

FORTUNE Prelims Precise

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Toppers in Top 100



History & Culture

Martand Sun Temple



- Recently, members of a Hindutva group breached the Martand Sun Temple near **Anantnag in the Kashmir Valley**.
- Built around the **8th Century CE** by King **Lalitaditya Muktapida**, it's dedicated to the **Sun God**.
- It features a unique blend of **Kashmiri, Gupta, Chinese, Gandhara, Roman, and Greek** architectural styles.
- Constructed on a stone plateau, the temple has **84 smaller shrines** surrounding the main one.
- It's believed to have been demolished by **Sultan Sikandar Shah Miri**.

Bharat Ratna



- **Karpoori Thakur, M.S. Swaminathan, P. V. Narasimha Rao, Lal Krishna Advani, and Chaudhary Charan Singh** were recently announced as the recipients of Bharat Ratna this year.

- The Bharat Ratna, the highest civilian award, was established by the **former President of India, Rajendra Prasad** in 1954.
- The **first recipients of the Bharat Ratna were Sarvapalli Radhakrishnan, Sir C.V. Raman, and Chakravarti Rajagopalachari** in 1954.
- It is awarded for extraordinary contributions to the nation in various domains such as **Science, Arts, Literature, and exceptional public service**.
- The award can also be presented posthumously.
- The Prime Minister makes the recommendations for the Bharat Ratna to the President. No formal recommendations for this are necessary.
- The number of awards given each year is limited to a **maximum of three but was breached in 1999 when it was awarded to 4 people and in 2024 to 5 people (highest ever)**.
- The awardees receive a **Sanad (certificate) signed by the President** and a **medallion in the shape of a peepal leaf**. It has no monetary grant.
- It has been awarded to **naturalised citizens** (Mother Theresa) and **non-indians** (Khan Abdul Gafar Khan and Nelson Mandela)
- There was **no award** between 2020 and 2023.

U Tirot Sing



- Recently, a statue of U Tirot Sing was unveiled by Meghalaya government at the **Indira Gandhi Cultural Centre in Dhaka, Bangladesh**.
- U Tirot Sing is a **Khasi freedom fighter** who rebelled against British colonial rule.
- He is also known as '**the Hero of the Khasi Hills**'.

- He led an attack against British forces in 1829 resisting their attempts to control the **Khasi Hills**.
- He was captured during the **Anglo-Khasi War** and he died as a political prisoner in Dhaka in 1835.

Rani Chennamma

- To commemorate **200 years of Kittur Rani Chennamma's revolt against the British empire**, a group of organisations launched a nationwide '**Naanoo Rani Chennamma**' (**I am Rani Chennamma Too**) campaign in **Karnataka's Kittur**.
- Upset with the **Doctrine of Lapse policy** of the British, which did not recognise her adopted son's right to rule Kittur, she **waged a war in 1824**.
- Rani Chennamma fought the British fearlessly and **registered an initial victory which also saw the killing of John Thackeray of the British East India Company**.
- On **December 3, 1824**, the British army attacked the Kittur Fort and captured it.
- Rani Chennamma and her family were imprisoned and jailed at the fort in Bailhongal, where **she died in 1829**.

Military Landscapes of the Marathas

- The "Maratha Military Landscapes of India" will be India's nomination for recognition as **UNESCO World Heritage List** for the year 2024-25.
- The Maratha military landscape was **established during the reign of Chhatrapati Shivaji Maharaj, in 1670 CE** and persisted through successive rulers until 1818.
- It embodies an **exceptional fortification and military system conceptualised by the Maratha rulers**.
- The **twelve component parts** of this nomination are, Salher fort, Shivneri fort, Lohgad, Khanderi fort, Raigad, Rajgad, Pratapgad, Suvarnadurg, Panhala Fort, Vijay durg, Sindhudurg in Maharashtra and Gingee Fort in Tamil Nadu.

Hori Habba



- Casualties reported during Hori Habba raise concerns about animal and human safety.
- **Hori Habba also known as Hatti habba, Kobbari hori competition** is a popular **bull-catching event in Karnataka, held during the harvest season and deepawali**.
- It is an ancient folk game **native to Haveri district**, and played on the lines of **Jallikattu in Tamil Nadu and Kambala in Dakshina Kannada district**.

Maa Kamakhya Access Corridor

- The Prime Minister laid foundation stones for the **Maa Kamakhya Access Corridor (officially named Maa Kamakhya Divyalok Pariyojana) in Assam**.
- With a budget allocation of Rs 498 crore, the project aims to **upgrade the infrastructure surrounding the Kamakhya Temple in Guwahati**, mirroring the successful model of the **Kashi-Vishwanath Temple Corridor in Varanasi**.
- This project falls under the **Prime Minister's Development Initiative for North-East Region (PM-DevINE) scheme**.

Jnanpith Award



- The Jnanpith selection committee announced that the 58th Jnanpith Award will be given to two writers, Sanskrit scholar **Jagadguru Rambhadracharya** and Urdu poet and lyricist Gulzar, for 2023.
- The Jnanpith Award is **India's oldest and highest literary award** established in 1961 and first awarded in 1965.
- It's given **annually to an author for their "outstanding contribution towards literature"**.
- The award is sponsored by **Bharatiya Jnanpith, a literary and research organisation**, based in New Delhi founded on February 18, 1944 by Sahu Shanti Prasad Jain and Rama Jain to undertake systematic research and publication of Sanskrit, Prakrit, Pali and Apabhramsha texts.
- It is bestowed **only on Indian writers** writing in **Indian languages included in the Eighth Schedule** to the Constitution of India and **English**.
- There is no **posthumous conferral**. **Only works published during the preceding twenty years are considered for the award**.
- The Awardees receive a cash prize of Rs 11 lakh, a statue of **Vagdevi (Saraswati - the goddess of learning)**, and a citation, honouring their literary achievements.

Paruveta Utsavam of Ahobila



- Recently, the **Indian National Trust for Art and Cultural Heritage (INTACH)**, an NGO, has been making efforts to obtain UNESCO recognition for the yearly 'Paruveta Utsavam' as an 'intangible cultural heritage'.
- Paruveta Utsavam (mock hunting festival), is **celebrated at the Sri Narasimha Swamy temple in Ahobila, Andhra Pradesh**.
- According to folklore, **Lord Vishnu, upon his incarnation as a man-lion (Narasimha)** in Ahobila, married Maha Lakshmi, born as a tribal girl Chenchulakshmi.
- The **Chenchu tribals** give a **ceremonial reception to the deity of Lord Narasimha Swamy arriving from the Ahobila temple to their hamlet**.
- It is **celebrated by all sections of people** irrespective of their caste.
- It has been declared as a state festival by Andhra Pradesh government.
- The festival coincides with the **Sankranti festival**, which is celebrated on the day the deity reaches each Chenchu hamlet.

Subika Paintings

- Subika paintings intricately linked to the **Meitei community (Manipur)** are facing threats of survival.
- Presently, they survive through its **6 illustrated manuscripts** — **Subika, Subika Achouba, Subika Laishaba, Subika Choudit, Subika Cheithil and Thengrakhel Subika**.
- The royal chronicle, **Cheitharol Kumbaba**, doesn't mention a specific founder. However, experts estimate the use of Subika paintings since the **18th or 19th century**.



- The paintings are done on **handmade paper**, and the materials for manuscripts, such as handmade paper or **tree bark**, are prepared locally.

Kotravai Sculpture



- Recently, a team of archaeologists discovered an **8th century Kotravai sculpture** in Tamil Nadu dating back to the **Pallava period**.
- The sculpture in the stone slab stands **5 feet tall and 4 feet wide**, depicting Kotravai with eight hands, characteristic of the 8th century.
- The sculpture features various elements such as **chakkara, sword, bell, and abhaya mudra in the right hands**, and **conch, bow, shield, and Uru Mudhra in the left hands**, along with **bangles in all hands**.

Kotravai (aka Durga) is the **Tamil goddess of war and victory**. She is also the mother goddess, and the goddess of fertility, agriculture, and hunters. Her name comes from the Tamil word korram, which means victory, success, or bravery.

Morodharo

- Archaeologists recently discovered a **Harappan-era fortified settlement** named Morodharo, near Kutch district in **Gujarat**.
- The settlement looks mature (**2,600-1,900 BCE**) to late (**1,900-1,300 BCE**) Harappan.
- The site yielded a large quantity of **Harappan pottery** like **perforated jar shards, reserved slipware, and terracotta cakes** similar to that found in **Dholavira**.
- The settlement, **dating back 4,500 years**, shows **architectural similarities to Dholavira** and depended on the sea, suggesting that the desert was **once navigable water**.



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Polity & Governance

Interim Budget

- Recently, what is called as the **Interim Budget 2024-25** was tabled in the parliament by the Union Finance Minister
- As per **Article 112** of the Indian Constitution, a statement of the estimated receipts and expenditure of the Government of India for a specific financial year, referred to as '**annual financial statement**', is laid before **both Houses of Parliament**.
- Usually in an **election year**, the **incumbent Government doesn't present a full Budget** as there may be a change in the executive after the polls. Therefore, an **Interim Budget** that includes **estimates for the government's expenditure, revenue, projections etc for a short period** is presented.
- The Parliament passes a **vote-on-account** through the interim Budget, through which the **government requests Parliament's endorsement for funds adequate to cover expenses until the establishment of a new government**.
- There is **no constitutional provision for an interim budget** and **no major policy announcements can be presented in it**.

Surrogacy (Regulation) Amendment Rules, 2024

- Recently, the Centre amended the surrogacy Rules **allowing couples to use donor eggs or donor sperm for surrogacy**.
- This **overturned a previous amendment made in March 2023** that banned the use of donor gametes.
- The new provision allows use of donor gametes in case when the **District Medical Board certifies** that **either husband or wife constituting the intending couple suffers from a medical condition necessitating use of donor gametes**.

- However, if a **divorced or widowed woman** opts for **surrogacy**, the egg **has to come from the mother**: "Single women (widow or divorcee) undergoing surrogacy must use self-eggs and donor sperm to avail surrogacy procedure."
- The **March 2023 notification was challenged** in the Supreme Court by a woman with **Mayer-Rokitansky-Kuster-Hauser (MRKH) Syndrome**, a **rare congenital disorder** that affects the **reproductive system and can cause infertility**.

Science for Women-A Technology & Innovation (SWATI) Portal

- Recently, the **Principal Scientific Advisor to the Government of India** launched the SWATI Portal.
- The portal will act as a single online platform to represent and showcase the **contributions of Indian women and girls in STEMM (Science, Technology, Engineering, Mathematics & Medicine) fields**.
- It is developed, hosted, and maintained by the **National Institute of Plant Genome Research (NIPGR)** located in New Delhi.

PM Surya Ghar Muft Bijlee Yojana

- The Union Cabinet approved the PM Surya Ghar Muft Bijlee Yojana.
- PM Surya Ghar Muft Bijlee Yojana is a **Central Scheme** that aims to **provide free electricity to one crore households in India**, who opt to install roof top solar electricity units.
- The scheme will **enable the households to get 300 units of electricity free every month**.
- The scheme provides for a **subsidy of 60% of the solar unit cost for systems up to 2 kW capacity and 40% of additional system cost for systems between 2 to 3 kW capacity**. The subsidy has been capped at **3 kW capacity**.
- Households interested in availing the scheme's benefits will have to fork out the balance amount and **12 public sector banks will be offering a collateral free loan** to anyone with a viable roof and grid connectivity and wanting to install a rooftop system.

- The interested consumer has to **register on the National portal** (<https://pmsuryaghar.gov.in/>) that will assist them by providing relevant information.

All India Survey on Higher Education (AISHE) 2021-22

- The All India Survey on Higher Education (AISHE) 2021-22 was made public.
- The **Ministry of Education** has been conducting AISHE since **2011**, covering **all Higher Educational Institutions (HEIs) in the country** registered with AISHE collecting detailed information on different parameters such as **student enrollment, teachers, infrastructural information** etc.

Key Highlights of the Survey

- ◆ The **total enrolment in higher education** has increased to nearly **4.33 crore** in 2021-22 from **4.14 crore** in 2020-21.
- ◆ The **Female enrolment** has increased to **2.07 crore** in 2021-22 from **2.01 crore** in 2020-21.
- ◆ **Gross Enrolment Ratio (GER)** has increased to **28.4** in 2021-22 from **23.7** in 2014-15. **Female GER** has increased to **28.5** in 2021-22 from **22.9** in 2014-15.
- ◆ **Gender Parity Index (GPI)**, the ratio of female GER to male GER is **1.01** in 2021-22. GPI has continued to be above 1 since 2017-18 i.e., **female GER continues to be higher than male GER for the fifth consecutive year.**

Inclusive Education for Disabled at Secondary Stage (IEDSS) Scheme

- The Karnataka government suspended five officers in the Department of School Education and Literacy (DSEL) for dereliction of duty in the implementation of the IEDSS scheme.
- The **Scheme of Inclusive Education for Disabled at Secondary Stage (IEDSS)** was launched during **2009-10** and replaces the earlier scheme of **Integrated Education for Disabled Children (IEDC)**.
- The aim of this **centrally sponsored scheme** is to **enable all students with disabilities to pursue four years of secondary education in an inclusive and enabling environment**, after completing eight years of elementary schooling.

- The scheme covers all children studying in **classes IX to XII** in Government, local body and Government-aided schools, with **one or more disabilities as defined under the Persons with Disabilities Act (1995) and the National Trust Act (1999).**
- The **School Education Department of State Government/Union Territory (UT) Administration** acts as the implementation agency of the scheme.

National e-Governance Service Delivery Assessment (NeSDA)

- The **Annual NeSDA Way Forward Report 2023** was released by the **Department of Administrative Reforms and Public Grievances (DARPG)**.
- The DARPG had formulated the **National e-Governance Service Delivery Assessment (NeSDA) Framework** which monitors the progress made in e-service delivery and rise in integrated service delivery portals, across states and Union Territories through NeSDA Way Forward reports.

Key Highlights of the Report

- ★ A total number of **16,487 e-Services** have been mapped on the NeSDA Way Forward Dashboard by the end of **December, 2023.**
- ★ **Jammu & Kashmir** tops the chart in offering e-services such as issuance of birth or death certificates, followed by **Tamil Nadu, Madhya Pradesh and Kerala.**
- ★ The **bottom five states** are Manipur, Lakshadweep, Ladakh, Sikkim and Nagaland.

C-cares portal

- The **Union Minister of Coal and Mines** launched a web portal of the **Coal Mines Provident Fund Organization (CMPFO)** called **C-CARES.**
- Developed by the **Centre for Development of Advanced Computing (C-DAC).**
- **CMPFO Subscribers** can **view their individual details and subscription status**, while coal management can submit contribution details, subscribers' particulars, and claims for online settlement and payment.

Coal Mines Provident Fund Organization (CMPFO)

- ✿ Coal Mines Provident Fund Organization is an **autonomous organisation under the aegis of Ministry of Coal** established in the year 1948.
- ✿ It was established for **administering Provident Fund and Pension schemes** for the purpose of providing **social security to the coal sector workers**.

e-Jagriti portal

- 'e-Jagriti' portal of the **Department of Consumer Affairs, Ministry of Consumer Affairs, Food, and Public Distribution** is reportedly reducing pendencies in consumer courts..
- It is envisaged to **integrate consumer grievance platforms**, namely, the Online Case Monitoring System (OCMS), E-Daakhil, the National Consumer Dispute Redressal Commission (NCDRC) Case Monitoring System, CONFONET website, mediation application, on a single platform.
- The portal will **integrate a Virtual court facility** for a convenient and accessible resolution of consumer complaints, reducing the time of disposal, multiple hearings, and physical court appearances.

Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY)

- Recently, the Union Cabinet approved the **Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY)**, a sub scheme under the Pradhan Mantri Matsya Sampada Yojana.
- PM-MKSSY will be implemented as a **Central Sector Sub-scheme under the Central Sector Component** of the Pradhan Mantri Matsya Sampada Yojana.
- It will be implemented for **4 years from FY 2023-24 to FY 2026-27** across all the States and UTs.
- It aims for **formalisation of the unorganised fisheries sector through self registration of fishers, fish farmers and supportive workers** under a National Fisheries Sector Digital Platform.

- It also **facilitates access to institutional financing fisheries** sector micro and small enterprises & **providing one-time incentive to beneficiaries** for purchasing aquaculture insurance.
- **PM Mastya Sampada Yojana** seeks to bring about ecologically healthy, economically viable, and socially inclusive development of the Fisheries sector of India.

Kilkari and Mobile Academy

- The Union Minister of State for Health and Family Welfare launched mobile-health (m-health) initiatives called **Kilkari and Mobile Academy** in Maharashtra and Gujarat in local language to strengthen Public Health Infrastructure.
- **Mobile Academy** is a **free audio training course** designed to expand and refresh the knowledge of **Accredited Social Health Activists (ASHAs)**.
- It was developed by **BBC Media Action** (a charity of the broadcaster BBC) in 2012 and was nationally adopted by GoI in 2016 as part of Digital India initiative.
- It aims to **improve their communication skills via their mobile phones, which is both cost-effective and efficient**.
- **The Kilkari program**, launched on January 15, 2016 in some languages, as part of India's Digital India initiative, **aims to support new and expectant mothers in making healthier choices for their newborns**.
- It delivers **free, weekly, audio messages about pregnancy, childbirth, and childcare directly to beneficiaries via Interactive Voice Response (IVR)**.
- Messaging starts in the **second trimester** of pregnancy and continues until the child is **one year old**.
- Kilkari means 'a **baby's gurgle**'.

Smart Gram Panchayat Project

- The **Union Minister of Rural Development and Panchayati Raj** inaugurated a pilot project titled 'Smart Gram Panchayat: Revolution towards Digitization of Gram Panchayat'.
- The project is funded under the revamped **Rashtriya Gram Swaraj Abhiyan (RGSA)**.
- It aims for **extension of the Prime Minister's Wi-Fi Access Network Interface (PM-WANI) service** to 455 Gram Panchayats across **37 Blocks** in the **Districts of Begusarai and Rohtas in Bihar**.
- **Begusarai** will become the **first district where all Gram Panchayats will be equipped with Wi-Fi services** under the PM-WANI Scheme.

PM-WANI: Prime Minister Wi-Fi Access Network Interface

- ➔ PM-WANI: Prime Minister Wi-Fi Access Network Interface was launched by the **Ministry of Communications & Information Technology**.
- ➔ It is aimed to **enhance the proliferation of public WiFi hotspots** to create robust digital communications infrastructure in the country, **especially in rural areas**.
- ➔ It is overseen by the **Centre for Development of Telematics** which maintains details of App Providers, Public Data Office, Public Data Office Aggregator.

Curative Petition

- Recently, the Supreme Court closed a curative petition against its 2013 judgement on **IPC section 377**.
- A 5-judge bench of the Supreme Court held that the curative petition filed against the 2013 judgement, which **upheld Section 377** of the Indian Penal Code (which criminalised homosexuality), has become infructuous in the light of the **2018 judgement which decriminalised homosexuality**.

The concept of curative petition originated from the case of **Rupa Ashok Hurra Vs. Ashok Hurra and another case (2002)**. Question arose before the court of law- 'whether an aggrieved person is entitled to any relief against the final judgement/ order of the Supreme Court, after the dismissal of a review petition'.

- A curative petition, is the **final and last option** for the people to acquire justice as mentioned and promised by the Constitution of India.
- A curative petition may be **filed after a review plea against the final conviction is dismissed**.
- **Objective:** It is meant to ensure there is no miscarriage of justice, and to prevent abuse of process.

Criteria for Admission:

- If the petitioner establishes there was a violation of the **principles of natural justice**, and that **he was not heard by the court before passing an order**.
- In the scenario where a judge **failed to disclose facts** that raise the **apprehension of bias**.
- A curative petition must be accompanied by **certification by a senior advocate**, pointing out **substantial grounds for entertaining it**.

Test of Proportionality

- The Supreme Court recently used the test of proportionality to **strike down the Electoral Bonds scheme**.
- Test of proportionality is "the **judicial standard for resolving disputes** that involve either a conflict between **two rights claims or between a right and a legitimate government interest**."
- The test is **deemed necessary to guard against arbitrary action**, so that the state cannot extinguish the right entirely even in pursuance of a legitimate state interest.
- It was used in the **demonetisation case, Aadhar case** and also the **Puttaswamy case** among many others.

National Terrorism Data Fusion & Analysis Centre (NTDFAC)

- Recently, the **National Investigation Agency (NIA)** established the National Terrorism Data Fusion & Analysis Centre (NTDFAC).

- This system **integrates data from various sources**, including the NIA's National Automated Fingerprint Identification System (**NAFIS**) and the National Integrated Database on Arrested Narco Offenders (**NIDAAN**).
- By combining these databases, Indian intelligence can **access subjects' histories, fingerprints, videos, pictures, social media profiles**, and information on associated terror groups.
- The system features a **facial recognition** component for scanning CCTV footage for suspect faces, modelled after the **US Global Terrorism Database (GTD)**.
- Its significance lies in serving as a centralised database and analysis centre for terrorism-related information and activities within the country.

GHAR – GO Home and Re-unite Portal

- Recently, the **National Commission for Protection of Child Rights (NCPCR)**, developed and launched the **GHAR - GO Home and Re-Unite Portal** (Portal for Restoration and Repatriation of Child).
- It is a portal to **digitally monitor and track the restoration and repatriation of children** according to the protocols under the **Juvenile Justice (Care and Protection of Children) Act, 2015**, and Rules there of.

Some Important features of the portal:

- 🔑 **Digital tracking and monitoring of children** who are in the **Juvenile Justice system** and have to be repatriated to another Country/State/District.
- 🔑 **Digital transfer of cases of children** to the concerned **Juvenile Justice Board/ Child Welfare Committee** of the State.
- 🔑 **Restoration and rehabilitation** of children by digitally monitoring the progress of the case of the child.

Economy

Bima Trinity

- The **Insurance Regulatory and Development government (IRDAI)** has released a draft proposal for an insurance electronic marketplace called **Bima Sugam**.
- Bima Trinity is a three-level strategy by IRDAI as part of its **'vision insurance for all by 2047'** to increase **insurance penetration**.
- It seeks to increase the **availability, affordability, and accessibility** of insurance products to a larger population.

The 3 main components of the Bima trinity includes:

- **Bima Sugam**: A digital portal that integrates distributors and insurers into a single platform
- **Bima Vistaar**: An all-in-one insurance product that offers comprehensive insurance coverage at affordable prices
- **Bima Vaahak**: A women-led field distribution force at grama sabha level.

Sangam: Digital Twin Initiative

- Recently, the **Department of Telecommunications (DoT)** launched the 'Sangam: Digital Twin' initiative.
- The initiative involves crafting **virtual duplicates of tangible assets in the infrastructure sector**.
- The overarching goal of the initiative is to transform infrastructure planning and design through the **fusion of Digital Twin technology with Artificial Intelligence (AI), Machine Learning (ML), and the Internet of Things (IoT)**.
- The initiative consists of two stages, an **Exploratory phase** for creative exploration and horizon clarity and a practical **demonstration stage** focusing on specific use cases to generate future blueprints for scalability and replication.

Input Service Distributor (ISD)

- Recently, in the **Union Interim Budget 2024** the Finance Minister proposed the manner of distribution of input tax credit by **Input Service Distributors (ISD)**.
- ISD is a mechanism under the **Goods and Services Tax (GST) system** which allows entities with multiple business locations to distribute the **input tax credit (ITC)** on services received at the head office to other branches or units.
- As per **CGST Act, 2017**, an Input Service Distributor (ISD) refers to an office of the supplier of goods or services that receives tax invoices for input services.
- It will enable **proportionate distribution** of credit of **input services** among all the consuming units.

Input Tax Credit: It refers to an incentive on the tax already paid by an entity at the time of purchase of goods or services and which is available as deduction from tax payable on the finished goods.

Corruption Perceptions Index (CPI)

- **India ranked 93 out of 180 countries** on the **corruption perceptions index (CPI)** for 2023.
- The Corruption Perception Index (CPI), released by **Transparency International** lists countries by their **perceived levels of public sector corruption**.
- The index uses a **scale of 0 to 100**, where **0 is highly corrupt** and **100 is very clean**.
- It ranked **Denmark at the top**, followed by **Finland, New Zealand and Norway**.
- In **2023, India's overall score was 39** while in **2022, it was 40** and the rank in 2022 was **85**.
- The bottom of the index included **Myanmar (162), Afghanistan (162) and North Korea (172)**. At rank 180 was **Somalia** with the lowest score of 11, followed by **Venezuela and Syria**.

Rashtriya Udyamita Vikas Pariyojana

- **Union Minister of Education and Skill Development & Entrepreneurship** inaugurated the **Rashtriya Udyamita Vikas Pariyojana (RUVVP)** in Odisha.
- RUVVP is the National Entrepreneurship development project aimed to help street vendors and small shop keepers. The target audiences beneficiaries of PM SVANidhi Yojana.
- It **offers comprehensive entrepreneurship training over a period of 22 weeks** with **focus on ensuring 40% participation by women**.
- The training will be conducted through **offline, online and hybrid modes**, with **certificates awarded upon completion**.

PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) is a central sector micro credit scheme (upto Rs10000 of 1 year tenure) by **Ministry of Housing and Urban Affairs**.

National Livestock Mission (NLM)

- The Union Cabinet chaired by the Prime Minister made requisite modification of the National Livestock Mission by including additional activities.
- The **Department of Animal Husbandry & Dairying**, Government of India is implementing the scheme of National Livestock Mission since the **financial year 2014-15**.
- In view of the present need of the sector the scheme aims towards **employment generation, entrepreneurship development, increase in per animal productivity, increased production of meat** among others.

The NLM have three sub-missions:

- Sub-Mission on Breed Development of Livestock and Poultry.
- Sub-Mission on Feed and Fodder Development.
- Sub-Mission on Innovation and Extension.

Household Consumption Expenditure Survey 2022-2023

- Recently, the **Ministry of Statistics and Program Implementation** disclosed the general results of the All India Household Consumption Expenditure Survey.

- HCES is conducted by the **National Statistical Office (NSO)** every 5 years.
- It is designed to collect information on the **consumption of goods and services** by households.
- NSO was formed in 2019 as the government statistical data collection agency under **Ministry of Statistics and Programme Implementation (MOSPI)**.

Highlights of the Survey

- ✉ There was an overall increase in **Monthly Per Capita Consumer Expenditure (MPCE)**.
- ✉ **Sikkim** has the highest MPCE in both rural (₹7,731) and urban areas (₹12,105), while **Chhattisgarh** has the lowest with ₹2,466 for rural households and ₹4,483 for urban households.
- ✉ The **share of expenditure on food** has **gradually declined** and the share of non-food items has increased for both urban and rural households.
- ✉ The share of **cereals and pulses** within overall food consumption expenditure has been **reducing**, both in rural and urban households.

Inland Waterways Development Council

- India's First Inland Waterways Development Council (IWDC) has committed Rs. 45,000 crore for the development of River Cruise Tourism.
- The **Council** was established by the Inland Waterways Authority of India (IWAI) in 2023.
- It aims to **develop the Inland Water Transport (IWT) ecosystem** for improved cargo efficiency, passenger movement, and river cruise tourism.
- The council has committed **Rs. 35,000 crore for cruise vessels** and **Rs. 10,000 crore for cruise terminal infrastructure by 2047**.
- '**Harit Nauka**' guidelines and the '**River Cruise Tourism Roadmap, 2047**' were also launched during the event.
- '**Harit Nauka**' guidelines aim to **embrace low/zero emission sources of fuel & attain 100% green vessels** in the Indian waters by 2047.

Annual Survey of Industries (ASI)

- Recently, the **Ministry of Statistics and Programme Implementation (MoSPI)** released the results of the Annual Survey of Industries for the reference periods of **2020-21 and 2021-22**.
- The Annual Survey of Industries (ASI) is a **statutory survey** that has been conducted in India **since 1959**.
- Being the **primary source of industrial statistics** in the country, the ASI is used to assess changes in the structure and growth of registered manufacturing units.
- It also helps to build a **database on labour cost, earnings, employment, labour turnover, and absenteeism** in manufacturing industries.

Key Findings:

- ✓ **Gross Value Added (GVA)** increased by **8.8% in 2020-21** and by a remarkable **26.6% in 2021-22** compared to the respective previous years.
- ✓ **Industrial output** witnessed a growth of more than **35% in 2021-22** over the previous year.
- ✓ **Total employment** in the sector showed a robust growth of **7.0% in 2021-22** over the previous year, **exceeding pre-pandemic levels by over 9.35 lakh**.
- ✓ Among the major states, **Gujarat remained at the top in 2020-21**, while **Maharashtra ranked first in 2021-22**.
- ✓ **Tamil Nadu, Karnataka, and Uttar Pradesh** were among the top five states contributing significantly to manufacturing GVA and employment in both years.

StartupShala

- Recently, the **Department for Promotion of Industry and Internal Trade (DPIIT)** introduced '**StartupShala**'.
- StartupShala is a **transformative accelerator program** fostering growth for early-stage startups.
- It is a comprehensive program offering **knowledge, networking, funding support, and mentorship**.

International Relations

Kaladan Multi-Modal Transit Transport Project (KMTTP)

- India's Kaladan project in Myanmar in limbo as rebels control key towns.
- The **Kaladan Multi-Modal Transit Transport Project (KMTTP)** is a **joint initiative by India and Myanmar**.
- It aims to **create a multi-modal mode of transport for shipping cargo** from the **eastern ports of India to Myanmar**, as well as to the **North-Eastern part of India through Myanmar**.

Components

Stretch	Mode	Distance
Kolkata to Sittwe Port in Myanmar	Shipping	539 Km
Sittwe to Paletwa (River Kaladan)	Inland Water Transport (IWT)	158 Km
Paletwa to Indo-Myanmar Border (in Myanmar)	Road	110 Km
Border to NH 54 (Lawngtlai) in India	Road	100 Km

- The project provides a **far more feasible route for trade and commerce of Northeast India** than the existing route via Siliguri in Kolkata, saving time, money and excelling efficiency.
- The **Sittwe Port was made operational in 2023** but the progress on construction work of the road component has been slow due to the security situation in Myanmar.

Global Alliance for Global Good – Gender Equity and Equality



- The Union Minister of Women & Child Development and Minority Affairs launched the logo and website **for the Global Alliance for Global Good - Gender Equity and Equality**.
- It was established by **India at the 54th annual World Economic Forum (WEF) meeting in Davos, 2024**.
- This alliance aims to gather **worldwide best practices, promote knowledge sharing, and provide investment opportunities in women's education, health, and enterprise**.
- Industry leaders like MasterCard, Uber, and Tata, along with over 10,000 partners through the Confederation of Indian Industry (CII), have extended their support.
- The **WEF is onboard as a 'Network Partner,'** and **Invest India** (the National Investment Promotion and Facilitation Agency of India) is an **'Institutional Partner'**.

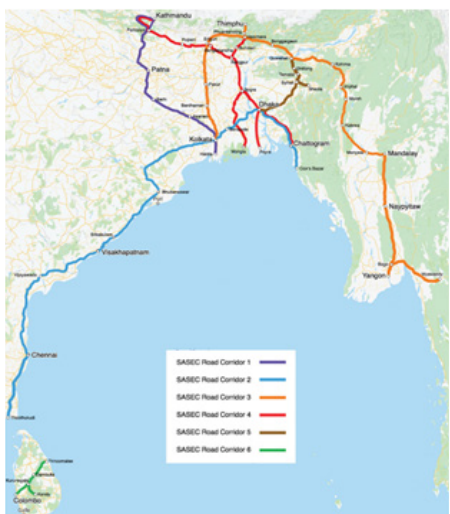
Raisina Dialogue

- The 9th edition of the **Raisina Dialogue, India's premier conference on geopolitics and geoeconomics, was held in New Delhi**.
- Hosted by the **Observer Research Foundation (ORF) in partnership with the Ministry of External Affairs, Government of India since 2016**, the Dialogue addresses pressing global issues.

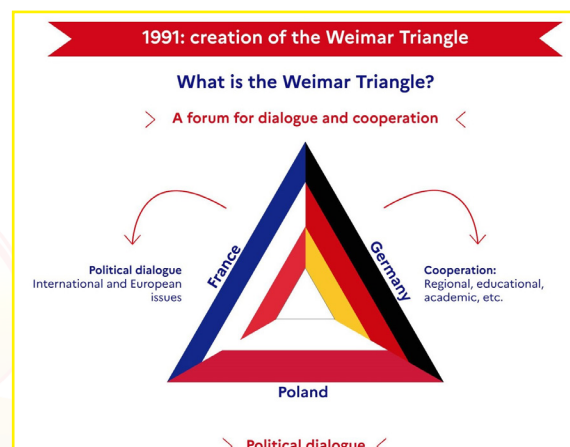
- It features **multi-stakeholder discussions** involving heads of state, cabinet ministers, local government officials, and thought leaders from the private sector, media, and academia.
- The name “Raisina Dialogue” is **derived from Raisina Hill** in New Delhi located between Yamuna river and Delhi ridge which is an extension of Aravalli ranges.
- India’s most important buildings including **Rashtrapati Bhavan** is located here.
- Raisina hill often used as a metonym for the seat of government of India.

South Asia SubRegional Economic Cooperation (SASEC)

- The Prime Minister recently laid the foundation stone for multiple road upgradation projects under **SASEC Corridor Connectivity**.
- SASEC setup in 2001, is a **project-based partnership** that is designed to **promote regional prosperity** by facilitating **cross-border connectivity, boosting trade, and strengthening economic cooperation**.
- Key countries in the SASEC are **Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, and Sri Lanka**.
- The Manila based **Asian Development Bank (ADB)** serves as its **Secretariat**, lead financier, and development partner.
- In India, SASEC will upgrade approximately **312.5 km** of state highways and major district roads in **Assam**, including 6 road sections across the western, central, and southern regions.



Weimar Triangle



- In light of recent Russian aggression in the region, foreign ministers of **Poland, France, and Germany** have pledged to strengthen Europe’s security and defence capabilities through its alliance called **Weimar Triangle**.
- Created in **1991**, Weimar triangle is a **regional alliance** to promote cooperation among the 3 nations .
- Initially, its focus was aimed at assisting Poland’s emergence from Communist rule.
- The group derives its name from the city of **Weimar, Germany**, where its inaugural meeting occurred.

Mission Aspides

- The European Union has recently launched a **Red Sea mission named Mission Aspides**.
- It is a **European Union (EU) naval mission** to protect cargo ships in the Red Sea from attacks from **Yemen’s Houthi rebels**.
- The Operation headquarters is based in **Larissa, Greece** and will send European warships and airborne early warning systems to the Red Sea, **Gulf of Aden** and surrounding waters.
- Mission Aspides (Greek for ‘shield’) is **planned for one year but may be renewed**.

Global Initiative on Digital Health (GIDH)

- Achieving one of the three priority areas agreed upon during India’s G20 presidency in 2023, the **World Health Organization (WHO)** recently launched the **Global Initiative on Digital Health (GIDH)** virtually.

- **Global Initiative on Digital Health (GIDH)** is a **WHO managed network aiming to amplify and align resources** toward country-led digital health transformation through strengthened collaboration and knowledge exchange.
- It is a platform for **sharing knowledge and digital products** among countries.
- The **membership is open to all institutions** engaged in digital health.

World Governments Summit 2024

- The Indian Prime Minister recently attended the **World Government Summit 2024** in the **UAE** as a guest of honour.
- Established in **2013 under the leadership of the Vice President and Prime Minister of the UAE**, the Summit **annually** gathers world leaders, policymakers, experts, and thought leaders in Dubai to discuss pressing global issues.
- The Summit's mission is to **shape future governments and create a better future for humanity**.
- The theme for WGS 2024 was **"Shaping Future Governments"**.

Safe City Project

- U.N. Women has partnered with the Kerala State government to support its Safe City project and gender data hub.
- The Safe City Project is an **initiative to create a secure and empowering environment** for women and girls in public spaces.
- It is a collaboration between **the Ministry of Home Affairs (nodal) and the Ministry of Women and Child Development**, funded under the **Nirbhaya Fund**. It was launched in 2018 on a pilot-basis in 8 major cities in India.
- It involves the **installation of CCTV cameras in public spaces**, along with a command-and-control centre equipped with video analytics, AI, machine learning, and facial recognition technologies.

- It is a **centrally sponsored scheme** with the cost of the project being shared **between the Central government and the respective state governments** in a **60:40 ratio**. In UTs there will be 100% central funds.

Women Exporters in the Digital Economy (WEIDE) Fund

- The Women Exporters in the Digital Economy (WEIDE) Fund was launched recently.
- The WEIDE Fund was introduced by **the World Trade Organisation(WTO) and International Trade Centre (ITC)**.
- It is a USD 50 million global fund aimed to **help women take advantage of opportunities in international trade** and the digital economy.
- It was **established in conjunction with the 13th Ministerial Conference of WTO**, which was held in Abu Dhabi, UAE.

Objectives of the WEIDE Fund: -

- ✓ To **support female entrepreneurs and women-run companies** in emerging and least developed nations.
- ✓ To embrace digital technology and **increase women-owned businesses' online visibility**.

Indian Ocean Conference

- Recently, the 7th edition of the Indian Ocean Conference was held in **Perth, Australia**.
- The 'Indian Ocean Conference' is a flagship consultative forum for countries in the Indian Ocean region, organised **annually by the Ministry of External Affairs (MEA) in association with the India Foundation** (an independent research centre).
- It has **never been held in India** but in other countries.
- IOR is a **geographical region that encompasses the Indian Ocean and its surrounding areas**, including the littoral states and islands.

The IOR spans from:

- The **African coast in the west to the Australian coast in the east**, and
- The **Arabian Peninsula and the Persian Gulf in the north to the southern coast of Sri Lanka and Australia in the south**.

- It is home to **several important sea lanes** of communication, including the **Strait of Malacca, the Suez Canal, and the Bab-el-Mandeb strait**, which connect Asia, Europe, and Africa.

Nordic-Baltic Eight (NB8)

- Recently, a delegation from eight Nordic-Baltic countries participated in the **Raisina Dialogue** in New Delhi as representatives of Nordic-Baltic cooperation.
- The **Nordic-Baltic Eight (NB8)** is a **flexible and informal forum founded in 1992**, comprising **Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, and Sweden**.
- It serves as a platform for collaboration on common interests, with members meeting regularly at different levels.
- The **NB8 Secretariat is in Copenhagen, Denmark**, and the presidency rotates annually among member states.

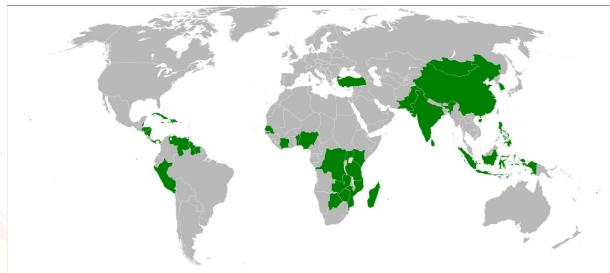
The Economic Community Of West African States (ECOWAS)

- ECOWAS is a **regional association of fifteen nations** formed on the basis of **Treaty of Lagos (1975)**.
- Headquarters** - Abuja, Nigeria.
- Members** - Benin, Burkina Faso, Cape Verde, Cote d' Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal and Togo.
- Its aim is to create a **borderless region** with deeper cooperation for **sustainable development**.

There are two sub-regional blocs:

- West African Economic and Monetary Union(1994)
- West African Monetary Zone (2000)
- India** was given an **observer status** in 2004.

G-33 (Friends of Special Products in agriculture)



- The G-33 also called Friends of Special Products countries, a coalition of developing and least developed nations formed during the **2003 WTO ministerial conference** in Cancun, Mexico, have recently called for a **permanent solution to public stockholding related issues** for food security.
- Public stockholding involves **government procurement, storage, and distribution of food**, similar to India's PDS.
- The group, which includes **47 member nations such as India, China, South Korea, Indonesia, Pakistan, Nigeria, and Turkey**, aims to safeguard the interests of developing countries in agricultural trade negotiations.
- They also advocate for **trade relaxations and tariff exemptions** to protect developing nations' interests.

Environment & Ecology

Acid Rain

- An independent study analysed the **impact of acid rain on soil chemical properties** degradation.
- Acid rain, or acid deposition, encompasses **any form of precipitation containing acidic components like sulfuric or nitric acid**, falling to the ground as rain, snow, fog, hail, or dust.
- It occurs when **sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emitted into the atmosphere react with water, oxygen, and other chemicals**, forming sulfuric and nitric acids.
- These acids then **mix with water and other materials before reaching the ground**.
- While a small portion of SO₂ and NO_x comes from natural sources like volcanoes, the **majority stems from fossil fuel combustion**, with two-thirds of SO₂ and one-fourth of NO_x in the atmosphere originating from this source.

Brumation

- Recently, researchers have **observed brumation in various reptilian species** across habitats.
- Brumation is **akin to hibernation in mammals**, describing a period of dormancy or reduced activity in reptiles.
- It usually happens during **colder months** when temperatures drop and food becomes scarce.
- Reptiles undergoing brumation may seek shelter in underground burrows, rock crevices, or other insulated areas where temperatures remain relatively stable.
- During this time, their **metabolism slows significantly**, enabling them to survive for weeks or even months without eating.

Hibernation is a state that only mammals can enter. **Brumation** is a state that only cold-blooded animals, like amphibians and reptiles, can enter.

State of World's Migratory Species Report

- Recently, the **Convention on the Conservation of Migratory Species (CMS) of Wild Animals** launched the **first-ever State of the World's Migratory Species report** during its COP14 at Samarkand, Uzbekistan.

Key Findings:

- Nearly **half of migratory species** listed under CMS are **declining in population**.
- **More than one-in-five CMS-listed species** are threatened with extinction, with **97% of listed fish facing extinction risk**.
- **Overexploitation and habitat loss** due to **human activity** are the greatest threats to migratory species.
- **Climate change, pollution, and invasive species** also impact migratory species significantly.
- Despite CMS listing, many migratory species are at risk, with **399 threatened species not currently listed under CMS**.

Frozen Smoke

- Researchers have recently developed a ground-breaking **sensor using frozen smoke to detect toxic formaldehyde** in homes and offices.
- "Frozen smoke" is a nickname for **aerogel, a silica-based material** that's the lightest solid known.
- Aerogel is also known as **solid smoke, solid air, solid cloud, and blue smoke**.
- When pressed softly, aerogel will **return to its original form**, but when pressed harder, a dimple forms. But, when an aerogel is under too much pressure it will **shatter like glass into many tiny pieces**.
- The sensor uses **artificial intelligence techniques** to detect **formaldehyde** in real time at concentrations as low as **eight parts per billion**, far beyond the sensitivity of most indoor air quality sensors.

Formaldehyde is a common **Volatile organic compound (VOC)** and is emitted by household items including pressed wood products (such as MDF), wallpapers and paints, and some synthetic fabrics. Formaldehyde can lead to **serious health problems** with prolonged exposure **even at low concentrations**.

Kyasanur Forest Disease

- Karnataka was grappling with the outbreak of Kyasanur Forest Disease (KFD) recently.
- Kyasanur Forest Disease (KFD) is a **viral hemorrhagic fever** that is **transmitted through ticks** and is consistently present in Karnataka State, India.
- It is also referred to as **monkey fever**.
- The virus responsible for this disease, known as Kyasanur forest disease Virus (KFDV), is **part of the Flavivirus genus and the Flaviviridae family**.
- A **tick bite or contact with an infected animal**, most particularly a sick or recently deceased monkey, may result in transmission to humans.
- Person to Person transmission is rare.
- There is **no specific treatment for KFD**, and **prevention is focused on reducing exposure to infected ticks**.

Climate and Clean Air Conference 2024

- The Climate and Clean Air Conference 2024 took place in **Nairobi, Kenya**.
- It was hosted by the **Climate and Clean Air Coalition (CCAC)** and the **UN Environment Programme (UNEP)**.
- It brought **together 86 State Partners and 83 Non-State Partners of the Clean Air Coalition**.
- The event was convened on the margins of the **sixth session of the UN Environment Assembly (UNEA-6)**.
- The conference called for phasing out **short-lived climate pollutants, or “super pollutants”**, such as **methane, black carbon and hydrofluorocarbons**.

Super pollutants, also sometimes referred to as **short-lived climate pollutants (SLCPs)**, derive their name from their **relatively short life in the atmosphere** as compared to carbon dioxide. Example: Methane.

- The **Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC)** was launched by the **United Nations Environment Programme (UNEP)** and **six countries**—Bangladesh, Canada, Ghana, Mexico, Sweden, and the United States—on 16 February 2012. India is a country partner.

Species Threat Abatement and Restoration (STAR) metric

- Recently, the **International Union for Conservation of Nature (IUCN)** has introduced the Species Threat Abatement and Restoration (STAR) metric for use in marine areas as well.
- The STAR metric was **first unveiled in 2021** for use in **terrestrial areas**.
- It utilises **existing data from the IUCN Red List of Threatened Species** to **quantify extinction risks** and threats faced by species.
- It **assesses the potential of specific actions at specific locations** to contribute to international conservation targets.

Greening and Restoration of Wasteland with Agroforestry (GROW) Portal

- Recently, the **Greening and Restoration of Wasteland with Agroforestry (GROW)** portal was launched by NITI Aayog.
- It is hosted by the **Bhuvan Platform of ISRO**, that allows **users to download 2D and 3D maps** with details such as the environment and other natural characteristics
- The portal aims to ensure universal access to state and district-level data related to **agroforestry suitability**.
- It uses data derived from **remote sensing and Geographic Information System (GIS) technology**.
- The portal also has the **Agroforestry Suitability Index (ASI)**, which provides a standardised index for prioritising agroforestry interventions at the national level.

Agroforestry is a **land use management system that combines trees and shrubs with crops and livestock**.

Triple-Dip La Niña

- As per recent studies the **air quality in the National Capital Region (NCR)** has reportedly improved significantly in last winter due to triple-dip La Nina.
- A triple-dip La Niña refers to the occurrence of the **La Niña climate pattern three consecutive times** without shifting to a neutral or El Niño state.
- La Niña is part of the **El Niño-Southern Oscillation (ENSO)** phenomenon, characterised by cooler-than-average sea surface temperatures in the central and eastern tropical Pacific Ocean.
- During La Niña **stronger monsoon rains and cooler temperatures** are experienced in the Asia-Pacific region. But in the American region, it can cause **hot conditions**. During the “triple-dip” La Niña these patterns recur over a longer period.

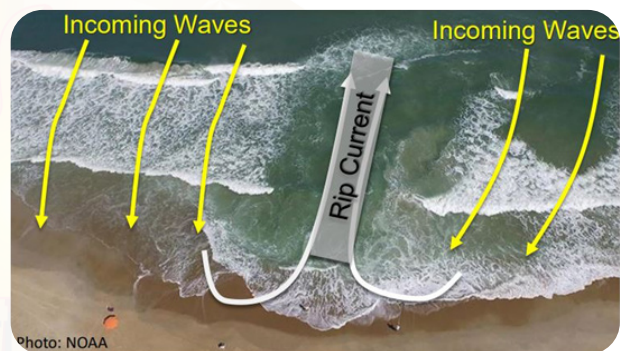
Seaweed Cultivation



- Union Minister of Fisheries, Animal Husbandry & Dairying** chaired the first National Conference on Promotion of Seaweed Cultivation at Kutch, Gujarat.
- Seaweeds** are **macroscopic algae** growing in the **marine and shallow coastal waters and brackish water habitats**.
- They are **renewable sources of food, energy, chemicals and medicines** with manifold nutritional, industrial, biomedical, agriculture and personal care applications.

- They are termed as the **‘Medical Food of the 21st Century’** due to **usage as laxatives**, for making pharmaceutical capsules, in treatment of **goitre, cancer, bone-replacement therapy and in cardiovascular surgeries**.
- Around **844 species of seaweeds** have been **reported from Indian seas**, among them, **221 species** are commercially important and abundant along the **Tamil Nadu and Gujarat coasts and around Lakshadweep and Andaman & Nicobar Islands**.
- Rich **seaweed beds** occur around **Mumbai, Ratnagiri, Goa, Karwar, Varkala, Vizhinjam and Pulicat in Tamil Nadu & Andhra Pradesh and Chilka in Orissa**.

Rip Currents

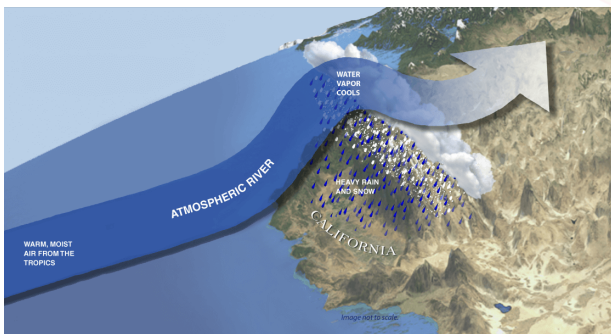


- Indian National Centre for Ocean Information Services (INCOIS)** and **Indian Space Research Organisation (ISRO)** have embarked on a project to continuously **monitor and issue operational forecast alerts of rip currents**.
- A **rip current** is a **localised current that flows away from the shoreline towards the ocean**
- The force of the current is **strongest and fastest** next to the surface of water since the friction between the water and the seabed slows down the current at the bottom.
- A rip current forms because **wind and breaking waves push surface water towards the land**. This causes a slight **rise in the water level along the shore**.
- This **excess water will tend to flow back to the open water** and one of the ways this water returns is to form a rip current.

Atmospheric Rivers

- Recently, California was grappling with an **extraordinary weather phenomenon** known as the **Atmospheric river (AR)**, also called the **Pineapple Express storm**.

- AR is used to **indicate narrow, elongated corridors** of concentrated moisture transport from lower to higher latitudes.
- They are typically formed in the **tropics or sub tropics** where warm ocean surfaces evaporate water into air. The **upper level westerly jet stream** carries this moisture to higher latitudes.
- They are responsible for **90 percent of the movement of moisture from the tropics toward the poles**.
- They are the **largest transport mechanisms of freshwater on Earth**.



Category 6 Hurricanes

Saffir - Simpson hurricane scale

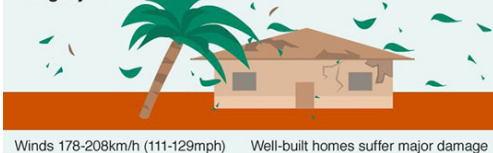
Category 1



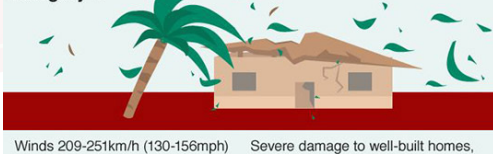
Category 2



Category 3



Category 4



Category 5



BBC

- Due to the open-ended nature of the **Saffir-Simpson Hurricane Wind Scale (SSHWS)**, researchers have proposed the creation of **Category 6**, for much stronger hurricanes.
- Currently, the Saffir-Simpson scale, with five categories, tops out at Category 5. The proposal is to qualify storms with **winds exceeding 192 mph for the new category**.
- The Saffir-Simpson Hurricane Wind Scale (SSHWS) is a tool that helps emergency officials determine the **wind hazards of an approaching hurricane**. The scale is a 1 to 5 rating based on a **hurricane's sustained wind speed**.

SARTHI Portal

- Recently, the Union Minister of Agriculture and Farmers Welfare launched the Agri-Insurance Sandbox Framework Platform SARTHI and **Learning Management System (LMS)** Platform for the farming community under the **Pradhan Mantri Fasal Bima Yojana (PMFBY)**.
- **Sandbox for Agricultural and Rural Security, Technology and Insurance (SARTHI)** is the comprehensive **digital insurance platform** launched in **collaboration with United Nations Development Programme (UNDP) India**.
- It extends coverage to health, life, home, shop, agriculture implements, motor, and parametric products.
- SARTHI empowers farmers to comprehensively mitigate risks, securing their livelihoods and fostering long-term sustainability in agriculture.

Learning Management System (LMS)

- It is developed in collaboration with the **National E-Governance Division (NeGD)**.
- It aims to provide stakeholders, including farmers, insurance companies, Government officials, and participants in the Pradhan Mantri Fasal Bima Yojana (PMFBY), with the **essential skills and knowledge needed for efficient crop insurance and agricultural credit**.
- It will **facilitate training and knowledge sharing through interactive modules, personalised training programs, and accessible resources**.

Science & Technology

High Altitude Pseudo Satellite (HAPS)



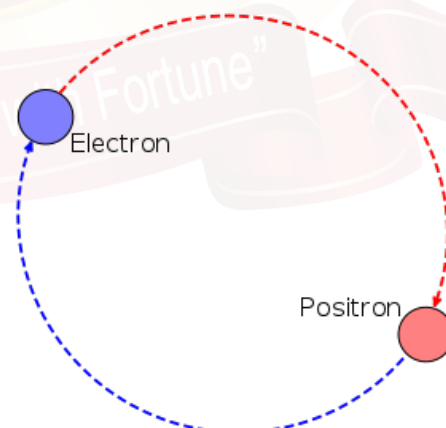
- **CSIR-National Aerospace Laboratories (NAL)** has successfully tested a prototype of **High Altitude Pseudo Satellite (HAPS)**.
- **HAPS**, also called high-altitude long-endurance vehicles (**HALE**) is a **solar-powered** unmanned aerial vehicle (**UAV**) that can potentially remain in the air for **months or years**.
- HAPS **moves very slowly (80-100kmph)** compared to other flying objects allowing it to observe a certain area for a long time.
- The Indian prototype has now been tested for **8.5hrs**.
- HAPS operates in the stratosphere, **flying at altitudes of 18-20 km**, nearly double the heights of commercial aeroplanes.
- The increased altitude allows them to provide **surveillance capabilities akin to satellites**.
- Unlike regular satellites that are expensive to build and launch and cannot be repurposed, HAPS **cost far less and are easier to launch and can be redeployed to any location**.
- HAPS is solar powered compared to the **battery powered UAVs** which are useful for a shorter duration and a shorter elevation.

- Compared to ground based communication networks, **HAPS can cover larger areas with less interference**
- **Challenges** of it being a developing technology, need to be lightweight, with energy dense batteries, endure almost -50 degree temperature and low air density remain.

Electronic Ink

- A new crowdfunded phone, called the **Minimal Phone**, has featured a **white E Ink display**.
- E Ink is a brand of **special type of display screen technology** often used in **e-readers like the Amazon Kindle**.
- These displays utilise **microcapsules** filled with **positively charged white particles** and **negatively charged black ones suspended in fluid**.
- By applying electrical charges, the **particles rise to the surface**, creating text and images on the display.
- E Ink **reflects light like paper**, making it easier on the eyes, **consuming little power** as it doesn't require backlighting, and **offering better readability** under bright lighting conditions.
- E Ink has advantages like **low power consumption and reduced eye strain** but has downsides such as a **slower refresh rate, colour limitations, and higher costs**.
- E ink was commercialised by the E Ink Corporation, which was co-founded in 1997.

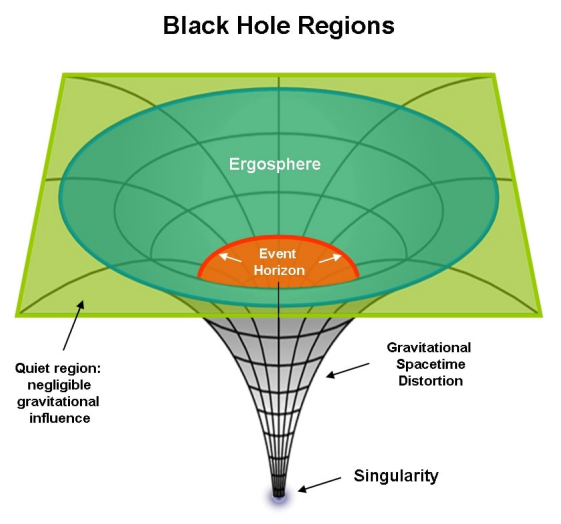
Laser Cooling of Positronium



- In a significant breakthrough, scientists at **CERN** have achieved **laser cooling of Positronium** for the first time, during the **Anti-hydrogen Experiment: Gravity, Interferometry, Spectroscopy (AEGIS)**.
- Positronium is a **unique atomic system** consisting of an electron and a positron, the antimatter counterpart of an electron held together in an atom.
- It has a **very short lifespan**, typically around **142 nanoseconds**, before it annihilates.
- Positronium holds the distinction of being a **pure leptonic atom (with an electron and its anti-lepton, the positron)**.
- **It is the lightest atom**, with its mass being twice that of an electron. Unlike hydrogen, it doesn't have a proton.
- **Laser cooling** of Positronium was accomplished by lowering its temperature from **about 380 Kelvin to 170 Kelvin** using a 70-nanosecond pulse of the **alexandrite-based laser system**, operating in either the deep ultraviolet or infrared frequency bands. The research is important in the development of **quantum physics**.

Antihydrogen Experiment: Gravity, Interferometry, and Spectroscopy (AEGIS) aims to directly measure Earth's gravitational acceleration on **antihydrogen**. An antihydrogen atom is made up of a **negatively charged antiproton and a positively charged positron**. It is a collaboration between **physicists from Europe and India**.

Ergosphere



- Scientists have proposed a **concept involving sending an object into the ergosphere of a black hole, allowing it to accelerate** in the direction of the black hole's rotation.
- The ergosphere is the **region between the event horizon and the stationary limit**.
- Beyond the **event horizon**, no light or radiation can escape due to the immense gravitational pull.
- The **stationary limit** marks a boundary where objects are forced to rotate with the black hole due to the distortion of space caused by its rotation.
- Inside the **ergosphere**, objects must rotate with the black hole, but with sufficient velocity, they can escape. Theoretically, this escape can be enhanced by utilising the energy of the black hole itself. Therefore, it may be **possible to extract matter and energy from the ergosphere**, but not from beyond the event horizon.
- This concept of harnessing energy from the ergosphere was **depicted in the movie "Interstellar"** to accelerate spacecraft with limited fuel.

Homosep Atom



- **Homosep Atom** is India's **first septic tank/manhole cleaning robot**.
- It is developed by the startup named **Solinas (IIT Madras)** with the help of the **Department of Science and Technology -Technology Business Incubator (DST-TBI)**.
- It aims to eliminate **manual scavenging** by employing robotic cleaning methods.
- It has been deployed in **16 cities in India**.

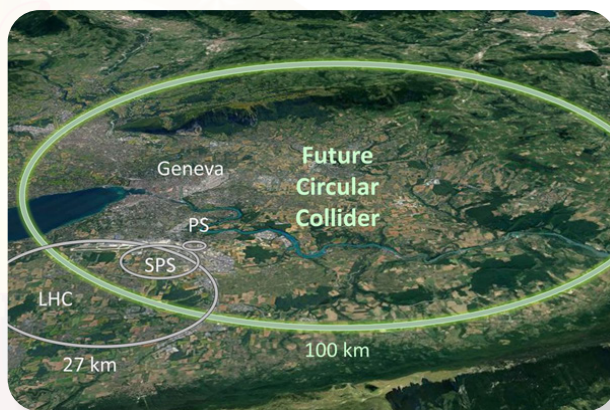
Gaganyaan

- Recently, the Prime Minister announced the names of the **four astronauts who will fly to low-Earth orbit** as part of the Indian Space Research Organisation's (ISRO) Gaganyaan Mission.
- Gaganyaan is an **Indian crewed orbital spacecraft** that is intended to send astronauts to **space for a 3 days mission** as part of the Indian Human Spaceflight Programme.
- It will be for the **first time that India will launch its manned mission to space**, making the country **fourth** in line to have sent a human to space **after the US, Russia and China**.
- The spacecraft developed by Indian Space Research Organization (ISRO) consists of a service module and a crew module, collectively known as the **Orbital module**.
- Geosynchronous Satellite Launch Vehicle (GSLV) Mk-III or LVM3** is identified as the launch vehicle for Gaganyaan mission.



- About **20 institutions** across India are involved in the project though the analysis and coordination is done out of the **Centre for Brain Research, Indian Institute of Science (IISc), Bangalore**.
- Some of the **priority areas** are Precision health, Rare genetic disorders, Mutation spectrum of genetic and complex diseases in the Indian population, Genetic Epidemiology of Multifactorial Lifestyle Diseases, and Translational Research.
- The main outcomes of such an enterprise is to gain **deeper insight into India's population diversity, improve diagnostic methods and medical counselling**.

Future Circular Collider (FCC)



- Recently, **CERN** (the European Organisation for Nuclear Research) scientists are advancing plans for a multibillion-euro project to construct a more powerful Future Circular Collider.
- The Future Circular Collider (FCC) is a **particle accelerator** currently under design, intended to accommodate the next generation of particle colliders.
- It **aims to design a hadron collider with a centre-of-mass energy** of about 100 TeV (trillion electron volts), which is eight times more powerful than the Large Hadron Collider's (LHC) 13 TeV.
- It is to be planned in a tunnel on the **France-Switzerland border**.
- It will enhance our **understanding of fundamental physics & foster advancements in fields such as cryogenics, superconductivity, vacuum tech, and detector instruments**.

Vyommitra

- ISRO has developed a **female half humanoid robot named Vyommitra** which will be sent on the first unmanned Gaganyaan flight.
- It will help in **simulating human functions in space** and the data collected by Vyommitra will be used to improve the design of the Gaganyaan spacecraft and to **develop procedures for future manned space missions**.

Genome India Project

- The Genome India Project recently announced that it had finished sequencing **10,000 Indian genomes**.
- Launched in **2020**, Genome India Project is a **Centre-backed, Department of Biotechnology's (DBT) initiative to sequence 10,000 Indian human genomes** in three years and create a database.

A **particle accelerator** is a machine that uses electromagnetic fields to speed up charged particles and channel them into a beam. Particle accelerators can be used for research, medicine, manufacturing, and food safety. They produce ionising radiation, such as x-rays or neutrons, and can make radioactive materials.

In particle physics, a **hadron** is a composite subatomic particle made of two or more quarks held together by the strong interaction. They are analogous to molecules, which are held together by the electric force.

Fission Surface Power Project

- NASA announced that it is wrapping up the **initial phase of its Fission Surface Power Project**.
- The Fission Surface Power Project aims to **develop safe, clean and reliable energy sources on the moon**. Such a system could play a big role in the agency's **Artemis program for lunar exploration**.
- The first phase was focused on **developing concept designs for a small, electricity-generating nuclear fission reactor** that could be used during a future demonstration on the Moon and to inform future designs for Mars.
- Since the **lunar night (lasts around 14 days) is challenging from a technical perspective**, having a source of power which operates independent of the sun will be an enabling option for long-term exploration and science efforts on the moon.

Sora

- Microsoft-backed **OpenAI has introduced Sora**, an advanced **text-to-video model**.
- Named after the **Japanese word for "sky,"** Sora can produce up to **60-second videos** with intricate scenes, dynamic camera movements, and emotionally rich characters.
- The model can generate realistic **videos using either still images or existing footage provided by users**.
- Currently, Sora is undergoing **red-teaming**, where a team of experts simulates real-world usage to pinpoint vulnerabilities and weaknesses in the system.

Brain-Computer Interface

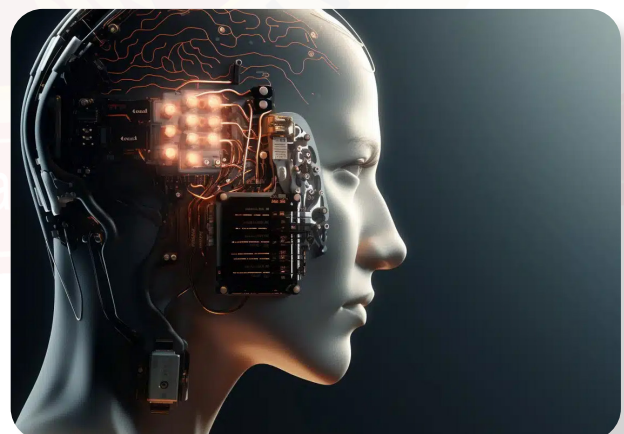
- **Neuralink**, an Elon Musk company, has **successfully installed a wireless brain-computer interface (BCI)** implant in a human patient.
- **Brain-Computer Interface**, sometimes called a **Brain-Machine Interface (BMI) or Smartbrain**, is a **direct communication pathway between the brain's electrical activity and an external device**, most commonly a computer or robotic limb.

A BCI has three main parts:

- **A device to measure brain activity.** This is usually in the form of a headset, cap or headband that has **specialised sensors embedded in it**.
- **A computer to process and analyse the recorded brain activity**, using specialised processing methods and algorithms.
- **An application/device to control.** Once the computer has 'determined' what the user wants to do, it will send a signal to the application/device to carry out that command.

Types of BCIs

- **Invasive BCIs:** These systems involve **surgically implanting sensors directly onto the surface of the brain**.
- **Non-Invasive BCIs:** Not directly connected to a person's brain but **involves a wearing device with electrical sensors that serve as two-way communication channels** between a person's brain and a machine.



Miscellaneous

Sada Tanseeq



- Recently, **India and Saudi Arabia** conducted their **first joint military exercise** named Sada Tanseeq.
- Its primary objective was to train troops for joint operations in **Semi-Desert terrain as mentioned in Chapter VII of the United Nations Charter**.
- The exercise took place in **Mahajan, Rajasthan** where the personnel of **Royal Saudi Land Forces and the Indian Army** participated.

SWAYAM Plus platform

- Recently, the Union **Minister of Education and Skill Development and Entrepreneurship** with support of **L&T, Microsoft, and CISCO** launched the 'SWAYAM Plus' platform.
- **SWAYAM** platform was launched by the **Ministry of Education** in 2017 to provide educational opportunities for a large population.
- The **SWAYAM Plus platform** aims to offer courses focusing on employability and professional development.
- It also covers sectors like **manufacturing, energy, computer science, engineering, IT, management studies, healthcare, hospitality, and tourism**.
- It is operated by **IIT Madras**.

Swachhata Green Leaf Rating

- Swachhata Green Leaf Rating was launched by the **Department of Drinking Water & Sanitation (DDWS), Ministry of Jal Shakti**, in collaboration with the **Ministry of Tourism**.
- It aims to promote **world-class hygiene and sanitation standards** in the hospitality sector.
- Its rating system **applies to all types of accommodations including hotels, lodges, homestays etc.**
- The SGLR initiative seamlessly aligns with the **Travel for LiFE (TFL) program** under Mission LiFE, fostering awareness about sustainable tourism.

U-WIN Platform

- Recently, the **Union Finance Minister** announced that the U-WIN platform will be rolled out expeditiously across the country.
- U-WIN is a **newly designed platform for managing immunisation and intensified efforts of the Mission Indradhanush** and to **digitise India's Universal Immunisation Programme (UIP)**. It is expected to be rolled out soon.
- The portal functions under the **Union Ministry of Health and Family Welfare**.
- The portal is **linked with the Co-WIN portal** and the **beneficiary records from Co-WIN can be accessed through U-WIN** using the registered mobile number.

Press Sewa Portal & NaViGate Bharat

- Recently, the **Ministry of Information and Broadcasting** launched Press Sewa Portal and NaViGate Bharat.

Press Sewa Portal

- Its primary objective is to streamline and automate the process of **newspaper registration and related activities** under the **Press and Registration of Periodicals Act, 2023 (PRP Act, 2023)**.
- It enables publishers to submit applications for title registration online, using **Aadhaar-based e-signatures** for authentication.

- With the help of this portal **District Magistrates** can manage applications received from publishers in a centralised dashboard.

NaViGate Bharat

- ◆ It serves as the **National Video Gateway of Bharat**.
- ◆ It also provides a **unified bilingual platform (English and Hindi)** for hosting videos on government's development initiatives and welfare-oriented measures.
- ◆ It also includes dedicated pages for **ministries, sectors, schemes, and campaigns**

INS Sandhyak



- INS Sandhyak **first Survey Vessel Large (SVL)** ship commissioned into the Indian Navy.
- INS Sandhyak is the **largest survey vessel** ever built in India.
- Sandhyak means the **one who carries out a special search**.
- It is fully designed and built by the Kolkata based **Garden Reach Shipbuilders and Engineers (GRSE)**.
- They are designed for **comprehensive coastal and deep-water hydrographic surveys**, especially in port and harbour approaches.
- It also determines navigation channels and routes, providing crucial data for maritime safety.

Purple Fest 2024

- The **Department of Empowerment of Persons with Disabilities**, Ministry of Social Justice & Empowerment conducted the **Purple Fest 2024** at Rashtrapati Bhawan.

- The first of its kind festival aims to **raise awareness about different disabilities** and their impact on people's lives.
- It aims to **promote understanding, acceptance and inclusion of persons with disabilities** within society.

Satyendra Nath Bose

- On the **50th anniversary of his death**, the eminent physicist S.N. Bose was honoured.
- Satyendra Nath Bose, an **Indian mathematician and physicist**, is renowned as the '**Father of the God Particle**' for his groundbreaking work on **bosons**, particles named after him due to their adherence to **Bose-Einstein statistics**.
- His pioneering research in the 1920s laid the groundwork for Bose-Einstein statistics and the **theory of the Bose-Einstein condensate**.
- Despite facing initial rejection, his seminal paper, which derived Planck's quantum radiation law, was **championed by Albert Einstein**, leading to its publication and recognition in the scientific community.
- Bose, born on January 1, 1894, had diverse interests spanning various fields.
- Honoured as a Fellow of the Royal Society, he was awarded India's second-highest civilian accolade, the **Padma Vibhushan**, in 1954.

Bose-Einstein Statistics: In statistical mechanics, Bose-Einstein statistics means the statistics of a system where you can not tell the difference between any of the bosons.

Bose-Einstein condensate (BEC): It is a state of matter that is typically formed when a gas of bosons at very low densities is cooled to temperatures very close to absolute zero.

Rhodamine B

- The **Karnataka government has banned** the use of harmful colouring agents in cotton candy and Gobi Manchurian.
- Rhodamine B is a **bright red to violet dye** commonly used in a variety of **industrial applications**, as well as a **tracer dye in scientific studies**.

- Since it is low in cost, it is a **popular choice for food colouring**.
- Rhodamine-B is considered **toxic as it causes oxidative stress on the human cells and the tissues, which causes damage and death of specialised cells in the cerebellum and brainstem tissue** (the part that connects the brain to the spinal cord).
- Long term use can lead to **liver dysfunction or cancer, and when exposed to large amounts over a short period, it results in acute poisoning**.
- Once considered solely an **anthroponosis (transmitted from humans to other animals)**, it's now classified as a **zoonosis** due to dogs serving as reservoirs in some African countries.
- There's **no specific drug or vaccine** for prevention, but anti-inflammatory medication can alleviate symptoms.
- **India achieved GWD eradication in the 1990s** and received WHO certification as GWD-free in 2000.

C-Bot

Digital Detox Initiative

- The **Karnataka government** recently announced 'Digital Detox' initiative in collaboration with the **All India Game Developers Forum (AIGDF)**.
- The programme aims to **spread awareness about the negative impacts** of excessive technology use and encourage more **mindful digital habits**.
- The goal of the 'Digital Detox' initiative is to **reduce the amount of time** people spend immersed in **digital devices and social media**.

- The **CSIR-National Institute of Oceanography (NIO) in Goa** recently launched the C-bot, an **autonomous underwater vehicle** designed for **monitoring coral reefs** and investigating coral bleaching caused by climate change.
- With a depth capability of **up to 200 metres**, the C-bot is a groundbreaking advancement in underwater vehicle technology, **facilitating exploration of the Indian Ocean's profound depths**.
- By offering **real-time data**, it becomes a crucial tool for scientists studying climate change's impact on coral reefs.

Guinea Worm Disease



- In 2023, WHO's weekly epidemiological report noted **only six cases of Guinea worm disease (GWD)**, caused by the **Dracunculus medinensis** parasite.
- GWD spreads through **drinking water containing guinea worm larvae**, primarily affecting rural communities reliant on stagnant surface water sources like ponds.

Places in News

Gupteswar Forest

- Recently, the **Odisha** government has declared the Gupteswar forest in Koraput district as its **fourth Biodiversity Heritage Site**.
- Biodiversity Heritage sites (BHS)** are well defined ecologically fragile ecosystems with a high diversity of wild and domesticated species.
- They are notified by the state government under **'The Biological Diversity Act, 2002'** in consultation with **'local bodies'**.
- The **Nallur Tamarind Grove** in Bengaluru, Karnataka, was **India's first Biodiversity Heritage Site**, declared in 2007. As of February 2024, India has a **total of 45** such sites, according to the **National Biodiversity Authority**.

T 50 Tunnel

- Prime Minister Narendra Modi inaugurated **India's longest transportation railway called T-50 tunnel** in Jammu Kashmir.
- The **12.77 km long** tunnel lies on the **Banihal-Khari-Sumber-Sangadal** section of the Udhampur-Srinagar-Baramulla Rail Link (USBRL).
- The **USBRL** is a 272 km project that was sanctioned in 1994-95 to **connect the Kashmir Valley to the Jammu region** and the national rail network, and will provide all-weather connectivity to Jammu and Kashmir.
- Out of 272 km, **209 kilometres** has been commissioned.

Mekong River



- A multibillion-dollar dam project underway across the Mekong River in **Laos** has prompted concerns that it could result in **Luang Prabang city losing its UNESCO World Heritage Site status**.
- Mekong river** is a **trans-boundary river** in **East Asia and Southeast Asia** and is the **world's twelfth-longest river and the third-longest in Asia**.
- It flows through six countries; **China, Myanmar, Laos, Thailand, Cambodia, and Vietnam**.
- It originates from the **Sanjianyuang in the Tibetan Plateau**, with the area designated a **national nature reserve to protect the headwaters of the Yangtze, Yellow, and Mekong Rivers**.
- It drains into the **South China Sea** through the **Mekong Delta**.
- It is the **second most biodiverse river basin in the world, after Amazon River Basin**.

Five more Wetlands added to Ramsar list

- India has increased its tally of **Ramsar sites to 80** by adding five more wetlands to the list on the eve of **World Wetlands Day 2024**.

Aghanashini Estuary (Karnataka)

- Formed at the confluence of the **Aghanashini River with the Arabian Sea**, covering an area of 4801 hectares.
- It provides diverse ecosystem services, including flood and erosion risk mitigation, **biodiversity conservation, and livelihood support**.
- The estuary also supports **over 43,000 waterbirds of over 66 species**.

Magadi Kere Conservation Reserve (Karnataka)

- A **human-made wetland** nearly 50 hectares in size, home to over 166 species of birds, of which 130 are migratory.
- It harbours **two vulnerable species and four near-threatened species**, and nearly 8,000 birds visit the site during winter.
- It is also one of the **largest wintering grounds for the Bar-headed goose**.

- ☞ A **human-made village irrigation tank** spread over 98.76 hectares, home to over 240 species of birds, including over **30,000 water birds that nest and roost there.**

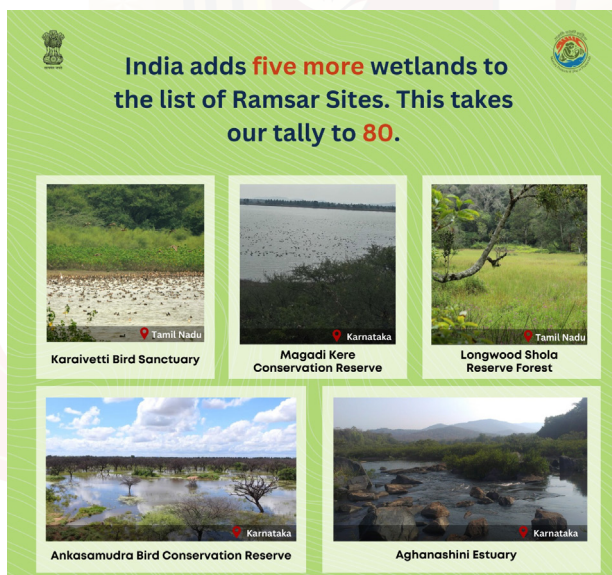
- ☞ It also supports **more than 1% of the biogeographic population of Painted Stork and Black-headed Ibis.**

Karaivetti Bird Sanctuary (Tamil Nadu)

- ☞ **One of the largest inland wetlands** in Tamil Nadu, covering an area of 453.72 hectares.
- ☞ It is a significant **source of groundwater recharge** for the area and provides water for agriculture.
- ☞ Karaivetti has one of the **largest congregations of waterbirds** in Tamil Nadu and a significant breeding ground for threatened bird species like the **grey-headed lapwing and the Indian skimmer.**

Longwood Shola Reserve Forest (Tamil Nadu)

- ☞ Derives its name from the Tamil word **"Solai" for "tropical rainforest".**
- ☞ Home to a variety of **endemic bird species**, including the globally endangered **Black-chinned Nilgiri Laughingthrush, Nilgiri Blue Robin**, and vulnerable **Nilgiri Wood-pigeon.**



Species in News

Northern White Rhinoceros (NWR)

- Recently, the international consortium, **BioRescue**, announced the **first-ever rhino pregnancy** through a **lab-made embryo** transferred to a **southern white rhino.**
- This has increased hopes for the revival of the northern white rhinoceros that is **critically endangered.**
- White rhinos are the **second largest land mammal after the elephant.**
- They are known as the **square-lipped rhinoceros**, white rhinos have a **square upper lip with almost no hair.**
- The death of the **last male northern white rhino in 2018** made **surrogacy** the only viable option for species regeneration.
- The remaining two females, **Najin and Fatu**, were found **incapable of reproduction for pathological reasons.**
- The only hope for the NWR is to use **frozen sperm** from deceased males and eggs from the females to create embryos in the laboratory, and then implant them into surrogate mothers from the southern white rhino (SWR) subspecies.
- Northern White Rhino: **Critically Endangered**
- Southern White Rhino: **Near Threatened**



Snow Leopard



- The Minister of Environment, Forest, and Climate Change (MoEFCC) recently released a **report on the Status of Snow Leopards** in India.
- Snow leopards (*Panthera uncia*) belong to the genus *Panthera* in the family *Felidae* and are **native to the mountain ranges of Central and South Asia** with 60% now found in China..
- Their habitat **spans across the mountainous regions of 12 countries** in Asia, including Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyz Republic, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan.
- In India, protected areas such as **Hemis National Park (Ladakh), Gangotri National Park (Uttarakhand), Khangchendzonga National Park (Sikkim), and Great Himalayan National Park (HP)** are known to be habitats for snow leopards.

Snow Leopard Population Assessment in India (SPAII), began in **2019** and involves the **World Wide Fund for Nature India** and the **Nature Conservation Foundation, Mysore** along with the **Wildlife Institute of India (WII)**

Highlights of the report

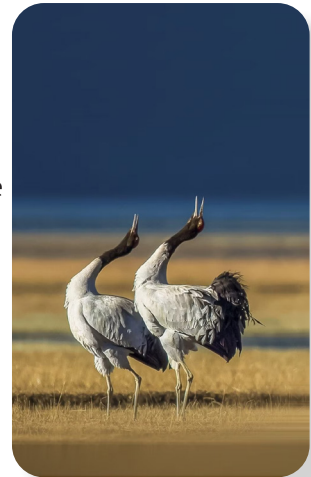
- ◆ There is a total of **718 snow leopards** in India.
- ◆ **Ladakh** has the most number with 477 followed by **Uttarakhand (124), Himachal Pradesh (51), Arunachal Pradesh (36), Sikkim (21), and Jammu and Kashmir (9)**.

Conservation Status

- » IUCN Red List: **Vulnerable**
- » CITES: **Appendix I**
- » Wildlife (Protection) Act, 1972 : **Schedule I**

Black Necked Crane

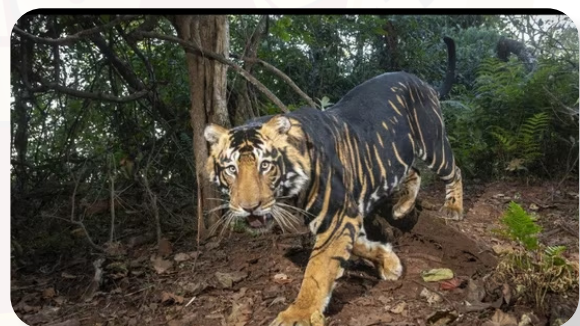
- The government is taking **steps to protect the Black-necked cranes**, classified as medium-sized members of the crane family.
- Found in **India, China, and Bhutan**, they breed in **high-altitude wetlands** on the Tibetan plateau, typically at elevations of 2950-4900 m above sea level.
- Adopted as the **State Bird of the Union Territory of Ladakh**, the **Tso Kar Wetlands Complex**, crucial for foraging and breeding of Black-necked Cranes, was designated as a **Ramsar Site** in 2020.



Conservation status

- » IUCN: **Near Threatened**
- » Wild Life (Protection) Act, 1972: **Schedule I**
- » CITES: **Appendix I**

Melanistic Tiger (Black Tiger)



- The Odisha government plans to launch the **world's first melanistic tiger safari** near **Similipal Tiger Reserve (STR)**.
- Melanism, a genetic condition causing **increased melanin production**, results in **black or nearly black skin, feathers, or hair** in animals.

- **Similipal's royal Bengal tigers possess a unique lineage with elevated melanin levels**, manifesting as black and yellow interspersed stripes, though they are not entirely black and are termed pseudo-melanistic.
- Research by the National Centre for Biological Sciences (NCBS), Bengaluru, suggests that a **single mutation in the Transmembrane Aminopeptidase Q gene causes these black tigers** to develop stripes. Genetic analyses hint that Similipal's black tigers may have originated from a small founding population, leading to inbreeding.

The STR, which sprawls over 2,750 square km in Odisha's Mayurbhanj district adjoining Jharkhand and West Bengal, is **Asia's second largest biosphere**, and the country's only wild habitat for melanistic royal Bengal tigers.

Sphaerotheca Varshaabhu



- Researchers from various national and international organisations have discovered a **new species of burrowing frog in Bengaluru**.
- Named as '**Sphaerotheca Varshaabhu**', meaning a **genus of frog which welcomes rain**, has been attributed to its behaviour of **coming out of burrows during the early showers**.
- The species has shown **adaptation to its urban surroundings**.
- The discovery emphasises the **need for continued exploration of urban ecosystems and the preservation of biodiversity** in areas heavily impacted by human activities.



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