



**SIVARAJAVEL IAS ACADEMY**

AN IDEAL INSTITUTE FOR **CIVIL SERVICE EXAMS**

the

# CATALYST

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## SPECIAL SESSION OF PARLIAMENT



SEPTEMBER 2023

# The CATALYST

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The CATALYST is a monthly magazine for current affairs which tries to give aspirants an in-depth comprehension of certain topics which appeared in different sources over the month. The Magazine has been designed in such a way that the reading experience is enriching and insightful for the readers.

The contents have been grouped into a thematic structure to help aspirants focus on the overall GS syllabus.

## Inside The Catalyst Magazine

- I. Within the Sub themes first few topics will be Prelims oriented followed by indepth coverage of Mains Topics.
- II. Fact Sheet and Quotes have also been provided.

*\*New sections will be added or removed based on the new updates we include in the forthcoming issues.*

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**SIVARAJAVEL IAS ACADEMY**

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# the **CATALYST**

## From the Editor's Desk

Dear Readers,

India hosted the G20 summit last month and it was a display of India's evolving status among global powers. We have published a supplementary edition covering all topics related to G20.

From 18<sup>th</sup> to 22<sup>nd</sup> of September, a special session of parliament was held. The special session witnessed the transfer of parliamentary proceedings from the existing premises of British-era building to the New Parliament House in the national capital. It is quite symbolic of "NEW INDIA". We are happy to announce our Mains Guidance Series (**METIS**) from 25th October.

Aspirants should focus on Mains for the next few months till the notification of UPSC. There will be a daily Mains Answer Writing Program. Do follow our telegram channel [t.me/srvias](https://t.me/srvias). For this Edition (Sep 1 to Sep 30), we have covered a wide range of topics such as Special session of Parliament, BRICS expansion, Disaster Management, Drone Overview, 50 Years Government Bonds, etc

We are constantly motivated by the reception given by our dear readers. We aspire to enrich the forthcoming issues. All feedback is welcome and suggestions to improve the magazine can be sent to [sivarajaveliasacademy@gmail.com](mailto:sivarajaveliasacademy@gmail.com).

Sincerely,  
P.Mohan

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# POLITY & GOVERNANCE

What's Inside?



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SPECIAL SESSION OF THE  
PARLIAMENT

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## INTERNET SHUTDOWN

### Context:

Internet services were restored in Manipur on September 23, almost five months since its shutdown after violence erupted on May 4.

### What is the Internet Shutdown?

Internet Shutdowns may be defined as any **disruption in access to the internet** services most of which deal with mobile internet.

### Objectives:

While a lot of shutdowns are necessary to prevent communal tensions, civil war, or riots and situations of unrest, they need to be proportionate.

### Types:

#### *Preventive shutdowns:*

Preventive shutdowns are imposed before an event takes place.

For example, following the circulation of a video of a tailor getting beheaded in Udaipur, there was a shutdown in anticipation of a communal riot.

#### *Reactive shutdowns:*

A reactive shutdown is imposed after an event takes place and is generally the easiest way to control an escalating law and order situation.

### Legal Provisions:

#### *Section 144 of CrPC:*

Till the year 2017, shutdowns were imposed

largely under Section 144 of the Code of Criminal Procedure (CrPC).

Section 144 of CrPC gave the police and the District Magistrate the powers in order to prevent unlawful gathering of people and also to direct any person to abstain from a certain activity.

#### *Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017:*

- In 2017 the law was amended and the Government promulgated the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rule 2017.
- The substantive law regarding suspension of Internet services is a broad interpretation of **Section 5(2) of Telegraph Act 1855**, although the traditional law regarding the same was not a lump of the former Act or Rules.
  - The **authority who are able to order** such directions is:
  - The **Secretary in the Ministry of Home Affairs**. (Central Government)

India leads the world in internet shutdowns, the one in J&K since abrogation of Article 370 lasted 552 days. The Supreme Court has been clear that indefinite suspension of internet services goes against freedom of speech and that such orders must satisfy tests of necessity and proportionality.

## SOCIAL AUDIT

### Context:

The Social Audit units under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Recovery in cases flagged by these units over the past three years ranges from 13.8% to 20.8%; the Union government, which funds the units, has been lax in delivering funds, while State governments fail to act on the cases

that have been revealed

### What is Social Audit?

**Social Audit** is a procedure with the help of which citizens examine and monitor the actions of the government on the grassroots level before using the results to hold the government accountable and a system of open hearings.

## What is Social Audit under MGNREGA?

- Social Audit is the examination and assessment of a programme/scheme conducted with the active involvement of people and comparing official records with actual ground realities.
- Section 17 of the MGNREGA has mandated Social audit of all works executed under the MGNREGA.
- Each State has social audit units that are supposed to work independently of the implementing authorities.
- The social audit unit's sole responsibility is to flag cases of malpractice. Recovering the money, and reprimanding the officials responsible, is up to the State governments.

## How Social Audit aids in good governance?

### *Reduces corruption:*

Social audit uncovers irregularities and malpractices in the public sector and maintains oversight on government functioning, thus reducing leakages and corruption. Civil society organisations, political representatives, civil servants and workers of Anantapur district of Andhra Pradesh collectively organise such social audits to prevent mass corruption under the MGNREGA.

### *Monitoring and feedback:*

It monitors social and ethical impact of decisions and provides feedback on the work. Official records obtained using RTI are used by the public to identify irregularities and thus monitor an organisation and give feedback which help in better performance.

### *Accountability and transparency:*

Social audit ensures accountability and

transparency in working of local government bodies and reduces trust gap between people and local governments. Social audit measures enhance transparency by enforcing the Right to information in the planning and implementation of local development activities. Transparency in public schemes reduces corruption and increases outcomes.

### *Encourages community participation:*

Social audit creates awareness among beneficiaries and providers of local social and productive services. Local community becomes important stakeholder in success of public welfare schemes thus improving outcomes through periodic evaluation of outcomes of policies. For example, in MGNREGA, social audits led to proper entries in job cards, increased knowledge about the wage payment slips and visible improvements were noticed in worksite facilities.

### *Empowering marginalised:*

It is important that marginalised social groups, which are normally excluded, have a say on local development issues and activities and have their views on the actual performance of local elected bodies. Through social audits these groups can have an impact on policy implementation and thus increasing outcomes.

### *Policy evaluation:*

Social audit plays an important role not in policy implementation but also policy evaluation. Thus social audit also assess the physical and financial gaps available for local development thus improving policies and outcomes.

### *Strengthens the local government:*

Social Audit gives voice and influencing power to the Gram Sabha, the lynchpin of rural governance structure. It boosts professionalism in public bodies by forcing Panchayats to keep proper records and accounts of the spending made against the grants received from the government and other sources.



## CBI-JUDGEMENT

### Context:

The Supreme Court on Monday held that its 2014 judgement holding as invalid Section 6A(1) of the Delhi Special Police Establishment Act, 1946, which required the Central Bureau of Investigation (CBI) to take prior sanction to register cases against officers of the rank of joint secretary and above, will have retrospective effect.

### More on news:

In the 2014 ruling in the Subramanian Swamy vs Union of India case, the Supreme Court had held that “Section 6- A(1), which requires approval of the Central Government to conduct any inquiry or investigation into any offence alleged to have been committed under the Prevention of Corruption Act, 1988 where such allegation relates to

- a. the employees of the Central Government of the level of Joint Secretary and above and
- b. Such officers as are appointed by the Central Government in corporations established by or under any Central Act, government companies, societies and local authorities owned or controlled by the Government, are invalid and violative of Article 14 of the Constitution”.t

### About CBI:

- The CBI was established as the Special Police Establishment in 1941, to investigate cases of corruption in the procurement during the Second World War.
- Later, the Santhanam Committee on Prevention of Corruption recommended the establishment of the CBI. As a result, it was set up in 1963 by a resolution of Union Home Ministry.
- The Special Police Establishment (which looked into vigilance cases) setup in 1941 was also merged with the CBI
- Later, it was transferred to the Ministry of Personnel and now it enjoys the status

of an attached office.

- The CBI is **not a statutory body**. It derives its powers from the Delhi Special Police Establishment Act, 1946.
- The CBI is the main investigating agency of the Central Government.
- The CBI investigates crime of corruption, economic offences and serious and organized crime other than terrorism.
  - National Investigation Agency (NIA) has been constituted after the Mumbai terror attack in 2008 mainly for investigation of incidents of terrorist attacks, funding of terrorism and other terror related crime.
  - The CBI is headed by a Director who is assisted by special/additional director. The Director of CBI has been provided security of two-year tenure by CVC Act, 2003.

As per the CVC Act of 2003, the Central Government shall appoint the Director of CBI on the recommendation of a three-member committee consisting of the

- Prime Minister as Chairperson,
- Leader of Opposition in the Lok Sabha
- Chief Justice of India or Judge of the Supreme Court nominated by him.
- If there is no recognized leader of opposition in the Lok Sabha, then the leader of the single largest opposition party in the Lok Sabha would be a member of that committee.

The CBI Academy is located at Ghaziabad, UP and started functioning in 1996. It also has three regional training centres at Kolkata, Mumbai & Chennai.

- The superintendence of CBI related to investigation of offences under

the Prevention of Corruption Act, 1988 lies with the Central Vigilance Commission (CVC) and in other matters with the Department of

Personnel & Training (DOPT) in the **Ministry of Personnel, Pension & Grievances** of the Government of India

## MEDIATION ACT 2023

### Context

In the recent monsoon session of Parliament, both Houses passed The Mediation Bill, 2023, to promote mediation as a means of dispute resolution.

### About

#### Aim of the bill

- To promote and facilitate mediation, especially institutional mediation, for resolution of disputes, commercial or otherwise,
- To enforce mediated settlement agreements,
- To provide for a body for registration of mediators,
- To encourage community mediation and
- To make online mediation as acceptable and cost effective process

#### Features of the bill

**Pre-litigation mediation:** Parties must attempt to settle civil or commercial disputes by mediation before approaching any court or certain tribunals. Even if they fail to reach a settlement through pre-litigation mediation, the court or tribunal may at any stage refer the parties to mediation if they request for the same.

**Disputes not fit for mediation:** The Bill contains a list of disputes which are not fit for mediation. These include disputes:

- (i) relating to claims against minors or persons of unsound mind,
- (ii) involving criminal prosecution, and
- (iii) affecting the rights of third parties.

The central government may amend this list.

**Applicability:** The Bill will apply to mediations conducted in India:

- (i) involving only domestic parties,
- (ii) involving at least one foreign party and relating to a commercial dispute (i.e., international mediation),
- (iii) if the mediation agreement states that mediation will be as per this Bill. If the central or state government is a party, the Bill will apply to: (a) commercial disputes, and (b) other disputes as notified.

**Mediation process:** Mediation proceedings will be confidential, and must be *completed within 180 days* (may be extended by 180 days by the parties). A party may withdraw from mediation after two sessions. Court annexed mediation must be conducted as per the rules framed by the Supreme Court or High Courts.

**Mediators:** Mediators may be appointed by: (i) the parties by agreement, or (ii) a mediation service provider (an institution administering mediation). They must disclose any conflict of interest that may raise doubts on their independence. Parties may then choose to replace the mediator.

**Mediation Council of India:** The central government will establish the Mediation Council of India. The Council will consist of a chairperson, two full-time members (with experience in mediation or ADR), three ex-officio members (including the Law Secretary, and the Expenditure Secretary), and a part-time member from an industry body. The Mediation Council, established to regulate the profession of mediators, may not have representation of practising mediators with adequate experience.

This is unlike other professional regulators such as the Bar Council of India.

**Functions of the Council** include:

- (i) registration of mediators,
- (ii) recognising mediation service providers and mediation institutes (which train, educate, and certify mediators).
- (iii) Promote international and domestic mediation in India
- (iv) Facilitate and conduct continuous training, education and certifications in mediation
- (v) Maintain a depository of mediation settlement agreements made in India

**Mediated settlement agreement:** Agreements resulting from mediation (other than community mediation) will be *final, binding, and enforceable in the same manner as court judgments*. They may be challenged on grounds of: fraud, corruption, impersonation, or relating to disputes not fit for mediation.

The Bill applies to international mediations only if they are conducted in India. It does not provide for enforcement of settlement agreements resulting from international mediation conducted outside India. Note that the *Singapore Convention on Mediation* provides a framework for crossborder enforcement of settlement agreements resulting from international mediation. *On August 7, 2019, India became a signatory to this Convention, but has not yet ratified it.*

**Community mediation:** Community mediation may be attempted to resolve disputes likely to affect the peace and harmony amongst residents of a locality. It will be conducted by a panel of three mediators (may include persons of standing in the community, and representatives of resident welfare associations).

### Alternate Dispute Resolution -

Alternate dispute resolution (ADR) refers to means by which disputes are settled outside the traditional court system.

In India, modes of ADR include arbitration, negotiation, mediation, and Lok Adalats.

#### Need for Alternate dispute Resolution

- Amicable and friendly resolution of disputes
- Speedy disposal of trials in the context of burdened judiciary
- Economic settlement of disputes
- Improves ease of living and ease of doing business
- Faster settlement of disputes

#### Merits of ADR

In the case of arbitration, the parties can select what procedural and domestic rules will be applied to their dispute.

Attorneys and expert witnesses are very expensive. ADR offers to resolve the case quickly without much delay and incurs less expenses.

ADR allows the parties to work together with a neutral arbitrator or mediator so that the dispute can be resolved quickly and the transacting parties are satisfied by the conclusion.

ADR process can be initiated at any time, whenever disputing party takes recourse to ADR.

ADR programs are not rigid.

ADR can be used to reduce the gravity of contentious issues between the parties.

#### Demerits of ADR

With the exception of arbitration, alternative dispute resolution processes do not always lead to a resolution. That means you could spend time and money and still end up going for litigation process.

Unfamiliarity of process is a factor causing obstruction in ADR.

The remedies established or given out to parties cannot be binding to future cases which means that remedy for one cannot be taken as a guiding stone for another.

#### Other Legislations of ADR in India

*Section 89 of the Civil Procedure Code,*

1908 - if it appears to court there exist elements of settlement outside the court then court formulate the terms of the possible settlement and refer the same for: Arbitration, Conciliation, Mediation or Lok Adalat.

**Arbitration and Conciliation Act, 1996** - modernization of The Arbitration Act, 1940, which dealt with only domestic arbitration.

**The Legal Services Authority Act, 1987** - passed in 1987 to encourage out-of-court settlements; to provide free and competent legal services to the weaker sections of the society to ensure that opportunities for securing justice are not denied to any citizen. Lok Adalat assumed statutory recognition under this act



## RIGHT TO INFORMATION

### Context:

The Supreme Court has directed the Central Information Commission and the State Information Commissions to ensure proper implementation of provisions of the Right to Information Act, 2005 including on proactive disclosure of information by public authorities.

### Objective:

The basic object of the Right to Information Act is to empower the citizens, promote transparency and accountability in the working of the Government, contain corruption, and make our democracy work for the people in real sense.

It goes without saying that an informed citizen is better equipped to keep necessary vigil on the instruments of governance and make the government more accountable to the governed.

The Act is a big step towards making the citizens informed about the activities of the Government.

RTI Portal Gateway to the citizens for quick search of information on the details of first Appellate Authorities, PIOs.

### Features:

It replaced the former Freedom of Information Act, 2002.

It is required to reply expeditiously or within thirty days. In case of matter involving a petitioner's life and liberty, the information has to be provided within 48 hours.

Although Right to Information is not included as a Fundamental Right in the Constitution of India, it protects the fundamental rights to Freedom of Expression and Speech under Article 19(1)(a) and Right to Life and Personal Liberty under Article 21 guaranteed by the Constitution.

### **Rti Amendment, 2019:**

The Right to Information Act 2019 passed on July 25, 2019 modified the terms and conditions of service of the CIC and Information Commissioners at the centre and in states.

It had been criticized as watering down the independence of the information commissions, namely by empowering the government to fix the term of service and salaries of information commissioners.

The Act extends to the whole of India.

The Right to Information (Amendment) Bill, 2019, seeks to amend Sections 13, 16, and 27 of the RTI Act.

It sets the term of the central Chief Information Commissioner and Information Commissioners at five years (or until the age of 65, whichever is earlier).

Finally, in Ashwanee K. Singh's case on 20 September 2020, it is stabilised that right to information is a fundamental right.

### **Challenges:**

#### ***Misuse of RTI Act:***

Due to non-applicability of locus-standi rule to RTI case and non-requirement of giving reasons for seeking information, it has been observed that the RTI act is misused by the many petitioners.

This leaves ample scope for non-serious information seekers to misuse it for their personal interest rather than public interest in disclosure.

Also, this diverts the time of public servants and adversely affects their work.

#### ***Low Public Awareness:***

Public Awareness is very low in India regarding their rights as well as duties.

Some reasons behind this are lack of education and awareness. It was further observed that awareness level is low among the rural areas and in disadvantaged communities such as women, SC/ST/OBC.

#### ***Huge Backlog and Delay in Disposal of Cases:***

Due to the insufficient number of Information Commissioners at the center level, there is a high backlog and delay in the hearing of the cases.

Further, because of poor quality, incomplete and inaccurate information, the filing the First appeal increases significantly under the RTI Act.

Moreover, the act doesn't provide any limit within which the Second Appeal to Chief Information Commission (CIC) must be heard. Due to this, the applicant has to wait for months in order to have his or her case heard at CIC.

Ineffective record management systems and procedures to collect information from field offices lead to delays in processing RTI applications.

#### ***Dilution of the law:***

The RTI Act (Amendment) Act, 2019 gives the central government the power to fix the terms and the service conditions of the Information Commissioners both at central and state levels.

By vesting excessive powers with the central government, this amendment has hampered the autonomy of CIC.

#### ***Issue of Enforceability:***

The Act does not give adequate authority to the Information Commissions to enforce their decisions.

Information commissions can give directions to public authorities to take the steps necessary to comply with the Act, but are not empowered to take any action if such directions are ignored.

#### ***Secrecy:***

The free flow of information in India remains severely restricted by the legislative framework including several pieces of restrictive legislation, such as the Official Secrets Act, 1923.

# DIGITAL PERSONAL DATA PROTECTION ACT, 2023

## Context:

The Digital Personal Data Protection Act (DPDP Act) was passed by Parliament and received the President's assent on August 12, 2023. The law aims to protect the privacy of Indian citizens and proposes a penalty of up to Rs 250 crore on entities for misusing or failing to protect digital data of individuals.

## Highlights of the Bill:

### Data Transfer:

- It has been provided in Section 6 of the Act that Personal Data may be processed only for the specified purpose and after obtaining the consent of the Data Principal (individual).
- Section 16 allows extraterritorial processing and transfer of Personal Data, except to such countries restricted by CG through notification.
- Personal data may be processed only for a lawful purpose upon consent of an individual. Consent may not be required for specified legitimate uses such as voluntary sharing of data by the individual or processing by the State for permits, licenses, benefits, and services.
- The Bill will apply to the processing of digital personal data within India where such data is collected online, or collected offline and is digitised. It will also apply to such processing outside India, if it is for offering goods or services in India.
- The Bill grants certain rights to individuals including the right to obtain information, seek correction and erasure, and grievance redressal.

## Data Protection Board OWf India:

- This act establishes a Data Protection Board of India (Board) consisting of a Chairperson and other members.
- Data fiduciaries will be obligated to maintain the accuracy of data, keep data

secure, and delete data once its purpose has been met.

- The central government may exempt government agencies from the application of provisions of the Bill in the interest of specified grounds such as security of the state, public order, and prevention of offences.
- The central government will establish the Data Protection Board of India to adjudicate on non-compliance with the provisions of the Bill.

## Key Issues and Analysis

Exemptions to data processing by the State on grounds such as national security may lead to data collection, processing, and retention beyond what is necessary. This may violate the fundamental right to privacy.

The Bill does not regulate risks of harms arising from processing of personal data.

The Bill does not grant the right to data portability and the right to be forgotten to the data principal.

The Bill allows transfer of personal data outside India, except to countries notified by the central government. This mechanism may not ensure adequate evaluation of data protection standards in the countries where transfer of personal data is allowed.

The members of the Data Protection Board of India will be appointed for two years and will be eligible for re-appointment. The short term with scope for re-appointment may affect the independent functioning of the Board.

## NHRC'S ADVISORY ON THE WELFARE OF TRANSGENDERS

The National Human Rights Commission (NHRC) recently issued an advisory to the Centre, State governments and Union Territory Administrations calling upon them to ensure the welfare of transgender persons. The welfare measures include provision of separate toilets, free sex reassignment surgery, pension rights and inheritance rights.

The Transgender Persons (Protection of Rights) Act, 2019, aims to safeguard and uphold their rights.

### Recommendations

A single transchild of a deceased government employee or pensioner may be treated as an unmarried daughter for the family pension and other benefits.

It also recommended that transgender persons be allowed to inherit ancestral agricultural land. A multi-purpose identity card may be provided to the people of this community to help the access government schemes and other benefits.

Insurance companies may be advised to consider and accept the Transgender Certificate issued by the appropriate authority for document verification purposes. The Ministry concerned should ensure the timely release of the funds allocated to Garima Greh [shelter scheme].

It also advised for the setting up of a Transgender Welfare Board under Section 10(1) of the Transgender Persons (Protection of Rights) Rules, 2020 and also the establishment of a Transgender Protection Cell under the Director General of Police or his/ her nominee in the State to monitor cases of offences against transpersons.

The advisory asked the authorities to ensure that transpersons are treated with respect and dignity so that they do not face hurdles in education and growth. It also stressed on steps to tackle the sexual harassment of transgender persons and prevent violence or discrimination.

The NHRC also advised governments to set up medical boards at the district level to assist transpersons in medical consultation, besides making provisions in every district civil hospital for consultation, treatment and counselling for sex reassignment surgery.

“The Ministry of Corporate Affairs may consider incorporating welfare activities of Transgender Persons explicitly in Schedule VII of the Companies Act, 2013, which provides the list of activities that can be included for making expenditures for Corporate Social Responsibilities (CSR) activities.

## “AADHAR DATA UNRELIABLE” - SAYS MOODY'S REPORT

### Context

In a report titled “Decentralized Finance and Digital Assets”, global rating major Moody's Investors Service has flagged concerns about security and privacy vulnerabilities in centralised identification systems like India's Aadhaar programme.

The Aadhaar system enables access to public and private services, with verification via

fingerprint or iris scans and alternatives like One-Time Passcodes (OTPs). However, it “faces hurdles, including the burden of establishing authorization and concerns about biometric reliability”.

The rating agency termed Aadhaar, and a new crypto-based digital identity token called Worldline, as two digital ID systems in the world that stand out due to their scale and extent of innovation.

Stressing that ID systems like

## Low rating

Moody's Investors Service has cautioned against centralised digital ID systems such as Aadhaar as they pose security and privacy vulnerabilities. Here are a few warnings from the firm which offers credit ratings, research, and risk analysis:

- A single entity controlling users' ID credentials can dispose of user data for internal or third-party profiling purposes
- Aadhaar system faces hurdles, including the burden of establishing authorisation
- Reliability of biometric technologies, especially for manual labourers, in hot, humid climates is questionable



Aadhaar lead to the concentration of sensitive information with specific entities and increase the risks of data breaches, Moody's made a pitch for decentralised ID (DID) systems such as digital wallets, based on blockchain capabilities that give users more control of their private data and can reduce online fraud.

### Unique Identification Authority of India (UIDAI)

The UIDAI is a statutory authority established under the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 ("Aadhaar Act 2016").

It issues a unique 12-digit identification number to each individual in India. It serves as proof of identity and proof of address for residents of India.

### Widespread use of Aadhar - Statistics

As of July 31, 2023, 765.30 million Indians had linked Aadhaar with ration card to avail ration through Public Distribution System(PDS).

Over 280 million residents linked Aadhaar with cooking gas connection for LPG subsidy through PAHAL.

Over 788 million Aadhaar have been uniquely linked with the Bank Accounts on NPCI Mapper.

And almost 100 per cent of farmer-beneficiaries under PM Kisan Yojna are connected via Aadhaar.



## SPECIAL SESSION OF THE PARLIAMENT

### Context:

The Union Minister for Parliamentary affairs announced that a “special session” of Parliament would be held in September 2023. The special session happened from 18<sup>th</sup> September to 22<sup>nd</sup> September.

According to the legislative research organisation PRS, the Bills listed in the Lok Sabha’s bulletin include the Advocates (Amendment) Bill, the Press and Registration of Periodicals Bill and the Post Office Bill. The Rajya Sabha bulletin has the Repealing and Amending Bill, 2023. Parliament special session also saw a debate on the women’s reservation Bill which finally got assent from the President.

Here is a brief look at what these Bills say.

### 1. The Advocates (Amendment) Bill:

#### *Introduced by:*

Ministry of Law and Justice

#### **Status:**

The Bill was introduced and passed in the Rajya Sabha in August this year and is now pending in Lok Sabha.

#### **Objectives:**

It talks about repealing certain sections under the Legal Practitioners Act, 1879 and amending the Advocates Act, 1961.

“In keeping with the

Government’s policy of repealing all obsolete laws or pre-independence Acts which have lost their utility, the Government of India in consultation with the Bar Council of India has decided to repeal the Legal Practitioners Act, 1879 and to amend the Advocates Act, 1961 by incorporating the provisions of section 36 of the Legal Practitioners Act, 1879 in the Advocates Act, 1961 so as to reduce the number of superfluous enactments in the statute book,” states the accompanying statement of objects and reasons.

“This would also help to regulate the legal profession by a single Act, the Advocates Act, 1961,” it says.

### 2. The Press and Registration of Periodicals Bill:

#### *Introduced by:*

Ministry of Information and Broadcasting

#### *Status:*

It was introduced and passed by the Rajya Sabha in August 2023 and is pending in the Lok Sabha.

#### *Objectives:*

According to the government, the Bill aims to repeal and reenact the Press and Registration of Books Act, 1867. This is proposed for introducing a new Bill that can provide for — “(i) ease of

doing business; (ii) removing unnecessary procedural obstacles for publishers; and (iii) unburdening the owners of printing presses and publishers from the onerous task of furnishing declaration before the District Magistrate and filing of revised declaration every time there were any changes in its particulars.”

It talks about making the process of allotment of titles and registration of periodicals simple and simultaneous, through a completely online system, which would be fast-tracked by the Press Registrar General to ease the process for starting periodicals.

### 3. The Post Office Bill:

#### *Introduced by:*

Ministry of Information and Broadcasting

#### *Status:*

The Bill was introduced in the Rajya Sabha in August and is pending in both Houses.

#### *Objectives:*

It seeks to consolidate and amend the law relating to Post Offices in India.

It said of the Indian Post Office Act, 1898: “This Act primarily addresses mail services provided through the Post Office. Over the years, services available through the Post Office have diversified beyond mails and the Post Office network has become a vehicle for delivery of a variety

of citizen centric services which necessitated the repeal of the said Act and enactment of new law in its place.”

Further, it mentions the grounds under which the Central Government can intercept, open or detain delivery items. These include the interests of the security of the State, friendly relations with foreign states, public order, emergency, or public safety. It also speaks of the appointment of a Director General of Postal Services and their powers.

#### 4. Repealing and Amending Bill, 2023:

**Introduced by:**

Ministry of Law and Justice

**Status:**

Passed in the Lok Sabha in July, it is now pending in the Rajya Sabha.

**Objectives:**

This Bill repeals certain enactments that are now considered obsolete and also makes an amendment to the Factoring Regulation Act, 2011. It also repeals Appropriation Acts from 2013 to 2017 that related to the withdrawal of funds from the Consolidated Fund of India.

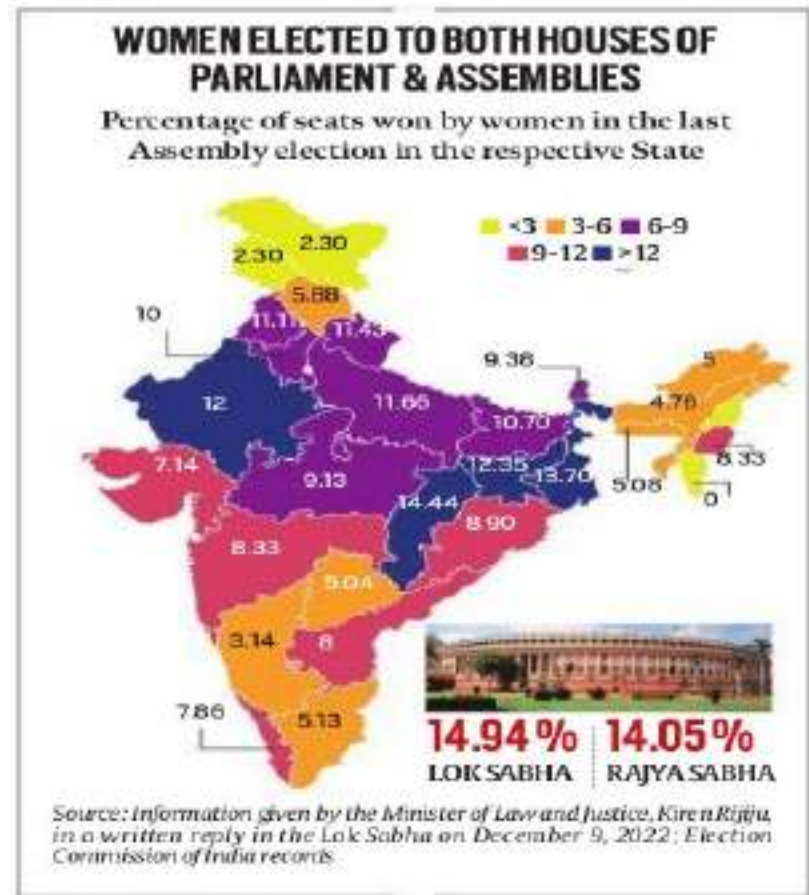
#### 5. Women’s Reservation Bill 2023:

The President of India has given assent to the Constitution (106th Amendment) Act 2023, which provides 1/3rd reservation for women in Lok Sabha and State Assemblies.

**What is the need for women reservation?**

**Limited political participation-** If a group is not represented proportionately in the political system, its ability

When compared to BRICS nations, including the new members, India has the 2nd lowest share (15%) of women in Parliament, just above Iran (6%).



to influence policy-making is limited.

As of May 2022, female representation in national parliaments was 26.2 %

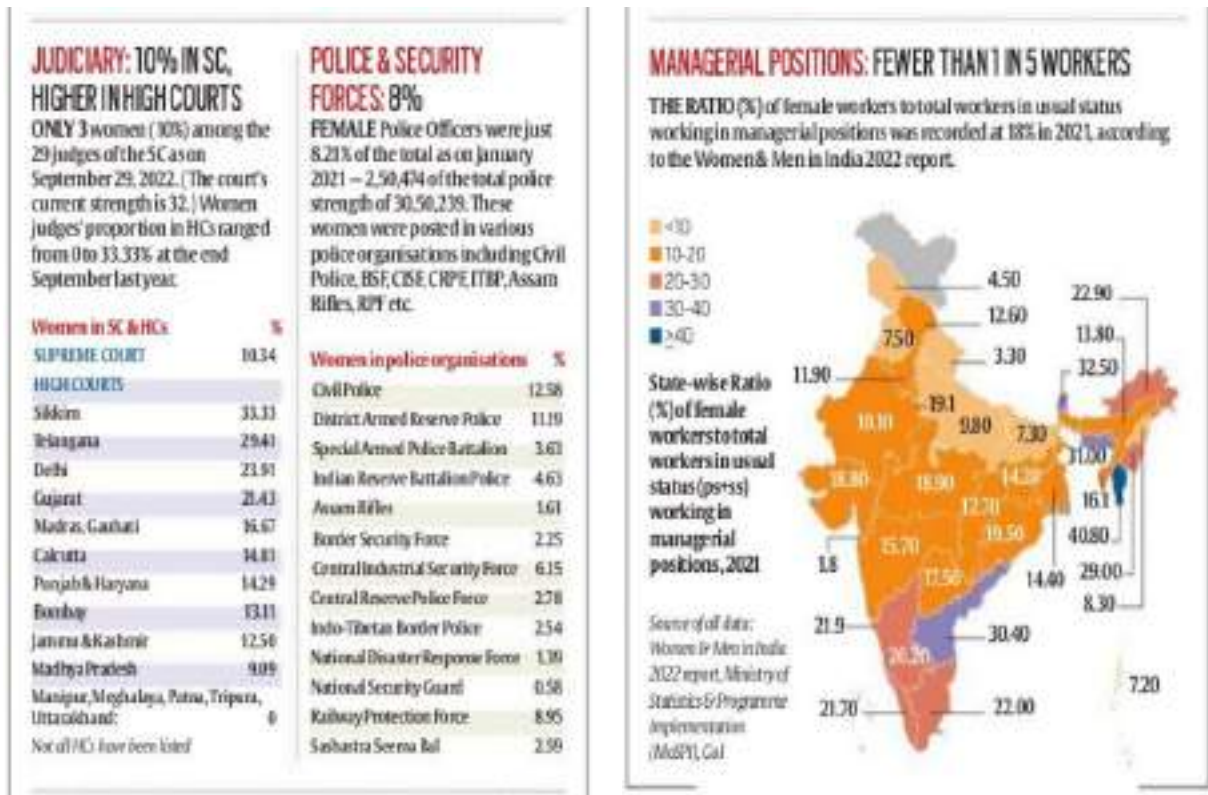
The average number of women MLAs in Assemblies across the nation accounts for only 8%.

Nagaland has got its first 2 women MLAs only in its recently held elections. Mizoram too has not had a women MLA in the past 7 Assemblies.

The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) provides that discrimination against women must be eliminated in political and public life.

A 2003 study about the effect of reservation for women in panchayats showed that women elected under the reservation policy invest more in the public goods closely linked to women’s concerns.

The Standing Committee on Personnel, Public



Grievances, Law and Justice (2009) had noted that reservation of seats for women in local bodies has enabled them to make meaningful contributions.

The Inter-Parliamentary Union (2022) has noted that legislated quotas have been a decisive factor in women's representation.

Women in other fields

Thus, the women reservation is a significant one which will empower themselves and also will empower the society at large.

**History of women reservation bill**

**Key features of the bill:**

The Bill proposes **33% reservation** for women in Lok Sabha, SLAs, and the Legislative Assembly of the National Capital Territory of Delhi.

This will also apply to the seats reserved for SCs and STs in Lok Sabha and states legislatures.

**Introduction of Article 330A and Article 332A in**

the Constitution to propose changes for Lok Sabha and Assemblies respectively.

The reservation will be effective after the census conducted after this Bill has been published.

Based on this, delimitation will be undertaken to reserve seats for women for a period of **15 years**. However, it shall continue till

Bill	About
81 <sup>st</sup> Amendment Bill, 1996	<ul style="list-style-type: none"> <li>To reserve not less than 1/3<sup>rd</sup> of the total number of seats filled by direct election in the House of the People and in the State Legislative Assemblies (SLAs) for women.</li> <li>Due to the dissolution of 11<sup>th</sup> Lok Sabha the bill was lapse</li> </ul>
84 <sup>th</sup> Amendment Bill, 1998	<ul style="list-style-type: none"> <li>To provide reservation for women in Lok Sabha, SLAs and National Capital Territory of Delhi for 15 years from the commencement of the proposed enactment</li> <li>Due to the dissolution of 12<sup>th</sup> Lok Sabha the bill was lapse</li> </ul>
85 <sup>th</sup> Amendment Bill, 1999	<ul style="list-style-type: none"> <li>To provide reservation for women in legislatures.</li> <li>Due to lack of consensus amongst the political parties</li> </ul>
108 <sup>th</sup> Amendment Bill 2008	<ul style="list-style-type: none"> <li>To reserve 1/3<sup>rd</sup> of all seats for women in Lok Sabha and SLAs.</li> <li>The allocation of reserved seats shall be determined by such authority as prescribed by Parliament.</li> <li>Due to the dissolution of 15<sup>th</sup> Lok Sabha the bill was lapse</li> </ul>
128 <sup>th</sup> Amendment Bill, 2023	<ul style="list-style-type: none"> <li>Proposes 33% reservation for women in Lok Sabha, SLAs and the Legislative Assembly of the National Capital Territory of Delhi.</li> <li>Both Lok Sabha and Rajya Sabha passed the bill</li> </ul>

such date as determined by a law made by Parliament.

Seats reserved for women will be rotated after each delimitation, as determined by a law made by Parliament.

### Advantages of the bill:

#### Political empowerment of women-

It is rightly perceived as a powerful and indispensable tool for eliminating gender inequality and discrimination.

#### Gender equity-

It can be achieved by increasing the number of women members in Parliament and State Assemblies.

#### Develop society-

Experience of women in family life as a leader, will help the society at large.

**Women leadership-** In 2001, a study on the impact of women's leadership on policy decisions in West Bengal has found that women invest more in infrastructure that are directly relevant to the needs of rural women like water, fuel etc.,

#### Electoral advantage for minorities-

Nominating women from minority communities will create an impact on minorities political participation.

New Orientation for implementation of gender budgeting

### Concerns of the bill:

Women will be used as

a puppet by their politically strong husbands & relatives and will work behind them indirectly.

Linking of the bill with delimitation exercise would mean a prolonged delay in the quota coming into force and it may not effectively be operationalized in Lok Sabha before the general elections of 2029 where 2021 census is already delayed due to COVID-19 pandemic.

#### Internal reservation-

This will also create a demand to expand this process to caste based women reservation. For instance, Joint Parliamentary Committee for 1996 bill pushed for reservation to women OBCs who constitute around 40% of the population.

#### Challenges in implementation of the bill in future with respect to rotating constituencies-

For instance, A study by the Ministry of Panchayati Raj recommended that rotation of constituencies should be discontinued at the panchayat level because almost 85% women were first-timers and only 15% women could get re-elected because the seats they were elected from were de-reserved.

#### Lack of merit-

The separate constituencies for women would not only narrow their outlook but lead to perpetuation of unequal status because they would be seen as not competing on merit.

#### Electoral reforms issue-

Reservation alone would not lead to political empowerment of women because larger issues of electoral reforms have not been addressed including

Criminalization of politics

Internal democracy in political parties

Influence of black money

### Conclusion:

This bill stresses the importance of fostering an enabling environment for the participation of women from all backgrounds in public life – which can have profound, positive implications for society as a whole. This is an important step towards implementation of the Sustainable Development Goals as well as India's obligations under the UN Convention on the Elimination of All Forms of Discrimination Against Women.

### What is a special session of Parliament?

The term sometimes refers to sessions the government has convened for specific occasions, like commemorating parliamentary or national milestones.

The Constitution **does not use the term "special session"**.

Article 85(1) of the Constitution states that "*The President shall from time to time summon each House of Parliament to meet at such time and place as he/she thinks fit*"

The President, *who summons a regular Parliamentary session will summon this session also as per provisions of this article.*

Article 352 of the Constitution **does refer to a “special sitting of the House”** which deals with proclamation of emergency. **44<sup>th</sup> amendment act 1978** added the part related to **special sitting to add safeguards to the power of proclaiming emergency in the country.**

What is the history of special sessions?

**Agenda-** It has been to either celebrate a historical legacy like the Indian freedom struggle and Indian Independence or to pass a bill.

The special sessions can be divided into two parts

**Proper special sessions-** It happens with debates or

discussions, and

**Midnight sessions-** It happens without any debates.

Article 352 (8) of the Constitution says that Where a notice in writing signed by not less than one-tenth of the total number of members of the House of the People has been given, of their intention to move a resolution for disapproving, or, as the case may be, for disapproving the continuance in force of, a Proclamation issued under clause (1) or a Proclamation varying such Proclamation,— (a) to the Speaker, if the House is in session; or (b) to the President, if the House is not in session, a special sitting of the House shall be held within fourteen days from the date on which such notice is received by the Speaker, or, as the case may be, by the President, for the purpose of considering such resolution.]

It holds a special place in the parliamentary calendar and history of democratic India.

**Special sitting in Lok Sabha-** It was organised on

May 13, 2012, a Sunday, to commemorate the 60th anniversary of the first sitting of the Indian Parliament.

**Special sitting in Rajya Sabha-** It was organised in 1977 and 1991 when the Lok Sabha was under dissolution to decide on the President’s Rule.

**2023 special session-** Amidst Amrit Kaal, Parliament is looking forward to have fruitful discussions and debates.

Proper special sessions	Midnight sessions
1962- organized to discuss the issue of Indo-China War	<b>1947-</b> held on the eve of Independence
1997- organized to mark the 50 years of India’s Independence	<b>1972-</b> to celebrate 25 years of India’s Independence
2015- organized to pay respect to the architect of the Indian constitution, Dr. B. R. Ambedkar	<b>2017-</b> first time a bill was discussed in a special session (for the GST rollout)



# INTERNATIONAL RELATIONS



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INDO CANADA TIES

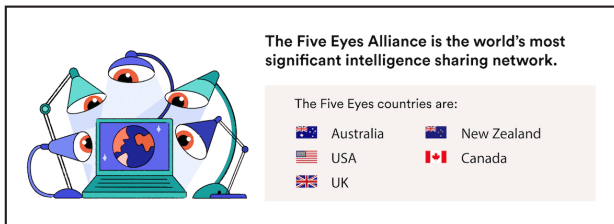
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# FIVE EYES ALLIANCE

## Context

The recent India-Canada standoff regarding allegations of Indian government involvement in the killing of a separatist leader in Canada has brought attention to the role of the Five Eyes Alliance.



## About

It is a multilateral intelligence-sharing network shared by over 20 different agencies of five English-speaking countries — Australia, Canada, New Zealand, the United Kingdom and the United States.

It is both surveillance-based and signals intelligence (SIGINT).

Intelligence documents shared between the member countries are classified as ‘Secret—AUS/CAN/NZ/UK/US Eyes Only,’ which gave the group its title ‘Five Eyes.’

## Background of the alliance

The alliance between the U.S. and the U.K. evolved around the Second World War to counter the Cold War Soviet threat.

The two countries, which had successfully deciphered German and Japanese codes during the World War, forged a collaboration to share intelligence related to signals such as radio, satellite and internet communications.

In the aftermath of the war in 1946, the alliance was formalised through an agreement for cooperation in signals intelligence.

The treaty called the British-U.S. Communication Intelligence Agreement, or BRUSA (now known as the UKUSA Agreement), was signed between the State-Army-Navy Communication Intelligence Board (STANCIB) of the U.S. and the London Signal Intelligence Board (SIGINT) of Britain.

Its scope was limited to “communication intelligence matters only” related to “unrestricted” exchange of intelligence products in six areas:

Collection of traffic;

Acquisition of communication documents and equipment;

Traffic analysis;

Cryptanalysis;

Decryption and translation; and

Acquisition of information regarding communication organisations, practices, procedures, and equipment.

The arrangement was later extended to ‘second party’ countries —Canada joined in 1948, while Australia and New Zealand became part of the alliance in 1956.

These partner nations exchange a wide spectrum of intelligence within one of the world’s most tightly-knit multilateral agreements as part of the collaboration.

Following its origin, the agency later enlarged its core group to ‘Nine Eyes’ and 14 Eyes alliances as well, encompassing more countries as security partners.

The ‘Nine Eyes’ group expands to cover the Netherlands, Denmark, France and Norway, whereas the 14 Eyes bloc further includes Belgium, Italy, Germany, Spain and Sweden.

## NORMAN E BORLAUG AWARD

### Context

Swati Nayak, an Indian agriculture scientist known as “Bihana Didi” (Seed Lady) by local communities in Odisha, was awarded the prestigious Norman E Borlaug Award for 2023.

### About Norman E Borlaug Award

Norman E. Borlaug Award is presented annually by the World Food Prize Foundation, Endowed by the Rockefeller Foundation.

The award is designed to honour exceptional scientists under the age of 40 who are actively engaged in addressing the global challenges of food and nutrition security and the eradication of hunger.

The award is named in memory of Dr. Norman E. Borlaug, a renowned agronomist and the chief architect of the Green Revolution. Dr. Borlaug was awarded the Nobel Peace Prize in 1970 for his contributions to increasing agricultural productivity and alleviating hunger.

Recipients of the award are individuals who work directly with farmers, animal herders, fishers, or others in rural communities. They can be from any discipline or enterprise related to food production, processing, and distribution.

The award includes a diploma featuring an image of Dr. Norman Borlaug at work in the fields of Mexico, symbolising his dedication to agriculture and food security. In addition to the diploma, the recipient is awarded a cash prize of \$10,000.

### Contributions of Swati Nayak

She introduced Sahbhagi Dhan, a drought-tolerant variety of rice suitable for hilly uplands, and ‘BINA Dhan-11’, which is flood-tolerant.

Sahabhagi Dhan remains one of the most in-demand products in Odisha and the rest of India. Nayak is fondly referred to by the local communities with whom she has worked as



“Bihana Didi,” meaning “Seed Lady.”

BINA-Dhan-11’, which contains a submergence-tolerant Sub1 gene identified from an indigenous land race of Odisha.

The Sub1 gene has been incorporated into many existing popular high-yielding varieties such as ‘Samba Mahsuri’, ‘Swarna’ and ‘Ranjit’.

There are, likewise, other drought-tolerant varieties, such as ‘DRR Dhan 42’ and ‘DRR Dhan 44’.

She has played a catalytic role in nurturing regional collaboration through the “Seed Without Borders” policy agreement, which speeds the dissemination of modern rice varieties across South and Southeast Asia.

Her instrumental involvement in introducing promising novel rice varieties from Bangladesh to India and beyond has transcended geographical boundaries, ensuring that research innovations swiftly reach the hands of farmers across nationalities.



# GABON ELECTIONS

## CONTEXT:

Albert Ondo Ossa, Gabon's main opposition candidate in the August 26 presidential election has claimed victory in the election while dismissing Wednesday's coup in the oil-rich central African country.

## STORYSO FAR:

A recent coup in the Central African nation of Gabon is the latest nondemocratic transition of power on the continent, following a July coup in Niger and 2022 coups in Burkina Faso and Mali.

## DATA ABOUT GABON:

Gabon, country lying on the west coast of Africa, astride the Equator.

A former French colony, Gabon retains strong ties to France and to the French language and culture.

The capital is **Libreville**.

Gabon, a central African country, is rich in natural resources. Located on the Atlantic Ocean, it borders Cameroon, Equatorial Guinea, and the Republic of Congo.



**Gabon is one of the world's largest producers of manganese.**

Diamonds and gold are also mined in the country, and there are reserves of high-quality iron ore (60–65 percent iron content)

It is one of the fast-developing countries of Africa.

# EAST ASIA SUMMIT AND ASEAN INDIA SUMMIT

## Context

Recently, the Prime Minister (PM) of India attended the 20th Association of Southeast Asian Nations (ASEAN)-India Summit and the 18th East Asia Summit (EAS) in Jakarta, Indonesia.

## Highlights of 20th ASEAN INDIA Summit

Speaking at the 20th ASEAN-India summit in Jakarta, Indonesia's capital, Prime Minister Narendra Modi said that ASEAN (Association of Southeast Asian Nations) is the "central pillar" of India's Act East Policy and the country fully supports the group's centrality and outlook on the Indo-Pacific.

The PM of India presented a 12-point proposal for strengthening India – ASEAN cooperation covering connectivity, digital transformation, trade and economic engagement, addressing contemporary challenges, people-to-people contacts, and deepening strategic engagement.

The 12-point proposal included the following:

Establishing multi-modal connectivity and economic corridor that links South-East Asia-India-West Asia-Europe.

Offered to share India's Digital Public Infrastructure Stack with ASEAN partners.

Announced an ASEAN-

India fund for Digital Future focusing on cooperation in digital transformation and financial connectivity.

Announced renewal of support to the Economic and Research Institute of ASEAN and East Asia (ERIA) to act as a knowledge partner for enhancing our engagement.

Called for collectively raising issues being faced by Global South in multilateral fora

Invited ASEAN countries to join the Global Centre for Traditional Medicine being established by WHO in India.

Called for working together on Mission LiFE (Lifestyle for the Environment).

Offered to share India's experience in providing affordable and quality medicines to people through Jan-Aushadhi Kendras.

Called for a collective fight against terrorism, terror financing, and cyber-disinformation.

Invited ASEAN countries to join the Coalition for Disaster Resilient Infrastructure. Called for cooperation in disaster management.

Called for enhanced cooperation on maritime safety, security, and domain awareness.

## Highlights of the 18th East Asia Summit

The PM of India

emphasized the significance of the EAS mechanism and reaffirmed India's support for further strengthening it.

India's strong support for ASEAN centrality and called for ensuring a free, open and rules-based Indo-Pacific.

Insights into the PM's discussion on the QUAD's vision and the cooperative approach to address global challenges like terrorism, climate change, and resilient supply chains.

India's initiatives in climate change, including ISA (International Solar Alliance), CDRI (Coalition for Disaster Resilient Infrastructure), LiFE (Mission LiFE), and OSOWOG (One Sun One World One Grid) were highlighted.

## About ASEAN

The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration)

Founding Fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore and Thailand

Presently, ASEAN has 10 member countries – Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar and Cambodia.

ASEAN has an anthem,

a flag and biannual summits (twice a year) with a rotating chairmanship.

ASEAN's official motto is "One Vision, One Identity, One Community".

Southeast Asia consists of eleven countries: Brunei, Cambodia, East Timor (Timor-Leste), Indonesia, Laos, Malaysia, Myanmar (Burma), the Philippines, Singapore, Thailand, Vietnam.

East Timor is the only Southeast Asian country, which was not a part of ASEAN groupings.

**ASEAN Community is comprised of three pillars:**

**ASEAN Political-Security Community** - The ASEAN Political-Security Community (APSC) aims to ensure regional peace and a just, democratic, and harmonious environment.

**ASEAN Economic Community** - The AEC is the realization of the region's end goal of economic integration. It envisions ASEAN as a single market and product base, a highly competitive region, with equitable economic development, and fully integrated into the global economy.

**ASEAN Socio-Cultural Community** - The ASEAN Socio Cultural Community is all about realizing the full potential of ASEAN citizens.

**Goals and Objectives of**

## ASEAN

To accelerate the economic growth, social progress and cultural development in the region through joint endeavors in the spirit of equality and partnership in order to strengthen the foundation for a prosperous and peaceful community of Southeast Asian Nations

To promote regional peace and stability through abiding respect for justice and the rule of law in the relationship among countries of the region and adherence to the principles of the United Nations Charter

To promote active collaboration and mutual assistance on matters of common interest in the economic, social, cultural, technical, scientific and administrative fields

To provide assistance to each other in the form of training and research facilities in the educational, professional, technical and administrative spheres

To collaborate more effectively for the greater utilization of their agriculture and industries, the expansion of their trade, including the study of the problems of international commodity trade, the improvement of their transportation and communications facilities and the raising of the living standards of their peoples

To promote Southeast Asian studies; and

To maintain close and beneficial cooperation with existing international and regional organizations with similar aims and purposes, and explore all avenues for even closer cooperation among themselves.

## Fundamental Principles of ASEAN

Mutual respect for the independence, sovereignty, equality, territorial integrity, and national identity of all nations;

The right of every State to lead its national existence free from external interference, subversion or coercion;

Non-interference in the internal affairs of one another;

Settlement of differences or disputes by peaceful manner;

Renunciation of the threat or use of force; and

Effective cooperation among themselves.

## Forums are led by ASEAN

ASEAN Regional Forum (ARF): Launched in 1993, the twenty-seven-member multilateral grouping was developed to facilitate cooperation on political and security issues to contribute to regional confidence-building and preventive diplomacy.

ASEAN Plus Three: The

consultative group initiated in 1997 brings together ASEAN's ten members, China, Japan, and South Korea.

East Asia Summit (EAS): First held in 2005, the summit seeks to promote security and prosperity in the region and is usually attended by the heads of state from ASEAN, Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States. ASEAN plays a central role as the agenda-setter.

ASEAN Defence Ministers Meeting (ADMM)-Plus Meeting: The ADMM-Plus is a platform for ASEAN and its eight Dialogue Partners to strengthen security and defence cooperation for peace, stability, and development in the region. The ADMM-Plus countries include ten ASEAN Member States and eight Plus countries, namely Australia, China, India, Japan, New Zealand, ROK, Russian Federation, and the United States. The first ADMM-Plus was convened at Ha Noi, Vietnam in 2010.

## About EAST ASIA SUMMIT

The EAS was established in 2005 as an Association of Southeast Asian Nations (ASEAN)-led initiative. The EAS is the only leader-led forum in the Indo-Pacific that brings together all key partners to discuss political, security and economic issues of strategic importance.

The EAS operates on the principles of openness,

inclusiveness, respect for international law, ASEAN centrality, and ASEAN's role as the driving force. The idea of an East Asia Grouping was first proposed by then Malaysian Prime Minister Mahathir Mohamad in 1991. The first summit was held in Kuala Lumpur, Malaysia on 14 December 2005.

## Members

The EAS comprises 18 members: the 10 ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam) and eight dialogue partners (Australia, China, India, Japan, New Zealand, Republic of Korea, Russia and the United States).

## EAS Meetings and Processes

The EAS is usually held alongside ASEAN Leaders' meetings in the fourth quarter of every year.

The EAS Leaders' Summit is supported by various ministerial and senior officials' meetings, such as the Foreign Ministers' Meeting, the Economic Ministers' Meeting, the Defence Ministers' Meeting, and the Education Ministers' Meeting.

The EAS has six priority areas of cooperation: environment and energy; education; finance; global health issues and pandemic diseases; natural disaster management; and ASEAN

connectivity.

The EAS also covers other topics of common interest and concern, such as trade and investment, regional architecture, maritime security, non-proliferation, counterterrorism, and cyber security.

## India and East Asia Summit:

India has been a founding member of the EAS since 2005 and has actively participated in all its meetings and activities.

India views the EAS as a key platform for enhancing its Act East Policy and strengthening its strategic partnership with ASEAN and other regional countries.

At the East Asia Summit in Bangkok in November 2019, India had unveiled India's Indo-Pacific Oceans Initiative (IPOI), which is aimed at forging partnerships to create a secure and stable maritime domain.

India has contributed to the EAS cooperation in various fields, such as disaster management, renewable energy, education, health, connectivity, maritime security and counterterrorism.

# “BUILDING BRICS”: THE EXPANSION AND THE CHANGING WORLD ORDER

The 15th BRICS summit in Johannesburg extended invitations to six additional countries namely Iran, the United Arab Emirates, Saudi Arabia, Argentina, Egypt, and Ethiopia. Earlier it was a five-member grouping consisting of Brazil, Russia, India, China, and South Africa.

This move aims to bolster the collective voice of the Global South and foster multipolarity in the international arena.

## Background of BRICS formation

Jim O’Neil’s conception of BRIC, a grouping of four emerging economies i.e., Brazil, Russia, India, and China.

Later India and Brazil joined hands with South Africa to form IBSA in 2003. China played a trump card and bought South Africa into BRIC, thus turning it into BRICS.

The BRICS Leaders’ Summit is convened annually. It does not exist in the form of an organization, but it is an annual summit

between the supreme leaders of five nations. BRICS has held 14 summits in the past 13 years.

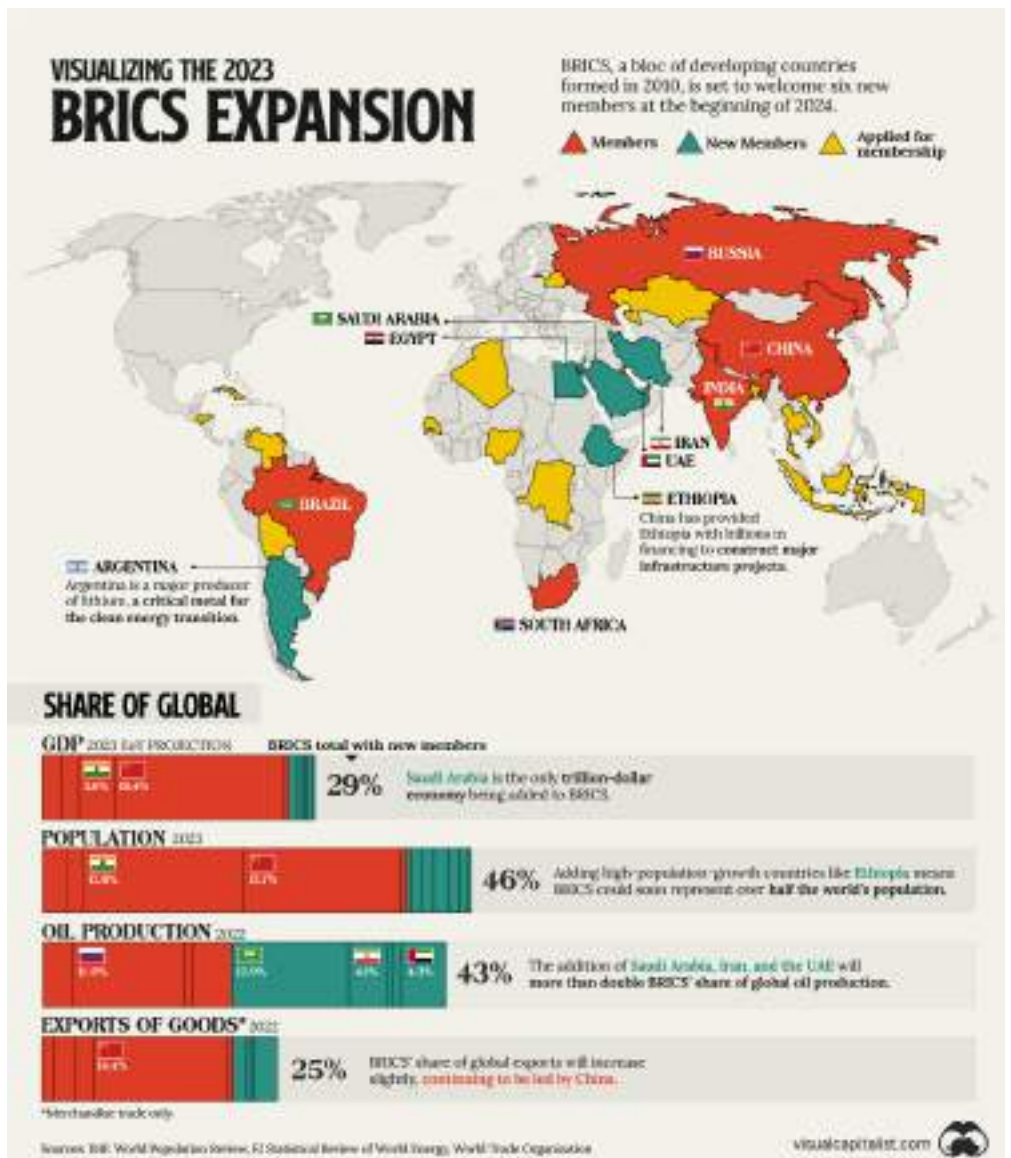
## Significance of BRICS

Together, BRICS accounts for about 41% of the world’s population; about 24% of Global GDP and 16% of global trade, making it a critical economic engine. (Before

expansion). It is an emerging investment market and global power bloc.

BRICS represents the World’s top emerging economies and claims to serve as a bridge between the developed and developing world.

All are coming as a part of changing world order, South-South cooperation,



multilateralism, increased accommodation in global, attracting investment & stable economic system.

It was formed in the context that China and India, by 2050, become the world's dominant suppliers of manufactured goods and services.

## **Achievements of BRICS**

The main reason for starting cooperation among the BRIC nations was the financial crisis of 2008. They raised concerns over the sustainability of the dollar-dominated monetary system. They are developing a joint payment mechanism to reduce foreign trade settlements in US Dollars.

BRICS called for the reform of multilateral institutions. They have managed to push for international reform which led to IMF Quota reform in 2010.

New Development Bank was set up based on the Fortaleza Summit, 2014 to provide development assistance. It has already financed 96 projects valued at \$33 billion.

Contingent Reserve Arrangement (CRA), a financial mechanism to protect against global liquidity pressures. It supports countries facing short-term balance-of-payments pressures.

Comprehensive programme to expand trade and investment cooperation among the 5 member countries.

India is taking the lead

role in digital health, digital forensics, film technology, traditional medicine, sustainable water management, internships, and fellowships.

## **Four Areas of Cooperation of BRICS**

### **1. Economic Cooperation**

There are rapidly growing trade and investment flows between BRICS countries as well as economic cooperation activities across a range of sectors.

Agreements have been concluded in the areas of Economic and Trade Cooperation; Innovation Cooperation, Customs Cooperation; strategic cooperation between the BRICS Business Council, Contingent Reserve Arrangement, and the New Development Bank.

These agreements contribute to the realization of the shared objectives of deepening economic cooperation and fostering integrated trade and investment markets.

### **2. People-to-people exchange**

BRICS members have recognized the need for strengthening People-to-People exchanges and fostering closer cooperation in the areas of culture, sport, education, film, and youth.

People-to-people exchanges seek to forge new friendships; and deepen relations and mutual

understanding between BRICS peoples in the spirit of openness, inclusiveness, diversity, and mutual learning.

Such People-to-people exchanges include the Young Diplomats Forum, Parliamentarian Forum, Trade Union Forum, Civil BRICS as well as the Media Forum.

### **3. Political and Security Cooperation**

BRICS member political and security cooperation is aimed at achieving peace, security, development, and cooperation for a more equitable and fairer world.

It provides opportunities for sharing policy advice and exchanges of best practices in terms of domestic and regional challenges as well as advancing the restructuring of the global political architecture so that it is more balanced, resting on the pillar of multilateralism.

It is utilized as a driver for South Africa's foreign policy priorities including the pursuit of the African Agenda and South-South Cooperation.

### **4. Cooperation Mechanism**

Cooperation among members is achieved through:

Formal diplomatic engagement between the national governments.

Engagement through government-affiliated institutions, e.g. state-owned enterprises and business councils.

Civil society and People-to-People engagement.

## Geo-political Importance of BRICS Expansion

The recent additions to BRICS, especially those from West Asia, align well with the group's political and economic framework.

China and India receive 35% of Saudi Arabia's oil production. Russia, a major oil supplier to China and India, is exploring Brazil as a market. Despite U.S. sanctions, Iran has considerably increased its oil production, and most of it going to China.

Egypt and Ethiopia play essential roles in the strategically vital Horn of Africa and the Red Sea region.

Saudi Arabia has pursued de-escalation and engaged in dialogue with various countries, including Turkey and Iran.

The UAE has normalized relations with Iran and is expanding its maritime presence across the Gulf, the Gulf of Aden, the Red Sea, and the Horn of Africa.

Iran's inclusion in BRICS is significant. It opens opportunities for enhanced regional economic cooperation and the revitalization of long-dormant north-south connectivity projects, including the Chabahar port.

Brazil is the largest producer of Ethanol; South Africa has a significant amount

of coal-bedded methane; India produces biomass Energy; China produces solar Panels; Argentina is the second-largest economy in Latin America.

Potential of Brazil's investments in space, defence, agriculture equipment, animal husbandry, post-harvest technologies, and biofuels.

### Importance for India

India can benefit from the collective strength of BRICS by way of consultation and cooperation on economic issues of mutual interests, as well as topical global issues, such as international terrorism, climate change, food and energy security, reforms of global governance institutions, etc.

India remains engaged with the other BRICS countries on its UNSC and NSG membership. First time India talked about Traditional medicine systems in the BRICS NDB meeting.

The NDB will help India to raise and avail resources for their infrastructure and sustainable development projects. The NDB has approved its first set of loans, which included a loan of US\$ 250 million in respect of India's Multi-tranche Financing Facility for Renewable Energy Financing Scheme.

## Challenges pertaining to BRICS

The market dominance of the big three Russia-China-India is a challenge for BRICS as it moves ahead. To become a true representative of large emerging markets

across the world, BRICS must become pan-continental. Its membership must include more countries from other regions and continents.

BRICS will need to expand its agenda to increase its relevance in the global order. As of now, climate change and development finance, aimed at building infrastructure dominate the agenda.

As BRICS moves forward foundational principles i.e., respect for sovereign equality and pluralism in global governance are liable to be tested as the five-member countries pursue their own national agendas.

The military standoff between India and China on the Doklam plateau, has effectively brought to an end the naive notion that a comfortable political relationship is always possible amongst the BRICS members.

China's efforts to co-opt nation-states, which are integral to its Belt and Road Initiative, into a broader political arrangement have the potential to cause conflict among BRICS members, especially China and India.

Global political turmoil like the Afghanistan crisis. Various regions still have conflict potential. The arms control architecture is deliberately undermined by the US withdrawal from the Intermediate-Range Nuclear Force Treaty.

Structural imbalances in

the World Economy. Threats from unfair competition practices, sanctions, trade wars, abuse of US \$ status as World reserve currency.

### Way Forward

To become a true representative of Emerging economies, BRICS must increase membership and expand its agenda to climate change, development finance, etc.

BRICS + and NextEleven (N - 11) = 11 countries poised to become the biggest economies in the world in the 21st century after BRICS countries. They are South Korea, Mexico, Bangladesh, Egypt, Indonesia, Iran, Nigeria, Pakistan, Philippines, Turkey, and Vietnam.

It will be useful for BRICS to develop an institutional research wing on the lines of the OECD, offering solutions

relevant to the developing world.

It can consider Climate Change and UN SDGs by setting up an Energy alliance and Energy Policy.

The idea of setting up a Credit Rating Agency (BCRA) as proposed by India (opposed to West Standard and Poor, Moody) can be on BRICS Future Agenda.

## INDO CANADA TIES

### CONTEXT

Tensions flared between India and Canada after Mr. Trudeau's allegation linking Indian agents to the killing of Khalistani separatist leader Hardeep Singh Nijjar in June.

### History of India-Canada relations

Early Immigration and Freedom Struggle:

The relationship between India and Canada can be traced back to the late 19th century when Indian immigrants, primarily Sikhs, arrived in Canada to work on projects like the Canadian Pacific Railway.

Indian migrants in Canada, notably in places like Vancouver, played a role in the Indian freedom struggle. Organizations like the "Swadesh Sevak Home" were involved in mobilizing support against British colonial rule.

Diplomatic Relations (1947):

India and Canada established diplomatic relations in 1947, following India's independence from British colonial rule. The shared democratic values of both countries laid the foundation for a diplomatic partnership.

Early Focus on Development and Education:

In the early years of their relationship, India and Canada primarily cooperated in areas such as development assistance and education. Canada was one of the largest providers of foreign aid to India during the Cold War period.

### Challenges in Bilateral Relations:

Bilateral relations faced challenges, notably during India's nuclear tests and the bombing of Air India Flight 182 in 1985 by Sikh terrorists, which had connections to Canada.

Economic Liberalization and Expansion (1990s):

In the 1990s, India's economic liberalization opened up new avenues for cooperation between the two nations, particularly in trade and investment. Canada recognized the economic potential of the Indian market.

Strategic Partnership (2015):

The relationship reached a significant milestone in April 2015 when Indian Prime Minister Narendra Modi visited Canada. During this visit, the two countries elevated their ties to a strategic partnership, signifying a broader and deeper cooperation.

### Pillars of India - Canada Relations

#### 1. Political Relations:

India and Canada have a strategic partnership supported by Ministerial Dialogues on various aspects, including foreign policy, trade and investment, finance, and energy.



Several agreements, including the Air Services Agreement, Extradition Treaty, Nuclear Cooperation Agreement, and Social Security Agreement, have been signed.

### 2. Commercial Relations:

Bilateral trade between India and Canada is valued at approximately \$12 billion in 2023. India was Canada's tenth-largest trading partner in 2022.

The trade balance favors India. India exports pharmaceuticals, gems and jewelry, textiles, and machinery to Canada, while Canada exports pulses, timber, pulp and paper, and mining products to India.

Canada is the 18th largest foreign investor in India, having invested approximately \$3,306 million between April 2000 and March 2023.

Both countries are in technical negotiations for a Comprehensive Economic Partnership Agreement (CEPA), covering trade in goods, services, investment, trade facilitation, and other areas.

To diversify the Canadian economy, India is a critical partner under its Indo-Pacific strategy, given the country's growing economic and demographic importance in the region.

### 3. Cultural Relations:

The Indian diaspora in Canada is significant, with over 1.3 million Canadians of Indian origin, contributing to

soft power diplomacy.

Canada has a sizable Indian diaspora, with Persons of Indian Origin (PIOs) and Non-Resident Indians (NRIs) accounting for more than 4% of the nation's population.

Canada designated April as Sikh Heritage Month in 2019.

The number of Indians granted permanent residency in Canada increased by 260% from 2013 to 2022.

A substantial number of Indian immigrants have come to Canada as professionals, semi-professionals, skilled laborers, and entrepreneurs. Indian entrepreneurs show a growing interest in Canada's Startup Visa (SUV) program.

The Canadian parliament has more than 15 Indian-origin MPs holding ministry portfolios in the current cabinet.

### 4. Education and Innovation:

Indian students studying in Canada now comprise approximately 40% of the entire population of international students in Canada.

Canada's Intellectual Property Office and India's Department of Industrial Policy and Promotion (DIPP) agreed to strengthen cooperation in the area of Intellectual Property Rights (IPR).

### 5. Tourism:

Canada is India's fourth largest source of tourists, accounting for 5.3% (80,437) of all Foreign Tourist Arrivals

(FTAs) in India during 2021.

### 6. Technological Cooperation:

Research and development collaborations aim to promote industrial R&D with potential applications in the development of new intellectual property, processes, prototypes, or products.

IC-IMPACTS is a Canada-India Research Centre of Excellence dedicated to research collaborations.

Collaboration in space includes Memorandums of Understanding (MOUs) between ISRO and the Canadian Space Agency (CSA) for space exploration and satellite tracking.

ISRO's commercial arm, ANTRIX, has launched nine nanosatellites in collaboration with the University of Toronto's Institute of Aerospace Studies (UTIAS).

Collaboration in nuclear energy, including the Nuclear Cooperation Agreement (NCA) and exchanges between India's Atomic Energy Regulatory Board (AERB) and the Canadian Nuclear Safety Commission (CNSC), promotes nuclear safety and regulatory experiences.

### Challenges to India-Canada relations

#### 1. Trade Barriers and Economic Challenges:

Trade disputes and barriers, including tariffs and non-tariff barriers, have

hindered bilateral trade and economic cooperation.

Recent pause in trade negotiations on a Free Trade Agreement.

Concerns over India's restrictions on agricultural imports, particularly in areas like pulse crops.

## 2. Human Rights Concerns:

and religious places, leading to diplomatic tensions.

## 3. Visa and Immigration Issues:

Changes in Canadian visa and immigration policies have raised concerns in India.

India's suspension of visas for Canadians as a response, further escalating tensions.

## 4. Geopolitical

Khalistan movement.

## 5. Perceived Lack of Focus on India:

The perception that the current Canadian government has prioritized other regions, potentially at the expense of its relationship with India.

This is a concern for India, given the emerging geopolitical importance of the Indo-Pacific region.

## 6. Khalistan Issue

The Khalistani separatist movement has been a source of tension between India and Canada for many years. The movement advocates for the creation of an independent Sikh state, known as Khalistan, separate from India.

The Growing influence of Khalistani advocacy in Canada: In recent years, the Khalistani issue has become more prominent in Canada due to the presence of a vocal Sikh diaspora in Canada, advocating for the Khalistan cause. This is due in part to the rise of social media and the spread of Khalistani propaganda online. India has expressed concerns about the influence of Canada-based Khalistan sympathisers and has criticised Canada for not taking stronger action against them.

The tensions between India and Canada flared up again over the Khalistani issue. Canadian Prime Minister accused India of being involved in a Sikh separatist's assassination, a claim that India vehemently



Canada's vocal stance on human rights issues in India, especially regarding the treatment of religious minorities, such as Sikhs and Muslims.

India's concerns over attacks on Hindu minorities

## Differences:

Disagreements over various geopolitical issues, including Afghanistan, Iran, China, Pakistan, and terrorism.

Differences in approaches to issues like the political situation in Kashmir and the

denied.

**G20 Summit:** India and Canada met only on the sidelines of G20 Summit 2023 held in India. During the G20 summit, India held bilateral meetings with many world leaders but not with Canada.

**Pause in Trade negotiations:** India-Canada Free Trade Agreement talks have been again postponed due to the concerns about pro-Khalistan activities.

**Ambassador removal:** Both India and Canada expelled the senior diplomats. Moreover in recent, India has ordered Canada to reduce its diplomats in the country.

**Visa issue:** As a result of absurd accusations and ongoing diplomatic tensions, India has suspended the processing of visas for Canadians wishing to visit India, both within India and in third-party countries.

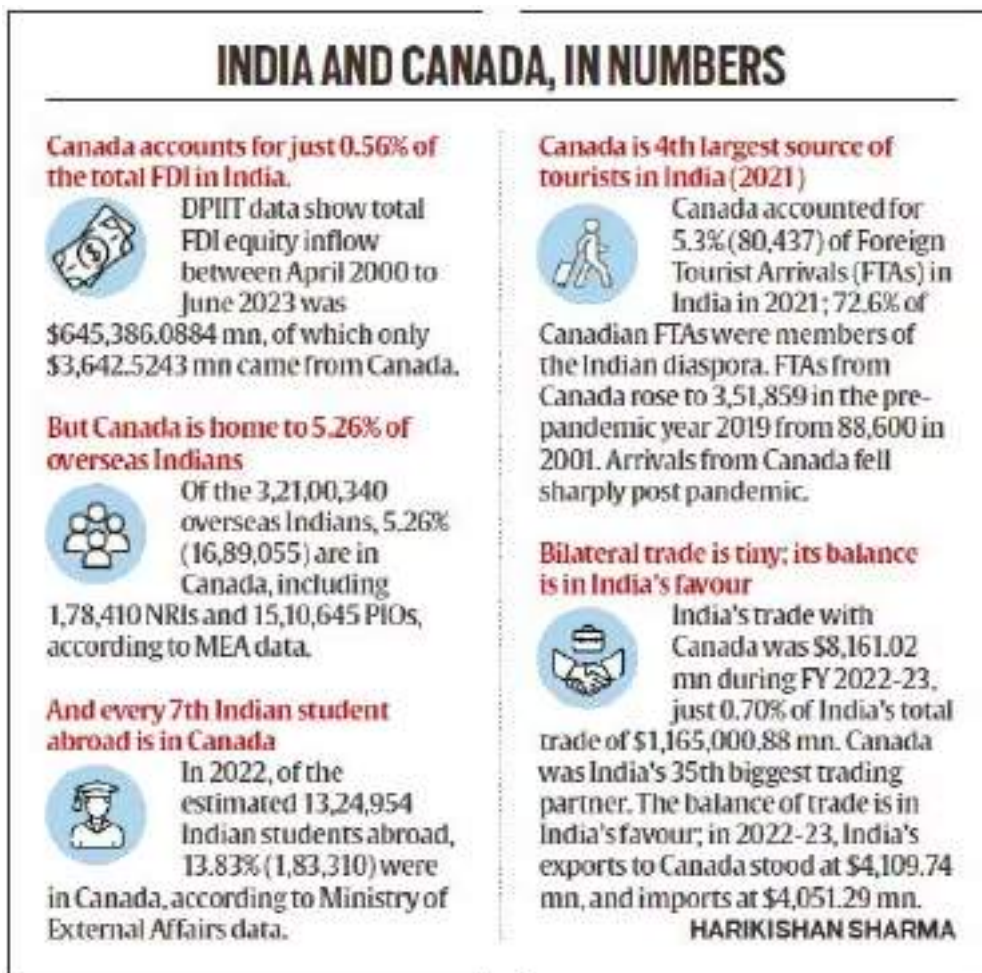
**Role of Five Eyes and US:** The 'Five Eyes' is an intelligence-sharing network of Australia, Canada, New Zealand, the United Kingdom and the United States. In a recent interview, the US Ambassador to Canada stated that "shared intelligence among Five Eyes partners" helped to lead Canada to the assertions made by the Canadian Prime Minister.

The ongoing issue has further deteriorated the diplomatic relations between India and Canada. India has stated that such unsubstantiated allegations seek to divert attention away from Khalistani terrorists and extremists who have sought refuge in Canada and continue to pose a threat to India's sovereignty and territorial integrity.

## What could be the way ahead?

**Diplomatic Engagement:**

Regular high-level dialogue is crucial. Additionally, both countries should appoint dedicated envoys



or ambassadors to focus on specific aspects of the relationship, such as trade, security, or cultural exchange.

Addressing the Khalistan Issue:

Open and inclusive dialogue should involve not just governments but also representatives from the Sikh community, including moderates. A collaborative approach to address this issue can help ease tensions.

#### **Deepening Economic Cooperation:**

Both nations should prioritize the negotiation of a Comprehensive Economic Partnership Agreement (CEPA) to facilitate increased trade. In addition, they can explore the possibility of a bilateral investment treaty to provide more protection to investors.

#### **Investment and Infrastructure:**

Promote collaboration in infrastructure development, including smart cities and transportation projects. Governments and businesses should be encouraged to invest in each other's countries.

#### **Strategic Cooperation:**

Cooperation on global security issues, such as counter-terrorism and ensuring a free and open Indo-Pacific, should be a priority. Joint military exercises and intelligence sharing can bolster strategic cooperation.

#### **Environmental Collaboration:**

Collaborate on renewable energy projects, technology transfer, and sustainable development initiatives. Both countries can work together to meet their climate change commitments and encourage green growth.

#### **People-to-People Ties:**

Increase cultural exchanges, educational programs, and scholarships for students from both countries. This can foster a deeper understanding of each other's culture and values.

#### **Science and Technology Collaboration:**

Encourage joint research and development initiatives, especially in emerging technology sectors. This can lead to innovation and economic growth in both nations.

#### **Support for the Indian Diaspora:**

Engage with the Indian diaspora in Canada to strengthen ties and encourage their participation in cultural and business exchanges.

#### **Track II Diplomacy:**

Promote and support Track II diplomacy efforts that involve non-governmental organizations, think tanks, and academics to foster dialogue, understanding, and collaborative solutions.

#### **Promotion of Art and Culture:**

Encourage the exchange of art, music, and literature to promote cultural ties. This can help showcase the diversity and richness of both nations' cultures.

#### **Youth Exchange Programs:**

Facilitate youth exchange programs that allow young people from India and Canada to experience each other's culture, education systems, and daily life.

#### **Business Chambers and Associations:**

Encourage business chambers and trade associations to play an active role in promoting economic ties and facilitating partnerships between companies in both countries.



# SOCIETY &

# SOCIAL JUSTICE

What's Inside?

1. PRADHAN MANTRI DAKSHATA AUR KUSHALATA SAMPANNA HITGRAHI (PM-DAKSH) YOJANA
2. GUJARAT DECLARATION
3. AYUSHMAN BHAV CAMPAIGN

# PRADHAN MANTRI DAKSHATA AUR KUSHALATA SAMPANNA HITGRAHI (PM-DAKSH) YOJANA

## Context:

The Pradhan Mantri Dakshata Aur Kushalata Sampanna Hitgrahi (PM-DAKSH) Yojana was launched during 2020-21. During last three years of implementation from 2020-21 to 2022-23, a total of 107156 beneficiaries have been trained and an amount of Rs. 213.83 crore has been spent under PM-DAKSH.

## About PM-DAKSH Yojana:

Pradhan Mantri Dakshata Aur Kushalata Sampanna Hitgrahi Yojana is a National Action Plan for the skilling of marginalized persons.

In 2020-21, the existing scheme of **Assistance for Skill Development of Other Backward Classes (OBCs), Economically Backward Classes (EBCs), De-Notified, Nomadic, and Semi-Nomadic Tribes (DNTs)**, was modified as a Central Sector Scheme with the **inclusion of Scheduled Castes (SCs), and Sanitation workers including waste pickers**, and was renamed as PMDAKSH Yojana.

## Objective of PM-DAKSH:

The main objective of the scheme is to increase the skill levels of the target youth by providing for long-term and short-term skills, followed by settlement in employment/selfemployment.

The purpose is to improve the all-round competency and adeptness of around 2.71 lakh persons over the period of 2021-22 to 2025-26, from the following sections of the target groups:

**Artisans**– to improve their revenue generation capacities within their practicing vocations;

**Women** - to facilitate them to go in for self-employment thereby financially empowering them without neglecting their domestic activities; and

**Youth from the target groups** - may acquire long-term training and specialization in employable vocations giving them better standing in the job market.

## Key features of the scheme:

Free of cost training for the trainees through 100% grants by the Government.

Stipend of Rs. 1,000 to Rs. 1,500 per month per trainee for trainees having 80% and above attendance in short term and long-term training.

Wage compensation @ Rs.3000 per trainee (Rs.2500 as per PM-DAKSH and Rs.500 as per Common Cost Norms for trainees having 80% and above attendance in Reskilling/Up-skilling)

Trained candidates to be provided with certification after successful completion of training and assessment.

Trained candidates to be provided placement after assessment and certification

## Implementation:

The scheme is to be implemented through three Public Sector Undertakings (PSUs), of the Ministry of Social Justice & Empowerment, i.e. National Scheduled Castes Finance and Development Corporation (NSFDC), National Backward Classes Finance & Development Corporation (NBCFDC) and National Safai Karamcharis Finance & Development Corporation (NSKFDC).

## Eligibility:

Candidates of age group 18-45 years belonging to any of the following categories can apply for the training programme under PM-DAKSH:

- Persons belonging to the Scheduled Castes
- Other Backward Classes (OBCs) having Annual Family Income below Rs. 3.00 Lakh
- Economically Backward Classes (EBCs) having AFI below Rs. 1.00 Lakh
- De-Notified, Nomadic, and Semi-Nomadic Tribe (DNT)

- Transgender (TG) community
- Safai Karamcharis (including waste pickers) and their dependents

### Target:

The scheme has a target to skill around 2,71,000 SC/OBC/EBC/DNT persons, Safai Karamcharis including Waste Pickers during the next five years (2021-22 to 2025-26) with a budget outlay of Rs. 450.25 crore

### PM-DAKSH Portal and Mobile App:

PM-DAKSH Portal and PM-DAKSH Mobile App were **launched by the Ministry of Social Justice and Empowerment** on August 07, 2021. PM-DAKSH portal offers online registration for free of cost Skill Development Training

Programmes.

Some of the features of this portal are as follows:

Availability of all information related to skill development in one place for Scheduled Castes, Backward Classes and Safai Karamcharis.

Facility to register for the training institute and programme of their interest.

Facility to upload desired documents related to personal information.

Facility to register the attendance of the trainees through the face and eye scanning during the training period.

Monitoring facility through photo and video clip during training etc

## GUJARAT DECLARATION

### Context

World Health Organization (WHO) has released the outcome document of first WHO Traditional Medicine Global Summit 2023 in form of “Gujarat Declaration”.

### About Traditional Medicine Global Summit 2023

The First global summit on Traditional Medicine was organised by the World Health Organization (WHO) and co-hosted by the Ministry of Ayush, from August 17-18, 2023, at Gandhinagar, Gujarat.

The highlight of summit was how to enable the appropriate development and application of digital health technologies, and artificial intelligence (AI) in particular, to advance digital health resources on Traditional complimentary integrative medicine (TCIM) for people’s health and well-being.

The summit reaffirmed global commitments related to indigenous knowledges, biodiversity and traditional, complementary and integrative medicine, including in the

- Declaration of Alma-Ata of 1978,
- Convention on Biological Diversity 1992,

- UN Declaration on the Rights of Indigenous Peoples 2007
- UN 2030 Agenda for Sustainable Development,
- Astana Declaration on primary health care 2018,
- UN General Assembly political declaration on universal health coverage in 2019,

World Health Assembly resolutions on traditional, complementary and integrative medicine (TCIM)

### About Gujarat Declaration

Gujarat declaration talks about scaling up efforts to further implement evidence-based TCIM (Traditional complimentary integrative medicine) interventions and approaches in support of the goal of universal health coverage (UHC) and all health-related Sustainable Development Goals (SDGs).

It states the role of multi-regional, multi-disciplinary and multi-stakeholder collaborations demonstrated at the Global Summit through the WHO GCTM that is aligned with and complementary to the work of WHO major offices, to maximize evidence based benefits of TCIM in global health.

## Action Agenda proposed by the Gujarat Declaration

### Health and well-being of people and the planet

To implement evidence-based TCIM interventions and approaches in support of the goal of universal health coverage (UHC) and all health-related Sustainable Development Goals (SDGs), and to promote health and well-being of all members of our human family at all ages, and that of the planet that sustains us all.

#### Global health leadership on traditional, complementary and integrative medicine

To contribute to the development, implementation, monitoring, and transformative impact of the *WHO Global Traditional Medicine Strategy for the period 2025-2034*,

To advocate for increased political and financial commitments at global, regional, national and community levels to translate that strategy into policies and practices for people's health and well-being

### Research and evidence

To advocate and mobilize research funding commensurate with TCIM demand and use and based on global, regional and national TCIM evidence mapping and research priority-setting,

To make appropriate use of existing and new research, evidence syntheses and knowledge translation principles and WHO initiatives

Support the *evidence-based integration of TCIM in national health policies* and systems based on highest quality research. Accelerate the production, regulation, and formal utilization of scientifically proven TCIM products and practices

### Universal health coverage, primary health care and health systems

Facilitate the evidence-informed, *appropriate integration of TCIM into national health systems using a primary health care approach*, and according to country contexts and priorities, to progressively realize UHC and all health-related SDGs.

Support and promote the *development of curricula standards for the education of TCIM practitioners* according to country contexts and priorities

### Data, and routine information systems

To devise advance policies that promote standardized TCIM documentation, including through expanded and accelerated use of the *WHO International Classification of Diseases (ICD-11)* to enable integration of evidence and data collection on TCIM in a standardized way within routine health information systems.

Establish *a global network of TCIM reference clinical centres* that can routinely undertake standardized data collection and monitoring based on WHO ICD-11 coding of the implementation WHO Traditional Medicine Global Summit 2023 Meeting Report: Gujarat Declaration 4 and impact of TCIM interventions

### Digital health frontiers, including artificial intelligence

Enable the appropriate *development and application of digital health technologies*, and artificial intelligence (AI) in particular, to advance *digital health resources on TCIM for people's health and well-being* supported by the development of comprehensive governance models, policies, regulatory frameworks, normative guidance and science- and evidence-based knowledge sharing.

### Biodiversity and sustainability

Support and promote the implementation of the *United Nations Convention on Biological Diversity, including the Kunming Montreal Global Biodiversity Framework*, as the most ambitious global agreement on biodiversity conservation, management and sustainable use in the history of environmental governance.

*Ensure full participation of, and consultation with, Indigenous Peoples*, including through the establishment of a formal high-level consultation mechanism with Indigenous Peoples linked to the Kunming Montreal Global Biodiversity



Framework, to develop, adopt and support the implementation of policies and actions related to the protection of traditional and Indigenous knowledges of health and medicine.

### Human rights, equity and ethics

To incorporate ethical methods and processes in TCIM research and

practice through the development and implementation of ethical frameworks that are culturally appropriate and socially relevant and inclusive; and build capacities for ethical practices by incorporating these principles in health policy and workforce education.

## AYUSHMAN BHAV CAMPAIGN

### Context

Honourable President of India, Smt. Droupadi Murmu, to virtually launch Ayushman Bhav Campaign on September 13, 2023

### About

The 'Ayushman Bhav' campaign, initiated by the Ministry of Health and Family Welfare, Government of India, is a comprehensive nationwide healthcare initiative that aims to provide *saturation coverage of healthcare services, reaching every village and town in the country*. This groundbreaking initiative builds upon the success of the Ayushman Bharat program and signifies a paradigm shift in healthcare services.

The campaign, which will be implemented from September 17th to October 2nd, 2023, embodies a whole-of-nation and whole-of-society approach. It unites government sectors, civil society organizations and communities under *a common mission to ensure that every individual receives essential health services without any disparity or exclusion*.

The Ayushman Bhav campaign is a collaborative effort *spearheaded by Gram Panchayats* in coordination with the Department of Health, other government departments, and local elected bodies in the rural and urban areas.

*Its core objective is to extend comprehensive healthcare coverage to every village and town, transcending geographical barriers and ensuring that no one is left behind.*

This synergistic approach aims to saturate coverage of health services through its three

components Ayushman - *Apke Dwar 3.0, Ayushman Melas at Health and Wellness Centres (HWCs) and Community Health Centres (CHCs) and Ayushman Sabhas* in every village and panchayat:

**Ayushman Apke Dwar 3.0:** This initiative aims to provide Ayushman cards to remaining eligible beneficiaries enrolled under the PM-JAY scheme, ensuring that more individuals have access to essential health services.

**Ayushman Melas at HWCs and CHCs:** These Melas at Ayushman Bharat- HWCs and CHCs will facilitate the creation of ABHA IDs (Health IDs) and issuance of Ayushman Bharat Cards. They will also offer early diagnosis, comprehensive primary health care services, teleconsultation with specialists, and appropriate referrals.

**Ayushman Sabhas:** These gatherings in every village and Panchayat will play a pivotal role in distributing Ayushman cards, generating ABHA IDs, and raising awareness about vital health schemes and disease conditions, such as non-communicable diseases, tuberculosis (Nikshay Mitra), sickle cell disease, as well as blood donation and organ donation drives.

The Ayushman Bhav campaign is aligned with the vision of creating '*Healthy Villages*' and '*Healthy Gram Panchayats*,' laying the foundation for *achieving Universal Health Coverage* in the country. *Panchayats that successfully saturate the health schemes will earn the prestigious title of 'Ayushman Gram Panchayat' or 'Ayushman Urban Ward,' symbolizing their dedication to equitable healthcare provision*

# Economic Development & Agriculture

What's Inside?



1. INDIA'S GDP ACCELERATED TO 7.8% IN Q1 OF FY23-24
2. GLOBAL INNOVATION INDEX
3. INDIA'S INCLUSION IN GOVERNMENT BOND INDEX-EMERGING MARKETS(GBI-EM)
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5. 5TH WORLD COFFEE CONFERENCE
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10. GRESHAM'S LAW

# INDIA'S GDP ACCELERATED TO 7.8% IN Q1 OF FY23-24

In a significant economic development, India's Gross Domestic Product (GDP) demonstrated robust growth, surging to 7.8% in the first quarter (Q1) of the fiscal year 2023-2024, compared to a 6.1% growth rate recorded in the preceding January-March quarter (Q4) of the fiscal year 2022-23.

This acceleration is indicative of a positive economic trajectory and holds great implications for the nation's financial landscape.

Looking back at the same quarter in the

previous year, the GDP growth rate stood at a remarkable 13.1%. This highlights both the progress and the challenges that the Indian economy has faced over the past year.

The impressive Q1 FY23-24 economic growth can be attributed primarily to the exceptional performance of the services sector, which has displayed remarkable resilience and adaptability.

Additionally, a surge in capital expenditure has contributed significantly to this growth trajectory.

## Growth accelerates

India's gross domestic product grew by 7.8% in the first quarter of FY24 compared with 13.1% growth in Q1 FY23



# GLOBAL INNOVATION INDEX

## Context

India retains 40th rank out of 132 economies in the Global Innovation Index 2023 rankings. This year, the NITI Aayog, in partnership with the CII and the World Intellectual Property Organisation (WIPO), is hosting, virtually, the India Launch of the GII 2023 on 29th September 2023.

## About

“Global Innovation Index 2023 - Innovation in the face of uncertainty”. This 2023 edition of the Global Innovation Index (GII) takes the pulse of global innovation trends against the background of an economic environment fraught with uncertainty. It reveals the ranking of this year’s most innovative economies in the world amongst 132 economies and localises the top 100 science and technology innovation clusters.

Now in its 16th edition, the Global Innovation Index is a leading reference for measuring an economy’s innovation ecosystem performance. It is published by the World Intellectual Property Organization (WIPO).

It is also a valuable benchmarking tool used by policymakers, business leaders, and other stakeholders to assess progress in innovation over time.

## Key findings of the report

The Global Innovation Index is built on a rich dataset – the collection of 80 indicators from international public and private sources – going beyond the traditional measures of innovation since the definition of innovation has broadened.

For the 13th year in a row, Switzerland is the most innovative economy in 2023 followed by Sweden, the United States, the United Kingdom and Singapore. Singapore has entered the top five, and has taken the leading position among South East Asia, East Asia and Oceania (SEAO) region economies.

Scientific clusters: S&T clusters are the areas in the world where the highest density of inventors and scientific authors are located.

The top Science and Technology innovation clusters in the world in 2023 are Tokyo–Yokohama, followed by Shenzhen–Hong Kong–Guangzhou, Seoul, Beijing and Shanghai–Suzhou. China now has the largest number of clusters in the world, overtaking the United States.

Compared to China’s 24 and US’s 21, India has only 4 S&T clusters among the world’s top 100. These are Chennai, Bengaluru, Mumbai and Delhi.

## Key highlights related to India

- India secured the 40th position in the latest GII 2023, showcasing a remarkable climb from the 81th spot in 2015.
- It listed India as among the 21 economies that outperformed for a 13th consecutive year on innovation relative to level of development.
- India secured the top position among the 37 lower-middle-income countries and leading among the 10 economies in Central and South America.
- It states that India, Iran, Philippines, Turkiye, Vietnam and Indonesia are among the economies within the GII top 65 that climbed fastest in the ranking over the last decade.
- India holds top ranking within the Central and Southern Asia region for Human capital and research (48th), Business sophistication (57th) and Knowledge and technology outputs (22nd).
- Strong indicators include ICT services exports (5th), Venture capital received (6th), Graduates in science and engineering (11th) and Global corporate R&D investors (13th).

## Push for India’s Progress

India’s progress is attributed to its abundant knowledge capital and a thriving Startup Ecosystem, along with commendable efforts from public and private research organisations.

The consistent improvement in the GII ranking is owing to the immense knowledge

capital, the vibrant start-up ecosystem, and the amazing work done by the public and private research organisations.

NITI Aayog has been working tirelessly to ensure the optimization of the national efforts

for bringing policy-led innovation in different areas such as electric vehicles, biotechnology, nanotechnology, space, alternative energy sources, etc. It has also played a role in expanding the innovation ecosystem in states and districts.

### What is WIPO?

**World Intellectual Property Organization** is the global forum for Intellectual Property (IP) services, policy, information and cooperation. It is a self-funding agency of the United Nations, **with 193 member states**. WIPO is one of the **15 specialised agencies of the United Nations**.

Its aim is to lead the development of a balanced and effective international IP system that enables innovation and creativity for the benefit of all. Its mandate, governing bodies and procedures are set out in the WIPO Convention, which established WIPO in 1967. Headquarter located in **Geneva**.

## INDIA'S INCLUSION IN GOVERNMENT BOND INDEX-EMERGING MARKETS (GBI-EM)

JP Morgan has decided to include India in its Government Bond Index-Emerging Markets (GBI-EM) index. The inclusion is scheduled to commence on June 28, 2024.

While being included in the JPM Index is great news for India, this inclusion automatically will not lead to India's inclusion in other two indices i.e., the FTSE EM Index and the Bloomberg Barclays EM bond index.

### About JP Morgan GBI-EM

The index was launched in 2005 and is the first comprehensive emerging market debt benchmark that tracks local currency bonds issued by Emerging Market governments.

As emerging-market governments look increasingly toward their domestic market for sources of finance, investors are looking more closely at local markets in search of higher yield and greater diversification.

### Significance of India's Inclusion in JP Morgan's Emerging Markets Bond Index

Being part of a global bond index can attract foreign investors who use index-tracking funds

and passive investment strategies.

Total flows could top \$45-50 billion over the next 12-15 months alone once India is part of the third key bond indices. For context, India has received total bond inflows of around \$40 billion over the last decade, that is, under 2 per cent of the total issue size.

The inclusion will help ease the constraints around the financing of India's twin deficits; the fiscal and current account deficits by providing an alternate source of funds.

It will also deepen India's bond markets, increase liquidity, widen the ownership of G-Secs (Government Security) and lower the pressure on yields.

Importantly, it will make the exchange rate stable, lowering the hurdle rate for FIIs investing in India. The Indian currency will benefit from the resultant higher confidence of investors.

The commercial banking sector will face less pressure to absorb a majority of government bonds and hence the balance sheets will have more ability to lend to the needy private sector segments in the economy.

This is vital for creating the infrastructure backbone for realising the manufacturing-led growth ambitions.

With public debt rising faster than savings, bond inclusion can provide a long-term sustainable source of funding via investing in government assets.

### Challenges with the Inclusion of India into JPM GBI-EM

- The timing of inclusion is interesting, as the external environment has turned more hostile. Reliance on foreign funds for funding domestic deficits entails significant macro risks as was seen during the global financial crisis.
- Yet another US government shutdown approaches, posing a risk to markets. Furthermore, the global trade and geopolitical environment remain unclear.
- The inclusion in the global indices will not make India automatically entitled to huge resultant inflows.
- Rising crude oil prices are causing fiscal problems and any relief via petrol or diesel price cuts or other sops will become

tougher.

- The inclusion will also expose Indian debt markets to greater volatility and link it to the vagaries of passive flows which allocate capital based on the weightage assigned by the index provider.
- Hot money's tendency to move quickly from one country to another in search of profits, can result in a volatile currency rate and potentially cause larger financial issues. The 1997 financial crisis is a prime example of hot money flows derailing economies of emerging markets.
- Excessively high foreign currency inflows can also result in appreciation of the rupee, which could make Indian manufacturers less competitive in global trade.

### Conclusion

Inclusion in a global bond index will enhance India's visibility and credibility in the international financial community. By addressing the aforementioned concerns, India would grow as a coveted investment destination and global economic powerhouse.

## SURETY BONDS

### Context:

The Ministry of Finance and the Ministry of Road Transport and Highways are putting pressure on the Insurance Regulatory and Development Authority of India (IRDAI) to push the insurance industry to launch surety Bond Products.

Recently, some of the leading general insurers like New India Assurance, SBI General Insurance etc. have announced their plans to issue Surety Bonds.

### About Surety Bond

A surety bond can be defined in its simplest form as a written agreement to guarantee compliance, payment, or performance of an act. They are mainly aimed at infrastructure development.

It involves three-parties:

1. **Principal** – The party that purchases the bond and undertakes an obligation to perform an act as promised.
2. **Surety** – The insurance company or surety company that guarantees the obligation will be performed. If the principal fails to perform the act as promised, the surety is contractually liable for losses sustained.
3. **Obligee** - The party who requires, and often receives the benefit of the surety bond.

A surety bond is provided by the insurance company on behalf of the contractor to the entity that is awarding the project.

It will help contractors to have financial closure of their projects without depending upon only bank guarantees.

### How can it Boost the Infra Project?

The Surety insurance business will reduce the requirement of collateral and assist in developing an alternative to bank guarantees for construction projects.

Hence, this shall release liquidity in the infrastructure space without compromising on risk aspects.

It will create a level-playing field for large, mid and small contractors.

### Issues with the Surety Bonds

Surety bonds, a new concept, are risky and insurance companies in India are yet to achieve expertise in risk assessment in such business.

Surety Bonds need extensive reinsurance support and no primary insurers can issue any policy without proper reinsurance backup.

The Indian Contract Act and Insolvency and Bankruptcy Code do not recognize the rights of Insurers at par with financial creditors yet and thus insurance companies do not have recourse to recovery like banks in case of any default.

## 5TH WORLD COFFEE CONFERENCE

Recently, the 5th edition of the World Coffee Conference (WCC) was held in Bengaluru.

### About the World Coffee Conference (WCC)

It was organized by the International Coffee Organisation (ICO) in collaboration with the Coffee Board of India, the Ministry of Commerce and Industry and the Government of Karnataka.

It aims to discuss, debate, and collaborate on building a sustainable coffee industry.

**Theme for 2023: “Sustainability through the circular economy and regenerative agriculture”.**

### About the International Coffee Organization (ICO)

The International Coffee Organization (ICO) was established in 1963 under the aegis of the

United Nations and following the approval of the first International Coffee Agreement in 1962.

The ICO is the only intergovernmental organization for coffee, bringing together exporting and importing Governments.

It currently represents 93% of world coffee production and 63% of world consumption.

India is a member of this organization.

### About the Coffee Board of India

The Coffee Board is a statutory organization constituted under Section (4) of the Coffee Act, 1942.

It functions under the administrative control of the Ministry of Commerce and Industry, Government of India.

**The Board is headquartered in Bengaluru.**

#### Coffee Production in India:

- The most well-known species of coffee grown in India are Robusta (over 70% of coffee production) and Arabica.
- In the year 2021-22, India was the 5th largest exporter of coffee in the world with a share of about 6% of global coffee exports.
- Karnataka is the largest coffee producer in India, accounting for 70 per cent of total coffee production. It is followed by Kerala and Tamil Nadu.
- Globally, Brazil is the largest coffee-producing country.

## CENTRE SOFTENS ANGEL TAX RULES

### Context:

The Finance Ministry has notified final rules outlining valuation methods for non-resident and resident investors under the new angel tax mechanism in the Finance Act 2023.

### About Angel Tax

Angel tax is levied when an *unlisted company issues shares to an investor at a price higher than its fair market value (FMV)*.

It was introduced in 2012 as a measure to prevent the generation and circulation of unaccounted money.

It was called the angel tax as it initially applied primarily to Indian angel investors – usually high-net-worth individuals who invest in startups at a very early stage.

Earlier, angel tax was levied only on investments made by residents or local investors. However, the Budget expanded its scope to cover non-resident investors.

Angel tax has been criticized by startups and investors, who argue that it discourages investments in startups as it is common practice to sell shares at a steep premium.

## SOCIAL BONDS

Recently, the National Bank for Agriculture and Rural Development (NABARD) issued India's first 'AAA' rated Indian Rupee-denominated Social Bonds aggregating Rs. 1040.5 crores at a coupon rate of 7.63 per cent.

### About Social Bonds

The social bonds issued by NABARD have received 'AAA' ratings from CRISIL and ICRA, and they will be listed on the Bombay Stock Exchange.

A social bond is a type of financial instrument issued by governments, international organizations, or corporations to raise funds for projects and initiatives that have a positive social impact on society.

These bonds are designed to finance projects that address various social issues, such as healthcare, education, affordable housing, poverty alleviation, and environmental sustainability.

## INDIA'S FIRST-EVER 50-YEAR GOVERNMENT BONDS & 30-YEAR GREEN BONDS

India is set to make its first-ever issuance of 50-year government bonds as part of its plan to raise ₹6.55 lakh crore in market borrowings in the second half of the fiscal year ending in March 2024; government to also sell 30-year green debt securities.

The issuance of these bonds is intended to cater to the investment needs of long-term institutional investors while also supporting specific financial and environmental goals.

### About the Government Security (G-Sec) Bond

A government may issue a debt security

known as a government security bond (G-Sec), to collect money for a variety of public uses and managing fiscal deficits.

Government bonds are considered one of the safest investments and have a low default risk because they are backed by the government's ability to tax its citizens and print currency.

Bonds with fixed rates pay a set interest rate for the duration of the bond, but those with variable rates may experience periodic interest rate changes based on a benchmark interest rate.

Government bonds have set maturity dates that range from short-term (a few months) to long-



term (several decades). When the bond matures, investors get their original investment back.

## G-Securities planned by the Indian government

**50-Year Government Bonds:** These bonds will mature in 50 years, and it is anticipated that long-term investors like insurance firms, provident funds, and pension funds will be interested.

**30-Year Green Bonds:** Additionally, the government intends to issue 30-Year Green Bonds. Green bonds are used to finance eco-friendly initiatives and projects. Through these green bonds, the government hopes to raise 20,000 crores, with the 30-year green bonds accounting for half of that total.

## Benefits

For the Government:

Government securities serve as a steady and dependable source of funding for the state. They make it possible for the government to cover budget deficits, which can happen when costs exceed receipts.

Since government bonds are frequently regarded as low-risk investments, they draw investors who are willing to accept lower interest rates in exchange for security. As a result, the government may incur cheaper borrowing costs.

Government securities are one of the tools used by central banks (like RBI) to carry out monetary policy. The central bank can affect the financial system's liquidity and interest rates through open market operations.

## Benefits for the Public:

Risk-averse investors looking for a safe location to deposit their money for long-term are drawn to this assurance.

Government securities offer investors predictable and dependable income in the form of interest payments. Retirement candidates and people looking for a reliable source of income may find this income stream to be extremely beneficial.

Economic stability is a result of a healthy government securities market, which offers investors a secure haven and supports the government's monetary and fiscal policies.

# RBI TO INTRODUCE CBDC IN CALL MONEY MARKET

## Context

The Reserve Bank of India (RBI) is looking at introducing its wholesale version of Central Bank Digital Currency (CBDC) or the digital rupee in the interbank borrowing or call money market.

CBDC is digital rupee, announced in the FY23 Budget. As on date, two pilot projects – one for CBDC (Retail) and other for CBDC (Wholesale) are going on. ***RBI is now planning to go to inter-bank borrowing market, specifically call money market.***

The RBI had launched the pilot for the wholesale CBDC in November 2022 aimed at settlement of secondary market transactions in government securities. It had then allowed the use of wholesale CBDC for settlement of government bond transactions in the secondary market.

The pilots started in four cities and four banks. These have now been expanded to 13 banks and 26 locations, with nearly 20 lakh million users and merchants on board. The RBI is targeting 10 lakh transactions per day in the retail CBDC segment by December. In July, 20,000-25,000 retail CBDC transactions were done, with August seeing a slight dip on account of banks' efforts to make the retail CBDC and UPI infrastructure inter-operable.

## Inter Bank Money Market:

The money market is a market for short-term financial assets that are close substitutes of money. The most important feature of a money market instrument is that it is liquid and can be turned over quickly at low cost and provides an avenue for equilibrating the short-term surplus funds of lenders and the requirements of borrowers. The

call/notice money market forms an important segment of the Indian money market. ***Under call money market, funds are transacted on overnight basis and under notice money market, funds are transacted for the period between 2 days and 14 days.***

**Participants:** Participants in call/notice money market currently include banks, Primary Dealers (PDs), development finance institutions, insurance companies and select mutual funds (Annex I). Of these, banks and PDs can operate both as borrowers and lenders in the market. Non-bank institutions, which have been given specific permission to operate in call/notice money market can, however, operate as lenders only

## RBI's Showcase at G20

RBI showcased various digital initiatives in the financial sector at the exhibition pavilion at the G20 Summit later this week. These include Public Tech Platform (PTP) for Frictionless Credit, CBDC, UPI One World, RuPay On-The-Go, and Bharat Bill Payment System.

### 1) Public Tech Platform (PTP) for Frictionless Credit

At Public Tech Platform, visitors can experience an interactive demonstration of the entire process i.e., from onboarding to sanction and disbursement of the KCC and dairy loans in an entirely digital manner in a few minutes, revolutionising rural credit. This platform can be used for distribution of small ticket loans such as

MSME, personal loans, etc. Besides, the central bank will showcase an informational video on the RBI's digital rupee and its journey and there would be live digital rupee transactions demonstrated by select banks which are participating in the pilot.

### 2) UPI One World

UPI One World aims to facilitate the onboarding of visitors to the UPI system, even if they don't possess a bank account in India. Meanwhile, RuPay On-The-Go empowers customers to conduct contactless payment transactions using everyday accessories such as watches, rings, or keychains, showcasing the versatility of domestic card scheme products on par with their global counterparts.

### 3) Bharat Bill Payment System

BBPS (Bharat Bill Payment System) cross-border bill payment will highlight the adaptability of the BBPS platform to integrate with fintechs and conventional financial players to facilitate domestic as well as cross-border payment transactions.

### 4) RuPay On-The-Go

Allowed customers to carry out contactless payment transactions through accessories they wear (watch, ring) or use (key chain) every day and highlighted the adaptability of the domestic card scheme associated products such as credit card, convenience of Tap&Pay at par with such global products.

## GRESHAM'S LAW

### Context

Gresham's law came into play most recently during the economic crisis in Sri Lanka last year, during which the Sri Lankan central bank fixed the exchange rate between the Sri Lankan rupee and the U.S. dollar.

### What happened in Sri Lanka?

The Central Bank of Sri Lanka, at a certain point, mandated that the price of the U.S. dollar in terms of the Sri Lankan rupee should not rise

beyond 200 rupees per dollar even though rates in the black market suggested that the U.S. dollar should sell for far more than 200 rupees.

In effect, people were banned from paying more than 200 Sri Lankan rupees for a dollar, thus causing the rupee to be overvalued and the U.S. dollar to be undervalued when compared to the market exchange rate.

***This caused the supply of dollars in the market to fall and the U.S. dollar to be gradually driven out of the formal foreign exchange market.*** People

who wanted U.S. dollars to purchase foreign goods then had to purchase dollars from the black market by paying far more than 200 Sri Lankan rupees for each U.S. dollar.

### What is Gresham's Law?

Gresham's law refers to the dictum that "**bad money drives out good.**" Gresham's law comes into play when the exchange rate between two moneys or currencies is fixed by the government at a certain ratio that is different from the market exchange rate. Such price fixing causes the undervalued currency — that is, the currency whose price is fixed at a level below the market rate — to go out of circulation. The overvalued currency, on the other hand, remains in circulation but it does not find enough buyers.

Both currency types were liquid and available simultaneously for use as acceptable forms of exchange. Gresham observed that bad money was driving out good money from circulation. Bad money is a currency with equal or less value than its face value. Good money has the potential for a greater value than its face value. People will choose to use bad money first and hold onto good money.

Gresham's law, however, holds true only when the exchange rate between currencies is fixed under law by the government and the law is implemented effectively by authorities.

### Thiers' law – a complement to Gresham's Law

In the absence of any government decree fixing the exchange rate between currencies, it is good money that eventually drives bad money out of the market and not the other way round.

When the exchange rate between currencies is not fixed and people have the choice to freely choose between currencies, people gradually stop using currencies that they consider to be of poor quality and adopt currencies that are found to be of better quality. This phenomenon wherein "**good money drives out bad**" is called **Thiers' law** (named after French politician Adolphe Thiers) and it is seen as a complement to Gresham's law.

The rise of private cryptocurrencies in recent years has been cited by many analysts as an example of good money issued by private money producers driving out bad money issued by governments.

### Fixed exchange rate

A fixed exchange rate, also called pegged exchange rate, is a regime applied by a government or central bank that ties the country's official currency exchange rate to another country's currency or the price of gold.

The purpose of a fixed exchange rate system is to keep a currency's value within a narrow band.

# GEOGRAPHY,

# ENVIRONMENT,

# BIODIVERSITY AND

# DISASTER MANAGEMENT

## What's Inside?

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# KOLE WETLANDS

## Context

Kole wetlands of Kerala face threat of alien plants

## About

Kole wetlands, an internationally important Ramsar site of high value biodiversity, has been facing the threat of alien invasive species. *Cabomba furcuta*, popularly called as Pink Bloom due its massive flowering, has been a new threat in addition to water hyacinth and *Salvinia molesta*. Many parts of the water canals, crisscrossing the vast kole fields, have turned pink now. *Cabomba furcuta*, is repeating its presence for the third year in a row in kole fields.

*A native of central and south America*, *Cabomba furcuta* was brought to Kerala as an aquarium plant and has escaped to the wild. Alien plants that are invasive pose a major threat to the biodiversity both in the terrestrial system as well as the aquatic landscape .

*While water hyacinth and Salvinia molesta* are the most impacting species in kole fields so far, regular presence of the pink bloom is a threat to the kole fields , which produce a major chunk of paddy requirements of the State.

The Pink bloom had emerged as a *tourist*

*attraction* a few years ago during the COVID period near Perambra in Kozhikode. *Red Cabomba* attracts people due to the massive flowering, which turns the entire water body pink.

Currently the plants have filled canals besides the bunds and have not crossed over to the fields as they are rooted and not flowing with water. But once blooming is over, it would spread out to the paddy fields as seeds quickly spread into them.

## About Kole Wetlands

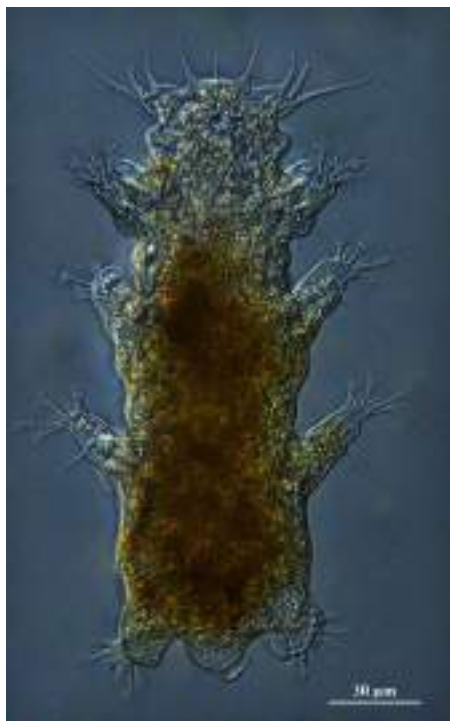
- Kole Wetlands is a wetland lying in Thrissur District in Kerala.
- It gives 40% of Kerala's rice requirement and acts as a natural drainage system.
- It is a part of Vembanad-Kole wetlands, a Ramsar site and has been colonised by invasive species.
- It is the largest brackish, humid tropical wetland ecosystem located in the state of Kerala.
- Extending from the northern bank of Chalakudy River in the south to the southern bank of Bharathapuzha River in the north.
- It is situated in the Central Asian Flyway of migratory birds.



## NEW MARINE TARDIGRADE

### Context

New marine tardigrade species discovered from Mandapam in south-east Tamil Nadu, belongs to genus *Batillipes* and has been named *Batillipes kalami* in honor of late former President A.P.J. Abdul Kalam



### About Tardigrades

Tardigrades are extremely tiny animals whose size is measured in micrometres. Their microscopic size, however, belies their toughness. They are known for their extraordinary resilience

and survival instincts. Studied using microscopes, these water-dwelling animals also go by the rather unlikely moniker ‘water bears.’

#### *About Batillipes kalami*

The new species, discovered from Mandapam in south-east Tamil Nadu, belongs to the genus *Batillipes* and has been named *Batillipes kalami*.

*Batillipes kalami* averages 170 micrometres (0.17 mm) in length and around 50 micrometres (0.05 mm) in width. It has a trapezoid-shaped head with sharp-tipped filament-like appendages (cirri) extending from it.

All four pairs of legs possess sensory spines of varying length. The females are slightly bigger compared to the males. The marine species are smaller than their terrestrial counterparts and also tougher to identify.

*Batillipes kalami* is the second marine tardigrade to be discovered from Indian waters and the first one from the east coast. It is also the first taxonomically described species belonging to the genus *Batillipes* from India.

*Batillipes kalami* is the 37th species of the genus *Batillipes*. Although *Batillipes* is a globally distributed genus, previous reports and studies are predominantly Eurocentric. Although three species were reported from Indian waters in the past, they lack proper taxonomic descriptions, making verification impossible.

## ZERO DRAFT OF PLASTICS TREATY

### Context

On September 4, 2023, the United Nations unveiled the Zero Draft of the Plastics Treaty.

### About

The Zero Draft text is proposed to facilitate and support the UNEP intergovernmental negotiating committee’s work towards the development of the international legally binding

instrument on plastic pollution, including in the marine environment, called for by United Nations Environment Assembly (UNEA) resolution

The zero draft has 10 placeholders to discuss issues like the preamble, definitions, principles and scope, in addition to the institutional arrangements and the final provisions.

Member states such as Saudi Arabia, Iran, and China at INC-2 stressed the importance of defining

the scope of the legally binding instrument.

India had agreed with this proposal.

The zero draft talked about:

- Reduction in the production of primary plastic
- Elimination of polymers and chemicals of concern
- Elimination of problematic, avoidable, and short lived plastics
- Transparency measures including labelling mechanisms
- Just transition
- Targets for reduction and reuse

## Intergovernmental Negotiating Committee

The INC was established in February 2022, at the 5th session of the United Nations Environment Assembly (UNEA-5.2) by a resolution.

The resolution requested the Executive Director of the UN Environment Programme (UNEP) to convene an Intergovernmental Negotiating Committee (INC) to develop “the instrument,” which is to be based on a comprehensive approach that addresses the full

life cycle of plastic, including its production, design and disposal.

The INC began its work during the second half of 2022, with the ambition to complete the negotiations by the end of 2024.

The first session of the INC (INC-1) took place in Punta del Este, Uruguay from 28 November to 2 December 2022, followed by a second session (INC-2) in Paris, France from 29 May to 2 June 2023. The third session (INC-3) is now scheduled from 13 to 19 November 2023 at the UNEP Headquarters in Nairobi, Kenya.

## United Nations Environment Assembly

It is the governing body of the UN Environment Programme.

It is the world’s highest-level decision-making body on the environment.

The Assembly is made up of the 193 UN Member States and convenes every two years to advance global environmental governance.

It was created in June 2012, during the United Nations Conference on Sustainable Development, also referred to as RIO+20.

# HEAT INDEX

## About

The heat index, also known as the apparent temperature, is what the temperature feels like to the human body when relative humidity is combined with the air temperature. This has important considerations for the human body’s comfort.

When the body gets too hot, it begins to perspire or sweat to cool itself off. If the perspiration is not able to evaporate, the body cannot regulate its temperature. Evaporation is a cooling process.

When perspiration is evaporated off the body, it effectively reduces the body’s temperature. When the atmospheric moisture content (i.e. relative

humidity) is high, the rate of evaporation from the body decreases.

In other words, the human body feels warmer in humid conditions. The opposite is true when the relative humidity decreases because the rate of perspiration increases. The body actually feels cooler in arid conditions. There is direct relationship between the air temperature and relative humidity and the heat index, meaning as the air temperature and relative humidity increase (decrease), the heat index increases (decreases).

## Significance of measuring the heat index

**Accurate Perception of Heat:** The heat index provides a more accurate representation of how hot

it feels to the human body compared to the actual air temperature. It factors in relative humidity, which significantly affects human comfort in hot conditions.

**Health Impact Assessment:** Measuring the heat index is crucial for assessing the potential health risks associated with hot weather. It helps identify conditions that may lead to heat-related illnesses, including heat exhaustion and heatstroke.

**Preventing Heat Stress:** High humidity levels, considered in the heat index, can lead to heat stress. Monitoring the heat index assists in recognizing situations where heat stress is more likely to occur, prompting individuals to take the necessary precautions.

**Issuing Public Warnings:** Weather agencies and authorities use the heat index to issue heat advisories and warnings to the public. These warnings inform people about the heightened risks associated with high heat index values,

encouraging them to take protective measures.

**Workplace Safety:** Measuring the heat index is vital for ensuring workplace safety, particularly in industries involving outdoor work or non-air-conditioned environments. It enables employers and workers to implement safety measures to prevent heat-related illnesses and injuries.

**Emergency Preparedness:** Emergency response and preparedness agencies rely on heat index information to anticipate and respond to heat-related emergencies. This includes managing heat-related illnesses and addressing the increased demand for cooling during heatwaves.

**Adapting to Climate Change:** With the increasing frequency and intensity of heatwaves associated with climate change, monitoring the heat index becomes essential. It assists in adapting to changing climate conditions and developing strategies to mitigate heat-related risks.

## MOROCCO EARTHQUAKE

### Context

On 8 September 2023, a powerful earthquake of magnitude 6.8 struck Morocco, claiming more than 2,800 lives and impacting more than 100,000 children according to initial reports.

### About

The collision of the African and Eurasian tectonic plates occurred at a relatively shallow depth, which makes a quake more dangerous.

### Reason for the Earthquake:

The earthquake in Morocco resulted from a geological phenomenon known as a “reverse fault.”

**Tectonic Plate Interaction:** Morocco is situated in an area where the Eurasian and African tectonic plates converge.

**Plate Boundary Activity:** The Atlas Mountains, where the earthquake occurred, are actively rising due to the convergence of these two large tectonic plates

**Seismic Stress Accumulation:** Although the region had not experienced major recorded earthquakes before, stress had been accumulating underground for an extended period due to the slow movement of tectonic plates.

**Oblique-Reverse Fault:** This type of faulting is common in areas of compression along the convergent plate boundaries. The stress along





these fault lines can induce earthquakes as rocks abruptly shift to release accumulated stress.

## Morocco

Morocco is a country in the Maghreb Region of North Africa where it covers an area of 710,850 sq. km.

Much of Morocco's landscape is mountainous with slopes that gradually transition into plateaus and valleys. The Atlas mountains dominate the central part of the country, while the Rif mountains make up the northern edge.

Jebel Toubkal (marked on the map by a yellow upright triangle) is the highest point of Morocco at 13,664 ft (4,165 m), and is also the highest peak of the Atlas mountains.

The southeastern region of the country is blanketed by the Sahara Desert, the world's third largest desert at over 3,600,000 square miles (9,400,000 sq. km).

Land degradation is a large issue for Morocco,

of vegetation has eroded the soil.

Significant sources of water of Morocco include the Moulouya River, whose source is located in the Atlas Mountains, and flows into the Mediterranean Sea.

The lowest point of the country is Sebkhah Tah at -180 ft (-55 m)

## Why the earthquake in Morocco has caused so much damage?

Higher magnitude - 6.8 causing more damage

Shallow earthquake - The USGS reported that the epicentre of the Friday earthquake was roughly 18.5 km below the Earth's surface, though Morocco's own seismic agency pegged the depth at 11 km. Either way, it was a fairly shallow quake. Such quakes are generally more dangerous as they carry more energy when they emerge to the surface when compared to quakes that occur deeper underneath the surface. While deeper quakes do indeed spread farther as seismic waves move radially upwards to the surface, they lose energy while travelling greater distances.

Epicentre at populous area - The epicentre of the earthquake occurred near Marrakech which is a tightly packed old city - an UNESCO world heritage site. It is in the vicinity of the Atlas Mountains

Low preparedness - Earthquakes are not very common in North Africa, with seismicity — the occurrence or frequency of quakes in a region — rates comparatively low along the northern margin of the African continent. This means that unlike regions which frequently face such quakes, Morocco was not prepared for such a calamity. While a 1960 earthquake, which was a magnitude 5.8 quake and killed thousands, did bring about changes to construction rules, most Moroccan buildings, especially in rural areas and older cities, are not built to withstand such strong tremors.



and many other countries located within the Sahara, as overgrazing of livestock and destruction

# GLOBAL BIODIVERSITY FRAMEWORK FUND

## Context

The Global Biodiversity Framework Fund (GBFF) has been ratified and launched during the 7th Assembly of the Global Environment Facility (GEF) in Vancouver, Canada.

## About

The new Global Biodiversity Framework Fund (GBFF) has been designed to mobilize and accelerate investment in the conservation and sustainability of wild species and ecosystems, whose health is under threat from wildfires, flooding, extreme weather, and human activity including urban sprawl.

The new fund was ratified and launched at the GEF Assembly in Vancouver, where two countries announced initial contributions to start its capitalization. This included 200 million Canadian dollars from Canada and 10 million pounds from the United Kingdom.

The GBFF's ratification came eight months after the Conference of the Parties to the

Convention on Biological Diversity agreed on a historic set of global biodiversity goals known as the Kunming-Montreal Global Biodiversity Framework, and decided to set up a new GEF-managed fund to support its implementation.

## Fund Allocations:

20% will be allocated to Indigenous Peoples and local communities (IPLCs)

25% to GEF agencies

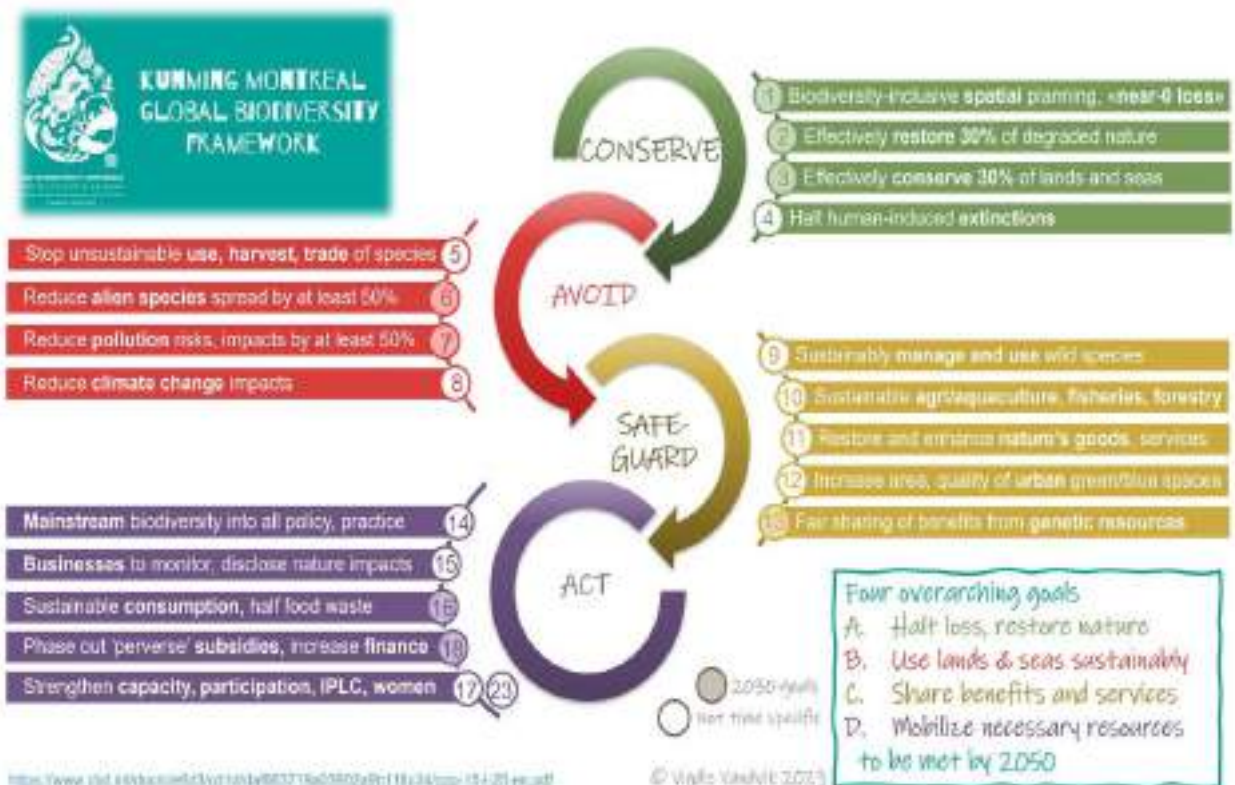
36% to SIDS (Small Island Developing States)

3% to LDCs (Least Developed Countries)

The allocation for IPLCs will be reviewed for two years and the allocations for SIDS and LDCs will be reviewed for three years.

## About the Global Environment Facility

The GEF is a family of funds dedicated to confronting biodiversity loss, climate change, pollution, and strains on land and ocean



health. Its grants, blended financing, and policy support helps developing countries address their biggest environmental priorities and adhere to international environmental conventions. Over the past three decades, the GEF has provided more than \$23 billion and mobilized \$129 billion in co-financing for more than 5,000 national and regional projects.

The GEF was established ahead of the 1992 Rio Earth Summit and includes 184 countries in partnership with international institutions, civil society organizations, and the private sector. It supports country-driven sustainable development initiatives in developing countries that generate global environmental benefits

The GEF also serves as financial mechanism for the following conventions:

Convention on Biological Diversity (CBD)

United Nations Framework Convention on Climate Change (UNFCCC)

United Nations Convention to Combat Desertification (UNCCD)

Stockholm Convention on Persistent Organic Pollutants

Minamata Convention on Mercury

The GEF also supports implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer (MP).

## Kunming Montreal Global Biodiversity Framework

The Kunming-Montreal Global Biodiversity Framework (GBF) is an outcome of the 2022 United Nations Biodiversity Conference. Its tentative title had been the “Post-2020 Global Biodiversity Framework”. The GBF was adopted by the 15th Conference of Parties (COP15) to the Convention on Biological Diversity (CBD) on 19 December 2022. It has been promoted as a “Paris Agreement for Nature”

### *KM - GBF has 4 targets and 23 goals*

The GBF consists of four overarching global goals to protect nature, including:

halting human-induced extinction of threatened species and reducing the rate of extinction of all species tenfold by 2050;

sustainable use and management of biodiversity to ensure that nature’s contributions to people are valued, maintained and enhanced;

fair sharing of the benefits from the utilization of genetic resources, and digital sequence information on genetic resources;

adequate means of implementing the GBF be accessible to all Parties, particularly Least Developed Countries and Small Island Developing States.

# KAIMUR TIGER RESERVE

## Context

Bihar is getting its second tiger reserve in Kaimur (Kaimur Wildlife Sanctuary), expected to be established by the end of 2023 or early 2024. The need for a second reserve arose as the Valmiki Tiger Reserve (Bihar’s 1st tiger reserve) reached its capacity to manage tigers.

## About

### Geographical location

The Kaimur district is divided into two parts: hilly area which is also known as Kaimur plateau and the plain area on the western side which is

flanked by the rivers Karmnasa and Durgavati.

The district has a large forest cover and is home to tigers, leopards and chinkaras. The Bihar Forest Department officials’ website said the forests of Kaimur span 1,134 sq km area including 986 sq km of the Kaimur Wildlife Sanctuary. At 34%, Kaimur also has the highest green cover in Bihar and the Kaimur forests are the biggest in the State in terms of area. The district shares its boundary with neighboring States of Jharkhand, Uttar Pradesh and Madhya Pradesh.

### How are tiger reserves notified?

Tiger Reserves are notified by State

Governments as per provisions of Wildlife (Protection) Act on advice of the National Tiger Conservation Authority.

The following steps are involved in the notification:

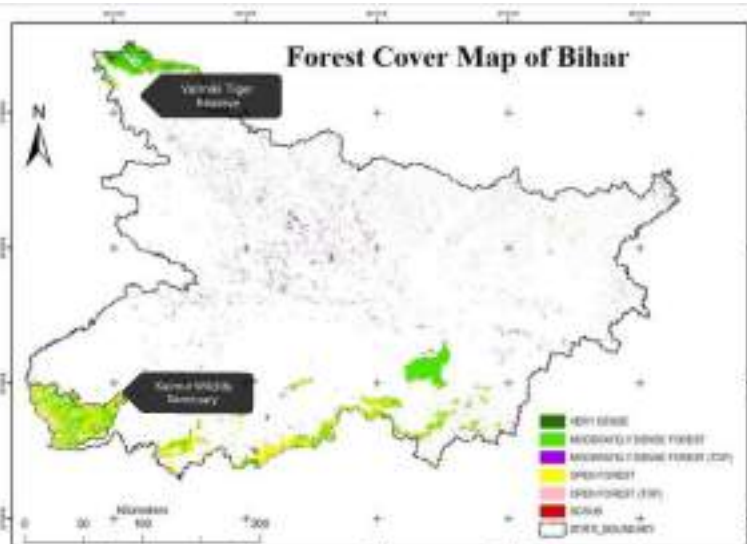
(a) Proposal is obtained from the State.

(b) In-principle approval is communicated from the National Tiger Conservation Authority, soliciting detailed proposals under section 38V of the Wildlife (Protection) Act, 1972.

(c) National Tiger Conservation Authority recommends the proposal to the State after due diligence.

(d) The State Government notifies the area as a Tiger Reserve.

No alteration in the boundaries of a tiger reserve shall be made except on a recommendation



of the Tiger Conservation Authority and the approval of the National Board for Wild Life

No State Government shall de-notify a tiger reserve, except in public interest with the approval of the Tiger Conservation Authority and the National Board for Wild Life

## GEO-HERITAGE SITES

### Context

As part of the Special Campaign 3.0, an initiative of the Government of India for fostering cleanliness, minimizing pendency, institutionalizing Swachhata, strengthening internal monitoring mechanism, record management in government offices, digitizing physical records etc, Geological Survey of India (GSI), under the Ministry of Mines, has planned to organize Swachhata Drive at fifteen Geoheritage sites across the country.

### About Geological Survey of India

The Geological Survey of India (GSI) was set up in 1851 primarily to find coal deposits for the Railways. Over the years, GSI has not only grown into a repository of geo-science information required in various fields in the country but has also attained the status of a geo-scientific organization of international repute.

Its main functions relate to creating and updating of national geoscientific information and mineral resource assessment.

GSI presently emphasizes on investigation for critical and strategic minerals for augmentation of these resources and on establishing early warning systems on landslides.

It functions as a 'Repository' for the purpose and uses the latest technologies for dissemination of geoscientific information and spatial data, through cooperation and collaboration with other stakeholders in the Geo-informatics sector.

GSI, headquartered in Kolkata, has six regional offices located in Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata and state unit offices in almost all states of the country. GSI is an attached office to the Ministry of Mines.

### Geoheritage sites

Geo-heritage refers to the geological features which are inherently or culturally significant offering insight to earth's evolution or history to earth science or that can be utilized for education.

Geological Survey of India (GSI) is the parent body which is making efforts towards identification and protection of geo-heritage sites/national

geological monuments in the country.

Till date, GSI has identified a total 92 such Geo-heritage sites and some of these are also recognized as UNESCO world heritage sites.

List of Geoheritage sites selected for the campaign

#### **Uttar Pradesh**

Salkhan Fossil Park

#### **Karnataka**

Maradihalli Pillow Lava

Pyroclastics& Pillow Lava, Pedappalli-Kolar Gold Field

#### **Kerala**

Angadipuram Laterite

#### **Andhra Pradesh**

WajrakarurKimberlite Field

#### **Tamil Nadu**

Charnockite, St. Thomas Mount

Sattanur National Fossil Wood Park

#### **Bihar**

Barabar Caves

#### **Jharkhand**

DudhiNala

#### **Rajasthan**

KishangarhNephelineSyenite

#### **Gujarat**

Eddy Current Marking, Kadana Dam

#### **Madhya Pradesh**

Bhedaghat Marble rocks

#### **Maharashtra**

Nighoj-Natural Potholes

#### **Meghalaya**

Mawmluh Cave

#### **Tripura**

Rock Carved Stone Images, Unakoti

## STATE OF INDIA'S BIRDS REPORT

### **Context**

Recently, the State of India's Birds (SoIB) 2023 was released, which highlighted that despite thriving a few bird species, there is a substantial decline in numerous bird species.

### **About**

The SoIB 2023 is a first-of-its-kind collaborative effort of 13 government and non-government organisations, including the Bombay Natural History Society (BNHS), Wildlife Institute of India (WII), and Zoological Survey of India (ZSI), Wildlife Trust of India (WTI), Worldwide Fund for Nature-India (WWF-India) among others, which evaluates the overall conservation status of the most regularly occurring bird species in India.

### **Methodologies Used in the Report**

This report is based on data collected from

approximately 30,000 birdwatchers.

The report relies on three primary indices to assess bird populations,

Long-term trend (change over 30 years)

Current annual trend (change over the past seven years)

Distribution range size within India

Among the 942 bird species assessed, the report indicates that many could not have their long-term or current trends accurately established.

### **Bird Diversity in India:**

India is home to more than 1,350 bird species, including endemic and habitat-specific species.

The report highlights the significance of understanding the distribution and trends of these species for conservation efforts.

### **Key Findings:**

Of the 942 bird species analyzed, 60% showed long-term declines, with 40% showing current annual declines.

Generalist species like the Indian peafowl and Asian koel are thriving, while habitat specialists, especially in grasslands and wetlands, are rapidly declining.

Species feeding on vertebrates and carrion, such as raptors and vultures, have also faced significant declines, possibly due to harmful pollutants in their food resources.

Insectivorous birds, particularly those endemic to the Western Ghats, have also shown rapid declines, though the reasons remain unclear.

Other declining groups include grassland birds like the Great grey shrike and Great Indian bustards, as well as wetland species like the curlew sandpiper.

### **Bird Species Doing Well:**

Some generalist bird species, such as the Indian peafowl, have experienced significant increases in abundance.

However, this increase is not without challenges, including reports of crop damage and concerns about its impact on ecosystems and other wildlife.

Other species, including the Ashy Prinia, feral Rock pigeon, and Asian koel, are also doing well.

### **High Conservation Priority Species:**

The report classifies 178 bird species as “High Priority” for conservation action. This category includes migratory wetland birds like the Ruddy shelduck, resident species like the Indian courser, and endemics like the Narcondam hornbill.

Some of these High Priority species classified as “Least Concern” by the IUCN show significant declines nationally, warranting urgent conservation efforts.

The report emphasizes the need for conservation measures to protect and maintain grassland ecosystems.

### **Major Threats to Bird Species:**

The report identifies various threats to bird species, including forest degradation, urbanization, and energy infrastructure.

Environmental pollutants, avian diseases, and illegal hunting and trade also pose challenges to bird populations.

The impacts of climate change, particularly on migratory species, are a growing concern.

### **Call for Action and Research:**

The report underscores the importance of ongoing research to understand the reasons behind bird population changes.

Conservation policies need to focus not only on threatened species but also on preserving common species.

The report highlights the need to align different policies, such as river, water, and wasteland development policies, with conservation goals.

The “State of India’s Birds 2023” report serves as a vital resource for understanding the challenges faced by bird populations in India and emphasizes the importance of conservation efforts and research to protect these species and their ecosystems.

## **INVASIVE ALIEN SPECIES**

### **Context:**

Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) in its new publication – the “Assessment Report on Invasive Alien Species and their Control”

### **Key Data:**

Has found that there are 37,000 alien species, including plants and animals, that have been introduced.

Many human activities to regions and biomes around the world, including more than 3,500 invasive alien species and that invasive alien species have played a key role in 60% of global

plant and animal extinctions recorded.

Invasive alien species are one of the five major direct drivers of biodiversity loss globally, alongside land and sea use change, direct exploitation of organisms, climate change, and pollution.

### Short Note On IBPES:

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

IPBES is an independent intergovernmental body established to strengthen the science-policy interface for biodiversity and ecosystem services, working in a similar way to the IPCC, which is the UN's climate science body. But, it is not a United Nations body.

Secretariat: Bonn, Germany

### Invasive Alien Species:

An alien species is one that has been introduced outside of its natural range.

They are unintentionally or knowingly brought outside of their normal habitats, where they outcompete the local species and disturb the ecological equilibrium.

The ability to adapt physiologically to new conditions, also known as phenotypic plasticity, is one of the most common traits of invasive species.

### Effects Of IAS

By out-competing indigenous species for resources, IAS can directly alter the community structure and species composition of native ecosystems.

IAS can have a direct impact on human health. Infectious diseases are frequently IAS imported

by travellers or vectored by exotic bird, rodent, and insect species.

Early discovery and quick action are frequently cited as being essential to decrease the expenses associated with invasive species harm and management.

### Invasive Species In India:

As a result, India is responsible for 8% of the world's biodiversity, which covers only 2.4% of its land area.

4900 out of 15000 flowering plant species, or 33 percent, are said to be endemic to the current political boundaries of this country.

The 173 species of invasive alien plants in India are the subject of the current investigation.

The most harmful invasive species, such as *Alternanthera philoxeroides*, *Cassia uniflora*, *Chromolaena odorata*, *Eichhornia crassipes*, *Lantana camara*, *Parthenium hysterophorus*, *Prosopis juliflora*, and others, are included in this group.

### Invasive Alien Species - Law In India

India is attempting to combat invasive alien species for the first time through legislation.

The Wildlife Protection Act of 1972 was updated in 2021 with a new amendment that addresses invasive alien species. The Wildlife Protection Act's reach is expanded by the bill's introduction of "Alien Invasive Species."

The Central Government has the authority to control or outlaw the import, trade, possession, or spread of invasive alien species that endanger India's wildlife or habitat under Section 62A(i).

## STUMP TAILED MACAQUE

### Context

The Delhi zoo now houses a new animal species – the stump-tailed macaque. Eight stump-tailed macaques have been brought to the zoo from the Aizawl Zoological Park in Mizoram.

### Stump Tailed Macaque:

The stump-tailed macaque also called the

bear macaque, is a species of macaque native to South Asia and Southeast Asia.

### Scientific name: *Macaca arctoides*

Habitat: In India, it occurs south of the Brahmaputra River, in the northeastern part of the country.

Distribution: Its range in India extends from

Assam and Meghalaya to eastern Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura.

**Nature:** It is primarily frugivorous, but eats many types of vegetation, such as seeds, leaves and roots, but also hunts freshwater crabs, frogs, bird eggs and insects.

It is listed as vulnerable on the IUCN Red List of species.

Wild Life (Protection) Act, 1972: Schedule II



## LIBYA FLASHFLOODS

### Context:

Heavy one-day rains from Mediterranean storm Daniel caused massive flooding across eastern Libya that overwhelmed two dams, sending a wall of water through the coastal city of Derna that destroyed entire neighborhoods and swept bridges, cars and people out to sea.

Storms like Daniel are rare, yet they represent a new normal as climate change intensifies Mediterranean tropical-like cyclones, also known as Medicanes.

### What are flash floods?

Excessive or continuous rainfall over a period of days or during particular seasons, can lead to

stagnation of water and cause flooding.

Flash floods occur in a much shorter span of time (say, when rainfall creates flooding in less than 6 hours) and are highly localised.

Flash floods can also be caused by factors apart from rainfall, like when a dam overflows.

### Causes of flash floods in India:

Nearly 75% of the total rainfall is concentrated over just four months (June to September) → rivers witness a heavy discharge during these months.

Cloudbursts or thunderstorms and overflowing glacial lakes (in Himalayan states formed due to the melting of glaciers).

Depression and cyclonic storms in the coastal areas of Orissa, West Bengal, and Andhra Pradesh.

Flash floods may begin to take place after wildfires. Wildfires destroy forests and other vegetation, which in turn weakens the soil and makes it less permeable for water to seep through.

Climate change/global warming has increased the frequency/numbers of the above events.

### Vulnerability of India:

According to government data, India is the worst flood-affected country in the world, after Bangladesh.

~40 million hectares of land in the country are liable to floods annually. (National Flood Commission)





India accounts for one-fifth of the global death count due to floods.

Flash floods have been commonly witnessed in cities like Chennai and Mumbai.

### Steps taken:

India has launched first-of-its-kind Flash Flood Guidance services for India and other

South Asian countries – Bangladesh, Bhutan, Nepal, and Sri Lanka.

### Flashfloods Events In India:

The Chandigarh-Manali highway was blocked following flash floods and landslides in parts of Haryana and Himachal Pradesh.

## MARINE LIGHT POLLUTION

### Context:

The impact of artificial lighting on land-based life (humans, fireflies, and birds) has been known for quite some time.

### Artificial Lighting in the Marine Environment

Artificial lighting refers to the light that is produced from artificial sources such as candles, fire, electricity, etc.

Ecologists and biologists have long recognized that artificial light at night can have adverse effects on the health of humans and terrestrial wildlife.

Recent research is showing that marine life is also sensitive to artificial light, including extremely low levels and certain wavelengths, particularly blue and green light.

**Marine Light Pollution:** When this artificial light is used excessively or poorly, it becomes light pollution and disrupts the natural patterns of wildlife, contributing to the increase in carbon dioxide (CO<sub>2</sub>) in the atmosphere.

The scientists found that 1.9 million km<sup>2</sup> of the ocean experience biologically significant amounts of artificial light pollution to a depth of 1 metre.

This represents about 3% of the world's Exclusive Economic Zones (EEZs).

Significant areas of the ocean are seeing light exposures to depths of 10 metres, 20 metres, or more.

In areas with very clear water, the light at night can reach depths of more than 40 metres.

### Sources:

Coastal development (e.g., buildings, streetlights, billboards, ports, piers, docks and light house).

Vessels (e.g., fishing and merchant marine vessels), harbours and offshore infrastructure such as oil rigs.

Some of the common types of artificial lights in the marine environment are LED, fluorescent, metal halide, and plasma lamps.

White LEDs produce broad spectrum light that is sensed by a wide range of organisms and have a peak at short wavelengths (blue and green light) to which many marine organisms are particularly sensitive.

### How does Artificial Lightning Affect the Marine Ecosystem?

**Disruption of Normal Cycles:** It already took marine organisms an evolution of over millions of years to adapt to natural light and now the threat of ever-increasing anthropogenic light pollution has been posing several threats to them.

Artificial light can easily wash out the glow of moonlight and starlight consequently disrupting their hormonal cycles, inter-species behaviour, and reproduction cycles.

**Illustration:** For instance, to lay their eggs, female sea turtles try to find a quiet, dark spot and avoid light. However, due to artificial lightning, they may end up not coming ashore at all.

Moreover, their hatchlings head toward inland lights instead of moonlight on the water and then die of dehydration or starvation.

LEDs Worsening the Impact: The ever-growing usage of LED lighting is also altering the very nature of artificial light.

### Suggestion:

Encouraging land-based Lights Out efforts (local, state, and regional campaigns to darken skies) to help migrating birds that are drawn to light at night. It will also benefit marine systems

near coastal cities.

Increasing the usage of red light in coastal areas as much as possible and putting up barriers to shield the coastline from artificial light.

Red light, having the longest wavelength in the visible spectrum, doesn't penetrate as far into the water.

## DACHIGAM NATIONAL PARK

### Context:

Hangul, the state animal of Jammu and Kashmir, once ruled the Kashmir valley but has become a critically endangered species with sightings mostly reported in Srinagar's Dachigam National Park along with a few connecting pockets in south Kashmir like Tral Wildlife Sanctuary.

In order to let Kashmir's unique royal stag, the Hangul, mate in peace, the authorities have suspended the entry of visitors into Dachigam National Park for three weeks.

### About:

Dachigam National Park is located 22 km from Srinagar in Jammu and Kashmir. It covers an area of 141 sq km.

The name literally stands for 'ten villages', which could be in memory of the ten villages that were relocated in order to create the park.

Dachigam was initially established to ensure the supply of clean drinking water to Srinagar city. A protected area since 1910, it was declared as a national park in 1981.



The park is best known as the home of the hangul, or Kashmir stag.

Habitat to Kashmir Stag: Only area where Kashmir stag is found.

### Species Found:

Dachigam is a well-known habitat for the Hangul (Kashmir Stag). They can be easily spotted in winters, when they hang out in the lower valleys. Other inhabitants at Dachigam are Musk deer, Brown Bear, Leopards, Jungle Cats, Himalayan black bear, and a few species of wild goat like the markhor and ibex.

Flora category, Dachigam national Park is extremely rich in Wild Cherry, Pear, Plum, Peach, Apple, Apricot, Walnut, Chestnut, Oak, Willow, Poplar, Chinar, Birch, Pine and Elm.

Some of the rare and threatened birds found in the area include exotic species like the Himalayan Golden Eagle, the Bearded Vulture, the Monal Pheasant, the Koklas, the Western Tragopan, the Black necked Crane, the Himalayan Snow Cock and the Bar-Headed Goose.

Migratory Water birds include Duck, Geese and Swans. The most common water birds which visit the state during winter months are Mallard, Common Teal, Pintail, Red Crested Pochard, Greylag Goose, Wigeon, Shoveller, Garganay, Coot and Gadwall.

### Protection and Conservation:

A survey in 2019 conducted by collaring the hangul has revealed that the species is no longer confined within the walls of Dachigam National Park.

The endangered subspecies has now begun to use an old migratory route which spread through Sind Valley up to Tulail in Gurez Valley.

Unfortunately, they were threatened, due to habitat destruction, over-grazing by domestic livestock, and poaching.

The Dachigam National Park located on foothills of Zabarwan range on the outskirts of Srinagar.

The state of Jammu & Kashmir, along with

the IUCN and the WWF prepared a project for the protection of these animals. It became known as Project Hangul.

As per the IUCN Red book, Hangul is categorized under Critically Endangered species.

Hangul is placed under Schedule I of the Indian Wildlife (Protection) Act, 1972 and the J&K Wildlife Protection Act, 1978.

## SC CONSTITUTES PANEL TO STUDY THE CARRYING CAPACITY OF HIMALAYAS

### Context

The Supreme Court has decided to set up an expert committee for conducting a “complete and comprehensive” study on the carrying capacity of the Himalayan region in the country, where unplanned development has caused devastation in recent times, terming it a “very important issue”.

This initiative is essential to ensure sustainable development and preservation of the fragile Himalayan ecosystem.

### What is Carrying Capacity?

Carrying capacity refers to the maximum population size that an ecosystem or environment can sustainably support over a specific period without causing significant degradation or harm to its natural resources and overall health.

Carrying capacity assessments is crucial for understanding and managing the balance between human activities and the preservation of natural ecosystems to ensure long-term sustainability.

### Global example of Ecocide

Mexico’s Maya train project has earned a contradictory reputation. Some describe it as a “Pharaonic project”, the train route covers 1,525 km (about the distance from Florida to New York City), connects tourists in the Caribbean with historic Maya sites and costs \$20 billion (almost four times India’s Great Nicobar Project). It has also been described as a “megaproject of death”. It imperils the Yucatán peninsula’s rich wilderness, ancient cave systems and indigenous communities.

The Tribunal for the Rights of Nature in August said the project caused “crimes of ecocide and ethnocide”.

### What is ‘ECOCIDE’?

Biologist Arthur Galston in 1970 is credited to be the first to link environmental destruction with genocide, which is recognised as an international crime, when referring to the U.S. military’s use of Agent Orange (a herbicide) during the Vietnam War.

Swedish Prime Minister Olof Palme, two years later, used the term in a speech at the United Nations, warning that unchecked industrialisation could cause irreversible damage to the environment. British lawyer Polly Higgins became the linchpin, when in 2010, she urged the United Nations’ International Criminal Court (ICC) to recognise ecocide as an international crime.

At present, the Rome Statute of the ICC deals with four atrocities: genocide, crimes against humanity, war crimes and the crime of aggression. The provision on war crimes is the only statute that can hold a perpetrator responsible for environmental damage, albeit if it is intentionally caused and during wartime situations.

Ms. Higgins proposed that the Statute should be amended to treat crimes against nature on par with crimes against people. Her description of ecocide was: “Extensive loss, damage to or destruction of ecosystems...such that the peaceful enjoyment by the inhabitants has been or will be

### Ecocide

1. For the purpose of this Statute, "ecocide" means unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.
2. For the purpose of paragraph 1:
  - a. "Wanton" means with reckless disregard for damage which would be clearly excessive in relation to the social and economic benefits anticipated;
  - b. "Severe" means damage which involves very serious adverse changes, disruption or harm to any element of the environment, including grave impacts on human life or natural, cultural or economic resources;
  - c. "Widespread" means damage which extends beyond a limited geographic area, crosses state boundaries, or is suffered by an entire ecosystem or species or a large number of human beings;
  - d. "Long-term" means damage which is irreversible or which cannot be redressed through natural recovery within a reasonable period of time;
  - e. "Environment" means the earth, its biosphere, cryosphere, lithosphere, hydrosphere and atmosphere, as well as outer space.

severely diminished." Here, "inhabitants" applies to all living creatures, not limiting crime to an anthropogenic legal view.

### Why should ecocide be a crime?

Ecocide is a crime in 11 countries, with 27 other nations mulling laws around criminalising environmental damage that is wilfully caused and harms humans, animals and plant species. The European Parliament voted unanimously this year to enshrine ecocide in law. Most national definitions penalise "mass destruction of flora and fauna", "poisoning the atmosphere or water resources" or "deliberate actions capable of causing an ecological disaster." The ICC and Ukraine's public prosecutor are investigating Russia's role in the collapse of the Nova Kakhovka dam, which unleashed a catastrophic flood drowning 40 regions, and caused oil spillage and toxic leakage into the Black Sea.

Over one-third of the Earth's animal and plant species could be extinct by 2050; 'unprecedented' heat waves have broken records globally; changing monsoon patterns and anthropogenic causes have made floods the norm in States like Assam.

The Intergovernmental Panel on Climate Change reiterated in March that global climate action is "insufficient"; indiscriminate

burning of fossil fuels, polluting land and waterways with plastics and fertilisers, and species loss have pushed us to a new geological epoch, the Anthropocene.

Criminalising ecocide "can lead to a shift in social norms".

### Ecoterrorism / Environmental terrorism

Ecoterrorism, also called ecological terrorism or environmental terrorism, destruction, or the threat of destruction, of the environment by states, groups, or individuals in order to intimidate or to coerce governments or civilians. The term also has been applied to a variety of crimes committed against companies or government agencies and intended to prevent or to interfere with activities allegedly harmful to the environment.

More concisely, environmental terrorism involves targeting natural resources. Eco-terrorism involves targeting the built environment such as roads, buildings and trucks, in defense of natural resources.

# PHOSPHORUS SHORTAGE

## Context

India is facing a critical shortage of phosphorus, which is essential for fertilizers but also a major environmental pollutant.

Phosphorus is scarce and exists only in limited quantities, in certain geological formations. Not only are we running out of it, it also pollutes the environment. It doesn't exist as a gas, which means it can only move from land to water, where it leads to algal blooms and eutrophication.

The history of phosphorus spans its discovery in guano to current global supply chains. Today, a handful of countries control most of the world's reserves of phosphorus. This is a major geopolitical concern.

## Global reserves

The world's largest reserves are in Morocco and the Western Sahara region. But here, phosphorus coexists with cadmium, a heavy metal that can accumulate in animal and human kidneys when ingested. Removing cadmium is also an expensive process.

As a result, cadmium-laden fertilisers are often applied to the soil, absorbed by crops, and consumed, bioaccumulating in our bodies. Studies have found that this accelerates heart disease. In 2018, the EU passed new legislation to regulate cadmium levels in fertilisers.

Only six countries have substantial cadmium-free phosphorous reserves. Of them, China restricted exports in 2020 and many EU countries no longer buy from Russia. So, the market for safe phosphorus has suddenly exploded.

This is one reason why Sri Lanka banned the import of synthetic fertilisers and went organic in 2021, later experiencing a sudden drop in crop yield that precipitated a political crisis.

## Impact of Cadmium

Today, India is the world's largest importer of phosphorus, most of it from the cadmium-laden deposits of West Africa. Not all crops absorb cadmium at the same rate, but paddy, a staple crop in India, is particularly susceptible; Indian

farmers also apply a lot of fertilisers to paddy. Other grains, such as wheat, barley, and maize also absorb cadmium, just less.

(The uptake of cadmium by crops varies based on soil quality, climatic conditions, and the type and variety of crops grown. Social and cultural factors further affect the intake of cadmium into human bodies and the severity of health effects.)

Thus, we may face a hard choice down the line: if we don't remove cadmium from the phosphorus, we may face a public health crisis; if we do, fertilisers will become more expensive.

## Chemical Properties

Phosphorus readily forms compounds with other elements, especially oxygen, forming various phosphates. It is highly reactive and can spontaneously combust in air, producing a white smoke.

Phosphorus compounds are crucial in biology, as they are a fundamental component of DNA, RNA, and ATP (adenosine triphosphate).

## Natural Occurrence

Phosphorus is commonly found in the Earth's crust in the form of various phosphate minerals, such as apatite.

## Industrial Uses

Phosphorus compounds are used in the production of fertilizers, as they are necessary for plant growth.

It is also used in detergents, where phosphate compounds help break down and remove stains. Phosphorus is utilized in the production of steel and other metallurgical processes.

## Phosphorus disposal problem

1) Only about a fifth of the phosphorus mined is actually consumed through food. Much of it is lost directly to water bodies as agricultural runoff, due to the excessive application of fertilisers.

2) Most of the phosphorus that people consume ends up in the sewage. Most sewage in India is still not treated or treated only up to the

secondary level. So even if the organic matter is digested, the effluent discharged from STPs still contains nitrates and phosphates. Of these, nitrates can be digested by denitrifying bacteria and released safely as nitrogen gas into the atmosphere, while phosphorus remains trapped in the sediments and water column.

3) It is then absorbed by the algal blooms that grow in response to the high nutrient supply, and when they decompose, the bacteria that feed on

them consume the dissolved oxygen. The result: water bodies become oxygen-starved, leading to fish deaths. The algal blooms are also toxic, causing respiratory issues, nausea, and other ailments to people exposed to them.

4) Extracting and processing phosphate rock is energy-intensive, contributing to greenhouse gas emissions and environmental degradation.

## NATION'S FIRST GREEN HYDROGEN-POWERED BUS

### Context

India's top oil firm Indian Oil Corporation has unveiled the nation's first green hydrogen-powered bus that emits just water as it takes the lead in bringing out unrivaled tools to replace fossil fuels.

Indian Oil Corporation (IOC) will produce close to 75 kg of hydrogen by splitting water using electricity from renewable sources. This hydrogen will be used to power two buses which will ply across the national capital region for trial runs.

IOC's R&D Centre at Faridabad is producing green hydrogen for the pilot run. Four cylinders with a capacity of 30 kg can run the buses for 350 km.

It takes 10-12 minutes for the four tanks to fill. Hydrogen when burnt emits only water vapour as a by-product. With three times the energy density and the absence of harmful emissions, hydrogen shines as a cleaner, more efficient choice to meet the energy requirement.

### Green Hydrogen

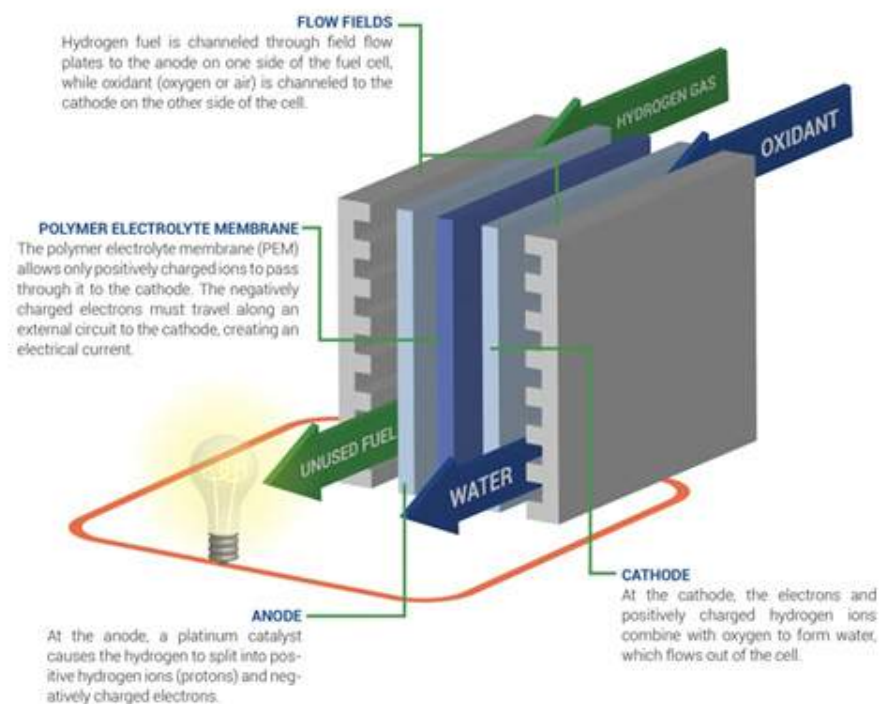
Green hydrogen is a type of hydrogen

produced through a process called electrolysis, using renewable energy sources like wind or solar power. It involves splitting water (H<sub>2</sub>O) into its constituent elements, hydrogen (H<sub>2</sub>) and oxygen (O<sub>2</sub>), with zero greenhouse gas emissions.

### Fuel Cell

A fuel cell is an electrochemical device that

### HOW DO HYDROGEN FUEL CELLS WORK?



converts chemical energy (in this case, hydrogen) into electrical energy. It consists of two electrodes (anode and cathode) separated by an electrolyte.

## The Process of Generating Electricity

Green hydrogen is supplied to the anode side of the fuel cell. At the anode, hydrogen molecules release electrons and become positively charged hydrogen ions (protons).

Electrons flow from the anode to the cathode

through an external circuit, generating an electric current. Oxygen from the air is supplied to the cathode.

At the cathode, oxygen molecules combine with electrons and protons to produce water vapor (H<sub>2</sub>O) as a byproduct.

# ASSAM PROMOTES PIPE COMPOSTING

## Context

Endorsing a technology that is simple and effective for the disposal of biodegradable waste at the household level, Assam is actively promoting pipe composting among its rural communities during the ongoing Swachhata Hi Seva campaign.

## Pipe composting technology

Pipe composting technology is a method of converting organic waste into compost using PVC pipes 8 - 10 inches in diameter and 1.25 metres in length. The pipes are placed vertically keeping them 25-30 cm inside the ground.

Only degradable waste can be disposed of into the pipes including leftover food, fruit and vegetable peels, flowers, dung, agricultural waste, etc. Once in two weeks a little cow dung and dry leaves are mixed with water and poured inside to accelerate the growth of the worms. This should

remain closed so that rainwater does not enter the pipes. Compost manure can be removed by lifting the pipe after 2 months.

## Benefits of pipe composting

It converts biodegradable waste into manure within a short time without harming the environment; it helps maintain a clean and hygienic environment on the school campus; it is odourless and fly-proof; and it is space efficient. Moreover, the system is sustainable as the same pipes can be used over and over again.

It provides an opportunity for students to learn about the science and ecology of decomposition, the role of microorganisms and invertebrates, and the importance of waste management and sustainability.

# GROUND WATER EXPLOITATION

## Context

The rate of depletion of groundwater in India during 2041-2080 will be thrice the current rate with global warming, according to a new report. As the country becomes warmer, people will draw more water from underground, leading to faster depletion, the researchers wrote in the paper published in Science Advances open access multidisciplinary journal September 1.

## About

This is a critical concern as over 60% of India's irrigated agriculture relies on groundwater, and some regions in India are already experiencing severe groundwater depletion.

## Research Findings:

The study projected a tripling of groundwater depletion rates under a business-as-usual scenario, driven by warming-induced increases in irrigation.

The estimated groundwater level declines (GWL) from 2041 to 2080 would be on average 3.26 times the current depletion rates, depending on climate models and Representative Concentration Pathway (RCP) scenarios.

Farmers in India have adapted to warming temperatures by intensifying groundwater withdrawals to meet the growing crop water demand.

## Current Status of Groundwater use in

## India

According to a Report by the Ministry of Jal Shakti (Dynamic Ground Water Resource Assessment Report 2022), the total annual groundwater recharge is 437.60 Billion Cubic Metres (BCM). The quantity of groundwater extracted stood at 239.16 BCM.

The extraction has been the lowest since 2004, when the extraction was 231 BCM. The major user for groundwater is for irrigation (208.49 BCM), followed by domestic (27.05 BCM) and industrial use (3.64 BCM).

The Central Groundwater Board of India estimates that about 17% of groundwater blocks are overexploited (rate of extraction exceeds the rate of recharge of aquifer) while 5% and 14% blocks are at critical and semi-critical stages, respectively. The situation is particularly alarming in three major regions: North-western, Western, and Southern peninsular.

According to the Groundwater Resource Assessment (2022), there has been a 3% reduction in the number of 'overexploited' groundwater units and a 4% increase in the number of 'safe' category units as compared to 2017. There was an improvement in groundwater conditions in 909 units.

According to India water portal, India uses 25% of all groundwater extracted globally,

ahead of USA and China. ~70% of the water supply in Indian agriculture today is groundwater.

## Impact of Global Warming on Groundwater Depletion:

Increasing irrigation mitigates the negative effects of warming temperatures on crop water stress but accelerates groundwater depletion.

The report highlights that this previously unquantified cost of adapting to warming temperatures will likely threaten India's food and water security in the coming decades.

Increased variability in precipitation and more extreme weather events caused by climate change can lead to longer periods of droughts and floods, which directly affects availability and dependency on groundwater.

In long periods of droughts there is a higher risk of depletion of aquifers, especially in case of small and shallow aquifers. People in water-scarce areas will increasingly depend on groundwater, because of its buffer capacity.

At the same time, indirect climate change impacts such as the intensification of human activities and land use changes increase the demand for groundwater. Strategic use of groundwater for global water and food security in a changing climate is becoming more and more important. This is another reason why groundwater should



have a more prominent role in climate debates.

Climate change does not only affects groundwater quantity, but also its quality. Sea level rise may lead to salt water intrusion into coastal aquifers affecting groundwater quality and contaminating drinking water sources.

Once salt water has intruded into fresh water system it is difficult to reverse the process. Particular vulnerable are already low-lying coastal zones and small island developing states.

On the other hand, saline/ brackish groundwater bodies also represent opportunities for economic activities and ecosystems. Understanding this systems will promote effective management interventions in the face of climate change.

### Factors Contributing to Overexploitation:

Historically, groundwater extraction was facilitated by policies such as increased access to borewells, free or subsidized electricity, and a lack of electricity metering.

These policies have allowed farmers to withdraw groundwater on demand, leading to overexploitation.

### Faulty Minimum Support Price (MSP) Policies:

MSP policies did not consider water consumption when fixing crop prices.

This led to increased cultivation of water-intensive crops like paddy, wheat, and

sugarcane.

### Horticulture Revolution:

The horticulture revolution around 2000-01 increased groundwater exploitation.

The net groundwater irrigated area expanded from 7.30 million hectares in 1960-61 to 46 million hectares in 2018-19, a 530% increase.

Groundwater's share in the total irrigated area rose from 29% to 68% during the same period.

### Increased Demand for Water:

The demand for water has surged since 1990-91 due to urban growth and industrial development.

Supply from surface sources like canals and tanks couldn't keep up with demand.

India became over-dependent on groundwater for various purposes from the early 1990s.

### Consequences of Over-Exploitation:

Over-exploitation led to reduced groundwater levels, causing economic hardships for farmers.

Deep bore-wells deplete shallow wells, impacting poor farmers who can't afford them.

Reduced water levels shorten well lifespans.

### Quality Impact:

Increased groundwater exploitation causes seawater intrusion into coastal areas, affecting groundwater quality.

Data from the Central Groundwater Board shows saline groundwater in several blocks in Tamil Nadu and Andhra Pradesh.

### Economic and Environmental Consequences:

Increased electricity consumption for deep well irrigation strains electricity subsidies.

Falling groundwater levels raise irrigation costs, increasing the cost of cultivation.

Projections indicate a drastic decline in per capita water availability by 2050 if groundwater depletion continues.

A potential 6% loss in GDP by 2050 and a risk to a quarter of India's harvest due to groundwater depletion have been warned.

### Challenges associated with the groundwater use in India

- Growing Population and Water Demand
- Unplanned Cities
- Agriculture Impact
- Regulatory and Management Issues
- Groundwater Pollution
- Climate Change

### Recommendations to Address Over-Exploitation:

- Implement groundwater conservation fees.
- Monitor groundwater exploitation by large

corporations.

- Promote rainwater harvesting and recharge methods.
- Fix MSPs for crops based on water consumption.
- Encourage micro-irrigation (drip and sprinkler) in over-exploited areas to reduce groundwater usage.
- Increase public awareness about water literacy and the consequences of declining groundwater levels.
- Effective policies are needed, including rationing power supply, metering electricity usage, regional water resource development and allocation, and rewarding farmers investing in groundwater recharge.

The use of efficient irrigation technologies (drip or sprinkler irrigation), cultivating less water-intensive crops, and supplemental irrigation through canals are also suggested to conserve groundwater.

Reuse of greywater—which includes all the wastewater without faecal matter generated from domestic streams, such as kitchens, and bathroom—provides an opportunity to reduce this water scarcity by 50 per cent, eventually reducing the water bill and water footprint.

Greywater has a lower contamination making it easier to treat. In India, it is estimated that 31 billion litres of greywater is generated daily.

## Governmental Efforts to

### prevent overexploitation of groundwater

- Government of India launched Jal Shakti Abhiyan (JSA) in 2019, a time bound campaign with a mission mode approach intended to improve water availability including ground water conditions in the water stressed blocks of 256 districts in India.
- National Water Policy (2012) has been formulated by Department of Water Resources, RD & GR, which inter-alia advocates rainwater harvesting and conservation of water and highlights the need for augmenting the availability of water through direct use of rainfall. It also inter-alia, advocates conservation of river, river bodies and infrastructure should be undertaken in a scientifically planned manner through community participation. Further, encroachment and diversion of water bodies and drainage channels must not be allowed and wherever, it has taken place, it should be restored to the extent feasible and maintained properly.
- Ministry has circulated a Model Bill to all the States/UTs to enable them to enact suitable ground water legislation for regulation of its development, which also includes provision of rain water harvesting. So far, 21 States/UTs have adopted and implemented the Model ground water legislations

with certain modifications suiting to their needs.

- Model Building Bye Laws (MBBL) 2016 circulated by Ministry of Housing & Urban Affairs include provisions for Rainwater Harvesting and it has been shared with all the States/ UTs. So far, barring Sikkim, Lakshadweep and Mizoram all the States/UTs have adopted the provisions of rainwater harvesting of MBBL-2016.
- In addition, Ministry of Jal Shakti has taken up the “Jal Shakti Abhiyan: Catch the Rain” (JSA:CTR) with the theme “Catch the Rain - Where it Falls When it Falls” to cover all the blocks of all districts (rural as well as urban areas) across the country during 22nd March 2021 to 30th November 2021. The campaign was launched by the Hon’ble Prime Minister on 22 March 2021.
- Ministry of Jal Shakti, Department of Water Resources, RD & GR (DoWR, RD & GR) is implementing Atal Bhujal Yojana (Atal Jal), a Rs.6,000 crore Central Sector Scheme, for sustainable management of ground water resources with community participation. Atal Jal is being implemented in 81 water stressed districts and 8,774 Gram Panchayats of seven States viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
- Central Ground Water Board (CGWB), in consultation

with States/UTs, has prepared 'Master Plan for Artificial Recharge to Groundwater - 2020'. The Master Plan - 2020 is a macro level plan indicating various structures for the different terrain conditions of the country. The Master Plan - 2020 envisages construction of about 1.42 crore rain water harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Metre (BCM).

- National Aquifer Mapping and Management program (NAQUIM) is being implemented by CGWB as part of Ground Water Management and Regulation (GWM & R) Scheme, a Central Sector scheme.

NAQUIM envisages mapping of aquifers (water bearing formations), their characterization and development of Aquifer Management Plans to facilitate sustainable management of groundwater resources in the country. NAQUIM outputs are shared with States/UTs for suitable interventions.

- Government of India generally supports artificial groundwater recharge/water harvesting works in the country through Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Prime Minister Krishi Sinchayee Yojana - Watershed Development component

(PMKSY-WDC), 'Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies schemes' a component of PMKSY.

- Prime Minister has launched Amrit Sarovar Mission on 24th April 2022. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of celebration of Azadi ka Amrit Mahotsav.
- Targeting water-saving policies and interventions in the required regions before substantial groundwater depletion occurs can help farmers cope with warming temperatures in the coming decades.

## DISASTER RISK REDUCTION

### Context

1. Recently cloudbursts and landslides in Himachal Pradesh claimed the lives of 50 people.
2. Heavy rain in the hills of West Bengal and Sikkim triggered a landslide that caused a cave-in on the National Highway 10 in Darjeeling district, disrupting vehicular movement on the key arterial link between the two states
3. At least 70 people - including nine soldiers - have died, and more than 100 others are missing after South Lhonak in Sikkim, a glacial lake in the Himalayas, burst its banks

4. According to a report by the Geneva-based Internal Displacement Monitoring Centre, natural disasters, especially heavy floods and cyclones, triggered around 2.5 million internal displacements in India in 2022.

### Disaster Risk Profile of India

#### Vulnerability to Disasters:

India has been vulnerable, in varying degrees, to a large number of natural, as well as, human-made disasters on account of its unique geo-climatic and socioeconomic conditions. It is highly vulnerable to floods, droughts, cyclones, earthquakes,

landslides, avalanches and forest fires.

Out of 36 states and union territories in the country, 27 of them are disaster prone. Almost 58.6 per cent of the landmass is prone to earthquakes of moderate to very high intensity; over 40 million hectares (12 per cent of land) are prone to floods and river erosion; of the 7,516 km long coastline, close to 5,700 km is prone to cyclones and tsunamis; 68 per cent of the cultivable area is vulnerable to drought and hilly areas are at risk from landslides and avalanches.

### Factors for higher risk profile of India

- Adverse Geo-climatic

conditions

- Topographic features
- Environmental degradation
- Population growth
- Urbanization
- Industrialization
- Non scientific development practices
- Construction of dams

### Variability of disasters:

As far as the vulnerability to disaster is concerned, the five distinctive regions of the country i.e. Himalayan region, the alluvial plains, the hilly part of the peninsula, and the coastal zone have their own specific problems.

While on one hand the Himalayan region is prone to disasters like earthquakes and landslides, the plain is affected by floods almost every year. The desert part of the country is affected by droughts and famine while the coastal zone is susceptible to cyclones and storms.

The geo-tectonic features of the Himalayan region and adjacent alluvial plains make the region susceptible to earthquakes, landslides, water erosion, etc. Though peninsular India is considered to be the most stable portions, but occasional earthquakes in the region shows that geo-tectonic movements are still going on within its depth.

The tectonic features, characteristics of the Hiamalaya are prevalent in the alluvial plains of Indus, Ganga and Brahmaputra too, as the rocks lying below the alluvial pains are



just extension of the Himalayan ranges only. Thus this region is also quite prone to seismic activities. As a result of various major river systems flowing from Himalaya and huge quantity of sediment brought by them, the area is also suffering from river channel siltation, resulting into frequent floods, especially in the plains of Uttar Pradesh and Bihar.

The western part of the country, including Rajasthan, Gujarat and some parts of Maharashtra are hit very frequently by drought situation. If Monsoon worsens the situation spreads in other parts of the country too.

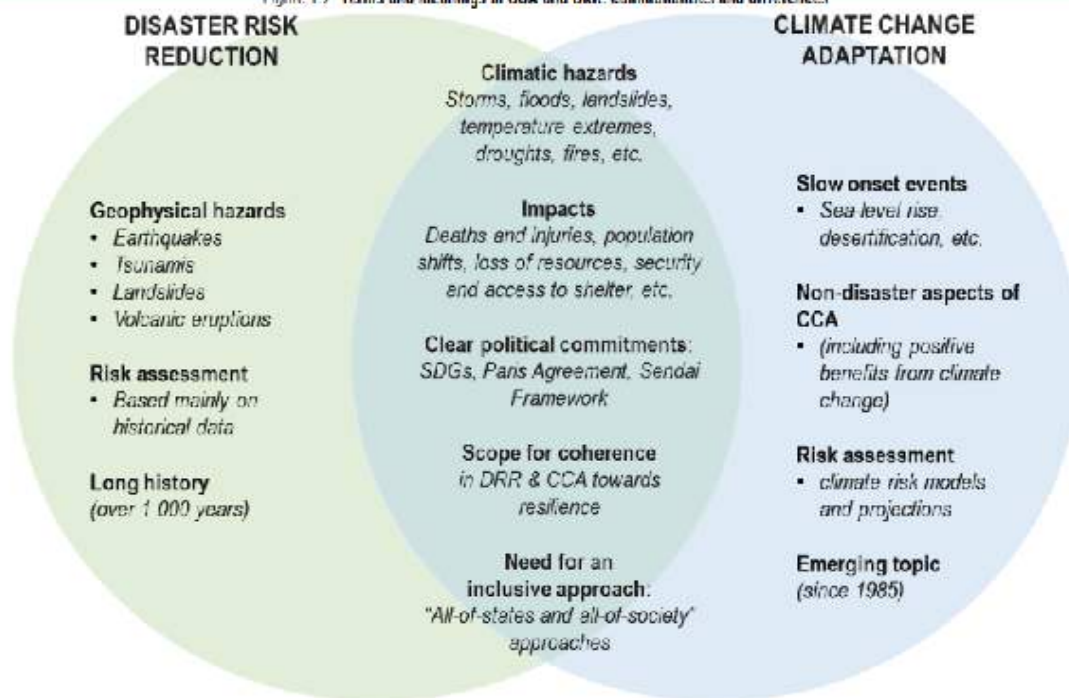
The disturbance in the pressure

conditions over oceans, results into cyclones in coastal regions. The Geo-tectonic movements going on in the ocean floor make the coastal region prone to tsunami disaster too.

### International Efforts for Disaster Risk Reduction

Disaster Risk Reduction (DRR) is increasing in the agenda of the Organisations of the UN System. While the Sendai Framework for Disaster Risk Reduction 2015-2030 is the roadmap for Disaster Risk Reduction, other global agendas including the Sustainable Development Goals, the Paris Climate Agreement,

Figure 1.2 Terms and meanings in CCA and DRR: commonalities and differences



the New Urban Agenda and the Biodiversity Agenda have targets that cannot be attained without considering Disaster Risk Reduction. There are clear links between those international instruments.

### SDG and Disaster Risk Prevention

Disaster risk management cuts across different sectors of development and of the 17 Sustainable Development Goals (SDGs), 10 are related to disaster risk management (reduction).

These include

- Goal 1 (End poverty),
- Goal 2 (End hunger),
- Goal 3 (Ensure healthy life),
- Goal 4 (Ensure inclusive and equitable quality education),
- Goal 6 (Ensure availability of water and sanitation),
- Goal 9 (Build resilient

infrastructure),

Goal 11 (Make cities and human settlements inclusive, safe and sustainable),

Goal 13 (take urgent action to combat climate change),

Goal 14 (Conserve oceans, seas and marine resources for sustainable development)

Goal 15 (Protect and promote terrestrial ecosystems and environment).

In this way, these SDGHs intend to build resilience of the poor and vulnerable sections in extreme situations caused by disasters.

### Sendai Framework

The Sendai Framework for Disaster Risk Reduction 2015–2030 outlines seven targets and four priorities for action to prevent new and reduce existing disaster risks:

1. Understanding disaster risk;

2. Strengthening disaster risk governance to manage disaster risk;
3. Investing in disaster reduction for resilience, and;
4. Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation, and reconstruction.

**UN office for Disaster Risk Reduction:** UNDRR oversees the implementation of the Sendai Framework for Disaster Risk Reduction, supporting countries in its implementation, monitoring and sharing what works in reducing existing risk and preventing the creation of new risk.

It focuses on comprehensive risk management through the development of guidance documents at the global level and training documents at the country level including

capacity development on risk-based approaches and Multi-Hazard Early Warning Systems (MHEWS).

UNDRR is also implementing the Climate Risks and Early Warning Systems (CREWS) project with the World Meteorological Organization (WMO) in LDCs and SIDS, along with partners working directly with countries on technical assessment and capacity development. Efforts to implement the project in Africa are in the pipeline in several African countries/regions.

### UNFCCC and Disaster Risk Reduction

Both DRR and Climate Change Adaptation aim to reduce the adverse impacts of hazards by addressing drivers of vulnerability and where possible also exposure. Interventions targeting either objective are likely to be intrinsically linked as climate change is one of the most critical factors affecting many types of disaster risk, and the majority of climate change impacts will materialise through climate variability and extreme weather events

Particularly, **Paris Agreement mentions the Sendai Framework in the Preamble**; Article 7 and 8 focus on strengthening resilience and reducing vulnerability to climate change, which is coherent with DRR.

#### New Urban Agenda:

The New Urban Agenda was adopted at the United Nations Conference on Housing and Sustainable Urbanisation

(HABITAT III) in Quito in 2016 as an action-oriented document that sets global standards of achievement in sustainable urban development, rethinking the way we build, manage, and live, in cities. It offers countries a road map to achieve SDGs.

The implementation of the New Urban Agenda contributes to the localization of the 2030 Agenda for Sustainable Development in an integrated manner, and to the achievement of the Sustainable Development Goals and targets, including Goal 11 of making cities and human settlements inclusive, safe, resilient and sustainable. The platform provides a centralized, virtual reporting mechanism of the New Urban Agenda implementation and urban related SDGs.

**Coalition for Disaster Resilient Infrastructure (CDRI)** is an international coalition of countries, United Nations (UN) agencies, multilateral development banks, the private sector, and academic institutions, that aims to promote disaster-resilient infrastructure. Its objective is to promote research and knowledge sharing in the fields of infrastructure risk management, standards, financing, and recovery mechanisms. It was launched by the Indian Prime Minister Narendra Modi at the 2019 UN Climate Action Summit in September 2019

**ASEAN framework on Anticipatory action in disaster management** - It provides guidance for defining and contextualising anticipatory

action at the regional level with some considerations for its implementation by Members of the Association of Southeast Asian Nations (ASEAN). This Framework outlines three building blocks of anticipatory action and proposes a Plan of Action for 2021–2025 with the primary aim to streamline anticipatory action in disaster risk management (DRM) through joint regional efforts. The implementation of the action plan will strengthen the ASEAN's vision of building disaster-resilient nations and communities.

### India's Efforts in Disaster Risk Reduction

*India is a signatory to the Sendai Framework* for Disaster Risk Reduction, which aims to make all stakeholders disaster resilient and significantly reduce the loss of lives and assets.

**National Disaster Management Plan (NDMP)** - It was released in 2016, it is the first ever national plan prepared in the country for disaster management. With National Disaster Management Plan (2016)

India is one of the participating countries and works closely with the **United Nations International Strategy for Disaster Reduction (UNISDR)**. India has been working closely with many countries for the exchange of ideas and expertise in disaster management.

**National Disaster Management Services (NDMS)** was conceived by NDMA during 2015-16 for setting up of Very Small Aperture

Terminal (VSAT) Network connecting MHA, NDMA, NDRF etc. to provide the failsafe communication infrastructure and technical support for Emergency Operation Centre (EOC) operations across the country.

**NDMA has taken an initiative on Earthquake Disaster Risk Indexing (EDRI)** for 50 important cities and 1 District in Seismic Zone IV & V areas. This kind of indexing will be helpful in comparing the overall risk across large number of cities or region and also in prioritization of cities to implement appropriate disaster mitigation measures.

**NDMA through Building Materials & Technology Promotion Council (BMTPC)** has prepared Upgraded Earthquake Hazard Maps and Atlases for the country for better planning and policies. The third edition of Vulnerability Atlas of India, brought out by BMTPC, is collation of the existing hazard scenario for the entire country and presents the digitized State/UT-wise Hazard Maps with respect to Earthquakes, Winds & Floods for district-wise identification of vulnerable areas.

**Leveraging the technology of geographic information system (GIS)**, NDMA have taken up a project for disaster risk

management by establishing GIS Server and creation of database to integrate data obtained from various stakeholders to increase disaster preparedness, mitigation, damage assessment, response and relief management efforts.

**Under the National School Safety Programme (NSSP)**, 8600 schools (with 200 schools in 43 districts in 22 States/UTs falling seismic zones IV and V) have been selected for providing training on school safety and disaster preparedness.

**The Aapdamitra scheme of NDMA has provision for training 6000 community volunteers** in disaster response in 30 most flood prone districts (200 volunteers per district) in 25 States.

The government has set up **National Crisis Management Committee and Crisis Management Group**. The state governments have set up state crisis management groups headed by chief secretaries, institutes of relief commissioners and state/district contingency plans.

The disaster management policy of the government stresses on forecasting and warning using advanced technologies, contingency agricultural planning to ensure availability

of food grains, and preparedness and mitigation through specific programmes.

**Project on deployment of Mobile Radiation Detection Systems (MRDS)** to handle Radiological Hazards in Metros/Capital Cities/Big Cities in India to detect unclaimed radioactive materials/substances and save public from its hazardous effects.

**Landslide Risk Mitigation Scheme (LRMS)** envisages financial support for site specific Landslide Mitigation Projects recommended by landslide prone States, covering disaster prevention strategy, disaster mitigation and R&D in monitoring of critical Landslides thereby leading to the development of Early Warning System and Capacity Building initiatives. The Scheme is under preparation.

## Way Forward

Disasters are no longer to be considered as occurrences that are to be managed through emergency response services. So, there is a need to foster a culture of prevention and identification of the key issues to be addressed especially in the development process.

The path ahead for managing disasters is to bring in a people-centered development strategy



# SCIENCE & TECHNOLOGY

## What's Inside?

1. BATTERY ENERGY STORAGE SYSTEMS (BESS) SCHEME
2. NIPAH VIRUS
3. FIRST INDIGENOUS NUCLEAR POWER PLANT IN GUJARAT
4. STORM-0558 AND CRYPTOGRAPHIC KEY
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# BATTERY ENERGY STORAGE SYSTEMS (BESS) SCHEME

Recently, the Union Cabinet, chaired by the Hon'ble Prime Minister of India, approved the Scheme for Viability Gap Funding (VGF) for the development of Battery Energy Storage Systems (BESS).

## What is BESS?

Battery storage, or battery energy storage systems (BESS), are devices that enable energy from renewable, like solar and wind, to be stored and then released when the power is needed most.

It will make a round-the-clock renewable energy supply possible.

## About the Scheme

- This scheme is designed to harness the potential of renewable energy sources such as solar and wind power; the scheme aims to provide clean, reliable, and affordable electricity to the citizens.
- The approved scheme envisages the development of 4,000 MWh of BESS projects by 2030-31.
- Financial support of up to 40% of the capital cost as budgetary support in the

form of Viability Gap Funding (VGF) is provided by the union government.

- The VGF shall be disbursed in 5 tranches linked with the various stages of implementation of BESS projects.
- To ensure that the benefits of the scheme reach the consumers, a minimum of 85% of the BESS project capacity will be made available to Distribution Companies (Discoms).

## Significance of the Scheme

- The scheme is in sync with India's ambition to meet its 50% of energy requirements through renewable energy and non-fossil energy sources by 2030 and also help reduce carbon emission.
- This will not only enhance the integration of renewable energy into the electricity grid but also minimise wastage while optimising the utilisation of transmission networks.
- This will reduce the need for costly infrastructure upgrades.

- The competitive bidding process approach will foster healthy competition and encourage the growth of a robust ecosystem for BESS, attracting significant investments and generating opportunities for associated industries.



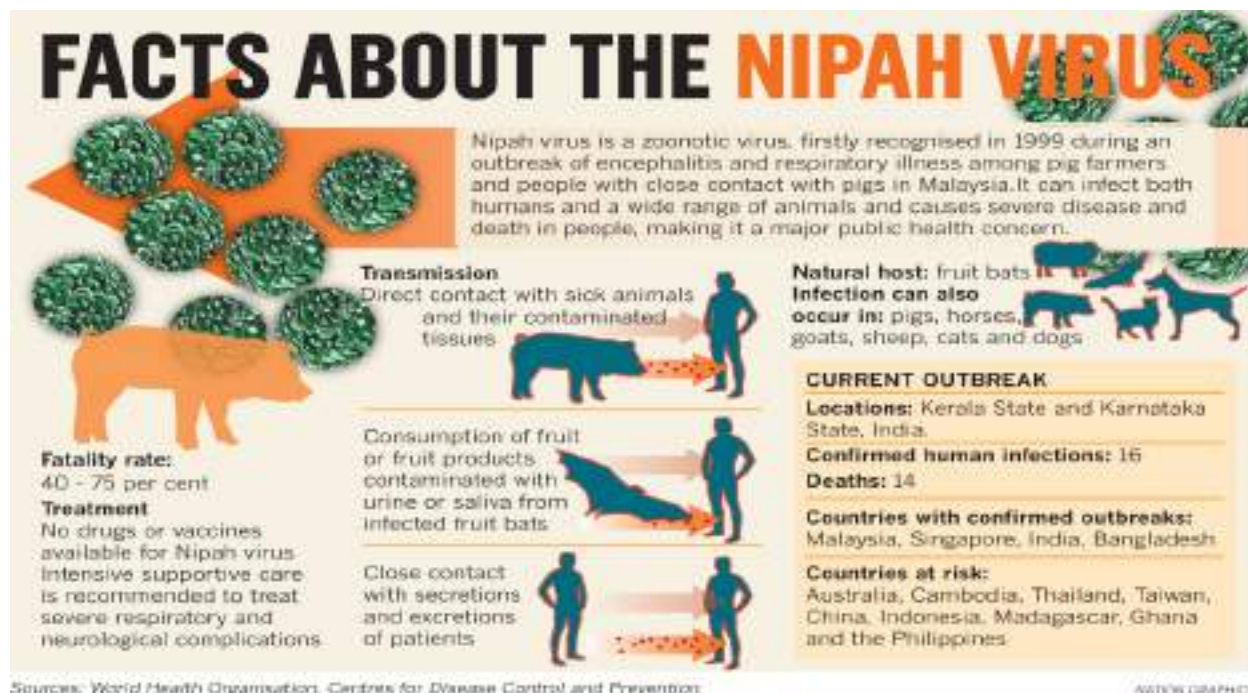
# NIPAH VIRUS

## Context

For the fourth time since 2018, Kerala is facing the deadly virus Nipah. Three of the four Nipah outbreaks in Kerala in 2018, 2021 and 2023 have been in Kozhikode district; the 2019 outbreak was in Ernakulam district.

## Symptoms:

- Fever, headache, cough, sore throat, difficulty in breathing, and vomiting. In severe cases, disorientation, drowsiness, seizures, and encephalitis (swelling of the brain) can occur, progressing to coma and death.



## About

- Nipah is a zoonotic disease, which means it is transmitted to humans through infected animals or contaminated food.
- The first outbreaks of the Nipah virus among humans was reported from Malaysia (1998) and Singapore (1999). The virus takes its name from the village in Malaysia where the person in whom the virus was first isolated died of the disease.
- The animal host reservoir of the virus is the fruit bat, commonly known as flying fox. Fruit bats are known to transmit this virus to other animals like pigs, and also dogs, cats, goats, horses and sheep.

- Usually, people with Nipah virus infection present with encephalitic symptoms. But in the latest outbreak, patients presented with pure respiratory symptoms, not reported anywhere in the world before.

## Transmission:

The disease spreads through fruit bats or 'flying foxes,' of the genus *Pteropus*, who are natural reservoir hosts of the Nipah and Hendra viruses. The virus is present in bat urine and potentially, bat faeces, saliva, and birthing fluids.

The virus is transmitted to people from animals and can also be passed on through contaminated food or directly from person to person. Human-to-human transmission of the Nipah virus has also been reported among family and caregivers of infected patients.

Some cases of infection have also been reported among people who climb trees where bats often roost.

### Fatality:

According to the World Health Organization (WHO), Nipah has a relatively high case fatality ratio. The case fatality rate is estimated at 40% to 75%. The very high death rates contribute to low transmission.

### Treatment:

There are currently no drugs or vaccines specific for Nipah virus infection although WHO

has identified Nipah as a priority disease for the WHO Research and Development Blueprint. Intensive supportive care is recommended to treat severe respiratory and neurologic complications.

### Preventive Measures:

- Raising awareness about its spread & transmission.
- Reducing the risk of bat-to-human transmission
- Reducing the risk of animal-to-human transmission by using Gloves and other protective clothing.

## FIRST INDIGENOUS NUCLEAR POWER PLANT IN GUJARAT

### Context:

The third unit of the indigenously developed 700-megawatt electric (MWe) nuclear power reactor at the Kakrapar Atomic Power Project (KAPP3) in Gujarat, India, has started operations at full capacity.

### Significance:

This marks a significant achievement in India's civilian nuclear program, as it is the country's first 700 MWe unit and represents a scale-up in technology.

The reactor uses Pressurized Heavy Water Reactor (PHWR) technology and is seen as a milestone in India's effort to expand its nuclear power capacity to 22,480 MWe by 2031.

The reactor design also incorporates enhanced safety features, including a Passive Decay Heat Removal System.

The NPCIL has ambitious plans to construct a total of sixteen 700 MW PHWRs across the country and has received financial and administrative sanction for the initiative.

Construction work is currently underway at Rawatbhata in Rajasthan (RAPS 7 and 8) and Gorakhpur in Haryana (GHAVP 1 and 2) to establish 700 MW nuclear power plants.



### Fleet Mode Development of PHWRs:

- In a significant boost to India's nuclear power capabilities, the government has sanctioned the construction of ten indigenously developed PHWRs in fleet mode.
- These reactors will be built at four different locations: Gorakhpur in Haryana, Chutka in Madhya Pradesh, Mahi Banswara in Rajasthan, and Kaiga in Karnataka. This fleet mode approach aims to expedite the establishment of nuclear power plants and enhance India's energy capacity.

## STORM-0558 AND CRYPTOGRAPHIC KEY

### Context:

Microsoft said the engineer's account had been penetrated by a hacking group it dubs Storm-0558, which is alleged to have stolen hundreds of thousands of emails from top American officials including Commerce Secretary Gina Raimondo.

### Storm-0558: A China-Based Threat Actor

Microsoft Threat Intelligence assessed Storm-0558 as a China-based threat actor with activities aligned with espionage objectives.

The group primarily targeted U.S. and European diplomatic, economic, and legislative entities, as well as individuals linked to Taiwan and Uyghur geopolitical interests.

Targeting Microsoft accounts using phishing campaigns and exploiting vulnerabilities in public-facing applications for initial access.

### Compromising Microsoft's Security

- Storm-0558 compromised Microsoft's cloud security by using an acquired MSA key to forge tokens.
- These tokens were used to access Outlook Web Access (OWA), Microsoft's web-based mail client, and impersonate Azure AD users for enterprise email access.

### Understanding Cryptographic Keys

A cryptographic key is a string of characters used in encryption algorithms to secure data.

### Types:

#### Symmetric Keys:

- These use the same key for both encryption and decryption.
- While efficient, secure sharing of the key between parties can be challenging.

#### Asymmetric Keys:

- Also known as public-key encryption.
- It involves a pair of keys – a public key and a private key.
- The public key is shared openly, while the private key remains secret.
- Data encrypted with the public key can only be decrypted with the private key, ensuring secure communication and authentication.

#### Digital Signatures:

- Cryptographic keys are crucial for creating and verifying digital signatures, which confirm the authenticity and integrity of digital documents or messages.

## GENE DRIVE TECHNOLOGY

### Context

Research led by the Department of Microbiology & Molecular Genetics, University of California at Irvine, Irvine, has developed a gene drive solution for mitigating malaria transmission from mosquitoes.

### About

- The fundamental idea behind genetic manipulation of mosquitoes is to systematically control their populations by interfering with their reproduction.

- Scientists worldwide have developed various genetic modification approaches. A major one in this endeavour is gene-drive technology, whose end result is for mosquitoes to selectively inherit some genes, rather than the inheritance to follow the rules of Mendelian genetics.

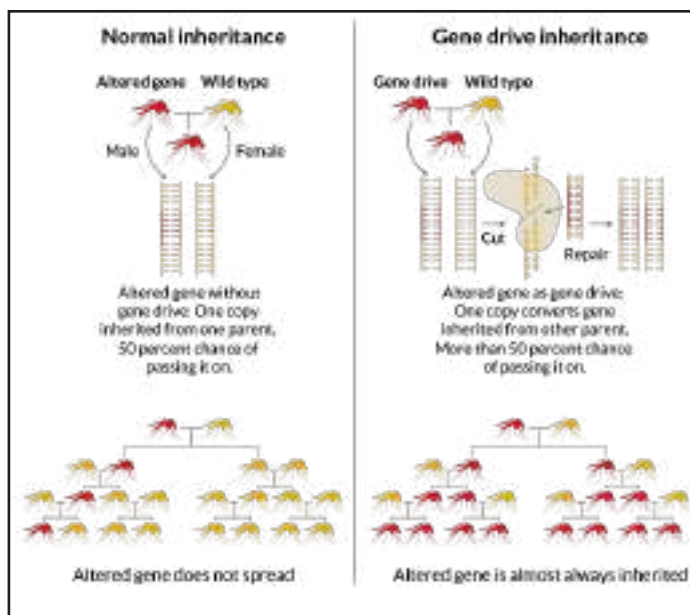
### Gene Drive Technology

- Gene drive is a technology that could allow society to control insects in a more targeted manner.

- The general underlying principle of all gene drives is an organism that will produce offspring similar to themselves.
- Some characteristics are randomly passed on from parents to the next generation. However, gene drive forces a different type of inheritance that ensures a specific characteristic is always present in the next generation.
- Scientists engineer gene drive using various molecular tools.
- This technology was conceived by Austin Burt, professor at Imperial College London, in a 2003 paper published in Royal Society Proceedings. Here, a protein cuts the mosquito's DNA at a part that doesn't encode a particular sequence in the genome. This triggers a natural mechanism in the cell containing the DNA to repair it and forces the cell to incorporate a sequence, called the drive sequence, into the damaged portion.
- In this process, a protein is introduced into the mosquito. This protein is typically an enzyme called a nuclease. Nucleases are molecular scissors that can cut DNA at specific locations.
- The protein (nuclease) is designed to cut the mosquito's DNA at a specific location. Importantly, this location is chosen in a part of the DNA that does not encode any essential genes or sequences necessary for the mosquito's survival or reproduction. This minimizes the risk of harm to the mosquito.
- When the mosquito's DNA is cut, the cell containing the damaged DNA will recognize this as damage and initiate a natural DNA repair mechanism. Cells have built-in mechanisms to repair breaks in their DNA.
- Here's where the "drive sequence" comes into play. Alongside the nuclease, scientists also introduce a

piece of DNA with the desired genetic sequence (the drive sequence). This drive sequence is designed to be incorporated into the mosquito's DNA during the repair process. Essentially, the cell copies the drive sequence and pastes it into the location where the DNA was cut.

- Since the nuclease and drive sequence are typically engineered to be inherited by offspring, this genetic change is passed on to the mosquito's offspring as well. This is what makes it a "gene drive." As the mosquito reproduces, the genetic change becomes more and more prevalent in the population.
- As a result, the malaria parasite won't be able to replicate inside the mosquito's gut. In a recent paper in Science Advances, researchers at Imperial College London genetically enhanced a gene expressed in the midgut of mosquitoes to secrete two antimicrobial substances called magainin 2 and melittin. They are detrimental to the Plasmodium parasite's development in the midgut and also reduce the lifespan of female mosquitoes. Computational modelling studies have suggested that this approach could significantly disrupt malaria transmission.



## Ecological Impact

- Genetically modified mosquitoes have been used in outdoor but controlled conditions in India, Brazil, and Panama as well. Early results from these trials showed promising drops in mosquito populations, around 90% during the trials. Additional trials have shown that such technologies can decrease incidence of dengue significantly as well.
- These technologies can bring benefits as well as risks, in different ways. An immediate implication is that the drastic reduction in the mosquito population could alter food chains and ecosystems that involve mosquitoes.
- So it's likely that the gap in the food chain could be 'invaded' by other mosquitoes or in fact other insects. As such, we don't fully understand the

implications in the short and longer terms. And since the consequences will be shared by individuals, communities, and populations, in that order, what constitutes a right decision and what processes are to be followed remains a dilemma to policymakers.

- Critics have expressed concerns about unintended consequences, such as unforeseen ecological disruptions or the potential for engineered genes to spread beyond target mosquito populations.
- Closer home, on the regulatory front, the Department of Biotechnology released comprehensive guidelines for genetically engineered insects earlier this year. They provide a roadmap for researchers, outlining procedures and regulations for working with such insects in the country.

## ANTIMATTER IS SUBJECT TO GRAVITY

### Context

Einstein's general theory of relativity implied that antimatter would fall just like matter does, but some physicists have long been suggesting that it should rise upward. Experiments at CERN have now demonstrated that antimatter falls, validating yet another aspect of the general theory.

### Antimatter

Antimatter is like the "mirror image" of regular matter. Everything in the universe, including us and the stuff around us, is made of matter. Matter is composed of tiny particles like electrons and protons. Antimatter, on the other hand, consists of particles that are almost exactly like their matter counterparts but with opposite properties.

For example, the electron is a negatively charged particle, but its antimatter counterpart, the positron, is positively charged. Similarly, the proton is positively charged, and its antimatter counterpart, the antiproton, is negatively charged.

When matter and antimatter meet, they can annihilate each other, releasing a burst of energy.

This concept is the basis for things like science fiction warp drives, but in reality, antimatter is quite rare in our universe. Scientists study antimatter to understand how it behaves and why there's so much more matter than antimatter in the universe, a puzzle that's still being explored.

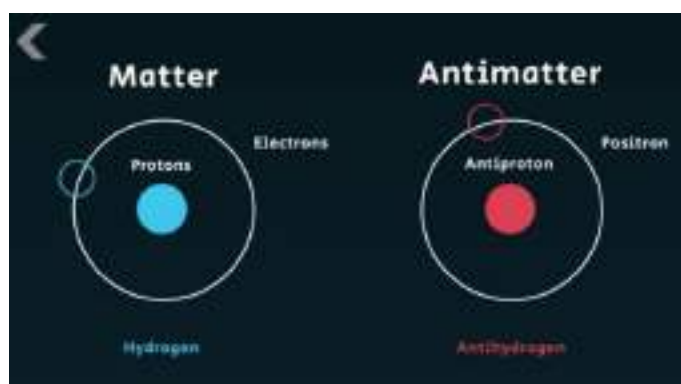
The observable universe consists almost entirely of ordinary matter, with very little antimatter. In other words, it is asymmetrical with respect to matter and antimatter. Scientists believe the Big Bang produced equal amounts of matter and antimatter, so this asymmetry is a mystery.

### Conditions for formation of antimatter

- Three conditions regularly form antimatter:
- radioactive decay,
- extremely high temperatures, and
- high-energy particle collisions.

## Examples

- Particle colliders have produced positrons, antiprotons, antineutrons, anti-nuclei, antihydrogen, and antihelium.
- But, one can encounter antimatter without visiting a high energy physics facility. Bananas, the human body, and other natural sources of potassium-40 release positrons from  $\beta^+$  decay. These positrons react with electrons and release energy from the annihilation, but the reaction poses no health threat.
- Lightning also produces positrons, which



react with matter to generate some gamma radiation.

- Cosmic rays contain positrons and some antiprotons. PET scans involve positrons.
- Solar flares may release antiprotons, which become trapped in the Van Allen radiation belt and can cause an aurora. Neutron stars and black holes produce positron-electron plasma.

## Uses of antimatter

- Energy Production: Annihilation for energy.
- Spacecraft Propulsion: High-speed space travel.

- Medical Imaging and Therapy: PET scans and cancer treatment. Positron emission tomography (PET) uses radioactive isotopes that emit positrons
- Particle Physics Research: Understanding fundamental forces.
- Radiation Therapy: Targeting tumors in cancer treatment.
- Dark Matter Exploration: Studying dark matter interactions.
- Matter-Antimatter Propellants: Faster interstellar travel.
- Radioactive Waste Disposal: Neutralizing radioactive waste.
- Neutrino Production: Studying elusive neutrinos.

## ALPHA EXPERIMENTS

- ALPHA (Antihydrogen Laser Physics Apparatus) is an international collaboration based at CERN, and which is working with trapped antihydrogen atoms, the antimatter counterpart of the simplest atom, hydrogen. By precise comparisons of hydrogen and antihydrogen, the experiment hopes to study fundamental symmetries between matter and antimatter.
- In the experiment, the researchers released groups of 100 antihydrogen atoms several times for the experiment. They then averaged the results of seven such releases. The results showed that the antimatter atoms exiting through the top and bottom were in the same proportion as predicted by simulations for matter atoms. In other words, the effect of gravity was the same for both: antimatter falls just like matter does.

## ANTI CANCER JAB

### Context

World's First: England introduces 7-min cancer treatment injection

### About

- The National Health Service (NHS) England has introduced an innovative anti-cancer injection capable of drastically reducing cancer treatment duration. This revolutionary jab has the potential to curtail treatment time for specific patients by a remarkable 75%.
- The injection takes only 7 minutes to administer and will be the first of its kind in the world to be rolled out to hundreds of NHS cancer patients annually. The Medicines and Healthcare Products Regulatory Agency (MHRA), is a UK

authority entrusted with safeguarding the efficacy and safety of medical products and treatments.

- Current Practices: Presently, cancer patients receive the immunotherapy drug atezolizumab through intravenous transfusion, a process that spans 30 minutes to an hour.
- This shift is projected to not only elevate patients' quality of life but also confer valuable time savings for healthcare professionals, further streamlining cancer care.
- However, patients who are undergoing a combined treatment regimen of intravenous chemotherapy and atezolizumab might still necessitate traditional transfusions.

## ADITYA L1

### Context

Aditya L1 was launched on September 2, 2023, from the Satish Dhawan Space Centre in Sriharikota. Indian Space Research Organisation (ISRO) used the Polar Satellite Launch Vehicle (PSLV-C57 rocket) for the launch, which carried seven payloads onboard that will be used to study the Sun's environment.

### About

- Aditya-L1 is the first space-based observatory-class Indian solar mission to study the Sun. The spacecraft is planned to be placed in a halo orbit around the Lagrangian point1 (L1) of the Sun-Earth system.
- The spacecraft will travel 1.5 million km from the Earth to the Lagrange 1 or L1 point between the Earth and the Sun. This distance is nearly four times that travelled by the Chandrayaan missions, but just 1% of the 150 million km between the Earth and the Sun.

- A satellite placed in the halo orbit around the L1 point has the major advantage of continuously viewing the Sun without any occultation/eclipse. This will provide a greater advantage of observing the solar activities continuously.

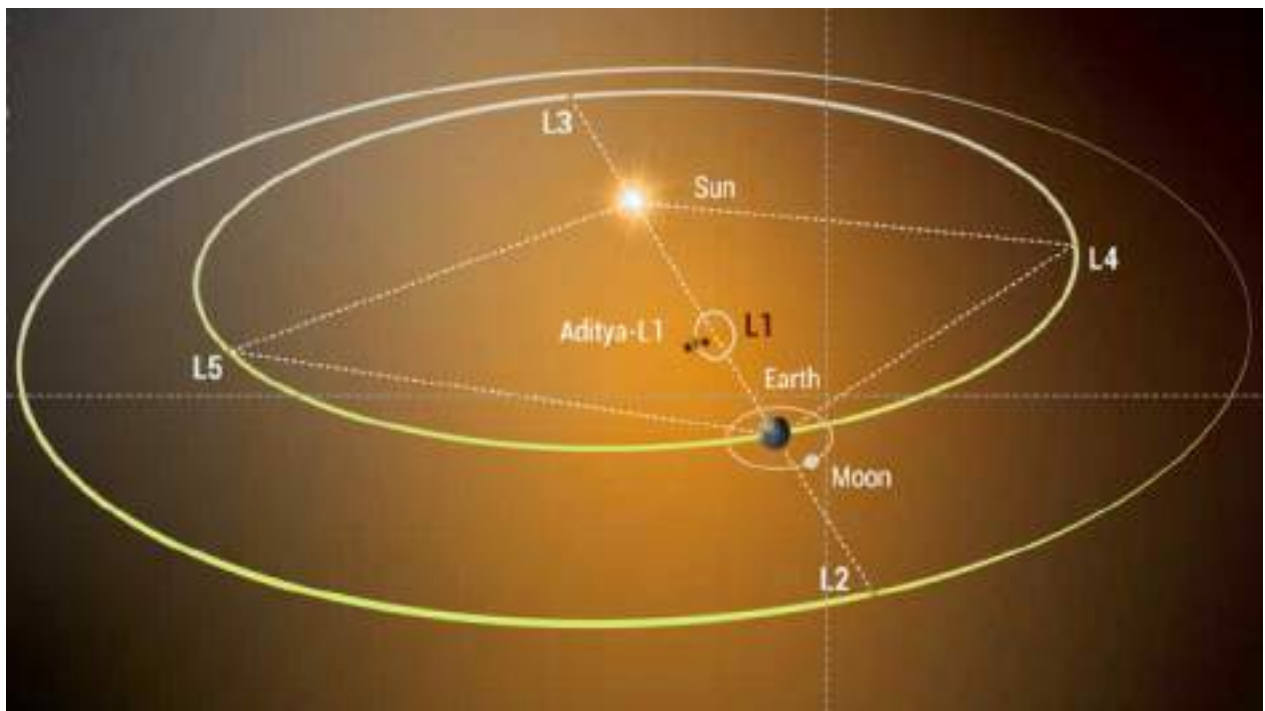
### Science Objectives of the Mission:

- The major science objectives of Aditya-L1 mission are:
- Study of Solar upper atmospheric (chromosphere and corona) dynamics.
- Study of chromospheric and coronal heating, physics of the partially ionized plasma, initiation of the coronal mass ejections, and flares
- Observe the in-situ particle and plasma environment providing data for the study of particle dynamics from the Sun.
- Physics of solar corona and its heating mechanism.
- Diagnostics of the coronal and coronal



### What is Lagrange Point?

- For a two-body gravitational system, the Lagrange Points are the positions in space where a small object tends to stay, if put there.
- These points in space for a two-body system such as Sun and Earth can be used by the spacecraft to remain at these positions with reduced fuel consumption.
- Technically at Lagrange point, the gravitational pull of the two large bodies equals the necessary centripetal force required for a small object to move with them.
- The interaction of the forces creates a point of equilibrium where a spacecraft may be *“parked” to make observations.*
- For two-body gravitational systems, there are total five Lagrange points, denoted as L1, L2, L3, L4, and L5.
- The distance of L1 from Earth is approximately 1% of the Earth-Sun distance.



loops plasma: Temperature, velocity and density.

- Development, dynamics and origin of CMEs.
- Identify the sequence of processes that occur at multiple layers (chromosphere, base and extended corona) which eventually leads to solar eruptive events.
- Magnetic field topology and magnetic field measurements in the solar corona.

- Drivers for space weather (origin, composition and dynamics of solar wind).

### Payloads of Aditya L1

- The spacecraft will carry seven payloads to observe the photosphere, chromosphere, and the outermost layers of the Sun (the corona) using electromagnetic and particle detectors.
- Using the special vantage point of L1, four payloads will directly view the Sun and the remaining three payloads will carry

out in-situ studies of particles and fields at the Lagrange point L1.

### Significance of the Mission

- The suit of Aditya L1 payloads are expected to provide most crucial information to understand the problems of coronal heating, Coronal Mass Ejection, pre-flare and flare activities, and their characteristics, dynamics of space weather, study of the propagation of particles, fields in the interplanetary medium, etc.

### Important terms related to the Sun

- Sunspots - Sunspots are cooler regions on the Sun's surface which increase and decrease in a cycle of 11 years. When the Sun is active, the number of sunspots is in the hundreds, and at solar minimum, the numbers are nearly zero.
- Solar flares - A sudden burst of high energy visible light, UV rays, X rays and Gamma rays.
- Coronal Mass ejection (CME) - At times, the Sun sneezes. Like a tongue of fire, a chunk of the corona suddenly accelerates and leaps into interplanetary space. CME consisting of billion tonnes of energetic plasma mixed with a solar magnetic field is hurled at 250 kilometers per second to 3,000 km/s.

**ADITYA-L1 Science Payloads**

The spacecraft carries seven scientific payloads for systematic study of the Sun. All payloads are indigenously developed in collaboration with various ISRO Centres.

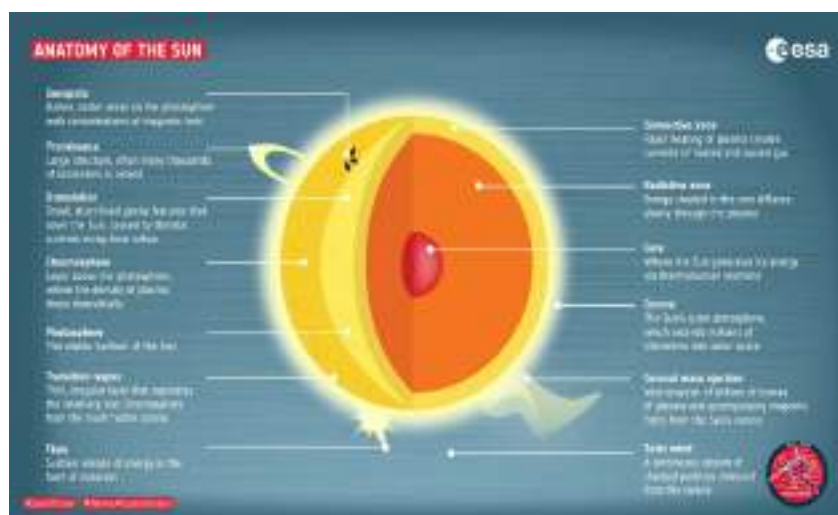
- VELC:** Visible Emission Line Coronagraph is designed to study solar corona and dynamics of coronal mass ejections. The payload is developed by Indian Institute of Astrophysics, Bengaluru in close collaboration with ISRO.
- SUIT:** Solar Ultra-violet Imaging Telescope to image the Solar Photosphere and Chromosphere in near Ultra-violet (UV) and, to measure the solar irradiance variations in near UV. The payload is developed by Inter University Centre for Astronomy and Astrophysics, Pune in close collaboration with ISRO.
- SoLEXS:** Solar Low Energy X-ray Spectrometer and High Energy L1 Orbiting X-ray Spectrometer are designed to study the X-ray flares from the Sun over a wide X-ray energy range. Both these payloads are developed at U R Rao Satellite Centre, Bengaluru.
- ASPEX:** Aditya Solar wind Particle Experiment and Plasma Analyser Package for Aditya payloads are designed to study the solar wind and energetic ions, as well as their energy distribution. ASPEX is developed at Physical Research Laboratory, Ahmedabad.
- PAPA:** PAPA is developed at Space Physics Laboratory, Vikram Sarabhai Space Centre, Thiruvananthapuram.
- MAG:** Magnetometer payload is capable of measuring interplanetary magnetic fields at the L1 point. The payload is developed at Laboratory for Electro Optics Systems, Bengaluru.

second.

- The solar wind constantly rams the Earth's magnetosphere, which functions like a shield and deflects most of it.
- Nevertheless, the energetic particles from the solar wind sneak through the weak

### Solar Wind

- Along with sunlight and electromagnetic radiation, such as ultraviolet rays, the Sun emits a constant stream of charged particles and a mixture of solar magnetic fields that travel throughout interplanetary space.
- The average speed of the flow near the Earth is about 300 kilometres per

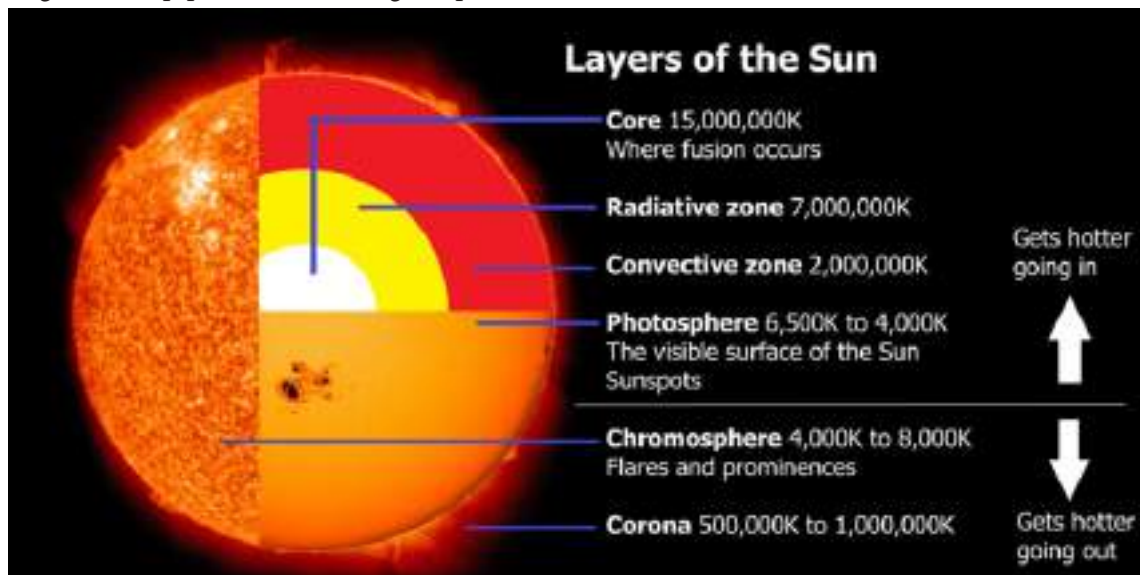


magnetic regions of the Earth — the north and south poles and interact with the molecules in the atmosphere, creating the dazzling display of aurora.

- Geomagnetic/ Solar Storm
- Violent eruptions like solar flares and CMEs trigger a strong wind or solar storm.
- A geomagnetic storm occurs when the solar storm bashes the Earth's magnetosphere.
- While brilliant, beautiful auroras appear as more energetic particles flow through the north and south poles, GPS and shortwave communication are disrupted, and the electronics in the satellite are in danger.
- Intense geomagnetic storms can induce magnetic induced currents in the power grid and pipelines, resulting in power

disk to about 250 miles (400 km) above that. The temperature in the photosphere varies between about 6500 K at the bottom and 4000 K at the top (11,000- and 6700-degrees F, 6200 and 3700 degrees C). Most of the photosphere is covered by granulation.

- Chromosphere - The chromosphere is a layer in the Sun between about 250 miles (400 km) and 1300 miles (2100 km) above the solar surface (the photosphere). The temperature in the chromosphere varies between about 4000 K at the bottom (the so-called temperature minimum) and 8000 K at the top (6700 and 14,000 degrees F, 3700 and 7700 degrees C), so in this layer (and higher layers) it actually gets hotter if you go further away from the Sun, unlike in the lower layers, where it



outages and fire.

- The energy from the charged particles heats the upper atmosphere, increasing the density and causing extra drag on satellites in low earth orbit.

### Temperature variation across different layers of the sun

- Photosphere - The photosphere is the deepest layer of the Sun that we can observe directly. It reaches from the surface visible at the center of the solar

gets hotter if you go closer to the center of the Sun.

- Transition Region - The transition region is a very narrow (60 miles / 100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K (14,000 to 900,000 degrees F, 7700 to 500,000 degrees C).

Corona - The corona is the outermost

layer of the Sun, starting at about 1300 miles (2100 km) above the solar surface (the photosphere). The temperature in the corona is 500,000 K (900,000 degrees F, 500,000 degrees C) or more, up to a few million K. The corona cannot be seen with the naked eye except during a total solar eclipse, or with the use of a coronagraph. The corona does not have an upper limit.

- While the surface of the Sun is 5,600 degrees, the corona, interestingly, is about two million degrees. Observations from Aditya L1 will help us understand the dynamics of the Sun and how solar variability impacts the climate on Earth and affects the space weather.

## VANADIUM IN GUJARAT

### Context:

Vanadium, a critical raw material for many industrial applications, has been found in sediment samples collected from Gulf of Khambhat, which opens into the Arabian Sea off Alang in Gujarat.

### Vanadium- Properties and significance:

- Vanadium is a chemical element with the symbol V and atomic number 23.
- It is a hard, silvery-grey, malleable transition metal.
- It is a critical raw metal.
- The elemental metal is rarely found in nature, but once isolated artificially, the formation of an oxide layer (passivation) somewhat stabilizes the free metal against further oxidation.
- Vanadium occurs naturally in about 65 minerals and fossil fuel deposits. It is produced in China and Russia from steel smelter slag.
- Large amounts of vanadium ions are found in a few organisms, possibly as a toxin.
- Most vanadium is produced from titanomagnetite ores, either directly or from the slag generated by smelting of titanomagnetite ores.
- Almost all the world's mined vanadium ore comes from either China, Russia, or South Africa.

- Brazil is the world's largest exporter of vanadium, with Russia and South Africa rounding out the top three.

### Vanadium and India:

Arunachal Pradesh, considered a sleeping hydropower giant, could be India's prime producer of vanadium, a high-value metal used in strengthening steel and titanium.

India is a significant consumer of vanadium but is not a primary producer of the strategic metal.

### Uses of vanadium:

The five key uses of vanadium include:

The production of metal alloys.

Inside nuclear reactors.

Vanadium oxide is used as a catalyst in sulfuric acid production.

Vanadium oxides are sometimes used as dyes.

Vanadium is a trace mineral in human diets, and is used for bone growth.

### What are Critical Raw Materials

Critical raw materials are substances that are of high economic importance and are essential for the production of various goods, technologies, and industries. These materials are considered critical due to their potential supply chain risks, geopolitical concerns, and their importance for strategic sectors.

**Vanadium is considered to be a critical raw metal.**

## Other initiatives taken by India for Critical Minerals:

- India just joined the Mineral Security Partnership (MSP) as the newest partner, which aims to strengthen critical mineral supply chains.
- The Geological Survey of India (GSI) is currently focused on exploring critical

and deep-seated minerals to boost the growth of the mining sector.

- KABIL: A Joint Venture Company among NALCO, HCL and MECL named Khanij Bidesh India Limited (KABIL) was formed in August 2019 to ensure the supply of Critical Minerals.

## OSIRIS-REX AND ASTEROID BENNU

### Context:

The mission's capsule, carrying Bennu's regolith, was dropped off in Utah, and OSIRIS-REx will continue its mission as OSIRIS-APEX to explore asteroid Apophis in 2029.

OSIRIS-REx is NASA's first mission to visit a near-Earth asteroid survey its surface and collect a sample from it.

### About OSIRIS-REx Mission:

It is the United States' first asteroid sample return mission, aiming to collect and carry a pristine, unaltered sample from an asteroid back to earth for scientific study.

The mission promises to bring the largest amount of extraterrestrial material back to the Earth since the Apollo era.

Recently, the spacecraft's robotic arm called the Touch-And-Go Sample Acquisition

Mechanism (TAGSAM), made attempt to "TAG" the asteroid

at a sample site and collected a sample.



OSIRIS-REx is part of NASA's New Frontiers Program.

OSIRIS-REx has now become OSIRIS-APEX and is on its way to explore asteroid Apophis.

### Asteroid Bennu:

Bennu is an ancient asteroid, currently more than 200 million miles from Earth.

It is known that this asteroid is a B-type asteroid, implying that it contains significant amounts of carbon and various other minerals.



Asteroids are categorized into different types (A, B, C, D) based on their reflectance spectra, the way they absorb & reflect sunlight at various wavelengths.

Because of its high carbon content, it reflects about 4% of the light that hits it.

Bennu is believed to have been born in the Main Asteroid belt between Mars and Jupiter.

# SUPER BLUE MOON

## Context

A rare blue supermoon — the closest full moon of the year — dazzled stargazers on August 31, 2023.

## What is Super moon?

Super moon occurs when the moon is in close alignment with Earth during its orbit, resulting in a larger and brighter appearance.

The orbit of the moon around the earth is not circular; it is elliptical, that is, an elongated or stretched-out circle. It takes the moon 27.3 days to orbit the earth.

(It is 29.5 days from new moon to new moon, though. This is because while the moon is orbiting the earth, both the earth and the moon are also moving around the sun — and it takes additional time for the sun to light up the moon in the same way as it does at the beginning of every revolution around the earth.)

The new moon is the opposite of the full moon — it is the darkest part of the moon's invisible phase, when its illuminated side is facing away from the earth.)

The point closest to earth in the moon's elliptical orbit is called perigee, and the point that is farthest is called apogee.

***A super moon happens when the moon is passing through or is close to its perigee and is also a full moon.*** (This happens with a new moon as well, just that it is not visible.)

A full moon occurs when the moon is directly opposite the sun (as seen from earth), and therefore, has its entire day side lit up.

## What is a blue moon?

Though the expression “once in a blue moon” implies a rare or unusual occurrence, a blue moon is not that rare an astronomical phenomenon.

There are a couple of definitions of a blue moon, but the one that is most understood and is *endorsed by NASA*, ***describes the situation when a full moon is seen twice in a single month.***

Because the new moon to new moon cycle lasts 29.5 days, a time comes when the full moon occurs at the beginning of a month, and there are days left still for another full cycle to be completed.

Such a month, in which the full moon is seen on the 1st or 2nd, will have a second full moon on the 30th or 31st. **According to NASA, this happens every two or three years.**



# GEOSPATIAL INTELLIGENCE

## Context

Geospatial intelligence is the collection and integration of data from a network of technologies, including satellites, mobile sensors, ground-control stations and aerial images. The data is used to produce real-time maps and simulations to help identify when, where and to what extent a threat is likely to emerge.

## Applications of Geospatial Intelligence

One long-standing contribution of geospatial intelligence is in emergency preparedness and response. For example, the National Hurricane Center actively monitors the location, formation and trajectory of tropical cyclones.

Detailed information on the timing, location and strength of a given hurricane helps officials distribute resources and personnel, as well as issue storm warnings and evacuation orders.

Geospatial intelligence also provides valuable guidance for search-and-rescue and recovery efforts following a disaster. For example, in the immediate aftermath of the February 2023 7.8 magnitude earthquake that struck Turkey and Syria, maps and aerial images quickly identified the extent of damage and the populations affected.

In addition, they helped first responders locate access points in the transportation network to rescue survivors, set up aid stations and provide emergency supplies.

Another use of geospatial intelligence is environmental monitoring. A stable environment is essential for human health and security. Monitoring temperature, precipitation, snowpack and polar ice helps scientists and government officials anticipate and prepare for potential disturbances.

The Russian-Ukraine war is another area

where geospatial intelligence has made contributions. Maxar Technologies, a commercial satellite imagery company, was the first to report the 40-mile-long convoy of Russian ground forces heading toward Kyiv in February 2022.

Another use of geospatial intelligence is in transportation, logistics and global supply chains. The global economy runs on GPS, which generates spatial data. GPS provides governments, businesses and people with detailed information on the time, location and destination of ships and cargo. This leads to greater efficiency and more consistent and reliable operations.

Geospatial intelligence is also helping with the rollout of autonomous vehicles. Using high-resolution imagery of about a foot (30 cm) per pixel, city planners and engineers can detect markings and features on the ground such as bicycle lanes and traffic direction. These advances help planners build safer, smarter, more efficient and better-connected communities.

Yet another use of geospatial intelligence is contributing to the development, implementation and evaluation of digital twins.

## Digital twins

Digital twins are virtual representations of real systems – buildings or cities, for example – that mimic the systems' characteristics and can be updated in real time to reflect changing conditions in the systems.

Digital twins are being used in many civilian and military settings to improve decision making. They are useful for modeling changes and predicting outcomes. Digital twins have been highly effective in conflict settings by simulating weather and terrain to help militaries and peacekeepers develop and enact strategies.



# SECURITY

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2. DEFENCE ACQUISITION COUNCIL AND C295 AIRCRAFT
3. MARITIME INFRASTRUCTURE PERSPECTIVE PLAN 2023-37
4. AFSPA EXTENSION
5. SIMBEX 30TH EDITION
6. INS MAHENDRAGIRI

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DRONE SECTOR OVERVIEW  
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# CANNABIS CULTIVATION AT HIMACHAL PRADESH

## Context:

The Himachal Pradesh government is exploring the possibility of Legalizing Cannabis (Hemp) cultivation, aligning with farmers' longstanding demands to lift the ban on cultivation.

## About Cannabis:

Cannabis refers to a group of three plants with psychoactive properties, known as Cannabis sativa, Cannabis indica, and Cannabis ruderalis.

Cannabis is made up of more than 120 components, which are known as cannabinoids. Two of them are:

**Cannabidiol (CBD):** This is a psychoactive cannabinoid, yet it's non-intoxicating and non-euphoric.

It's often used to help reduce inflammation and pain. It may also ease nausea, migraine, seizures and anxiety.

**Tetrahydrocannabinol (THC):** This is the main psychoactive compound in cannabis. THC is responsible for the "high" that most people associate with cannabis.

Cannabis cultivation traces all the way up to 12,000 years ago, suggesting it was one of humanity's oldest cultivated crops.

**Traditional Drink:** Some scholars speculate that it may be the main ingredient of the ritual Vedic drink 'soma', mentioned in both the Rigveda and the Bhagavad Gita.

**1961 Single Convention on Narcotic Drugs:** It put down stringent controls for the manufacture and consumption of drugs including cannabis.

## Cannabis Cultivation in India:

India banned the cultivation of cannabis plant under the Narcotic Drugs and Psychotropic Substances (NDPS) Act.

Currently, charas, ganja, or any mixture or drink prepared from the two products are banned in India under the NDPS Act, regardless of hemp

cultivation.

**Exemption to Ban:** Section 10 (a) (iii) of the Act empowers States to make rules regarding the cultivation of any cannabis plant, production, possession, transport, consumption, use, purchase, sale, and consumption of cannabis (except charas).

States are empowered to permit, by general or special order, the cultivation of hemp, only for obtaining fiber or seeds or for horticultural purposes.

Uttarakhand became the first State in the country to legalise cannabis cultivation in 2017 for industrial use.

Central government has also given legal status to the cultivation of cannabis in some districts of Rajasthan, Madhya Pradesh and Uttar Pradesh.

Controlled cultivation of cannabis has been permitted in several European Union countries apart from Uruguay, Canada, USA, Austria, Belgium and the Czech Republic.

## Significance of Move:

**Revenue for Government:** Given India's production capacity of cannabis, the government stands to benefit in terms of tax.

India alone accounted for **6 percent of the world's cannabis** herb seizures in 2016 and even higher quantities in 2017.

**Rural economy:** It will improve the economy in rural areas and the income of the state government will also increase.

In parts of Himachal such as Kullu and Mandi, hemp had traditionally been used for making footwear, ropes, mats, food items, etc.

**Culinary importance:** During snowfall in Himachal Pradesh, a dish is prepared from cannabis seeds to keep people warm and energetic.

**Overall benefits:** The legalization of marijuana can help create jobs, battle stress, improve human concentration, resolve medical problems and provide sustainable agricultural incomes, among other things.

# DEFENCE ACQUISITION COUNCIL AND C295 AIRCRAFT

## Context:

The Government of India took a significant step towards strengthening the country's defense capabilities by approving a series of proposals. The Defence Acquisition Council (DAC), led by Defence Minister Rajnath Singh, gave the green light to nine acquisition proposals, amounting to a total of Rs 45,000 crore. The Indian Air Force (IAF) received the first of the 56 C295 aircraft at the Airbus production site in Seville, Spain. It will replace its ageing Avro-748 fleet.

## What is the C295 aircraft?

The C295 is a versatile tactical transport aircraft capable of performing a wide range of missions.

These missions include transporting troops and cargo, conducting maritime patrols, providing airborne warning, surveillance, and reconnaissance, facilitating medical evacuations, serving as a VIP transport, and assisting in airborne firefighting.

The aircraft has the capacity to carry payloads weighing up to nine tonnes. It can accommodate up to 71 personnel while maintaining a maximum cruise speed of 260 knots. It is equipped for air-to-air refuelling.

It is powered by two Pratt & Whitney turboprop engines. It can cruise at altitudes of up to 30,000 feet and can take off and land quickly on unpaved, soft, and sandy/grassy airstrips.

## What is the significance of procurement of these aircrafts?

Firstly, it will serve as a replacement for the ageing Avro fleet of the Indian Air Force (IAF), which was originally acquired back in the 1960s.

This replacement will substantially enhance the IAF's capabilities in air transport. It will allow for the efficient transportation of troops and materials to various regions within the country.

This acquisition marks the initiation of India's 'Make in India' Aerospace program within the private sector. It involves the domestic manufacturing of these aircraft.

Until now, military aircraft production in India has been a monopoly of the state-owned Hindustan Aeronautics Limited (HAL).

It will stimulate India's aerospace sector. It will generate approximately 15,000 highly skilled jobs and an additional 10,000 indirect employment opportunities over the course of the next decade.

## What is the level of indigenous of the 40 C295?

Except for major components such as the engine and avionics, Airbus will facilitate the transfer of manufacturing technology to Tata Advanced Systems Limited (TASL) for most other parts.

This approach is expected to enable the production of 95 percent of the aircraft within India in the coming years.

The aircraft will feature domestically developed radar warning receivers and missile approach warning systems created by Bharat Electronics Limited.

The countermeasure dispensing system has been supplied by Bharat Dynamics Limited. The airframe of the medium transport aircraft comprises over 14,000 parts and components. 3,500 parts are manufactured by Tata each year.

It is anticipated that the 32nd aircraft, set for delivery in the first quarter of 2029, will be a fully Indian-manufactured C295.

What is the current status of C295 manufacturing in India?

The 40 C295 aircraft are intended for production in India at the Vadodara facility.

Tata Advanced Systems Limited (TASL) has established a factory in Hyderabad, where the

manufacturing of major airframe components will commence this year.

Once the major sections of the aircraft are assembled at the Hyderabad facility, they will be transported to the Vadodara facility next year. There, they will be equipped with engines, avionics, and other crucial components.

A training facility has been established in Agra, which is expected to become operational in late next year.

### About Defence Acquisition Council (DAC):

The DAC is the highest decision-making body of the defence Ministry on procurement.

**Objective:** To ensure expeditious procurement of the approved requirements of the armed forces.

**Formation:** It was formed after the Group of Minister's recommendations on 'Reforming the National Security System', in 2001, post-Kargil War (1999).

**Composition:** The defence minister is the

chairman of DAC and Its members include the Chief of Defence Staff (CDS) and chiefs of the Army, Navy, and Air Force.

### Functions:

Give in-principle approval of a 15 years Long Term Integrated Perspective Plan (LTIPP) for defence forces.

Accord of acceptance of necessity to acquisition proposals.

Categorization of the acquisition proposals relating to 'Buy', 'Buy & Make', and 'Make'.

Look into issues relating to single vendor clearance.

Take decisions regarding 'offset' provisions in respect of acquisition proposals above Rs 300 crore.

Take decisions regarding the Transfer of Technology under the 'Buy & Make' category of acquisition proposals.

Field trial evaluation.

## MARITIME INFRASTRUCTURE PERSPECTIVE PLAN 2023-37

### Context

Recently, the Minister of State for Defence released the Maritime Infrastructure Perspective Plan (MIPP) 2023-37 at the second edition of the biennial Naval Commanders Conference.

### About

The Maritime Infrastructure Perspective Plan 2023-37, aims to create sustainable architecture in sync with the broader policy directive of the PM Gati Shakti project.

It aims to synchronise and enmesh the infrastructure requirements of the Navy over the next 15 years through a comprehensive perspective plan mode

The Plan Document is aligned with the GoI vision on the creation of sustainable infrastructure and encompasses salient compliance with broader

policy directives on the PM Gati Shakti Project, Disaster Resilience, and Transition to Net Zero, among others.

### Naval Commanders' Conference

It serves as a platform for the officers to discuss important security issues at the military-strategic level and interact with senior government functionaries.

It is the apex-level biannual event facilitating interaction between the Naval Commanders for deliberation and formulation of important policy decisions.

Commanders review the ongoing Naval projects with a focus on enhancing indigenisation through Make in India in consonance with the vision of achieving self-reliance by 2047

## AFSPA EXTENSION

### Context:

The Centre on Tuesday extended “for a further period of six months” the validity of Armed Forces Special Powers Act (AFSPA) in the areas of Arunachal Pradesh and Nagaland that were last declared as ‘disturbed area’ under the Act on March 24, 2023.

The Armed Forces (Special Powers) Act (AFSPA) has been extended in Manipur for six more months starting October 1, with the status quote status of “Disturbed Area” to be retained by the state government.

Hill areas in Manipur will continue to be under the Armed Forces (Special Powers) Act (AFSPA) for another six months from October.

### Background:

The Armed Forces (Assam and Manipur) Special Powers Ordinance 1958 was promulgated by the President Dr. Rajendra Prasad on 22 May 1958. It was replaced by the Armed Forces (Assam and Manipur) Special Powers Act, 1958 on 11 September 1958.

The Armed Forces (Assam and Manipur) Special Powers Act, 1958 empowered only the Governors of the States and the Administrators of the Union Territories to declare areas in the concerned State or the Union Territory as ‘disturbed’.

The territorial scope of the act also expanded to the seven states of the North-East - Assam, Manipur, Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram.

In addition, the words “The Armed Forces (Assam and Manipur) Special Powers Act, 1958” were substituted by “Armed Forces (Special Powers) Act, 1958”, getting the acronym of AFSPA, 1958.

The Armed Forces (Special Powers) Act (AFSPA) is a law in India that grants special powers to the armed forces deployed in “disturbed areas.” The act was first enacted in 1958.

### Provisions of the act:

**Declaration of Disturbed Areas:** The central government, in consultation with the state government, can declare an area as “disturbed” due to factors like insurgency, terrorism, or other forms of internal unrest.

**Special Powers to Armed Forces:** Once an area is declared as disturbed, the armed forces deployed in that area are granted special powers to maintain public order. These powers include the use of force, search and arrest without a warrant, and the power to destroy structures and use firearms.

**Immunity for Armed Forces:** Under AFSPA, members of the armed forces are immune from prosecution for actions taken in good faith during the discharge of their duties in a disturbed area. This has raised concerns about accountability for alleged human rights violations.

**Detention and Arrest:** Security forces are authorized to detain individuals for questioning and arrest without a warrant if they suspect them of being involved in activities detrimental to public order.

**Entry into Premises:** Security forces can enter and search any premises, and they have the authority to use force if necessary during such operations.

**Control over Firearms:** AFSPA gives the armed forces control over the use of firearms, including the power to open fire if they believe it is necessary for the maintenance of public order.

**Review by State Government:** The state government can review the imposition of AFSPA in a particular area, and it must be re-justified periodically.

**Human Rights Concerns:** AFSPA has faced criticism from human rights organizations due to allegations of abuse, extrajudicial killings, and violations of individual liberties by security forces. Proponents argue that the act is necessary to combat insurgency and maintain order in conflict-ridden areas.

Repeal Demands: Over the years, there have been calls for the repeal or amendment of AFSPA to address human rights concerns and enhance accountability while balancing the need for security.

It's important to note that AFSPA is not

applicable uniformly across India but is selectively enforced in specific regions based on security considerations. The act continues to be a subject of debate and discussion in India's political and legal landscape.

## SIMBEX 30TH EDITION

### Context

The three-decade-old annual exercise kicked off with an opening ceremony on 21 September 2023, which was attended by personnel from both the navies. The ceremony saw the unveiling of the SIMBEX 30th Edition Logo.

### About

SIMBEX stands for Singapore-India Maritime Bilateral Exercise. It is an annual naval bilateral exercise. It takes place between the navies of India and Singapore (Republic of Singapore Navy – RSN)

First Initiated in 1994, SIMBEX is the Indian Navy's longest uninterrupted bilateral maritime exercise with any foreign navy.

### Two Phases

The Harbour Phase witnessed a wide range of professional interactions, Subject Matter Expert Exchanges, conduct of combined aviation and firefighting/ damage control exercises, and the signing of a Joint Standard Operating Procedure (JSOP) on Submarine Rescue between India and Singapore in presence of the High Commissioner of India to Singapore and the Singapore Navy Fleet Commander.

Other activities undertaken during the stay in harbour included sports exchanges, cross-deck visits, and onboard visit of school children and personnel from the Indian High Commission.

The Sea Phase of SIMBEX 23 - The units of Indian Navy alongwith RSS Stalwart, Valour, Tenacious, a submarine, Maritime Patrol Aircraft Fokker F-50 and fighter aircraft engaged in complex maritime security exercises including advanced anti-submarine warfare, surface and air defence exercises, as well as tactical manoeuvres and weapon firings.

SIMBEX 23 ended on a high note reaffirming the close bonds of friendship and interoperability between the two maritime nations.

### India-Singapore Defence Cooperation

The defence relations between India and Singapore are termed as strong as there are more than 20 regular bilateral mechanisms, dialogues and exercises; both are members of a number of forums:



- East Asia Summit
- G20
- Commonwealth of Nations
- Indian Ocean Rim Association (IORA) and
- Indian Ocean Naval Symposium (IONS)

### Other Forums and Exercises

- **ASEAN INDIA Summit**
- **MILAN Exercise** - multilateral naval exercise hosted by the Indian Navy
- **Bold Kurukshetra** - Joint military exercise between India and Singapore
- **SITMEX-20** - India, Thailand and Singapore trilateral Naval exercise

# INS MAHENDRAGIRI

## Context:

The seventh stealth frigate under the Indian Navy's Project 17 A, Mahendragiri, launched on Friday. Built at Mazagon Dock Shipbuilders Ltd (MDL), the vessel was developed as part of the push towards the Aatmnirbhar Bharat idea.

## Data Sheet:

INS Mahendragiri is a Nilgiri-class (Project-17 Alpha) frigate of the Indian Navy.

It was built at Mazagon Dock Shipbuilders Limited (MDL) in Mumbai.

Named after a mountain peak of the Eastern Ghats of Orissa, Mahendragiri is the seventh and final ship of the P-17A Frigates, which are the advanced version of Shivalik-class frigates with enhanced stealth features.

Mahendragiri is internally designed and has indigenously evolved stealth guided-missile frigate equipped with state-of-the-art technology.

The first six ships of the series were allotted the names utilised by the older class, namely – Nilgiri, Himgiri, Taragiri, Udaygiri, Dunagiri, and Vindhyagiri.

## What is Project 17A?

Project 17 Alpha frigates (P-17A) were launched by the Indian Navy in 2019 to construct a series of stealth guided-missile frigates.

These are currently being constructed by two companies - Mazagon Dock Shipbuilders (MDL) and Garden Reach Shipbuilders & Engineers (GRSE).

These guided-missile frigates have been constructed with a specific stealth design, which has radar-absorbent coatings and is low-observable which can make its approach undetectable for the enemies.

The new technology also reduces the infrared signals of the ship.

## Key Facts About Mahendragiri:

- Mahendragiri, is a mountain in Rayagada block of the district of Gajapati, Odisha, India.
- It is situated amongst the Eastern Ghats. It is the highest peak of eastern ghats of India.
- It is second biodiversity Heritage Site of Odisha.
- This is considered as one out of Seven Kula Parvat of India.
- This is the second highest mountain peak of Odisha after Deomali in Koraput district.
- Mahendragiri hill and its surrounding areas are recognized as a biodiversity hot spot.



# DRONE SECTOR OVERVIEW IN INDIA

## Context:

The use of drones for weapon delivery has been on the rise since 2020, with India reporting 79 cases in that year, 109 in 2021 and 266 in 2022. Amid these, the emergence of nano and micro drones and compact unmanned aerial vehicles (UAVs) with advanced capabilities, introduce fresh security challenges.

## Data:

Currently, India accounts for 22.5% of total global drone imports. Although most drones are employed for military activities, commercial drones are also getting popular. With a total value of over US\$ 900 million, the commercial end-use drone sector is predicted to exceed the military industry. By 2025, India is forecasted to be the world's third-largest drone market.

The Government of India is planning to make India a Global Drone Hub by 2030, and expects total turnover of the drone manufacturing industry to increase from ₹ 60-80 crore to ₹ 900 crore by FY 2024

## About:

An unmanned aerial vehicle

(UAV), commonly known as a drone, is an aircraft without any human pilot, crew, or passengers on board.

## List of Government of India policies for Drone promotion:

**1. Production-linked Incentive (PLI)** - It aims to promote the manufacturing of drones in India and make the country a hub for drone production in the world, in accordance with the Atmanirbhar Bharat Abhiyan.

**2. Drone Shakti initiative**, rolled out during Budget 2022, aimed to promote and facilitate drones as a service through start-ups.

3. Drones events like the **Bharat Drone Mahotsav**.

**4. Ban on imports** to promote local drone manufacturing.

5. Schemes for drones in agriculture such as **Kisan Drone scheme, drone subsidies** to promote the use of drones in agriculture.

**6. Drone Rules, 2021 and the Digital Sky Platform** - to regulate the sector and simplify

different procedures for drone manufacturers, operators, and other stakeholders.

7. Drones be used to demarcate land and complete land surveys under **SVAMITVA**.

**8. Drone Airspace Map**, has opened nearly 90% of Indian airspace as a green zone for drone flying up to 400 feet

**9. UAS Traffic Management (UTM) Policy Framework** for defining the architecture and mechanism for traffic management of unmanned aircraft in Very Low Level (VLL) airspace up to 1000 feet above ground level. This airspace is defined as UTM Airspace.

## Classification of Drones:

**A. Range:** Very close, Close, short, medium, long range

**B. Size:** Micro/Very small, Mini/Small, Medium Large

**C. Weight** Nano, micro air, miniature, medium and large

**D. Degree of autonomy:** remotely piloted aircraft or fully autonomous

Drones	UAV's
Any unmanned aircraft that can fly autonomously—that is, without a human in control is called a drone. It can actually be used to describe a wide variety of vehicles such as UAVs, RPAs etc.	A UAV is an Unmanned Aerial Vehicle. They are able to fly remotely such as with a controller or tablet or autonomously. Hence all UAVs can be called as Drones, but not all drones as UAVs.
The drone takes off vertically like a helicopter and then transitions into horizontal flight like an airplane.	If controlled by a pilot, then it is called as "Remotely Piloted Aircraft."

## Challenges:

1. Rise of Drone Threats and drone infiltrations across the border -

a. Drone attack at the Air Force Station in Jammu in 2021, that deployed two Improvised Explosive Devices (IEDs) causing damage to a building.

b. Use for smuggling counterfeit currency, drugs, small arms, and ammunition across the border.

### 2. Potential impacts

a. Drones infiltrating the critical infrastructure facilities such as Power plants, oil refineries, communication networks, and transportation hubs can cause widespread chaos, and even pose serious safety risks to the public.

b. Surveillance & collection of sensitive information, engaging in spy activities, or executing reconnaissance missions

c. Public gatherings, such as political rallies, concerts, and sporting events, draw large crowds and are susceptible to potential drone-related security breaches

d. Industrial sites, such as manufacturing plants, chemical facilities, and refineries, face potential risks from drone incidents. Eg., drone attack on the Riyadh oil refinery in 2021

e. Correctional facilities, including prisons and detention centres, are vulnerable to drones attempting to deliver contraband items to inmates or aid in their escape.

## Measures taken to tackle the threat:

1. **DRDO's anti-drone system D4S** – The Drone Detect, Deter and Destroy system is the first indigenously developed anti-drone system to secure critical assets.

E.g. The DRDO's system was deployed at the Red Fort on 15 Aug 2022

2. **Counter-unmanned aircraft systems (C-UAS)** technology is being developed with focus on both “soft kill” (blocking communication lines) as well as “hard kill” (bringing down the drone) techniques. E.g. DURGA II (Directionally Unrestricted Ray-Gun Array), a 100 KW light weight DEW system.

3. Internal Collaboration and sharing of technical expertise for developing anti drone technology. E.g. iCET – India – US

4. Anti-drone systems have been deployed in border areas of Punjab to counter the drone threats.















5. Institutional measures: MHA has established the **Anti Rogue Drone Technology Committee (ARDTC)** under supervision of Director General of BSF with the mandate to evaluate the technology available to counter rogue drones and certify its effectiveness in dealing with rogue drones.








It has become imperative to recognize the potential of drones and the importance of efficient countermeasures to protect critical infrastructure. What the world needs today is a comprehensive approach towards drone security that makes use of cutting-edge technology like AI.

By adopting a proactive and adaptable approach to emerging threats, it is feasible to leverage the advantages of drone technology while mitigating potential adverse consequences.



## USE OF DRONES ACROSS INDIAN STATES

 Arunachal Pradesh	Drones used to deliver medicines under a pilot project 'Medicine from the sky' Monitor lockdown violations during Covid-19	 Bihar	Monitor illegal sand-mining, flood situation, & illegal liquor manufacturing
 Assam	Spraying of fertilizers, launches 1 <sup>st</sup> drone school of North-east in Aug-22	 UP	Monitor drains and water-logging In Lucknow, Kanpur
 West Bengal	Drone covered a distance of 104 Kms. To deliver medical consignment, longest commercial delivery using drone in the state	 Uttarakhand	Detection of forest fires, poaching, disaster management
 Jharkhand	Drones used for surveillance during processions, mapping of Jamshedpur city, to provide emergency supplies to stranded people in accident.	 Orissa	Drones, satellites and remote sensing to detect illegal hemp cultivation
 Chhattisgarh	Spraying of agricultural fields; monitoring tiger reserve	 Andhra Pradesh	Use of drones in agriculture- spraying of seeds, water and pesticides
 Telangana	'Hara Bhara' campaign for afforestation in all districts	 Tamil Nadu	Using drones to track movement of elephants, curb illicit mining of minerals through monitoring of around 1,700 quarries
 Meghalaya	India's first drone station for medicine delivery, at Sub Divisional Hospital, Jenjgal (Dec 22), used to deliver medicines in Meghalaya	 Kerala	Drone based pesticide sprays to overcome labour shortage

 Rajasthan	Control of locusts- surveillance, photography, announcements, insecticide spray Police modernization- aerial surveillance, law & order
 Haryana	Crop damage survey, seeding of Aravallis; IoT, drones for smart city monitoring
 MP	Drones monitoring 10,000 high voltage towers w.e.f 01-Oct-2022
 Gujarat	Law enforcement, rath yatra monitoring, controlling illegal mining
 Punjab	Check illegal mining, monitoring traffic
 Maharashtra	200 drones were procured by the centre to map 6.62 lakh villages in the country Drones were used to monitor lockdown violations during Covid-19
 Karnataka	Drone-based aerial survey for creating urban property records in Bengaluru



# HISTORY



# ART & CULTURE

## What's Inside?

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## UNESCO WORLD HERITAGE LIST

### Context:

Recently, Santiniketan, which is a town located in Birbhum district of West Bengal, was included in the UNESCO's World Heritage List. The efforts to have Santiniketan recognized as a UNESCO World Heritage Site have been ongoing since 2010.

Karnataka's sacred ensembles of Hoysalas inscribed on UNESCO world heritage list

The announcement was made by the agency in Riyadh, Saudi Arabia, where the 45th session of the World Heritage Committee is being held till September 25.

### About sacred ensembles of Hoysalas

The three Hoysala temples selected for the UNESCO list include the *Chennakeshava temple in Belur*, the *Hoysaleswara Temple in Halebidu*, and the *Keshava Temple* in Somanathapura.

The 'Sacred Ensembles of the Hoysala' have been on UNESCO's Tentative list since April 15, 2014. The other heritage sites in Karnataka which got into the UNESCO list are Hampi (1986) and Pattadakal (1987).

### Who were the Hoysalas?

The Hoysalas held power in Karnataka from the 10th century to the 14th century. The dynasty began as provincial governors under the Western Chalukyas, but as the two dominant empires of the South, the Western Chalukyas and the Cholas, crumbled, the Hoysalas established themselves as rulers.

Two of the temples that made it to the UNESCO list are located in cities that served as the capital of the Hoysalas — earlier Belur, and then Halebidu (or Dwarasamudra).

### When were the Sacred Ensembles of the Hoysalas built?

The Chennakeshava temple, dedicated to **Lord Vishnu**, was consecrated around 1117 AD by the mighty Hoysala king Vishnuvardhana, to mark his victories against the Cholas. *It is thus also called the Vijaya Narayana temple.*

The other Vaishnava shrine, the Kesava temple, was built in Somanathapura around 1260 by Somanatha, a general of Hoysala King Narasimha III.



The Hoysaleswara temple in Halebidu is believed to be the largest Shiva temple built by the Hoysalas, and is dated to the 12th century.

## Uniqueness of Hoysala Architecture

*The Usage of soapstone*, a malleable stone that is easy to carve. This is one of the reasons behind the abundance of intricate sculptures one can see on the temple walls. The sculptures include animals, scenes of daily life, as well as depictions from the epics and the Puranas. The jewellery, headgear, clothes, etc. of the detailed sculptures give an idea of the society of the times.

Another special feature of Hoysala architecture is the unique confluence of styles. *Hoysala architecture is an amalgamation of three distinctive style*

1. The mainstream **Dravidian architecture** as represented in the Pallava and Chola temples
2. The **Vesara style**, the variant of the Dravida style that emerged in the Chalukya and Rashtrakuta temples; and then
3. The North Indian Nagara style.

The political dimension to this is the various military expeditions that the Hoysalas undertook, which led them to different regions from where they brought back masons, sculptors, architects who could visualise and actualise such temples.

The temples are generally **built on stellate (star-shaped) platforms**, and have several structures inside the complex.

An interesting feature of Hoysala temples is that they are 'signed' — the sculptors, masons leave behind their names, and sometimes a few more details.

Also, these Vaishnava and Shaiva shrines were built at the time Jainism was prominent in the region, and *thus mark a turn towards Hinduism*.

## What makes the three temples on UNESCO list special?

While hundreds of big and small Hoysal-era temples still survive, these three are believed to be among the finest surviving examples of

Hoysala art.

About the Chennakesava temple at Belur, K A Nilakanta Sastri writes in his *A History of South India*, "...the total number of pillars is 46. All of them, except the four in the central bay, are of different design so that the variety and complexity of the whole is astonishing." It is believed that one of the sculptures, Darpana Sundari (lady with the mirror), is modelled on Shantala Devi, the queen of Vishnuvardhana who had the temple built.

The Kesava temple in Somanathapura is built in the shape of a 16-point star, and has three shrines dedicated to Keshava, Janardhana and Venugopala. The Keshava statute, however, is missing now.

The Hoysaleswara temple in Halebidu, Sastri writes, "was perhaps the highest achievement of the school, despite its present ruined condition... Renders it difficult to realise this... The infinite wealth of sculpture over the exterior of this temple makes it one of the most remarkable monuments of the world and an unrivalled 'repository of religious thought expressed in plastic form'. *Halebidu was raided by Malik Kafur, a general of the then Delhi Sultan Alauddin Khalji.*

## About Santiniketan

Santiniketan is a renowned cultural and educational hub located in the Birbhum district of West Bengal, India. It holds a special place in Indian history and culture due to its association with Rabindranath Tagore, a Nobel laureate poet, philosopher, and polymath.

Santiniketan translates to "Abode of Peace" and was founded by Tagore as an experiment in education and art, which continues to influence generations of artists, scholars, and thinkers.

## History:

Santiniketan was established in 1901 when Rabindranath Tagore moved to this region, inspired by the serene and tranquil environment.

Tagore was dissatisfied with the conventional educational system and wanted to create an institution where education would be more holistic, integrating arts, culture, and nature.

Under his guidance, Santiniketan developed into a unique educational and cultural institution.

### Visva-Bharati University:

In 1921, Rabindranath Tagore established Visva-Bharati University within Santiniketan.

It aimed to promote the ideals of a universal, non-sectarian, and holistic education system.

Visva-Bharati remains a prestigious institution known for its emphasis on the arts, literature, and social sciences.

The university comprises various schools, including Shantiniketan (the core campus), Sriniketan (its rural reconstruction center), and several institutes and departments dedicated to diverse disciplines.

### Cultural Significance:

Santiniketan has been a crucible for art and culture in India.

It was instrumental in the development of the Bengal School of Art, a significant movement in Indian art. The school emphasised traditional Indian art forms, nature, and the spirit of the land.

The annual Poush Mela and Basanta Utsav (Holi festival) celebrations at Santiniketan attract people from all over India. These events showcase the rich cultural heritage of India, with performances of music, dance, theatre, and more.

Rabindranath Tagore's residence, known as the "Rabindra Bhavan," is a major attraction in Santiniketan. His personal belongings, manuscripts, and artistic works are preserved here, allowing visitors to gain insight into his life and creative process.

## 105TH ANNIVERSARY OF BATTLE OF HAIFA

### Context:

Every year on September 23, diplomats from India's Embassy in Israel and Israeli government officials gather at the Haifa War Cemetery to pay respects to the Indian soldiers who played a pivotal role in the Battle of Haifa in 1918. This annual commemoration marks the 105th anniversary of the battle, where Indian soldiers displayed extraordinary valor in a foreign land.

### The Battle of Haifa

On September 23, 1918, the 5th Cavalry Division, which included the Jodhpur Lancers and

other Indian units, was tasked with capturing Haifa.

For the Battle of Haifa, the princely state of Jodhpur provided resources such as horses, transport, tents, and clothing. The Jodhpur Lancers, along with the Mysore and Hyderabad Lancers, played a vital role in securing Haifa.

### Teen Murti Haifa Chowk

In 2018, the Teen Murti Chowk in Delhi was renamed Teen Murti Haifa Chowk to honor the centenary of the Battle of Haifa.

## SWAMINARAYANA SECT OF HINDUISM - RAMANUJA SAHAJANANDHA

### Context:

Rishi Sunak, UK Prime Minister, visited the Akshardham Temple in Delhi with his wife Akshata Murty.

### About Akshardham Temple:

Akshardham Temple, also known as the Swaminarayan Akshardham Temple, is a

magnificent Hindu temple complex located in Delhi.

Akshardham Temple was inaugurated on November 6, 2005, by Pramukh Swami Maharaj, the spiritual leader of the BAPS Swaminarayan Sanstha (Bochasanwasi Shri Akshar Purushottam Swaminarayan Sanstha), a prominent sect within Hinduism.

- The temple complex showcases stunning architecture inspired by ancient Vedic and Hindu architectural principles.
- The main monument is made of intricately carved pink sandstone and white marble.
- It stands 141 feet tall and features more than 20,000 statues and sculptures.
- The central monument represents Mount Meru, the mythical abode of the gods.
- The temple complex also includes beautifully landscaped gardens with bronze sculptures depicting India's cultural and spiritual heritage.
- The temple was built to honor Bhagwan Swaminarayan (1781-1830), the founder of the Swaminarayan tradition.

### Bhagwan Swaminarayan (1781-1830):

- He is also known as Sahajanand Swami.
- He was born in Gonda district, Uttar Pradesh in 1781.
- In 1792, he began a 7-year pilgrimage across India at the age of 11 years, adopting the name Nilkanth Varni. He settled in the modern-day Indian state of Gujarat around 1799.
- He was a yogi and ascetic around whom

the Swaminarayan Sampradaya developed, and whose life and teachings brought a revival of central Hindu practices of dharma, ahimsa and brahmacharya.

- He is believed by followers to be a manifestation of God.
- Swaminarayan developed a good relationship with the British Raj. He had followers not only from Hindu denominations but also from Islam and Zoroastrianism.

### Swaminarayan sect of Hinduism:

Swami Sahajanand preached a puritanical ideology both of belief and practice. This sect was a sort of protest against the epicurean and luxurious practices of Vaishnavism. The sect advocated vegetarianism and advised people to shun liquor and drugs.

The Swami Narain sect preached monotheism. On the social front it emphasised the primary importance of character building in individuals, the necessity of a pure and simple life and social unity. The sect attacked the restrictions on widow remarriage, the institution of Sati, and the practice of female infanticide. Anyone was welcome to join it, irrespective of caste or creed, even Parsis and Muslims.

## DADASAHEB PHALKE AWARDS

### Context

Veteran actor **Waheeda Rehman** to be honoured with Dadasaheb Phalke Award 2023.

### About

The Dadasaheb Phalke Awards is the highest award in cinema. *It is annually presented at the National Film Awards* ceremony by the Directorate of Film Festivals, an organisation set up by the Ministry of Information and Broadcasting

It is the *country's highest film honour* conferred for "Outstanding contribution for the growth and development of Indian cinema".



The award comprises a Swarna Kamal (Golden Lotus) medallion, a shawl, and a cash prize of ₹10,00,000 (US\$13,000).

Dadasaheb Phalke Award was introduced by the government in 1969 and it was awarded for the first time to **Devika Rani**, “*the first lady of Indian cinema*”.

Other women who have been awarded the prestigious honour are the singing legends Lata Mangeshkar and Asha Bhosle; actor-producer Durga Khote; Ruby Myers, who was better known

as Sulochana and actor-singer-producer Kanan Devi, considered “first lady of Bengali cinema”

### Dadasaheb Phalke

Dadasaheb Phalke directed India’s first feature film Raja Harischandra (1913). He was an Indian producer, director, and screenwriter. **He is known as the “Father of Indian Cinema”**. The government of India instituted Dadasaheb Phalke Award in his honour for a lifetime contribution to Indian cinema.

## STATUE OF ONENESS

### Context:

Madhya Pradesh Chief Minister unveiled the **108-foot-tall Statue of Oneness of Adi Shankaracharya at Omkareshwar**.

### Statue of Oneness

It depicts Adi Shankaracharya as a 12-year-old child, the age he was when he is said to have visited Omkareshwar.

**Location:** It is a multi-metal statue installed atop Mandhata Parvat hill at Omkareshwar, Madhya Pradesh.

At the base of the statue is the **Shankar Stambh**, depicting 32 stories related to Shankaracharya.

### Adi Shankaracharya

**Period** - He was born in Kerala’s Kaladi and is believed to have lived between 788 and 820 AD.

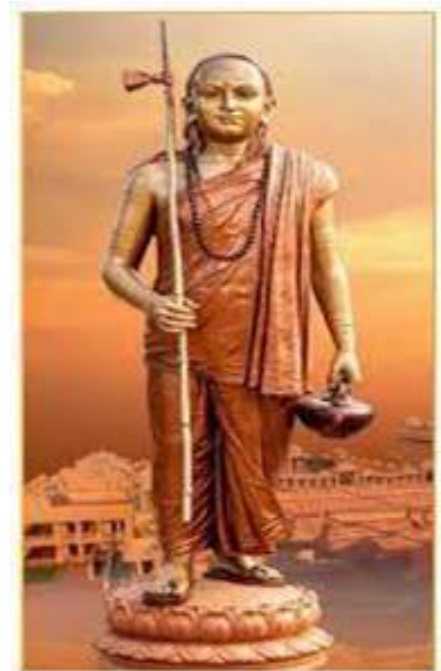
**Guru** - He studied under his guru Govinda Bhagavatpada and soon became a proponent of Advaita Vedanta at Omkareshwar.

He challenged the prevailing philosophical traditions including Buddhism and Jainism.

**Places visited** - He visited spiritual centres

such as Kanchi to Kamrup (Assam), and Kashmir, Kedar and Badri dhams, as well as Sringeri, Ujjain, Kashi, Puri, and Joshimath.

**Works** - The most notable work are the commentaries on the 10 Upanishads, the Brahmasutra and the Gita.



# FACT SHEET

## GENERAL STUDIES – I

### SOCIETY

#### Highlights of the State of the Indian Workforce: State of Working India 2023 report by Azim Premji University

- ◆ After stagnating since the 1980s, the share of workers with regular wage or salaried work started increasing in 2004, going from 18% to 25% for men and 10% to 25% for women.
- ◆ Between 2004 and 2017, around 3 million regular-wage jobs were created annually. Between 2017 and 2019 this jumped to 5 million per year. Since 2019, the pace of regular wage job creation has decreased due to the growth slowdown and the pandemic.
- ◆ In 2017, salaried women workers earned 76% of what men earned (70% by 2004). Since then, the gap has remained constant till 2021-22.
- ◆ Overall unemployment rate reduced to 6.6% in 2021-22 from 8.7% in 2017-18.
- ◆ Post the COVID-19 pandemic, 60% of women were self-employed compared to 50% before. However, this increase in workforce participation was accompanied by a decline in self-employment earnings, reflecting the pandemic's distressing impact.
- ◆ Intergenerational upward mobility has shown an upward trend, indicating socio-economic progress.
- ◆ In 2021, 40% of SC workers were involved in casual employment as compared to 13% of general caste workers.
- ◆ Furthermore, around 22% of SC workers were regular wage workers as opposed to 32% of general caste workers.
- ◆ The transition from agriculture to other sectors has not ensured a shift to salaried employment.

## GENERAL STUDIES – II

### POLITY

- ◆ According to the Union Finance Ministry, the government has saved Rs 2.73 lakh crore of taxpayers' Prison Statistics for 2021, by NCRB:
- ◆ There are 1,319 prisons in India with a total capacity of 4,25,609 prisoners. The actual inmates are 5,54,034 which shows that the occupancy capacity rate is 130%.
- ◆ Of the total inmates, the number of undertrial prisoners is 4,27,165 and the number of convicted prisoners is 1,22,852.
- ◆ The occupancy of women prisoners has been increased and the prisons are understaffed by approximately 30% of the required strength.



- ✦ Uttar Pradesh has the highest number of undertrial prisoners, accounting for 21% of the country's total while Delhi has the highest percentage of undertrial prisoners, comprising 91% of its total inmate population.
- ✦ Prisons are understaffed by approximately 30% of the required personnel.

## **SOCIAL JUSTICE**

### **Health**

#### **Tuberculosis**

- ✦ Tuberculosis was the world's deadliest infectious disease, as declared by the WHO, before COVID-19 swept the world.
- ✦ Each year, nearly half a million people develop drug-resistant TB and nearly 10.4 million people develop drug-sensitive TB.
- ✦ One-third of the world's population has latent TB, a version of the disease that can turn active as immunity falls.
- ✦ Nearly 2.8 million patients, the most in the world, live in India making it a national public health emergency.
- ✦ Globally, DR-TB is a major contributor to antimicrobial resistance and continues to be a public health threat.
- ✦ WHO's 1st ever report on the global impact of Hypertension

#### **Global Status:**

- ✦ The number of people living with hypertension doubled between 1990 and 2019, from 650 million to 1.3 billion.
- ✦ More than 3/4th of adults with hypertension live in low and middle-income countries.
- ✦ 1 in 3 adults gets affected with hypertension.
- ✦ Nearly 50% of people are currently unaware of their condition.
- ✦ Only about 1/5th of people with hypertension have controlled it.
- ✦ 76 million deaths could be averted between 2023 and 2050; if countries scale up their coverage.
- ✦ The economic benefits of improved hypertension treatment programmes outweigh the costs by about 18 to 1.
- ✦ In India:
  - ✦ 188 million Indian adults aged 30-79 years have hypertension in 2019.
  - ✦ Of them, only 37% were diagnosed and many do not start their treatments even after diagnosis.
  - ✦ Only 30% start treatment and a meagre 15% of people manage to keep their bp under control.
  - ✦ Women's status was marginally better than men's in having the condition diagnosed, treated and controlled.

- ◆ If 50% of people with hypertension manage their BP under control, at least 4.6 million deaths in India can be averted by 2040.

### Health trends among Scheduled Tribes (STs)

- ◆ Lancet study has analyzed health, nutrition, and population trends among Scheduled Tribes (STs) in India from 2016 to 2021 using data from National Family Health Surveys.

#### Key findings:

- ◆ **STs Population:** According to the 2011 Census, there are over 104 million STs spread across 705 recognised ethnic groups. They make up 8.6% of India's population. In 2021, the non-ST population outperformed the ST population in 81 out of 129 indicators.
- ◆ **Child Mortality:** The child mortality rate for STs was alarmingly high, with 50 out of every 1,000 children not surviving to their fifth birthday.
- ◆ **Child Malnutrition:** Child malnutrition was a significant issue, with over 40% of ST children under five being stunted and underweight.
- ◆ **High Blood Pressure:** Between 2016 and 2021, there was a notable increase in high blood pressure levels among ST men and women aged 15–49, with increases of 7.5% and 8.9%, respectively.
- ◆ Indicators in which STs outperformed non-STs: *STs surpassed non-STs in indicators such as gender balance, use of family planning methods, consistent treatment during pregnancy*, low diabetes and hypertension and adherence to recommended breastfeeding practices.
- ◆ During the period between 2016 to 2021, STs made progress in indicators such as: Sanitation Facilities (30% increase), skilled birth attendance (13% increase), coverage for full vaccination among children aged 12–23 months (increased by 18.6%), civil birth registration (rose from 76% in 2016 to 88% in 2021).

### India's Kidney Transplant Status

- ◆ **High Demand:** In 2022, over two lakh people in India needed a kidney, but only about 7,500 transplants were done, showing a stark shortage.
- ◆ **Prevalence of Chronic Diseases:** Chronic Kidney Disease (CKD) affects about 17% of India's population, mainly due to widespread diabetes, malnourishment, and poor living conditions, raising the demand for kidneys.

## GENERAL STUDIES – III

### ECONOMY:

- ◆ July 2023 witnessed a notable increase in Retail Inflation, reaching 7.44%, creating a Goldilocks scenario for India, making investors and savers uncertain about the economic situation. A Goldilocks Scenario describes an ideal state for an economy whereby the economy is not expanding or contracting by too much.

## AGRICULTURE

- ◆ 6th Census report on minor irrigation (MI) schemes by Ministry of Jal Shakti:
- ◆ It reveals that there are a total of 23.14 million minor irrigation schemes in India, with 94.8% (21.93 million) being Ground Water (GW) schemes and 5.2% (1.21 million) being Surface Water (SW) schemes.
- ◆ Uttar Pradesh holds the highest number of MI schemes, followed by Maharashtra, Madhya Pradesh, and Tamil Nadu.
- ◆ The report indicates a growth of 1.42 million MI schemes compared to the previous census, with a 6.9% increase in GW schemes and a 1.2% increase in SW schemes.
- ◆ The ownership of MI schemes is primarily private (96.6%), with a notable finding that 18.1% of individually owned schemes are owned by women.

## ENVIRONMENT

- ◆ Air Quality Life Index (AQLI) 2023:
- ◆ Air pollution shortens the lives of the residents of Delhi by around 11.9 years.
- ◆ In South Asia, particulate pollution has increased by 9.7 percent from 2013 to 2021. In India, 5 levels rose 9.5 percent.
- ◆ According to PM2.5 data for 2021 derived from satellites, pollution in India has increased more than 10 times the WHO guideline of 5  $\mu\text{g}/\text{m}^3$ . For Delhi it is 25 times more than the WHO guideline.
- ◆ The average Indian resident is set to lose 5.3 years of life expectancy if the WHO guideline is not met.

1. A recent study, titled “Evolution of Male Same-Sex Behavior in Rhesus Macaques,” has challenged conventional beliefs about same-sex behaviour (SSB) in animals. If reproduction is critical to evolution, then SSB which is non-reproductive should have ceased to exist. It is considered as ‘Darwinian paradox’. Present study found that male SSB in rhesus macaques is very common & doesn’t harm evolution.
2. The National e-Governance Division (NeGD) plans to integrate Personalised Adaptive Learning (PAL) into the DIKSHA platform, aiming to offer individualized learning experiences for students. PAL’s artificial intelligence (AI) based approach will allow each student to learn based on their unique needs and abilities. Ex: If a student of Class 9 is learning the Pythagoras theorem and makes a calculation mistake, the AI learning system flags it and loops the student back to a basic video of how to make the calculation.
3. Ms. Jaya Verma Sinha has been appointed as the first woman Chairperson of the Railway Board, the top decision-making body for the Ministry of Railways. She is the first-ever woman to head the Board in its 118-year-old history (Since 1905).
4. Recently, a major barrier to drug-resistant TB care ended, when Johnson & Johnson’s patent on Bedaquiline expired. This long-awaited expiry will allow generic manufacturers to supply the drug. Bedaquiline has now become the cornerstone to cure drug-resistant tuberculosis (DR-TB).
5. Japan has launched Smart Lander for Investigating Moon (SLIM), a “moon-sniper” i.e., lunar exploration spacecraft aboard a homegrown H-IIA rocket, clearing a path to become the world’s fifth country to land on the moon early next year.
6. Recently, the Council of Scientific and Industrial Research (CSIR) announced the list of awardees for the Shanti Swarup Bhatnagar (SSB) awards for 2022. The Prize is given each year for outstanding contributions to science and technology.
7. According to a recent study, disruptive weather events, including El Niño and changing precipitation patterns, are impacting India’s agriculture, resulting in reduced crop yields, water stress, and rising food prices.
8. The Ministry of Culture has joined hands with the Indian Navy and Goa-based Hodi Innovations to reconstruct an ancient stitched ship. They are constructed by stitching wooden planks together rather than using nails. This offers flexibility and durability, making them less susceptible to damage from sandbars.
9. Recently, the Unified Portal for Agricultural Statistics (UPAg) was launched by NITI Aayog members. It is an initiative by the Department of Agriculture and Farmers Welfare, to streamline data management in the agriculture sector. It aims to provide real-time, standardized, and verified data on agricultural commodities, facilitating data-driven decision-making for policymakers, researchers, and stakeholders.
10. Recently, the Rajya Sabha and Lok Sabha adjourned sine die, a day ahead of schedule, after both the Houses passed the landmark Women’s Reservation Bill with absolute majority. The Lok Sabha

boasted an exceptional productivity rate of 160%, while the Rajya Sabha was highly productive for 128% of its allocated time.

11. The Parliamentary Committee on Home Affairs has proposed the use of ankle GPS trackers or bracelets for prisoners on bail as a practical solution to alleviate overcrowding in prisons. It is to monitor the movements of these individuals and ensure they comply with their bail conditions. To avoid any potential human rights violations, the use of ankle trackers should be entirely voluntary and based on the informed consent of the inmates.
12. A Supreme Court-appointed committee has declared 12 private resorts along the Segur elephant corridor illegal. This corridor is vital for the movement of elephants and other wildlife between habitats in the Nilgiris Biosphere Reserve.
13. Recently, the Ministry of Agriculture and Farmers' Welfare launched an AI chatbot, the first of its kind to be integrated with the Pradhan Mantri Kisan Samman Nidhi Yojana (PM-KISAN scheme). The Chatbot will provide the farmers with "prompt, clear and accurate" responses to their queries.
14. E-sports (electronic sports) officially debuted as an official event at the Asian Games 2023 (in Hangzhou, China), involving teams from over 30 countries. The competition included both PC and mobile games, covering multiplayer and single-player genres. E-sports, refers to organized competitive video gaming that involves individuals or teams competing in various video games at a professional level, often in tournaments with significant prizes.
15. The Tamil Nadu government has announced full state honours to the funeral of organ donors from the state. A decision to this effect was taken to honour the sacrifices made by those declared brain dead and their family members who came forward to donate the organs thereby saving several lives.

## TERMS IN NEWS:

1. Fediverse: This approach allows users to communicate across different social media platforms without creating separate accounts for each one (similar to the benefits of UPI in payment space). In this system, a network of servers, managed by third parties, facilitates communication between users of various social media platforms, enabling seamless cross-platform interaction. Meta, the parent company of Facebook, Instagram, and WhatsApp, is planning to include its new Threads app in the fediverse.
2. Eco-anxiety: It is defined as an overwhelming sense of fear, sadness, and dread due to the warming of the planet. It may cause post-traumatic stress disorder, suicides due to economic fallouts (for instance due to flood), heat-induced aggression, or nagging stress.
3. Climate doom-ism: It is a belief that humanity has lost the battle against climate change and mankind is on its way to extinction. It is based on the idea that humanity has passed the point of being able to do anything at all about global warming.

## RELEVANT QUOTES

1. **Morals:** “On matters of style, swim with the current, on matters of principle stand like a rock” - Thomas Jefferson.
2. **Education:** “There is only one good, knowledge and one evil ignorance” - Socrates.
3. **Wars:** “Wars are poor chisels for carving out peaceful tomorrows” - Martin Luther King.
4. **Wars:** “Mankind must put an end to war – or war will put an end to mankind.” - John F. Kennedy.
5. **Freedom of thought:** “If everyone is thinking alike then no one is thinking” - Benjamin Franklin.