FORTUNE
Prelims Precise

FEBRUARY 2023

INDEX

FORTUNE IAS
Toppers in Top 100

Rank 6
Meera K
2021

Rank 15
Sidharth B
2017

Rank 21
Dilip K Kainikkara
2022

Rank 28
Hamna Mariyam
2017

Rank 29
Sreelakshmi Ram
2019

Rank 33
Anand
2016

Rank 36
Arya V M
2023

Rank 45
Safna Nazarudeen
2020

Rank 49
Renjina Mary V
2019

Rank 55
Dr. Arun S Nair
2020

Rank 57
Alfred O V
2022

Rank 58
Hari Kallikkat
2018

Rank 62
Aparna M B
2021

Rank 63
Dheenah Dastageer
2021

Rank 66
Akhil V Menon
2022

Rank 66
Arjun Mohan
2019

Rank 81
Malini S
2023

Rank 92
Devi Nandana
2020

Rank 99
Archana P P
2020

Rank 100
Kiran P B
2022

History & Culture

Yakshagana

» Recently a renowned Yakshagana playback singer Shri Balipa Narayana Bhagawatha passed away.

- Yakshagana is a **traditional folk dance** form of **Karnataka**.

- It is a combination of **dance, music, song, scholarly dialogues and colourful costumes depicting Indian mythology to contemporary themes**.

- It was performed by the **Jakkula Varu community** in the royal courts of the **Vijayanagar dynasty**.

- Traditionally, men portray all roles, including the female ones, but nowadays women also take part in Yakshagana.

Chhatrapati Shivaji Maharaj

- He was born in **February 19, 1630** and was the founder of the **Maratha Empire** carved out from Adilshahi sultanate of Bijapur.

- He maintained a disciplined **military** and well-established **administrative** setup.

- Chhatrapati Shivaji Maharaj is often considered as the **father of Indian Navy.**

- He also appointed **a team of eight ministers (Ashtapradhan)**.

- He **eliminated the Jagirdari System** and **replaced it with the Ryotwari System**, eliminating middle-men and collecting taxes directly from people.

Marathas collected **Chauth and Sardeshmukhi taxes**.

⚏ Chauth was a protection money **that amounted to 1/4th of the revenue/ produce** that was collected from the nighbouring sultanate and Mughal territories and was paid to Maratha chiefs.

⚏ Sardeshmukhi was an **additional levy of 10%** demanded from areas outside of the kingdom and was given to the Chhatrapati.

- He is known for his **liberal and tolerant religious** policies and he also posed a severe threat to the **suzerainty of the Mughals**.

Sursingar

» In his **Mann ki Baat** Prime Minister spoke of how musical instruments and folk artists play an important role in popularising folk art.

- **Sursingar** is a **stringed musical instrument (Tata Vadya)** similar to the sarod, but much **older** and produces **deeper** notes.

- It is used to play music in the **Hindustani style, Dhrupad**.

- It is made of **wood**, attached with a **gourd with a metal fingerboard**.

- Kolkata-based multi-instrumentalist **Joydeep Mukherjee** is credited with reviving the Sursingar.

Lavani

» Recently the dance form of Lavani was at the centre of controversy for vulgarisation of the traditional folk art form in Maharashtra.

- The **word Lavani** originates from **'lavanya' meaning beauty**.

- A **traditional folk dance** from Maharashtra that gained popularity during the **Peshwa era** in the 18th century.

- Women dancers wear **9 yard-long sarees** in bright colours, **ghunghroos (ankle-bells)** and perform to **dholak** beats.

Mohiniyattam

» Noted Mohiniyattam dancer Kanak Rele passed away.

• **M o h i n i y a t t a m** means the dance of the temptress, **Mohini** (a female avatar of the Hindu god **Vishnu**).

• It evolved as a devadasi dance in the **state of Kerala**, during the **rule of Cheras** (9 to 12 century CE).

• It has its roots in the **'Natya Shastra'** of Bharata Muni.

• It further developed as a **classical artform** during the **18th century** under patronage of **princely states in Kerala**.

• Conventionally performed by a **female dancer dressed in plain white or ivory cream traditional sari** embroidered with bright gold-laced brocade.

• Major emphasis is given on **hand gestures & subtle face expressions** rather than footworks

• It is said to represent the **element of air**.

Keeladi Excavations

» Recent **Archaeological Survey of India (ASI)** reports based on excavations at Keeladi points to repositioning the **Sangam age to 800 BCE**.

• **Keeladi** is a **tiny hamlet** located along the **Vaigai River** in south Tamil Nadu.

• **Gold** ornaments, **copper** articles, semi-precious stones, spindle whorls, **terracotta** seals and earthen vessels were discovered at the site over the years.

• Evidence of a once flourished **dyeing industry** and a **glass bead industry** were also found.

• Keeladi could provide crucial evidence for understanding the missing links of the **Iron Age** (12th century BCE to 6th century BCE) to the **Early Historic Period** (6th century BCE to 4th century BCE) and subsequent cultural developments.

• The **Panch Vani text** of the **Dadupanthi tradition within Hinduism** also includes numerous poems of Ravidas.

• He is considered as the **spiritual Guru of Meera Bai**.

Sant Sevalal Maharaj

» The Central Government in February 2023 kick-started the year long commemoration of the **284th birth anniversary of Sant Sevalal Maharaj**.

• Born on **15th February 1739** in **Karnataka**, Sant Sevalal Maharaj is considered as a **social reformer and spiritual teacher of the Banjara community**.

• He worked tirelessly to **dispel and eradicate myths and superstitions** prevalent in the tribal communities including Banjaras and brought about reforms in their way of life.

• He is believed to have **mastery in Ayurveda and naturopathy**.

Guru Ravidas (1267–1335)

» **Guru Ravidas Jayanti** is commemorated on **Magh Purnima**, the day of the full moon in the **month of Magh** (Jan-Feb), according to the Hindu **Lunar calendar**.

• Ravidas or Raidas was a **bhakti-poet of North India**.

• It is believed that he was born in Varanasi in a cobbler's family.

• He was a **disciple of Sant Kabir** and the **founder of the Ravidassia religion**.

• He gained prominence due to his **belief in one God** and his **unbiased religious poems**.

• Ravidas dedicated his whole life to the **abolition of the caste system** and openly despised the notion of a Brahmanical society.

• The Sikh scripture **Guru Granth Sahib** contains **41 of his devotional songs and poems**.

Maharishi Dayanand Saraswati

» Prime Minister inaugurated the year long celebrations commemorating **200th birth anniversary of Maharishi Dayanand saraswati**.

• Dayanand Saraswati was a **philosopher, social leader and founder of the Arya Samaj,** a reform movement of Vedic dharma.

• He was born on **12th February 1824** in Tankara, Gujarat.

Contributions:

• The first **Arya Samaj** unit was formally set up by him at **Mumbai in 1875**.

• His vision of India included a **classless and casteless society, religiously, socially and nationally united India and an India free from foreign rule**.

• He was the first to give the call for **Swaraj as India for Indians** in **1876**, which was later taken up by Lokmanya Tilak.

• He introduced a **complete overhaul of the education system** and is often considered as one of the visionaries of modern india.

• The **Dayanand Anglo Vedic (DAC) schools** came into existence in 1886 to realise the vision of Dayanand Saraswati.

Khajuraho Temples

» The Archaeological Survey of India (ASI) is probing allegations of certain activities reported from the vicinity (buffer zone) of the ancient Khajuraho Temples - a **UNESCO World Heritage site**.

• They are **a group of Hindu and Jain temples** in **Madhya Pradesh** built by the **Chandela Dynasty during 885 CE and 1000 CE**.

• They are **located along the Vindhyan mountain ranges**.

• The temples, made of **sandstone**, are famous for their **Nagara-style** architectural symbolism and their **erotic sculptures**.

• In 2019, the **Ministry of Tourism** included Khajuraho Temples as one of the sites under the **"Iconic Tourist Sites Initiative"**.

Polity & Governance

Commonwealth Parliamentary Association (CPA)

» The Annual conference of **19th Commonwealth Parliamentary Association (CPA) India Region Zone III** was inaugurated by **Lok Sabha Speaker** (ex-officio chairman) in **Sikkim**.

• CPA was **established in 1911 as the Empire Parliamentary Association** to strengthen democracy and good governance under the **Commonwealth** (an **association of 56 member states** which were former territories of British India).

• It is divided into **nine regions**: Africa; Asia; Australia; British Islands and Mediterranean; Canada; Caribbean, Americas and Atlantic; India; Pacific; and South-East Asia.
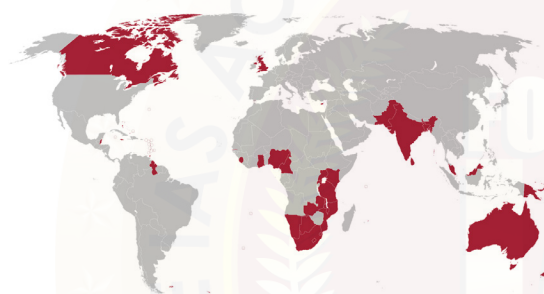
Commonwealth Parliamentary Association (CPA) India Region

• **After Africa**, **India** has the **largest members of branches of CPA**.

• **CPA India Region** is **divided into 4 zones** consisting of **31 legislatures**.

The National Commission for Safai Karamcharis (NCSK)

» The **National Commission for Safai Karamcharis** (NCSK), after being headless for close to a year, has finally got a chairperson, vice-chairperson and member on board.

• It was **constituted in 1994** as a **statutory body** under the The National Commission for Safai Karamcharis (NCSK)Act, 1993.

• With the lapsing of the **"The National Commission for Safai Karamcharis Act, 1993" in 2004**, it is now a **Non-Statutory body** of the **Ministry of Social Justice and Empowerment**. Its tenure is extended from time to time through Government Resolutions, now giving mandate till 2025.

• **Composition: Chairman** (in the rank and status of the Union Minister of State) and **four members**, including a lady member.

• **Major functions** of the commission include monitoring the implementation of **The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act 2013**, investigating the conditions of Safai Karamcharis, etc.

Vibrant Village Programme

» The Union Cabinet approved the **allocation of Rs 4,800 crore** for the Centre's **Vibrant Villages Programme (VVP)** for the Financial Years 2022-23 to 2025-26.

• It is a **centrally sponsored scheme** launched by the **Ministry of Home Affairs** for implementation over **financial years 2022-23 to 2025-26**.

• The programme will provide funds for development of essential infrastructure and creation of livelihood opportunities in **19 Districts and 46 Border blocks of 4 states and 1 UT** along the northern land border of the country - **Arunachal Pradesh, Sikkim, Uttarakhand, Himachal Pradesh and UT of Ladakh**.

• The improvements in quality of life will help in **reversing the outmigration** from these villages and **ensuring security** of the border regions.

Doctrine of Necessity

» Recently, the **Competition Commission of India (CCI)** Invoked the "Doctrine of Necessity".

• Doctrine of Necessity is a principle of constitutional law, where in an emergency or a special circumstance, **an entity may act legally in a manner which in other circumstances may be deemed to be illegal**.

• **Here, the CCI despite pending vacancies for a quorum**, cleared six deals involving mergers & acquisitions and investment proposals.

Member of Parliament Local Area Development Scheme (MPLADS)

» Recently, guidelines for MPLADS were revised and now Members of Parliament (MPs) can recommend the developmental works as per the **changing needs of the community**. Earlier, MPLADs funds could be spent only on **durable assets**.

• It is a **Central Sector Scheme** with the objective to enable the **MPs to recommend works** of developmental nature to meet local needs.

• Each year, MPs receive **Rs. 5 crore** in **two instalments** of Rs. 2.5 crore each. Funds under MPLADS are **non-lapsable** and the interest acquired from this fund will be diverted to the **Consolidated Fund Of India**.

• **Lok Sabha MPs** can recommend the **district authorities projects** in their Lok Sabha constituencies, while **Rajya Sabha MPs** can spend it in the state that has elected them to the House.

• **Nominated Members** of the Rajya Sabha can recommend works **anywhere in the country**.

• The district authority must inspect **at least 10%** of all works under implementation every year.

• Initially the scheme was administered by the Ministry of Rural Development.

• It was transferred to the **Ministry of Statistics and Programme Implimentaton(MOSPI)** in October 1994.

• **15%** of the fund must be used for development in areas inhabited by **Scheduled Caste** population and 7.5% for areas inhabited by **Scheduled Tribe** population.

Aadhaar Mitra

» Aadhaar issuing body UIDAI (Unique Identification Authority of India) has launched a new **Artificial Learning/ Machine Learning (AI/ML) based chatbot** called Aadhaar Mitra.

• **AI-powered chatbot** will let individuals type their queries regarding their enrolment status, Aadhaar PVC card status, and get information on enrolment centres

• Residents can also **register and track their complaints**.

Quality Council of India (QCI)

» Recently, India was ranked **5th amongst 184 countries**, in the latest **Global Quality Infrastructure Index (GQII)** 2021.

• QCI has been established to create a mechanism for **independent third party assessment of products, services and processes**.

• It was set up in **1997** as an autonomous body attached to the **Department of Industrial Policy & Promotion, Ministry of Commerce and Industry**.

• It is a **non-profit organisation** registered under the **Societies Registration Act of 1860**.

• It is crucial to the **propagation, adoption, and observance of quality standards at the national level** in all significant areas of activity

• The **Prime Minister appoints** the **Chairman of QCI**.

Right to be Forgotten

» A doctor approached Delhi High Court for the enforcement of his right to be forgotten, which includes the removal of news articles and other incriminating content related to his wrongful arrest in response to a fabricated FIR against him.

• The **Right to be Forgotten** is the **right to remove or erase content** online so that it is not accessible to the public at large.

• It **empowers an individual to have information in the form of news, videos or photographs deleted from internet** records, so that it doesn't show up through search engines.

• **Section 43A of the Information Technology Act 2000** provides for safeguards against certain breaches in relation to data from computer systems.

• In **Puttaswamy vs Union of India case 2017**, the **Right to Privacy** was declared a **fundamental right** and it was noted that the **Right to be Forgotten is a part of the broader right to privacy**.

• Interestingly, the **Personal Data Protection Act** does not mention the Right to be Forgotten, thus requiring **citizens to approach the courts based on Right to Privacy.**

Judicial Majoritarianism

» In recent Supreme Court judgements like the demonetisation case ruled by a 4:1 majority, the minority judgement or dissenting arguments have come in for praise. This has brought to focus the issue of **judicial majoritarianism which is the blind acceptance of numerical majorities in judicial decision making**.

• Under **Article 145**, SC judgements have to be with the concurrence of a majority of the judges. Also, **constitutional cases** are to be handled by **at least a 5-member bench**.

• In judicial majoritarianism, it is possible that the **majority judges may fall into either methodological fallacies and errors** or be limited by their judicial hunch (intuition or gut feeling).

• In such cases, a **meritorious minority decision**, irrespective of the impeccability of its reasoning, may **receive little weightage** in terms of its outcomes.

E-Waste (Management) Second Amendment Rules 2023

» The **Ministry of Environment, Forest and Climate Change (MoEFCC)** has introduced the **E-Waste (Management) Second Amendment Rules 2023**.

Key features:

• These amendment rules aimed to **modify the existing E-Waste (Management) Rules of 2022**.

• **All producers must furnish detailed information** about the constituents of their equipment, their components, consumables, parts or spares.

• They must also declare their **compliance with the reduction of hazardous substances provisions**, as and when requested by the **Central Pollution Control Board (CPCB)**.

• It introduced two new substances - **Cadmium** in solar panels, cells, **photovoltaic cells and Lead in medical devices** - to the **list of exemptions in Schedule II of the E-Waste (Management) Rules 2022**.

Swayam

» **Swayam Massive Open Online Courses (MOOC)** has outperformed other e-learning platforms as they have **crossed 3 crore enrollments**.

• SWAYAM stands for **Study Webs of Active-Learning for Young Aspiring Minds**, it was **launched in 2017** to achieve the educational principles of **access, equity** and **quality** and to provide one integrated platform and portal for online courses.

• The **Ministry of Education** is the **nodal agency** for the program where students can enroll for various courses.

• Students with 9th class to PG qualifications are **eligible**. From 2019, students from **Afghanistan** could also enroll under the scheme.

• The initiative is **free of cost** other than a nominal cost for exams.

Amendments to Organ Transplant Rules

» India has made important changes in organ donation and transplant rules.

Recent Changes

• **No age bar:** Now an individual of any age can register for organ transplant including those **beyond 65 years**.

• **Domicile factors:** **No more domicile criteria** for registering as a recipient.

• **Registration fees:** The State was requested to **refrain from charging any registration fees** in order to remove the hurdles.

Pradhan Mantri Particularly Vulnerable Tribal Groups (PVTG) Development Mission

» The **Finance Minister** announced the Pradhan Mantri PVTG Development Mission as part of the **Union Budget 2023-24**.

• The mission will be launched as part of **'Reaching the Last Mile'**, one of the seven **Saptarshi priorities** enlisted in the Budget.

• It is aimed to **improve socio-economic conditions of the particularly vulnerable**

tribal groups (PVTGs) by saturating PVTG families and habitations with basic facilities and sustainable livelihood opportunities.

- An allocation of **Rs.15000 crore** will be made for this mission **in the next 3 years** under the **Development Action Plan for the Scheduled Tribes**.

Who are PVTGs?

- PVTGs are **more vulnerable among the tribal groups** who are in need of greater support and development, **first identified** by the **Debar Commission in 1973**.

- **75 tribal groups** in **18 States and 1 Union Territory** have been identified and categorised as PVTGs with largest being the **Sahariyas** and smallest being **Sentinels** and **Andamanese**.

Inclusive development

Reaching the last mile

Financial Sector

Saptarshi Priorities (7 priorities) enlisted in the 2023-24 Budget

Unleashing the potential

Green growth

Youth power

Infrastructure and Investment

Economy

South India's 1st Industrial Corridor Project

- The Prime Minister laid the foundation stone of **South India's 1st Industrial Corridor Project at Tumakuru** under the **Chennai-Bengaluru Industrial Corridor (CBIC)**.

- The CBIC project includes the development of industrial townships like **Krishnapatnam** (Andhra Pradesh), **Tumakuru** (Karnataka), and **Ponneri** (Tamil Nadu).

- The **National Industrial Corridor Development and Implementation Trust** (NICDIT) and the **Karnataka Industrial Area Development Board** (KIADB) are working together to develop the **industrial township**.

- The project will be a **mixed-use development** with a combination of industrial, institutional, residential, commercial, and green spaces, making it a self-sustainable and resilient smart industrial city.

- Government of India, is developing **11 Industrial Corridor projects** under the **National Industrial Corridor Programme**.
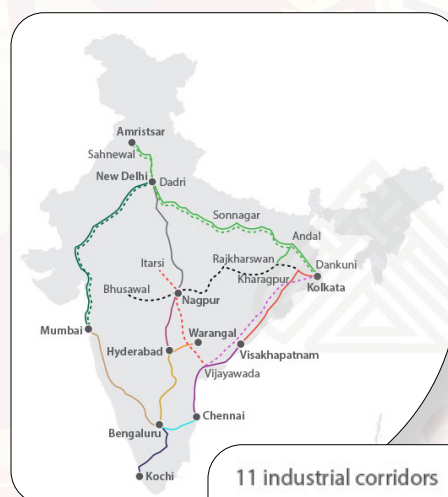
11 industrial corridors

- Delhi-Mumbai Industrial Corridor (DMIC)
- Amristsar-Kolkata Industrial Corridor (AKIC)
- Chennai-Bengaluru Industrial Corridor (CBIC)
- Vizag-Chennai Industrial Corridor (VCIC)
- East Coast Economic Corridor (ECEC)
- Hyderabad-Nagpur Industrial Corridor (HNIC)
- Hyderabad-Warangal Industrial Corridor (HWIC)
- Hyderabad-Bengaluru Industrial Corridor (HBIC)
- Bengaluru-Mumbai Industrial Corridor (BMIC)
- Extension of CBIC to Kochi via Coimbatore
- Delhi-Nagpur Industrial Corridor (DNIC)

Startup India Seed Fund Scheme

» The Ministry of Commerce and Industry has shared that under **Startup India Seed Fund Scheme (SISFS)**, 477.25 crore has been approved to 133 incubators of which Rs. 211.63 crore has been disbursed.

• The SISFS was **launched in 2016** under the **Ministry of Commerce and Industry** with the aim to support a strong ecosystem for the growth of startup businesses.

• The other flagship schemes under **Startup India** initiative - **Fund of Funds for Startups (FFS) and Credit Guarantee Scheme for Startups (CGSS)** also extend support to startups at various stages of their business cycle.

Sagar Parikrama

» **Sagar Parikrama Phase III** was launched from Hazira Port, Surat, by the **Ministry of Fisheries, Animal Husbandry, and Dairying**.

• **Sagar Parikrama** is a **program** intended to reach out to the **fisherfolk community** across the **entire coastal belt of the country** and to understand their issues, experiences and aspirations.

• **Phase I and Phase II of Sagar Parikrama** were also launched from **Gujarat** in March 2022 and September 2022 respectively.

• It is celebrated through a **pre-decided sea route** from Gujarat, Diu, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha, West Bengal, Andaman & Nicobar, and Lakshadweep Islands.

Green Bonds

» **Securities and Exchange Board of India (SEBI)** has issued the operation guidelines for the issuers of green bonds to **avoid greenwashing**.

• **Green bonds** are **debt instruments** issued by any sovereign entity, inter-governmental groups or alliances and corporations. The proceeds of the bonds are **utilised for projects classified as environmentally sustainable**.

• **Union Budget 2022-23** had earlier made an announcement to **issue Sovereign Green Bonds (SGB)** by Government of India.

• **Greenwashing** refers to making false, misleading, unsubstantiated or otherwise incomplete claims about the sustainability of a project, service or business operation.

• The **Ministry of Finance**, in 2022, constituted a **Green Finance Working Committee (GFWC) for selection and evaluation of projects and other works related to the SGB framework**.

• GFWC will **meet at least twice a year** to support the Ministry of Finance with members from relevant ministries and is **chaired by** the **Chief Economic Advisor**.

Vostro Account & Nostro Account

» 20 Russian banks opened **Special Rupee Vostro Accounts (SRVA)** with partner banks in India.

• **Vostro and Nostro** are terms that refer to the same account but from different perspectives.

• **Vostro** means **"your account in our books"** and **Nostro** means **"our account in your books"**.

• When a **foreign bank** (eg: Russian Rosbank) has **an account with a domestic bank** (eg: State Bank of India) in **domestic currency** (here, Indian Rupee), the **account is called Nostro with respect to foreign bank** and is called **Vostro with respect to the domestic bank**.

Municipal Bonds and Municipal Bond Index

» **NSE Indices Ltd**, a subsidiary of **National Stock Exchange (NSE)** launched the **country's first ever municipal bond index**.

• The **Nifty India Municipal Bond Index** tracks the **performance of municipal bonds across maturities**.

• A **municipal bond** is a **debt instrument** issued by **municipal corporations or associated bodies** in India to **finance socio-economic development projects**.

• Presently the index has **28 municipal bonds issued by 10 issuers** all having credit rating in the **AA category** (bonds with very strong capacity to meet its financial commitments).

• **Interests** from **Municipal bonds** are **exempted from tax** in India.

• **Bengaluru Municipal Corporation**, in **1997**, floated **India's first municipal bonds**.

Urban Infrastructure Development Fund (UIDF)

» Union Budget 2023-24 has announced the setting up of the **Urban Infrastructure Development Fund (UIDF)** through use of **Priority Sector Lending (PSL) shortfall**.

• UIDF aims to **supplement efforts of the State Governments/UTs** for urban infrastructure development work implemented through Public/State Agencies, Municipal Corporations, Urban Local Bodies in Tier 2 and Tier 3 cities by providing a stable and predictable source of financing.

• The Fund would be **operationalised broadly along** the lines of the **existing Rural Infrastructure Development Fund** (a fund maintained by the **National Bank for Agriculture and Rural Development** since 1995 for **financing rural infrastructure projects**).

Millet International Initiative for Research and Awareness (MIIRA)

» India has proposed a **MIIRA**. Its draft proposal was placed during the first **Agriculture Deputies Meeting** under the **Agriculture Working Group (AWG)** of **G20**.

• MIIRA will set up a **web platform** to connect researchers and hold international research conferences. It also plans to **raise awareness regarding millets**.

• **India will contribute the seed money** for its take off, while each G20 member will later have to contribute to its budget in the form of membership fee.

• The initiative will be in line with the **International Year of Millets (2023)** and the **MIIRA Secretariat** will be in **New Delhi**.

National Small Savings Fund (NSSF)

» In the **Union Budget 2023-24**, the Finance Minister revised some of the small savings schemes.

• **Small savings schemes** are designed to provide safe and attractive investment options to the public and at the same time to mobilise resources for development.

• **Established in 1999** within the **Public Accounts of India**, National Small Savings Fund **combines the collections obtained from different small savings schemes** and **withdrawals under these schemes by depositors are made from it**.

• It is administered by the **Ministry of Finance** under the **National Small Savings Fund (Custody and Investment) Rules 2001**.

UPI–PayNow Integration

» **India's Unified Payments Interface (UPI)** and **Singapore's PayNow** have been integrated to enable faster remittances between the two countries.

• **UPI** is India's mobile based fast payment system, **launched in 2016** by the **National Payments Corporation of India (NPCI)**, which facilitates customers to make round-the-clock payments instantly using a **Virtual Payment Address (VPA)** created by the customer.

• UPI **supports both Person-to-Person (P2P)** and **Person-to-Merchant (P2M) payments**.

• **PayNow** enables **peer-to-peer funds transfer service**, available to retail customers through participating banks and **Non-Bank Financial Institutions (NFI) in Singapore**.

• The UPI-PayNow linkage closely aligns with the **G20's financial inclusion priorities**.

• **Singapore** has become the **first country** with which **cross-border P2P payment facilities have been launched**.

Open Network for Digital Commerce (ONDC)

» E-commerce giant Amazon recently joined the Indian government's ONDC initiative.

• ONDC aims at transforming the **e-commerce market** in India by shifting from a **platform-centric model** to an **open-network model**.

• ONDC serves as a **platform connecting buyers and sellers** for **online shopping**.

• It works as a **network of interconnected** e-marketplaces, where sellers, including brands, can list and sell their products directly to customers **without any middlemen or intermediaries**.

• It was launched under the **Department for Promotion of Industry and Internal Trade (DPIIT)** by the **Ministry of Commerce** in 2022.

Follow on Public Offer (FPO)

» Recently, Adani Enterprises cancelled its Rs 20,000 crore follow-on public offer.

• FPO is a process wherein an entity **already listed on a stock exchange issues new shares to existing investors or shareholders**.

• FPOs are also known as **secondary offerings**.

• Companies may use an FPO to reduce debt or raise more capital.

Types of FPOs include

Dilutive FPO

The companies issue additional shares, increasing the share float in the market as a result the ownership percentage for current shareholders decreases.

Non-dilutive FPO

The companies does not issue new shares but, the company's existing shareholders sell their shares to the public.

At-the-market offering

It is an offering of securities into an existing trading market at a price or prices related to the then-market price of the securities.

• **Initial public offering (IPO)** is a process wherein a private or a government entity **first sells shares of stock to the public**.

Social Stock Exchange (SSE)

» SSE is a platform that allows investors to invest in select **social enterprises or social initiatives** that are working for society.

• SSE would function as a **separate segment** within the existing stock exchange and help social enterprises **raise funds from the public** through its mechanism.

• Any **non-profit organisation (NPO)** or **For-Profit Social Enterprise (FPSEs)** having **social intent and impact** as their primary goal are eligible to be registered or listed on the SSE.

• The fund-raising is proposed through several instruments such as **zero-coupon-zero-principal bonds, social venture funds and mutual funds**.

Zero Coupon Zero Principal

• Zero Coupon Zero Principal Instruments shall be issued only by a **non-profit organisation** registered on a **Social Stock Exchange** and shall have a specific tenure.

• Zero Coupon Zero Principal Instruments shall be **issued without any coupon and no principal amount** shall be payable on its maturity.

QR–code Based Coin Vending Machine (QCVM)

» **RBI (Reserve Bank of India)** recently launched a project to assess the functioning of a **QR-code based Coin Vending Machine (QCVM)**.

• It was launched as a pilot project in collaboration with **Axis Bank, Bank of Baroda, ICICI Bank, State Bank of India, and Federal Bank**.

• Coins can be withdrawn using the **Unified Payments Interface (UPI)** QR code in designated vending machines.

• Coins of denomination of **Re 1 - Rs 20** will be made available in QCVM.

• QCVMs central idea is to **ease the accessibility to coins**.

Reverse Flipping

» The **Economic Survey of 2022-23** recently stated that **Indian start-up companies** are looking at 'reverse flipping'.

• **Flipping** is the process of **transferring entire ownership** of an Indian company to an overseas entity.

• It is generally accompanied by a transfer of all **intellectual property** and **data** owned by an Indian company.

• Reverse Flipping is the **process of shifting the domicile of those companies back to India who flipped earlier**.

• Companies reverse flip because of easy access to capital from private equity and venture capital.

Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM KUSUM)

» Government has extended the PM KUSUM till **March 2026**.

- PM-KUSUM was launched by the **Ministry of New and Renewable Energy (MNRE)** in **2019** to boost solar capacity and provide **energy security** to Indian farmers.

- It has a target of **30,800 MW in rural areas**.

The scheme has 3 components:

- <u>Component 1</u> focuses on the installation of **10,000 MW** of solar capacity by setting up **small power plants of capacity of 2 MW**.

- <u>Component 2</u> lays emphasis on the installation of **20 lakh standalone. solar-powered agricultural pumps**. The government will support individual farmers in setting up solar pumps of a capacity up to 7.5 HP.

- Under <u>component 3</u>, the government will work for the **solarization** of **15 lakh grid-connected agriculture pumps**.

- The scheme also seeks to **increase the income of farmers** by allowing them to **sell surplus solar power to the grid**.

Litigation Financing

» Many Indian start-ups have shown interest in the field of **litigation financing**.

- Litigation financing is supposed to **help corporations to focus on their business** while fighting court cases. Here, **third-party entities** provide funding to help companies or individuals pursue legal tussles.

- It is often done in **return for a share** of profit or financial recovery from their court case.

There are two types of litigation financing – recourse and non-recourse

- Under <u>recourse</u>, a **short term loan** is given to a company going through insolvency to **remain operational during the litigation period**.

- Under <u>non-recourse</u> – The funding is provided on the guarantee that a portion of the **legal settlement would be paid back if the litigation is won**.

Khanan Prahari

- The **Ministry of Coal** has launched Khanan Prahari, a mobile app for **reporting unauthorised coal mining activities**.

- It allows citizens to report incidents of illegal coal mining through **geo-tagged photographs and textual information**.

- The user's identity is kept **confidential**, ensuring **privacy and security**.

- Users can also **track the status** of their complaints.

Misson Shakti

» The Supreme Court has sought more information from the government about **Mission Shakti for women**. Concerns have been raised about a possible shortage of protection officers to handle domestic violence cases.

- Mission Shakti is a scheme of the **Ministry of Women and Child Development** **(2020)** aimed at strengthening interventions for **women safety, security and empowerment**.

- It has two sub-schemes called **'Sambal'** with focus on **safety and security of women** and **'Samarthya'** with focus on **empowerment of women**.

Perpetual Funds

» The **Securities and Exchange Board of India (SEBI)** is planning on allowing **Permanent Capital Vehicles (PCVs)** also called as **evergreen or perpetual funds** into India.

- Perpetual fund **does not** have **any maturity period** unlike traditional funds.

- These funds are aimed at **long-term investors** such as **pension funds and insurance firms** which do not want the return of capital but regular income.
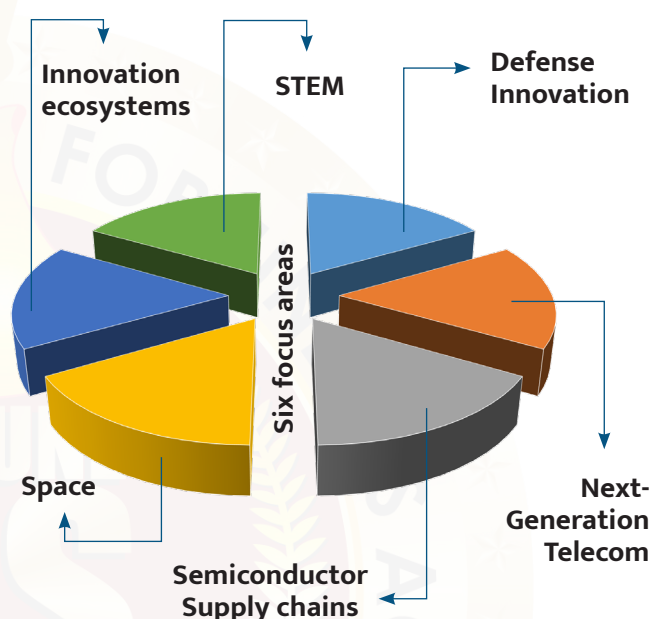
International Relations

Paris Club

» The Paris Club will **provide financial assurances** to the **International Monetary Fund (IMF)** on **Sri Lanka's debt**.

• Paris Club is an **informal group of creditors**, which dates back to **1956** when Argentina agreed to meet its public creditors in Paris.

• It is a **forum where official creditors** meet to **solve payment difficulties** faced by **debtor countries**.

• There are **currently 22 permanent members**, who are also **part of the Organisation for Economic Co-operation and Development (OECD)**.

• **India** is **not a member** of the **Paris Club**.

International Seabed Authority (ISA)

» The **International Seabed Authority (ISA)** and **Ministry of Earth Sciences** exchanged **Polymetallic Nodules (PMN) exploration extension contract**.

• **International Seabed Authority (ISA)** is an **autonomous international organisation** established under the **United Nations Convention on the Law of the Sea (UNCLOS) 1982**.

• It has the mandate to ensure the **effective protection of the maritime environment** from harmful effects that may arise from deep seabed related activities.

• It has its headquarters in **Jamaica** and regulates the **exploration of polymetallic nodules**.

• Polymetallic nodules, also called **manganese nodules** are **mineral concretions** on the sea bottom formed of **concentric layers of iron and manganese hydroxides** around a core.

• ISA and the Ministry of Earth Sciences signed the **initial PMN exploration contract for 15 years in March 2002** and was **extended for a 5 year period in 2017**.

Initiative on Critical and Emerging Technologies (iCET)

» India's NSA Ajit Doval and the U.S. NSA Jake Sullivan officially launched the United States-India initiative on **Critical and Emerging Technologies (iCET)**.

• iCET was **launched by India and USA** in **2022** to **elevate and expand strategic technology partnership** and **defense industrial cooperation** between 2 countries.

• The initiative will be spearheaded by the **National Security Council Secretariat** in **India** and the **US National Security Council**.

Six focus areas: Innovation ecosystems, STEM, Defense Innovation, Next-Generation Telecom, Semiconductor Supply chains, Space

UN Commission for Social Development (CSocD)

» The **UN Commission for Social Development (CSocD)** has elected **India's Permanent Representative** to the United Nations, **Ruchira Kamboj as its chair** for the **62nd session**.

• The UN Commission for Social Development (CSocD) is a **functional commission** of the **Economic and Social Council (ECOSOC)** of the UN. Formerly known as the **Social Commission** when **established in 1946**.

• It **advises the ECOSOC and governments** on a wide range of **social policy issues** and on the **social perspective of development**.

• Currently it has **46 members** who are **elected by ECOSOC** based on equitable **geographical distribution for 4 year term**.

Operation Dost

» Operation Dost was the **search and rescue operation** initiated by **India to aid Syria** and **Turkey**, after the **earthquake** devastated both countries.

• India dispatched three teams of the **National Disaster Response Force** along with a field hospital, supplies, medications, and equipment.

• This operation was part of India's **Humanitarian Assistance and Disaster Relief (HADR) diplomacy**, wherein India extends help to other nations in times of **natural disasters or conflicts**.

Trade and Technology Council (TTC)

» **India and the European Union** announced the **establishment** of the **3 working groups** under the **India-EU Trade and Technology Council** and their terms of reference.

• The **India-EU TTC** is the **second bilateral forum for the EU** (first one with the US) and the **first one established with any partner for India**.

• It aimed at **creating a high level coordination platform** to tackle strategic challenges at the nexus of trade, trusted technology and security.

• **Ministerial meetings** of the TTC will be held **annually**.

TTC consists of **3 working groups (WGs)** that report on roadmaps for future cooperation:

➡ WG on strategic technologies, digital governance and digital connectivity.

➡ WG on green and clean energy technologies.

➡ WG on trade, investment and resilient value chains.

• The TTC will not only offer **political guidance** but also provide the necessary **structure to effectively implement political decisions**, **coordinate technical endeavours** and ensure **accountability at the political level**.

Dar es Salaam Declaration

» The Dar es Salaam Declaration was announced at the first ministerial meeting of the **Global Alliance to End AIDS in Children (GAEAC)** by **2023 at Dar es Salaam, Tanzania**.

• GAEAC was launched at the **24th International AIDS Conference** at **Montreal, Canada** in 2022 by **UNAIDS, UNICEF, WHO** along with other civil society partners.

• **Twelve African countries** had joined the alliance in the first phase: Angola, Cameroon, Côte d'Ivoire, the Democratic Republic of the Congo (DRC), Kenya, Mozambique, Nigeria, South Africa, Uganda, the United Republic of Tanzania, Zambia, and Zimbabwe.

• There has been a **wide disparity in providing Antiretroviral treatments (ART)**. While 76% of adults overall were receiving antiretrovirals in 2021, only 52% of children (0-14 years) were accessing ART according to UNAIDS Global AIDS Update 2022.

Zero Draft of Global Pandemic Treaty

» The **World Health Organisation (WHO)** published a **Zero Draft of the Pandemic Treaty**, aiming to bring in global and national level pandemic preparedness.

• The treaty aimed at **strengthening pandemic prevention and responses** and is expected to be ready in **May 2024**.

• It would cover issues such as **sharing of data** and **genome sequencing** of emerging viruses and of any potential vaccines and drugs derived from research.

Principal components of the Zero Draft

• It calls for **increased global coordination and cooperation** in the preparation for and response to pandemics.

• It emphasises the **need to strengthen health systems in all countries**.

• It calls for **improved access to essential health technologies** such as vaccines, diagnostics and treatments.

• In **addressing gender disparities** in the healthcare workforce, the draft aims to ensure meaningful representation, engagement, participation and empowerment of all health care workers.

New START treaty

»	President Vladimir Putin has said Russia is suspending participation in the **New START nuclear arms reduction treaty** with the United States after accusing the West of being directly involved in attempts to attack its strategic air bases.

•	**START** (Strategic Arms Reduction Treaty) is the **last remaining nuclear arms control pact** between **Russia** and the **US**. It caps the number of **nuclear warheads** maintained by both the countries to **1550**.

•	The treaty, which caps the number of strategic nuclear warheads that the US and Russia can deploy, was signed in **2010**.

•	Its duration was for ten years that is **till 2021**, but it was **extended by five more years till 2026**.

Various treaties between Russia & USA
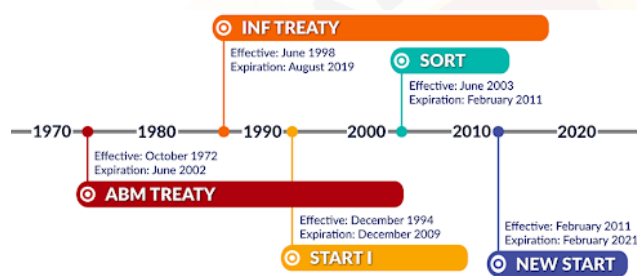
Global Biofuel Alliance

»	**India, Brazil** and the **US**, as **leading biofuel producers and consumers in the world**, will work together to develop a **Global Biofuels Alliance (GBA)**.

•	It was officially launched by India in **September 2023**, along with the leaders of **Singapore, Bangladesh, Italy, USA, Brazil, Argentina, Mauritius and UAE**.

•	It's an **India-led initiative** to develop an alliance of governments, international organisations and Industry to **facilitate the adoption of biofuels**.

•	It aims to accelerate the global adoption of biofuels by **spearheading technological innovations**, establishing robust standards and certifications, and **facilitating global biofuel trade**.

•	GBA will serve as a **centralised knowledge repository** and an expert hub.

Chicago Convention

»	The union cabinet has approved the ratification of three Protocols relating to amendments in the convention on **International Civil Aviation** or **Chicago Convention** of **1944**.

•	The Convention establishes rules of a**irspace, aircraft registration and safety, security, and sustainability**, and the details about the rights of the signatories in relation to air travel. The Convention also **contains taxation provisions**.

•	The convention also led to the establishment of the **International Civil Aviation Organization (ICAO)**, which is a specialised agency of the United Nations charged with **coordination of international air travel**.

•	The Convention has 193 state parties. **India ratified the Convention in 1947**.

Jaipur Declaration

»	18th **World Security Congress**, jointly organised by **Railway Protection Force (RPF) and the Union International Des Chemins (UIC) or International Union of Railways**, concluded with the adoption of the **Jaipur Declaration**.

•	The declaration outlines an actionable agenda for UIC to explore innovative approaches that can help **global railway organisations** achieve their **long-term goal of safety and security**.

•	The declaration also highlighted the commitment of UIC to work towards providing a more **safe and secure rail network across the globe**, by also fully activating the Asia-Pacific, Latin America and African regional assemblies by **2025**.

Environment & Ecology

River Cities Alliance

» **DHARA**, the annual meet of the **River Cities Alliance** members, was organised by the **National Mission for Clean Ganga (NMCG)** in association with the National Institute of Urban Affairs (NIUA) in **Pune**.

• **Driving Holistic Action for Urban Rivers (DHARA)** is organised by the **National Mission for Clean Ganga (NMCG)** in collaboration with the **National Institute of Urban Affairs (NIUA)**.

• River Cities Alliance is a **dedicated platform for river cities** launched in **2021** to discuss and exchange information for **sustainable management of urban rivers**.

• It symbolises the successful partnership of the **Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs**.

• The Alliance is **open to all river cities** of India. Currently it has **95 cities across India as members**.

Forever Chemicals

» An Oxford University-led study has found alarming levels of toxic **"forever chemicals"** in the ice around Svalbard, Norway which pose a risk to the region's wildlife.

• "Forever chemicals" is a term for a group of chemicals called **PFAS (per-and polyfluorinated alkyl substances)**.

• They are (class of 12,000 compounds) that **do not break down naturally** and are resistant to chemicals, stains or heat.

• They are used to **manufacture consumer products** like make-up, non-stick pans, clothing etc.

• **PFAS exposure** can cause **damage to health**, both in **humans** and **animals**.

International Marine Protected Areas Congress (IMPAC5)

» The **5th International Marine Protected Areas Congress (IMPAC5)** was held in **Canada**.

• IMPAC congresses are a collaborative effort between the **International Union for Conservation of Nature (IUCN)** and the chosen **host country**.

• Previously, **IUCN has hosted 4 events** with countries like **Australia(2005), USA(2009), France(2013)** and **Chile(2017)**.

• It provides a platform to address the **issue of funding gap** of **Marine Protected Areas (MPAs)**,latest **scientific knowledge, best practices** and **challenges** in the management of MPAs.

First Synchronised Vulture Survey

» The **Kerala Forest and Wildlife Department** along with its counterparts in **Tamil Nadu** and **Karnataka** organised the **first synchronised vulture survey** in selected regions of the **Western Ghats**.

• The survey was carried out in the **Mudumalai Tiger Reserve, Wayanad Wildlife Sanctuary, Bandipur Tiger Reserve and Nagerhole Tiger Reserve**.

• As many as **246 vultures were spotted** including White-rumped vultures, Long billed vultures, Red headed vultures, Egyptian vultures, Himalayan Griffon and Cinereous vultures.

• Vultures are one of the 22 species of **large carrion eating birds** that live mostly in the **tropics and subtropics**.

• India is home to **9 species of vulture** namely the **Oriental white-backed (CR), Long-billed (CR), Slender billed (CR), Himalayan, Red-headed (CR), Egyptian (EN), Bearded (NT), Cinereous (NT) and the Eurasian Griffon (LC)**.

• **Diclofenac Poisoning** is one of the major reason of its **high mortality rate**.

Save Wetlands Campaign

» The **Ministry of Environment, Forest and Climate Change** launched the Save Wetlands Campaign in Goa.

• The campaign is structured on a **whole of society approach** for **wetlands conservation**, enabling affirmative actions for wetlands conservation at all levels of the society and involving all strata of society.

Activities involved:

➥ **Sensitising people of the value of wetlands.**

➥ **Increasing the coverage of wetlands.**

➥ **Building citizen partnership for wetlands conservation**.

• **World Wetlands Day** is observed on **2nd February** every year to commemorate the signing of the **Ramsar Convention on Wetlands of International Importance** in **1971**.

Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) Scheme.

» The MISHTI scheme was announced in the **Union Budget 2023-24**.

• It is an initiative for **mangrove plantation** along the **coastline and on salt pan lands**.

• The scheme is planned to be implemented for a **period of five years** from **2023-2024 to 2027-2028**.

• The sharing of best practices on plantation techniques, conservation measures, management practices and resources mobilisation through **Public Private Partnership** are objectives of the scheme.

• MISHTI is to be implemented by **converging CAMPA Fund, MGNREGS, and other sources**.

• It will contribute to India's efforts to **'Mangrove Alliance for Climate (MAC)'** pioneered by the United States of Emirates (UAE) and Indonesia. It was later joined by India, Sri Lanka, Australia, Japan, and Spain. The alliance was launched during COP27 in Egypt.

Marburg Virus Disease (MVD)

» The **World Health Organisation (WHO)** convened an urgent meeting after central African nation **Equatorial Guinea** confirmed its first outbreak of the highly infectious **Marburg Virus Disease (MVD)**.

• MVD is a severe illness that causes **viral haemorrhagic fever** in humans and non-human primates.

• The virus was first identified after simultaneous outbreaks in Frankfurt and Marburg (both in Germany) in **1967**.

• Marburg virus is transmitted to **primates from fruit bats** which are considered natural hosts of the virus.

• It **spreads among humans** via direct contact with the bodily fluids of infected bats, or contaminated surfaces (Zoonotic Disease).

• Both the Marburg and Ebola viruses belong to the **Filoviridae family**.

• There are **no authorised vaccines** or drugs to treat the Marburg virus disease, where the average **mortality rate is 50%**.

Biodiversity Beyond National Jurisdiction (BBNJ) Treaty

» A **new round of negotiations** on the much-awaited **United Nations High Seas Treaty** for conservation and sustainable use of **marine biological diversity** of areas **beyond national jurisdiction (BBNJ)** began in New York.

• The BBNJ Agreement/UN High Seas Treaty was **formally adopted on 19th June 2023** and **yet to be ratified by 60 nations to become a law**.

• The main objective of the agreement is **conservation and sustainable use of marine biological diversity in the areas beyond national jurisdiction**.

• The Agreement covers **four major elements**: **Area-based management tools,** including **marine protected areas; Environmental impact assessments; Marine genetic resources,** including **the fair and equitable sharing of benefits; Capacity building** and the **transfer of marine technology.**

Aquatic Animal Disease surveillance

» **Ministry of Fisheries** launched phase 2 of **National Surveillance Programme for Aquatic Animal Diseases (NSPAAD)** for three years.

• NSPAAD was first launched in 2013 to strengthen the **farmer-based disease surveillance system** to **identify and report diseases**, while offering solutions.

• **Report Fish Disease (RFD)** app has been developed for the timely reporting of fish diseases.

Soil Organic Carbon

» FAO published its **first Global Assessment of Soil Carbon in Grasslands**.

• The carbon content present in the **organic matter** of soil is referred to as **Soil Organic Carbon (SOC)**.

• It is a **critical component of healthy soil** and is critical in many ecological processes. SOC is primarily derived from **plant decomposition and animal residues**, like leaves, roots, and dead organisms.

• It serves as a significant **indicator of soil health and fertility**.

Ethanol Blending

» Petrol blended with **20% ethanol** was rolled out at selected petrol pumps in 11 states and union territories in February.

• Ethanol blending is defined as a **blended motor fuel containing ethyl alcohol** that is at least 99% pure and is derived from agricultural products and **blended exclusively with petrol**.

• The Government of India introduced blending of ethanol in petrol under the **Ethanol Blended Petrol (EBP) Programme**.

• India aimed at achieving **20% ethanol blending (E20) by 2025-26**.

PM–PRANAM Scheme

» The **PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth (PM-PRANAM)** Scheme was announced in the Union Budget 2023-24.

• The scheme aims to **reduce the use of chemical fertilisers** by incentivising states to **adopt alternative fertilisers**.

• There will be **no separate budget for the scheme** and it will be **financed by the savings of existing fertiliser subsidies** under schemes run by the **Department of Fertilisers, Ministry of Chemicals and Fertilisers**.

• The **reduction in urea consumption** by a state will be compared to its average consumption of urea over the previous 3 years. This calculation will determine the **eligibility for subsidy savings and grants**.

SECURE Himalaya Project

» The Biodiversity Management Committee, the panchayat of Chumathang village, along with SECURE Himalaya Project recently resolved to declare **Yaya Tso** as **Ladakh's first Biodiversity Heritage Site (BHS)** under the Biological Diversity Act.

• The **Union Environment ministry** in association with the **United Nations Development Programme (UNDP)** has been implementing the 'Secure Himalaya' project to conserve the habitats of snow leopards.

• 'Secure Himalaya' project is a **landscape based approach** for the conservation and protection of the **high-altitude ecosystems** and is **funded by** the **Global Environment Facility (GEF)**.

• It was launched in **2017**, it supports the government's efforts for conservation of snow leopard and addresses key issues of habitat degradation, threatened livelihoods and illegal trade in wildlife.

• The project covers the high Himalayan Ecosystem spread over **Uttarakhand, Sikkim, Jammu & Kashmir and Himachal Pradesh**.

Amrit Dharohar

» In the annual budget speech, the Finance Minister announced **Amrit Dharohar** towards **conservation of wetlands**.

• Amrit Dharohar will be implemented over the next 3 years to encourage **optimal use of wetlands, carbon stock, and eco-tourism** opportunities.

• The main goal of the scheme is to **promote conservation values of Ramsar Sites**.

• The scheme also emphasises on **promotion of values of local communities** in conserving **wetland ecosystems**.

Cheetah reintroduction project

» Recently, 12 more cheetah's were translocated from **South Africa to the Kuno National Park** in Madhya Pradesh on 18th February 2023.

• It is the **world's first inter-continental cheetah translocation project**.

• The main goal of the cheetah programme is to establish a viable cheetah population in India.

• It also aims to bring in **5-10 cheetahs every year**, over the next decade, **until a self-sustaining population of cheetahs is established**.

• The **National Tiger Conservation Authority (NTCA)** is the apex body entrusted with the implementation of Project Cheetah and it comes under the **Ministry of forest, environment and climate change (MOEFCC)**.

Cheetah

• **Scientific Name:** Acinonyx jubatus

• **IUCN Status:** Vulnerable

• **CITES:** Appendix I

Chitwan Declaration for Asian Rhinos Conservation, 2023

» In the **3rd Asian Rhino Range Countries** Meeting held in Chitwan National Park, Nepal, the delegates of **Bhutan, India, Indonesia, Malaysia, and Nepal** adopted the Chitwan Declaration.

• Declaration seeks to protect and strengthen the regime, gather intelligence, and share real time intelligence information on **Rhino crime and its illegal horn trade**.

• It also aims to encourage the **exchange of Rhinos** between the populations of the same species in order to improve the genetic health.

• It also wants to increase the engagement of the **local communities** as stewards to secure the future of Rhinos in range countries and promote coexistence.

Geography

Mammatus Clouds

» **NASA** released the picture of the **Mammatus clouds** and explained the formation of the Mammatus clouds.

• Mammatus Clouds are **unusual and distinctive cloud formations** with a **series of bulges or pouches** emerging from the base of a cloud.

• They are usually formed in association with **large cumulonimbus clouds**.

• The **turbulence within the cumulonimbus cloud** will cause Mammatus to form, especially on the **underside** of the **projecting anvil** as it **rapidly descends to lower levels**.

Solar Prominence
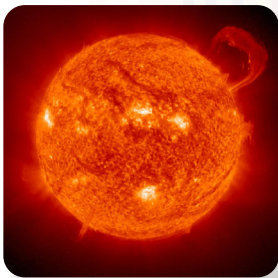
» Scientists observed a **large prominence** near the **Sun's north pole**.

• Solar Prominence is a **large**, **loop-like structure** on the edge of the **solar disk** which **stands out** brightly against the dark background of space.

• They are shaped by the **Sun's complex magnetic field**, often forming loops with each end anchored to the Sun's surface.

• Although they **appear very bright and hot**, they are **actually much cooler and denser** than the **surrounding plasma** in the **Sun's corona**.

Marine Spatial Planning Framework (MSPF)

» The **1st Marine Spatial Planning Framework (MSPF)** in India was launched in **Puducherry**.

• The Marine Spatial Planning Framework initiative was created under an **MoU signed between India and Norway** together under the **Indo-Norway Ocean Initiative** in **2019**.

• It is an **ecosystem based policy** for **sustainably allocating** the **spatial** and temporal **distribution of human activities** in **marine areas**.

• The **Ministry of Earth Sciences** oversees the implementation of the scheme in **collaboration** with the **Norwegian Environment Agency**.

Geomagnetic Storms

» Recently, a **Geomagnetic Storm** was caused by a solar wind that passed through a gap created in the **Earth's magnetic field**.

• Geomagnetic storm refers to the **disruptions to the Earth's magnetic field** caused by **solar emissions**.

• When a **Coronal Mass Ejection (CME)** or a **high speed solar stream** arrives at Earth, it peels open the planet's **magnetosphere**.

• This allows the energetic **solar wind particles** to stream down and **hit the atmosphere over the poles**.

• It can also **supercharge auroras**, sometimes making them visible in places where they wouldn't have been otherwise.

• Geomagnetic storms can hit operations of space dependent services like **GPS, radio and satellite communications. Aircraft flights and space exploration** programmes are also vulnerable.

• It can potentially create **disturbances in the magnetosphere**, the protective shield surrounding the Earth.

Roche Limit
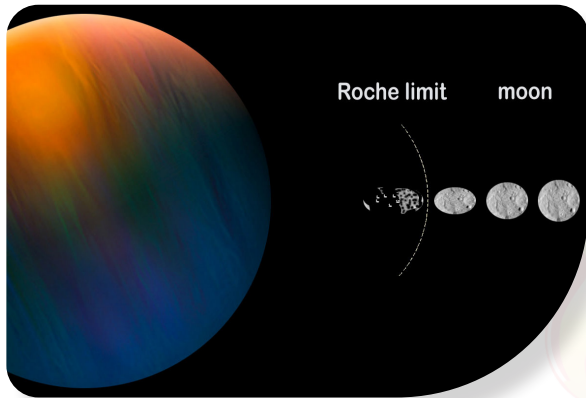
» Astronomers have found a **ring around a dwarf planet**, Quaoar, located in the **Kuiper Belt** at the solar system's edge.

• The ring, however, is positioned much further away than the **Roche limit** - a mathematically determined distance beyond which rings aren't supposed to exist.

• The Roche limit, also known as the Roche radius, defines the minimum distance at which a celestial body, such as a moon or a satellite, can maintain its structural integrity **without being torn apart by tidal forces** exerted by the primary body around which it orbits. Inside the Roche limit, the satellite will disintegrate to form rings.

• It is named after the **French astronomer** Édouard Roche, who first derived this concept in 1848.

• The rings of other planets lie within the Roche limit. **Eg:- Jupiter, Saturn etc.**
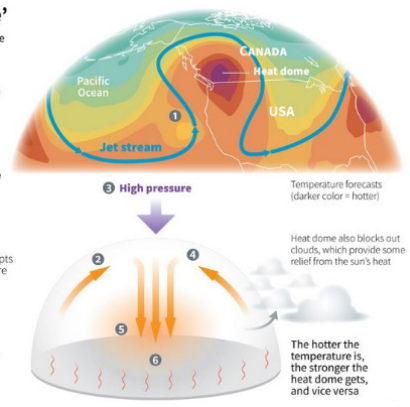
Lithium Reserves in India

» Recently, a significant **deposit of lithium** was discovered in **Jammu & Kashmir**, by the **Geological Survey of India**.

• **5.9 million tonnes** of lithium reserves was found in the Reasi district of Jammu & Kashmir.

• The deposits found might account for almost 5.7% of all the lithium reserves in the world.

• They are of **superior quality**, with a grade of 550 parts per million (ppm) as compared to the average 220 ppm.

Heat Dome

» Recently the formation of heat dome was **reported in North-West India** and **some parts of Europe**.

• A heat dome occurs when an area of **high-pressure traps warm air over a region**, just like a lid on a pot, for an extended period of time.

• A high-pressure system is created by **sinking air** that warms as it descends. Stagnant air allows the heat to build up and intensify over time.

• Moreover, high-pressure systems often bring **clear skies**, which means there is **less reflection of sunlight** and **more absorption of heat**.

• Its formation is related to the behaviour of the **jet stream**, with larger and elongated waves leading to stationary high-pressure systems.

• Heat domes generally stay for a **few days or can extend up to weeks**, which might cause deadly **heat waves**.

A **Heat Wave**, on the other hand, is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the summer season.

• **Change in Ocean Temperature, Change in Atmospheric Pressure, Climate Change etc also causes the formation of heat dome**.

Science & Technology

FAIRY Robot

» Recently scientists from the Tampere University developed a **Dandelion seed-inspired flying robot** (known as **FAIRY Robot**) that can potentially be an alternative for some pollinators.

• FAIRY robot is a **tiny lightweight** robot that relies on wind to float in the air like a **Dandelion seed**.

• Its movement is based on the **Light Responsive Materials Assembly**, which is controlled with a **light source** such as a **laser beam or an LED**.

• With the rapid decline of major pollinators like bees & butterflies, fairy robots can be helpful for controlled, coordinated & precise pollination.

Space Debris

» The Indian Government revealed that India has **111 payloads, 105 space debris objects orbiting Earth** which can have an impact on the sustainability of outer space and future missions.

• **Space debris** refers to the **artificial objects** including defunct satellites, spent rocket stages and other man-made objects that are **in orbit around Earth and pose a risk to operational spacecraft and astronauts**.

• **Kessler Syndrome** is a phenomenon in which the amount of junk in orbit around Earth reaches a point where it just creates more and more space debris, causing big problems for satellites, astronauts and mission planners.

• **Project NETRA** (**Network for space object Tracking and Analysis**) is an **early warning system** in space to detect debris and other hazards to **Indian satellites**.

• Under this project, **ISRO** will put up many **observational facilities** such as connected radars, telescopes and data processing units which will give India its own capability in **Space Situational Awareness (SSA)**.

Water Sensitive Urban Design and Planning (WSUDP) Approach

» Recent studies reveal that the **Water Sensitive Urban Design and Planning approach** is apt for **Global South water- sensitive cities**.

• The WSUDP approach was primarily for western cities in Europe & Australia, a **practice of combining urban water cycle, water supply, wastewater, stormwater and groundwater management with spatial and urban design**.

• It aims to **minimise the hydrological impacts** of urban development on the environment.

• This approach is apt for Indian cities like **Bengaluru, Mumbai and Chennai** recently affected by **urban floods**.

Bard AI

» Google is all **set to launch Bard,** a **new conversational AI chatbot** based on the **Language Model for Dialogue Application (LaMDA)**.

• Google Bard AI is a **Natural Language Processing (NLP)** model to produce **high-quality text** by anticipating the next word in a given phrase based on context.

• It has the **ability to generate human-like text** and understand the **context and nuances of language**.

Bisphenol A (BPA)

» A recent study establishes that the human made chemical **Bisphenol A** can significantly shorten the breeding time of **southern house mosquitoes** (Culex quinquefasciatus).

• Bisphenol A (BPA) is a chemical that is mainly used in combination with other chemicals to **manufacture plastics and resins**.

• It is produced by the **condensation of phenol and acetone**.

• This type of plastic is used to make some types of **beverage containers, compact disks, automobile parts** etc.

• BPA acts on the **hormonal level** by **distorting hormone balance** and inducing **oestrogenic effects through binding with oestrogen-related receptors (ERR)**.

Agnilet

» **Agnikul Cosmos**, a space-tech startup incubated in **IIT Madras** has successfully conducted the flight test for its **3D printed rocket engine Agnilet**.

- The **Agnilet rocket engine** is designed to be used in **Agnibaan**-a **small satellite launch vehicle (SSLV)** that can carry payloads up to 300 kg to a **low-Earth orbit** (less than 2000km altitude) - which the company is currently developing.

- It is a **semi-cryogenic engine** which uses a mixture of **liquid kerosene** at room temperature and **super cold liquid oxygen** to propel itself.

- Unlike other rocket engines, **Agnilet was built in a single step**, eliminating thousands of parts that are typically assembled in a conventional rocket engine.

- Earlier in **November 2022**, Agnikul Cosmos launched **India's first private launchpad and mission control centre at Satish Dhawan Space Centre (SDSC)** in Sriharikota.

Infocrop

» Recently, scientists at the **Indian Agricultural Research Institute (IARI)** in Delhi conducted a **first-of-its-kind** experiment to quantify the impact of the hot weather on crop yield in Punjab and Haryana by using **InfoCrop version 2.1**.

- InfoCrop version 1 launched by the IARI in **2004**, is a **dynamic simulation model** for the assessment of crop yields, losses due to pests, and the environmental impact of agroecosystems in **tropical environments**.

- Infocrop is **more suited for India** as it has the **life cycle data** for almost all the local varieties of **11 crops**: paddy, wheat, maize, sorghum, pearl millet, pigeon pea, chickpea, soybean, groundnut, potato and cotton.

- **InfoCrop version 2.1**: India's only dynamic crop simulation model was developed and released by the IARI in **2015** to study the **long-term impact** of climate change and crop management practices on yield.

Bandicoot

» The Kerala government has launched a robotic scavenger, **"Bandicoot"**, to clean sewages in the temple town of Guruvayur, becoming the **first state in the country** to use **robotic technology to clean** all its commissioned **manholes**.

- Bandicoot, the **world's first robotic scavenger**, developed by Kerala-based Genrobotics, had recently bagged **'Kerala Pride' award** at the Huddle Global 2022 conclave organised by **Kerala Startup Mission (KSUM)**.

- The spider-like robot has two units —a **control unit** and a **robotic unit**.

- It has a **robotic arm**, similar to that of a human arm, that lifts the lid on the manhole, goes down the pit, grabs waste that's blocking the manhole, brings it up and deposits it into a **bucket-like system**.

- Power is supplied by portable generators and the robot has **waterproof night-vision cameras** that help the operator monitor the robot's work inside the manhole.

- It also has a built-in **poisonous gas alert** system.

NISAR Mission

» An **earth-observation satellite**, jointly **developed by NASA and ISRO**, that will help study Earth's land and ice surfaces in greater detail, has been shipped to India.

- NASA and ISRO signed an agreement for this mission in **2014**.

- **NISAR (NASA-ISRO Synthetic Aperture Radar)** will be the **first radar of its kind** in space to systematically map Earth, using two different radar frequencies (**L-band and S-band**) to measure changes in our planet's surface less than a centimetre across. It can **map the entire globe in 12 days**.

- NASA is responsible for providing the **L-Band SAR** payload system, **GPS, solid state data recorder** and payload data subsystem while the ISRO supplied **S-Band SAR** payload, **GSLV launch system and space craft**.

- NISAR's data can help people worldwide **better manage natural resources and hazards**, as well as providing information for scientists to better understand the effects and pace of climate change. It will also add to our understanding of our planet's hard outer layer, called its crust.

- The **Low Earth Orbit (LEO) satellite** is said to be **operational for 3 years** and expected to be launched in 2024.

Soluble Adenylyl Cyclase (sAC)

- » US Researchers have created an experimental **contraceptive drug for men** that "temporarily stops sperm in their tracks and prevents pregnancies in preclinical models.

- Unlike the female contraceptive pill, it **does not involve any hormones** and hence **no possible side effects**.

- The experimental male pill inhibits or blocks sAC, which is a **cellular signalling protein** which acts as a **"sperm switch"**.

- sAC is essential for sperm **motility and maturation**.

Responsible Use of Artificial intelligence in the Military (REAIM), 2023

- » Recently, the World's first global summit on Responsible AI in the **Military** was organised in the Netherlands.

- REAIM brings together governments, corporations, academia, startups, and civil societies to raise awareness, discuss issues, and possibly, agree on common principles for deploying and using AI in **armed conflicts**.

- The conference, co-hosted by South Korea, hosted **80 government delegations**.

- **India did not participate in the summit**.

Atacama Large Millimetre/ submillimetre Array (ALMA)

- » ALMA is set to receive software and hardware upgrades. The upgrades will enable ALMA to collect more data and produce sharper images.

- ALMA is a **radio telescope comprising 66 antennas** located in the **Atacama desert of northern Chile**.

- It is operated under a partnership among the **United States, 16 countries in Europe, Canada, Japan, South Korea, Taiwan and Chile**.

- Fully functional since **2013**, the telescope was designed, planned and constructed by the **US's National Radio Astronomy Observatory (NRAO), the National Astronomical Observatory of Japan (NAOJ) and the European Southern Observatory (ESO)**.

- Over the years, it has helped astronomers make groundbreaking discoveries including that of **starburst galaxies** and the **dust formation inside supernova 1987A**.

Vertiplane X3 Drone

- » Recently, successful trial of drones delivering medicine was carried out from the **All-India Institute of Medical Sciences (AIIMS)** in Rishikesh to Baurari District Hospital in Tehri (Uttarakhand)

- 'VertiplaneX3' is a **hybrid-electric Vertical Take-off and Landing (VTOL)** made by TechEagle Gurugram-based drone startup.

- The VTOL drone has the capability to **take off and land vertically** like a helicopter from a small area of **5m x 5m**.

- **Maximum speed** of **120 kmph**, **distance coverage** of **100 km** and a **payload capacity** of 3 kg.

Lab Grown Diamonds

» To harness the potential of **lab grown diamonds** (LGD) or **synthetic diamond segment**, the Union Budget 2023-24 has laid emphasis on research & development to make it more competitive in the international markets.

• LGD is a **technology-and innovation-driven** emerging sector with high employment potential.

• These **environment-friendly diamonds** which have **optically and chemically the same properties as natural diamonds**.

LGDs are mostly manufactured through two processes:

• **High pressure, high temperature (HPHT) method:** In this method the seed (slice of another diamond) , along with pure graphite carbon, is exposed to temperatures around 1,500 degrees Celsius and extremely high pressure.

• **Chemical Vapour Deposition (CVD) method:** In the CVD method, the seed is heated to around 800 degrees Celsius inside a sealed chamber filled with a carbon-rich gas. The gas sticks to the seed, gradually building the diamond.

microLED

» Recently, Apple was reportedly **working on a new display technology microLEDs**, which is considered the next big thing in the display industry.

• microLEDs are **self-illuminating diodes** that have brighter and better colour reproduction than **Organic Light Emitting Diode (OLED)** display technology.

• It is based on the **use of sapphires**, which are known for their ability to shine on their own **indefinitely**.

• The technology involves the use of tiny **light-emitting diodes (LEDs)** that are packed tightly together to create a bright and high-quality display.

• microLEDs are **semiconductors** that receive electrical signals and once these microLEDs are gathered, they form a module. Several modules are then combined to form screens.

Artificial Neural Network (ANN)

» SBI Artificial Neural Network (ANN), an in-house research model, estimated India's GDP growth for Q3 FY23 at **4.6%**.

• ANN is a **computational network model** that has artificial neural networks like **biological neurons** that are linked to each other in various layers of the networks. These neurons are known as **nodes**.

• It's a **machine learning model** inspired by the structure and function of the human brain. It **mimics the way nerve cells work in the human brain**.

• Google's **LaMDA** is based on the **ANN.**

Miscellaneous

Operation Sadbhavana

» The Indian Army launched **'Operation Sadbhavana'** for the **development of Ladakh**.

• It is an unique humane initiative with the aim of **supporting children in remote areas of Ladakh**.

• To improve the standard of education and to provide them with quality education, the army is currently running seven **Army Goodwill Schools [AGS]** in the region.

'Kargil Ignited Minds', an initiative exclusively for girl students of Kargil, was launched for preparation for various competitive examinations for admission into various professional colleges and institutions in India.

Yuva Sangam Portal

» Union Minister of Education and Skill Development and Entrepreneurship Shri Dharmendra Pradhan launched Yuva Sangam portal.

• The Yuva Sangam portal seeks to build **close ties between the youth of the Northeast Region and the rest of India** under the spirit of **Ek Bharat Shreshtha Bharat**.

- The **youth of 18 years to 30 years** will get an opportunity to see different states of the country, to understand their art, culture and languages.

Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM ABHIM)

» The **World Bank** is lending up to **$1 billion** to help India with preparedness for **future pandemics** as well as to strengthen its health infrastructure.

- PM ABHIM, earlier known as the **Prime Minister Atmanirbhar Swasth Bharat Yojana (PMASBY)** was launched in **October 2021** by the **Union Ministry of Health and Family Welfare**.

- It is a **Centrally Sponsored Scheme with some Central Sector components**.

- It is **one of the largest pan-India health schemes** for **strengthening healthcare infrastructure** to accomplish the vision of comprehensive healthcare across the country.

Objectives:

- To strengthen **grass root public health institutions**.

- To expand and build an **IT enabled disease surveillance system**.

- To **expand research** on COVID-19 and other infectious diseases and to develop the core capacity to deliver the **One Health Approach**.

Jaivik Bharat Logo

» Recently, Jaivik Bharat logo was introduced by the **Food Safety and Standards Authority of India (FSSAI)**.

- Jaivik Bharat Logo is a logo to distinguish **organic products from inorganic**.

- Any product that has the Jaivik Bharat logo would have to meet **specific standards of organic farming**.

- **JaivikBharat web portal** is also launched through which -consumers can access information about the producer, the certification system, and the availability of certified organic products.

Jadui Pitara

» Recently, the **Ministry of Education** has launched **Learning - Teaching Material for the Foundational Stage** under National Education Policy 2020.

- Jadui Pitara is a **play-based learning-teaching material** made for children between the age group of **3-8 years**.

- It comprises playbooks, toys, puzzles, posters, flash cards, story books, worksheets as well as **reflecting the local culture, social context and languages** is designed to encourage curiosity and accommodate the diverse needs of learners in the foundational stage.

- It is developed under the N**ational Curriculum Framework (NCF)** and is available in **13 Indian languages**.

- The material also **utilises technology** and provides QR codes to enable teachers to access teaching resources such as poems, storybooks and flash cards.

Skye UTM

» Recently, Union Minister for Road Transport and Highways Nitin Gadkari unveiled **Skye UTM**.

- It is a **Cloud-based aerial traffic management system**.

- It integrates **unmanned air traffic with manned aviation airspace**.

- It has been built towards providing **situational awareness, autonomous navigation, risk assessment, and traffic management** to all drone/ operators across the airspace.

- It is capable of handling **4,000** flights per hour.

- It captures more than **255+ parameters of Unmanned Aerial Vehicle (UAV)** movements and stores them into its Blackbox.

- The platform also offers regulatory access to **Air Traffic Controllers** and other regulatory authorities.