after the collapse of the original Rinjani volcano.
- Frequent eruptions release **ash clouds, lava, and volcanic gases**.
- Its activity is closely monitored by Indonesian volcanological authorities.
- It is an example of a **post-caldera volcanic cone**.

### Indo-Pacific Oceans Initiative (IPOI)

- The **Indo-Pacific Oceans Initiative (IPOI)** was launched by **India** at the **East Asia Summit in 2019**.
- It aims to promote a **free, open, inclusive, and rules-based Indo-Pacific region**.
- The initiative is based on **seven pillars** including **maritime security, marine ecology, disaster risk reduction, resource sharing, science & technology, capacity building, and trade connectivity**.
- IPOI complements India's **SAGAR (Security and Growth for All in the Region)** vision.
- Several countries including **Australia, Japan, France, and Indonesia** support different pillars of the initiative.

### SAGAR Vision



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- **SAGAR** stands for **Security and Growth for All in the Region**.
- It was announced by **Prime Minister Narendra Modi** in **2015**.
- It emphasizes **maritime security, regional cooperation, sustainable development, and freedom of navigation** in the Indian Ocean.
- SAGAR guides India's maritime diplomacy and HADR (Humanitarian Assistance and Disaster Relief) operations.
- It forms an important pillar of India's **Indo-Pacific strategy**.

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