

# Factly Weekly

**Compilation**

2024

**For UPSC CSE Prelims  
Exam**

**4<sup>th</sup> Week  
February 2024**

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## Subject: Polity and Nation

### Centre Allows Donor Gametes in Surrogacy Rules

#### Why in the News?

The Centre has recently amended the 2022 surrogacy rules, **allowing couples to utilize donor gametes**. This overturns the ban on donor gametes that was imposed in March 2023.



Figure 1. Source-The Tribune

#### What are the latest amendments to the 2022 Surrogacy Rules?

**1. Medical condition certification of intended couple-** According to the latest amendments, if the **District Medical Board certifies** that **either the husband or wife in the intending couple has a medical condition** that requires the use of a donor gamete, **then surrogacy using a donor gamete is permitted**.

**Note-** **Gametes are reproductive cells** that unite during sexual reproduction to create a new individual. In humans, **gametes include sperm cells (from males) and egg cells**

**(from females).**

**2. At least one gamete from the intending couple-** The use of a donor gamete is permissible under the condition that the child born through surrogacy must possess **at least one gamete from the intending couple**.

**3. Single woman (widow or divorcee) directive-** The rules also state that a single woman (widow or divorcee) choosing surrogacy **must use her own eggs and donor sperm** for the procedure.

### General Diary (GD) Vs First Information Report (FIR)

#### Why in the News?

The Supreme Court recently ruled that information revealing the occurrence of a cognizable offense **must be documented as a First Information Report ("FIR")** in a book format, **rather than in the General Diary** maintained by the Police under the Police Act, 1861.

#### What is General Diary (GD)?



Source- Hindustan Times

**1. About-** The General Diary, also known as Station Diary or Daily Diary in some states, is kept according to Section 44 of the Police Act, 1861, or the relevant provisions of state police acts or manuals.

**2. Activities covered-** It comprises records of significant transactions and events within a police station, such as the movement of police personnel, the transfer of responsibilities, individual arrests, law enforcement tasks, visits by senior officers, and similar occurrences.

**3. Section 44 of the Police Act, 1861:**

a. It mandates that every officer in charge of a police station must maintain a general diary as per the format specified by the State Government.

b. The diary should document all complaints, charges filed, names of arrested individuals, complainants, offenses charged, seized weapons or property, and the names of witnesses examined.

**What is a First Information Report (FIR)?**

**1. About-** It is a written document prepared by a police officer following information provided by a victim or any other individual, either in written form or orally, regarding the commission of a cognizable offense.

**2. Start of investigation-** The investigation commences only after the FIR is filed.

**3. Mentioning under IPC and CrPC-** The term FIR is not specified in the Indian Penal Code (IPC), the Code of Criminal Procedure (CrPC) of 1973, or any other legislation. However, within police regulations or rules, information documented under Section 154 of the CrPC is referred to as the First Information Report (FIR).

**What is the basic difference between FIR and General Diary (GD)?**

Aspect	First Information Report (FIR)	General Diary (GD)
Transmittal obligation	A copy of every FIR is forwarded to the higher-ranking officers and the relevant Judicial Magistrate.	GD copy not sent to Magistrate; but sent to higher officer. Magistrate can inspect if necessary.
Signature requirement of complainant	The complainant's signature is taken in the FIR Book when the complaint is submitted to the police station.	Their is no such requirement.
Copy to complainant	In the case of F.I.R., a copy of these will be provided to the complainant.	It is an internal police record, not required to be provided to the complainant.

## Subject: International Relations

### Grey Zone Warfare

#### Why in the News?

Recently, at the Raisina Dialogue, Chief of Defence Staff Gen. Anil Chauhan made a statement regarding grey-zone warfare, **specifically in reference to China**.

#### What is Grey Zone Warfare?

1. Grey Zone Warfare is a **strategy where a country tries to gain an advantage without openly going to war**.
2. It involves **tactics like cyberattacks, misinformation, and economic pressure** to weaken an opponent.
3. China has been skillfully using this strategy, especially against India and neighboring countries.

#### What are China's Grey Zone Tactics against India?

1. **South China Sea Activities**- China **employs naval and civilian vessels** to assert its control over the South China Sea. It causes tensions with neighboring countries, including India.
2. **Constructing infrastructure in border areas**- China builds infrastructure and establishes villages close to India's borders. It **reinforces its territorial assertions and gains strategic benefits**.
3. **Investments in digital technologies**- China directs investments into apps, media, and various digital platforms within India. This presence in the digital sphere holds the potential to **mold public perceptions and narratives**.

### Nordic Baltic Cooperation

#### Why in the news?

The eight Nordic-Baltic countries are participating in the Raisina Dialogue in New Delhi together as representatives of the Nordic-Baltic cooperation.

#### About Nordic-Baltic cooperation



## NORDIC-BALTIC EIGHT



Source-Shutterstock

Aspect	Details
<b>Description</b>	The NB8 is a regional cooperation format that brings together the <b>Nordic countries</b> and the <b>Baltic States</b> . In 2000, it was decided that the Nordic-Baltic cooperation format would be called <b>Nordic-Baltic Eight (NB8)</b> .
<b>Objective</b>	To discuss important <b>regional</b> and <b>international issues</b> in an informal atmosphere.
<b>Members</b>	It comprises <b>five</b> Nordic countries:- 1) Denmark, Finland, Iceland, Norway, and Sweden. <b>Three</b> Baltic states:- 2) Estonia, Latvia, and Lithuania.
<b>Are they member of European Union?</b>	They are members of the European Union except <b>Iceland</b> and <b>Norway</b> .
<b>India and NB 8</b>	The Nordic-Baltic cooperation with India spans fields as diverse as innovation, green transition, maritime, health, intellectual property rights, new technologies, space cooperation etc. Trade and investment figures between the Nordic region and India are steadily increasing.

## EU sanctions Indian tech Firm-Si2 Microsystems for dual-use items

### Why in the News?

The European Union (EU) has recently sanctioned Si2 Microsystems, an Indian tech firm, for its **alleged connections with Russia regarding dual-use items**. Previously, the U.S. also banned it from transferring “dual-use” technology.

### Under scanner

European Union's latest sanctions after the second anniversary of the Russia-Ukraine war have reached India

- Si2 Microsystems (Entity number 620) has been banned from transactions within EU for “dual-use” technological goods

- The firm had signed a collaboration with Ministry of Electronics and Information Technology (MeitY) and IIT-Madras for production of silicon chips in October 2023

- It had been in the bankruptcy courts on account of non-payment of debts; owner was on Lookout Circular in 2021 when he sought permission to travel to Russia



Figure 2. Source- The Hindu

### What are dual-use items?

1. **About**– Dual-use items are products and technology **that can be used both for civilian and military applications**.

2. **Regulatory oversight**– Governments strictly regulate the export, transfer, and use of dual-use items to **prevent their misuse in activities such as weapons development, terrorism, or other illicit purposes**.

3. **Examples**– Global positioning satellites, **missiles, nuclear technology**, chemical and biological tools, **night vision technology, thermal imaging**, some models of drones, aluminum pipes with precise specifications or

certain kinds of ball bearings.

### What are the global control mechanisms for dual use items?

1. **Missile Technology Control Regime (MTCR)**- It is a multilateral export control regime aimed at reducing the risks of weapons of mass destruction (WMD) proliferation.

- Established in 1987 by G7 countries.
- It consists of 35 member countries.
- India became its 35th member in 2016.

2. **Wassenaar Agreement**– It is a multilateral export control regime that aims to regulate the export of conventional arms and dual-use goods and technologies.

- Established on 12 July 1996, in Wassenaar, near The Hague, Netherlands
- It consists of 42 participating countries.
- India is not a member of it.

3. **Nuclear Suppliers Group**– NSG is a group of nuclear supplier countries that frames and implements agreed rules for exporting nuclear equipment with a view to controlling the spread of nuclear weapons

- It was set up in 1974 as a response to India’s nuclear tests.
- It has 48 member states and the European Commission acts as an Observer.
- India is not a member of it.

## Energy Charter Treaty (ECT)

### Why in the News?

The UK, along with France, Germany, Spain, and the Netherlands, is pulling out of the Energy Charter Treaty. It permits fossil fuel companies to take legal action against governments regarding climate policies.

This decision comes after unsuccessful negotiations aimed at updating the treaty have concluded.



Figure 3 Source-Energy charter

### What is the Energy Charter Treaty (ECT)?

- 1. About-** It is an international agreement that establishes a multilateral framework for collaboration across borders in the energy sector.
- 2. Signed-** The agreement was signed in December 1994 and became legally effective in April 1998.
- 3. Objective-** The aim of the ECT is to encourage long-term cooperation in the energy sector, emphasizing complementary interests and mutual advantages.
- 4. Areas Covered-** It covers various facets of commercial energy operations, including trade, transit, investments, and energy efficiency.
- 5. Signatories-** Presently, there are 56 signatories and contracting parties to the Energy Charter Treaty (ECT), which include both the European Union and Euratom (European Atomic Energy Community).
- 6. Established Energy Charter Conference-** It founded the Energy Charter Conference, an inter-governmental organization that convenes regularly to address matters concerning energy collaboration.

## Africa Club

### Why in the news?

Recently, the Africa Club was launched at the 37th African Union Summit held in Addis Ababa, Ethiopia.

### About Africa Club

- 1) About:** It is an alliance of African Multilateral Financial Institutions (which are African-owned and controlled). It was launched at the 37th African Union Summit.
- 2) Aim:** It aims to amplify Africa's influence in the global financial system by aligning its functions with the SDGs and the African Union's Agenda 2063.
- 3) Objective:** It seeks to introduce innovative financial instruments, provide a venue for debt management discussions and foster collaborative effort to address the specific needs of African countries.
- 4) Members:** African Export-Import Bank, Trade and Development Bank, Africa Finance Corporation, African Reinsurance Corporation, African Trade and Investment Development Insurance, Shelter Afrique Development Bank and ZEP – RE (PTA Reinsurance Co) are members of African club.



### About African Union:

- 1) **About:** The AU is an **intergovernmental organisation** of the 55 member states located on the continent of Africa.
- 2) **Origin:** It was founded on July 9, **2002**. The grouping is the successor of the Organisation of African Unity (OAU), which was formed in 1963 (more on this later).
- 3) **Aim:** It seeks to build **an Integrated, Prosperous and Peaceful Africa, driven by its own citizens.**
- 4) **Key objectives:**
  - a) It aims at **promoting peace, stability, and security** across the region.
  - b) It also aims to **protect and promote human rights**
- 4) **Secretariat:** Addis Ababa

### Pancheshwar Multipurpose Project (PMP)

#### Why in the News?

Despite the recent agreement between India and Nepal, discussions over the Pancheshwar Multipurpose Project (PMP) are still deadlocked.

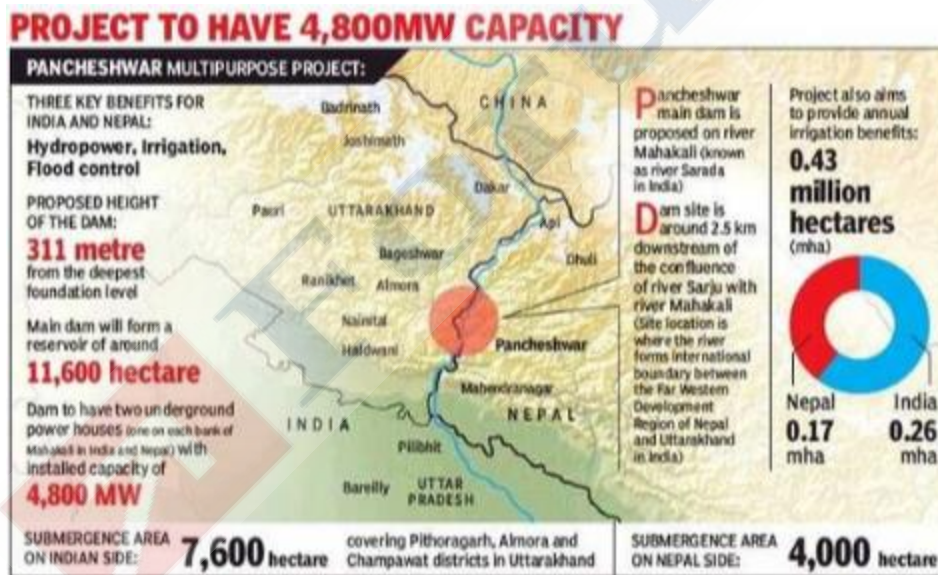


Figure 4. Source- The Times of India

#### What is Pancheshwar Multipurpose Project (PMP)?

**Background-** In February 1996, India and Nepal entered into the **Mahakali Treaty**. The focal point of this treaty is the **implementation of the Pancheshwar Multipurpose Project**.

**1. About-** It is a bi-national **hydropower project between India and Nepal**, planned for development **along the Mahakali River**, which forms the border

between the two countries.

**2. Aim-** Its main goals are to **produce energy and improve irrigation** in both countries.

#### 3. Features:

**a.** It includes building a **315-meter tall dam** across the Mahakali River, **called Sharda in India**.

- b. The project aims to **generate about 6,480 MW of energy**, divided equally between both sides.
- c. It will also **provide water for irrigating 130,000 hectares of land in Nepal and 240,000 hectares in Indian territory**.

**4. Concern**– Environmentalists have raised concerns about its **potential impact on regional ecology and local communities**.

### What is Mahakali Treaty?

#### 1. About:

- a. It is an agreement between the Governments of India and Nepal regarding the integrated development of the Mahakali River.
- b. The treaty **recognizes the Mahakali River as a boundary river between the two countries**.

**2. Signed**– The treaty was signed in **1996**.

### About Mahakali river (Sharda River)

**1. Origin**– The Sharda River, also called Kali River and Mahakali River, originates from **Kalapani in the Himalayas**, situated in the **Pithoragarh district of Uttarakhand**.

**2. Flow**- The river **flows along Nepal's western border with India and joins the Ghaghara (Karnali/Manchu) River**, which is a tributary of the Ganga.

#### 3. Tributaries:

- a. Left- Chameliya, Ramgun in Nepal
- b. Right- **Kuthi, Dhauli, Gori, Sarju, Ladhiya rivers** in Uttarakhand (India)

## Subject: Indian Economy

### T V Somanathan committee to finalise KYC Rules

#### Why in the News?

The government has recently established an expert committee under **Finance Secretary T V Somanathan** to make recommendations for implementing uniform Know Your Customer (KYC) norms across various sectors.

#### What are the objectives of the committee?



Figure 5. Source- Business Standard

**Background**– After the **Financial Stability and Development Council (FSDC)** talked about a plan for standard KYC norms, the government set up this committee to address issue of uniform KYC norms across various sectors.

**1. Objective**- The committee will suggest how to apply uniform Know Your Customer (KYC) norms across different sectors.

**2. Input from FSDC members**– The committee plans to seek input from

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all members of the Financial Stability and Development Council (FSDC) regarding KYC norms. **For example**, the **Ministry of Corporate Affairs** would share its practices regarding the use of the **permanent account number (PAN)** as a common identifier for company incorporation.

### What is Know Your Customer (KYC)?

1. It is a comprehensive process used by businesses and financial institutions to verify the authenticity and identity of their customers.
2. KYC is **mandatory for all customers** before investing or opening a bank account.
3. Currently in India, **different KYCs are required for various financial products** like opening a bank account, investing in mutual funds, purchasing life insurance, or investing in retirement savings funds.
4. Having to do multiple KYCs and updates can deter new investors. To streamline KYC for investing in various financial assets, the central government introduced the **Central KYC Records Registry**.

### What is Central KYC Records Registry?

1. **About-** The Central KYC Registry **stores KYC records of customers in the financial sector using uniform norms**.
2. **Aim-** It aims to reduce the inconvenience of submitting and verifying KYC documents every time a customer initiates a new relationship with a financial entity.
3. **Launched-** It was launched by central government in 2016.
4. **Limitation-** It has been restricted **only to the capital markets**.

## Subject: Science & Technology

### Guinea worm disease

#### Why in the news?

WHO's weekly epidemiological report has highlighted that only six cases were identified of Guinea worm disease in 2023.

#### Guinea worm disease



Source-Adobe Stock

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Aspect	Details
<b>Description</b>	It is an infectious ' <b>Neglected tropical disease</b> ' (NTD).
<b>Agent</b>	Parasite " <b>Dracunculus Medinensis</b> " which is a fiery serpent.
<b>Is it contagious?</b>	It is basically a <b>human disease</b> . However, it can also spread to <b>animals and humans</b> by eating certain <b>aquatic animals</b> that might carry Guinea worm larvae, like fish or frogs.
<b>Transmission</b>	Drinking water containing <b>Guinea worm larvae</b>
<b>Affected regions</b>	It affects <b>poor communities</b> in remote parts of <b>Africa</b> that do not have safe water to drink.
<b>Symptoms</b>	The disease usually has <b>no initial</b> symptoms. However, after 1 year of disease, there may be a <b>painful burning feeling</b> as a blister forms, usually on the legs. The blister bursts as the worm then comes out of the skin over a few weeks.
<b>Prevention</b>	It can be prevented by <b>filtering</b> drinking water through a piece of fine-mesh cloth, chlorination, or boiling.
<b>Treatment</b>	1) There is no <b>drug &amp; vaccine</b> to prevent Guinea worm infection. 2) <b>Anti-inflammatory</b> medicine can help reduce pain and swelling. 3) <b>Antibiotic ointment</b> can help prevent infections.
<b>Current status of disease</b>	1) According to the World Health Organization's (WHO) weekly epidemiological report, cases dwindled to 14 cases in 2021, 13 in 2022, and just six in 2023 from 3.5 million cases in the 1980s. 2) India <b>eliminated</b> GWD in the 1990s, 3) India received <b>GWD-free certification</b> from the WHO in 2000.

## Garbhini-GA2

### Why in the News?

Researchers have developed an India-specific artificial intelligence model- Garbhini-GA2. It accurately **determine the gestational age of a fetus during the second and third trimesters of pregnancy (months 4-9 of pregnancy)**.

### About Garbhini-GA2 AI Model of India



Figure 6.Source-The Hindu

- 1. About-** It is the first computer model for estimating late-trimester gestational age to be **developed** and **validated using data from the Indian population**.
- 2. Developed by-** Indian Institute of Technology-Madras and the Translational Health Science and Technology Institute, Faridabad.
- 3. Component of the GARBH-Ini initiative:**
  - a. It is part of a research program called GARBH-Ini** which focuses on



advanced research about birth outcomes in India.

b. The GARBH-Ini program is a flagship programme of the Department of Biotechnology (DBT), Govt of India.

#### 4. Funding of Garbhini-GA2:

a. Department of Biotechnology (DBT), Government of India

b. Grand Challenges India program under the Biotechnology Industry Research Assistance Council (BIRAC).

c. Robert Bosch Centre for Data Science and Artificial Intelligence (RBC-DSAI)

d. Centre for Integrative Biology and Systems Medicine (IBSE) at IIT Madras

#### What are the issues with current models?

1. Currently, the gestational age (GA) of a fetus is **assessed using a formula designed for Western populations.**

2. Existing Models like **Hadlock** and **INTERGROWTH** estimate pregnancy age, but they are **based on Western data.**

3. **Indian** and **Western babies grow differently during pregnancy.** So these models give inaccurate results for Indian women in the later months. This can affect due date prediction, care quality, and risk assessment for premature birth in India.

#### What is the Significance of Garbhini-GA2 model?

1. The new Garbhini-GA2 formula for the second and third trimesters **accurately determines the fetus's age for Indian population, reducing errors by nearly three times.**

2. Precise gestational age is crucial for providing proper care to pregnant women and accurately determining delivery dates.

## Bitcoin halving

#### Why in the News?

Crypto traders and Bitcoin miners are eagerly awaiting their quadrennial event known as Bitcoin halving, which is predicted to occur in April 2024.



Figure 7. Source-The Hindu

#### What is Bitcoin halving?

1. **About-** Bitcoin halving means **50% reduction in the reward paid to Bitcoin miners** who process cryptocurrency transactions for inclusion in the public digital ledger, known as the **blockchain.**

2. **Quadrennial event-** This event **programmed into the Bitcoin algorithm** and it occurs approximately **every four years.**

#### How does it work?

1. A decentralized network of miners, **validates** and **confirms all Bitcoin transactions** through a process called mining on the blockchain network.



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2. Miners **solve complex math problems with powerful computers** to add transactions to the Bitcoin blockchain as part of its **proof-of-work mechanism**. As a result, they receive a reward of 6.25 BTC.
3. Given the current Bitcoin price, **6.25 BTC amounts to approximately \$193,750**, serving as a considerable motivation for miners to maintain the smooth addition of Bitcoin transaction blocks.
4. Bitcoin transactions **consume a lot of electricity** and **create large carbon footprints** because of the intense computational activity involved, even though no physical mining occurs.

### What is its significance?

1. **Limited Supply**– The **maximum supply of Bitcoin is 21 million coins**, and halvings are essential to prevent this limit from being reached too quickly. By decreasing the pace of new Bitcoin creation, Bitcoin reflects the extraction pattern of a finite resource like gold- becoming harder.
2. **Lowered inflation rate**– Halving events **slow down new Bitcoin creation** thereby reducing inflation in the Bitcoin system. This differs from fiat currencies, where central banks can print money freely, risking high inflation.

## Large Language Models

### Why in the News?

Large language model serve as the backbone of Artificial Intelligence Chat boxes like ChatGPT and Gemini.

### What are Large Language Models

1. **Description**- Large language Models (LLMs) are **large general-purpose language models** that can be **pre-trained and fine-tuned** for specific purposes like text classification, question answering and document summarisation.
2. **Use**- Large Language Models enable the **Generative AI models like ChatGPT and Gemini** to “converse” with humans and predict the next word or sentence.
3. **Features**-
  - a. **Large Data Sets**- Large Language Models use extensive size of training data. They also have large parameter count.

**Note**- Parameters, also called **hyperparameters**, in machine learning represent the **memories and knowledge acquired by a machine during model training**. They determine the proficiency of the model in addressing a particular problem.

  - b. **Use for General Purpose**- This means the model is sufficient to **solve general problems** that are based on the commonality of human language regardless of specific tasks, and resource restrictions.
  - c. **Tool to produce Human Language**- It is a tool that helps computers understand and produce human language.
4. **Types of LLMs**:
  - a) **On the basis of architecture**- These are of 3 types, which are mentioned below-
    - i) **Autoregressive model**- They predict the next word in a sequence based on previous words. **For ex-** GPT-3

ii) **Transformer-based model**- They use a specific type of neural network architecture for language processing. **For Ex-** LaMDA or Gemini (formerly known as Bard)

iii) **Encoder-decoder model**- They encode input text into a representation and then decode it into another language or format. **For Ex-** T5, Bart, Pegasus, ProphetNet, Marge

b) **On the basis of training data:** There are three types of LLMs

i) **Pretrained and fine-tuned**- These language models are trained with multiple data set and are fine-tuned to provide accurate results.

ii) **Multilingual Models**- These LLMs can understand and generate text in multiple languages

iii) **Domain-specific Models**- These are trained on data related to specific domains such as legal, finance or healthcare.

c) **Based on availability**- They are categorised as **open-source and closed-source**.

i) **Open Source**- These use open source data from the web for training. **For ex-** LLaMA2, BLOOM, Google BERT, Falcon 180B, OPT-175 B.

ii) **Closed Source**- These models with close data sets. **For ex-** Claude 2, Bard, GPT-4, are some proprietary LLMs.

d) LLMs also vary **based on their sizes**. Large models require more computational resources but also offer better performance.

## 5) Working Methodology-

i) Deep learning is a key technique in training Large Language Models (LLMs). Deep learning involves using artificial neural networks inspired by the human brain.

ii) For LLMs, this **neural network** learns to predict the probability of a word or sequence of words by analysing the patterns and relationships between words in the data set used for training.

iii) Once trained, an LLM can predict the most likely next word or sequence of words based on inputs also known as **prompts**.

## Stratospheric Aerosol Intervention (SAI)

### Why in the News?

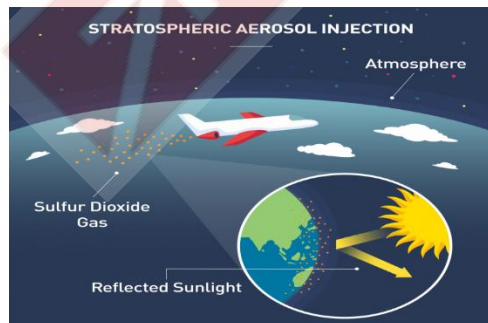


Figure 8Figure 8strangesound.org

Recently, researchers studied the impact of stratospheric aerosol intervention (SAI) in mitigation of global warming effects in the region.

### About stratospheric aerosol intervention (SAI)

1) **Description:** Stratospheric Aerosol Intervention (SAI), also known as Stratospheric Aerosol Injection, is a **geoengineering or climate engineering** approach that aims **to mitigate the effects of global warming**.

2) **Process:** It is done by **spraying large quantities of tiny reflective particles** into the stratosphere to cool the planet by reflecting sunlight back into space.

3) **Method:** Method ranges from **spraying reflective particles**, such as **sulphur dioxides**, finely powdered salt or **calcium carbonate**. These are either sprayed from aircraft or are shot from artillery guns or large hoses to reach the sky.

5) **Purpose:** It aims to **replicate the cooling impact of volcanic eruptions** by introducing sulphur dioxide (SO<sub>2</sub>) directly into the stratosphere. Within the stratosphere, the SO<sub>2</sub> transforms into sulfate aerosols that reflect sunlight.

6) As more radiation is scattered in the stratosphere by these aerosols, **less solar energy is absorbed by the troposphere**.

## Subject: Environment

### Spotted Deer

#### Why in the news?

Recently, 40 spotted deer (axis axis) have been **translocated** from **Chamarajendra Zoological Gardens (Mysuru Zoo)** to **Panasoli range of Kali Tiger Reserve (KTR)** in Dandeli forest, Uttara Kannada district.

#### What is spotted deer?



Source-Wikipedia

Aspect	Details
About	<ol style="list-style-type: none"><li>1. The Axis Deer, also known as <b>Chital or Spotted Deer</b>.</li><li>2. It is a large species of deer, which has a <b>particularly elegant</b> and <b>charming appearance</b>.</li><li>3. Axis Deer are <b>crepuscular</b>, which means that they are most active during the dawn and dusk.</li></ol>
Distribution	It is native to the Indian subcontinent ( <b>India, Nepal, Sri Lanka, Bhutan, and Bangladesh</b> ).

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<b>Habitat</b>	1. They <b>primarily eat grasses and vegetation</b> but will also ingest their shed antlers as a source of nutrients. 2. These deer prefer moderate to dense forests and grasslands near water sources.
<b>Conservation Status</b>	IUCN: Endangered
<b>Characteristics</b>	<b>1. Lifespan-</b> About <b>20 to 30 years</b> . <b>2. Height and weight-</b> It stands at about <b>35 inches tall</b> and weighs about <b>187 pounds</b> . <b>3. Appearance-</b> The deer's golden-Rufus colouring is speckled with white spots, and it has a white underbelly. <b>4. Reproduction-</b> The spotted deer has a <b>prolonged mating season</b> , as the perpetually warm climate allows females to remain fertile and to give birth to fawns any time of year. <b>5. Herd size-</b> Spotted deer most commonly occur in herds of <b>10 to 50 individuals</b> , with one or two males and a number of females and young.

### About Kali Tiger reserve

Aspect	Details
<b>Introduction</b>	1. The forest in the area was declared the <b>Dandeli Wildlife Sanctuary</b> on <b>10 May 1956</b> . 2. The state proposed carving out a section of the sanctuary to form the <b>Anshi national park</b> , which was implemented on <b>2 September 1987</b> . 3. It was renamed to <b>Kali Tiger Reserve</b> in <b>December 2015</b>
<b>Location</b>	Kali Tiger Reserve, earlier known as <b>Dandeli-Anshi Tiger Reserve</b> , is located in the central portion of the <b>Uttara Kannada</b> (North Canara) district of Karnataka state. The Tiger Reserve comprises two important protected areas of the region viz., <b>Dandeli Wildlife Sanctuary</b> (475.018 Km <sup>2</sup> ) and <b>Anshi National Park</b> (339.866 Km <sup>2</sup> ).
<b>Vegetation</b>	Forests of the Tiger Reserve are <b>primarily moist deciduous and semi-evergreen</b> , with excellent patches of evergreen forests in the westernmost parts as well as in deep valleys.
<b>Rivers</b>	The <b>Kali River flows through the tiger reserve</b> and is the lifeline of the ecosystem.
<b>Fauna</b>	Animals found in the Tiger Reserve include <b>Tiger, Leopard, Elephant</b> , Bison, Wild dog, Sambar, Spotted deer, Sloth bear, Wild boar, Hanuman langur, Bonnet macaque, varieties of reptiles and birds including all four species of hornbills as its residents., etc. Kali Tiger Reserve is home to <b>rare black panthers</b> .

## Sub National Climate Fund

### Why in News?

Recently, Goa became the **1st state** to get the **World Bank** backed **Sub National Climate Resilient Green Fund**.

### About first Sub National Climate Resilient Green Fund

- Goa's government has partnered with the World Bank to set up a unique finance facility to strengthen climate resilience.
- Stakeholders: Under the framework of the Blended Finance facility, the **Department of Environment, Government of Goa**, has signed Memoranda of Understanding (MoUs) with key financial institutions, including

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the **National Bank for Agriculture and Rural Development (NABARD)**, the **Small Industries Development Bank of India (SIDBI)**, and the **Power Finance Corporation (PFC)**.

3. The announcement of the Blended Finance facility was made during the 2024 edition of the **World Bank's India Climate and Development Partners' Meet** held in Panaji from February 19 to 21.

4. The fund is being set up as an **outcome of 100% renewable energy plan for Goa**, which was announced at the G20 Summit.

5. Significance:

a. This initiative marks a significant step **towards accessing and mobilizing concessional finance** to implement low-carbon and climate-resilient investments in Goa.

b. This facility is one of the **first sub-national facilities of its kind in India**. This will serve as a template for other states to adopt at the national level.

c. Key sectors earmarked to benefit from blended finance investments include **e-mobility, renewable energy, biodiversity conservation, coastal protection, and green tourism**, among others.

### North Atlantic right whales

#### Why in the news?

Recently scientists have discovered that North Atlantic right whales are getting smaller due to climate change. It is negatively impacting their ability to breed.

#### About North Atlantic right whales



Source- NOAA Fisheries

Aspect	Details
About	1) It is a <b>species of large baleen whale</b> found in the <b>North Atlantic Ocean</b> . 2) The North Atlantic right whale is <b>one of the world's most endangered large whale species</b> .
Characteristics	1) It has <b>white calluses</b> on its head. 2) It <b>lacks a dorsal fin</b> and has a <b>broad back</b> . 3) Its <b>mouth is long and arched</b> , starting above the eye. 4) As a baleen whale, it feeds <b>on small organisms like zooplankton and krill</b> . 5) They use <b>baleen plates in their mouths</b> to filter food from the water as they swim. 5) They are often seen in <b>coastal waters</b> during <b>breeding season</b> . 6) Right whales communicate using low-frequency moans, groans, and pulses.
Habitat	1) North Atlantic right whales inhabit <b>coastal waters</b> predominantly along the <b>eastern coast of North America</b> from Florida to Canada.



	2) They are also found in the <b>Gulf of St. Lawrence</b> .
<b>Conservation Status</b>	IUCN List of Threatened Species: <b>Critically Endangered</b>
<b>Conservation efforts</b>	1) Implementing rules to <b>minimize fishing gear entanglement</b> . 2) <b>Enforcing speed limits for ships</b> in areas where the whales are commonly found.
<b>Threats</b>	1) Threats like <b>entanglement in fishing gear, vessel strikes, climate change</b> is altering their migratory patterns, feeding areas, and breeding ability. 2) <b>Ocean noise</b> affects their communication, food search, and navigation abilities.

## Subject: Schemes & Programmes

### SAMAR Assesment Certificates

#### Why in the News?

Recently, the Defence Research and Development Organisation (DRDO) handed over SAMAR assessment certificates to nine Industry Partners at the MSME Defence Expo 2024.

#### About SAMAR Assessment Certificates



Source- DRDO and QCI

Aspect	Details
<b>About</b>	System for Advance Manufacturing Assessment and Rating (SAMAR) certificate is a <b>benchmark to measure the competency of defence manufacturing enterprises</b> .
<b>Partner organisations</b>	It is an outcome of the collaboration between <b>DRDO</b> and <a href="#">Quality Council of India (QCI)</a>
<b>Aim/Objective</b>	<ol style="list-style-type: none"> <li>To <b>strengthen the defence manufacturing ecosystem</b> in the country and making India self- reliant in defence manufacturing.</li> <li>To <b>provide an objective assessment of manufacturing capability</b> of Defence Manufacturing Enterprises.</li> <li>Enable enterprises to <b>benchmark their performance across a range of business capabilities</b> to enhance quality, reliability and competitiveness.</li> <li>Create a <b>credible database of Defence manufacturers</b> for ease in vendor selection and development.</li> </ol>
<b>Eligibility</b>	All defence manufacturing enterprises, <b>both MSME and Large enterprises</b> , are eligible to apply for this certification. The certification is based on a <b>maturity assessment model developed by QCI</b> and is applicable to all defence

	manufacturing enterprises i.e., micro, small, medium and large enterprises.
<b>Validity</b>	It is <b>valid for a period of 2 years</b> from the date of issuance of certificate.

## Subject: Art & Culture

### Badami Chalukya

#### About Badami Chalukyas

1) **Origin**– Pulakesi I established the Chalukya dynasty in 550. He took Vatapi (Badami in Bagalkot district, Karnataka) under his control and made it his capital.

Historians refer to Pulakesi I and his **descendants** as the Chalukyas of Badami.

2) **Art and Architecture**– It saw the evolution and proliferation of a new style of architecture known as **Vesara**, a combination of the South Indian and the North Indian building styles. The rock-cut temples of **Pattadakal**, a **UNESCO World Heritage Site**. Badami, and Aihole are the most celebrated monuments

3) **Coinage**– Their coins had Nagari and Kannada legends. They minted coins with symbols of **temples**, **lion** or boar facing right, and the lotus.

4) **Religion**– They initially followed **Vedic Hinduism**. Later, from the time of Vikramaditya I, the people took an inclination towards Shaivism, and sects like **Pashupata**, **Kapalikas**, and **Kalamukhas** emerged. They also patronised **Jainism**. For ex- Badami cave temples and other Jain temples in the Aihole complex signifies their religious faith.

#### What was the governance structure of Badami Chalukyas?

##### 1) Defence–

A) The army consisted of infantry, cavalry, elephant corps, and a powerful navy.

B) **Hiuen-Tsang** mentioned the Chalukya army that had hundreds of elephants, which were intoxicated with liquor prior to the battle.

C) **Rashtrakuta** inscriptions use the term **Karnatabala** to refer to their powerful armies.

2) **Taxation**– The government levied taxes called **Herjunka**, **Kirukula**, Bilkode, and Pannaya.

3) **Administrative division**– The empire was divided into **Maharashtrakas** (provinces), then into smaller **Rashtrakas** (Mandala), **Vishaya** (district), **Bhoga** (group of ten villages).

4) **Local governance**– Groups of mahajanas (learned brahmins) looked after agraharas. **Agraharas** were the place of higher learning. There were many **autonomous regions** which were ruled by feudatories like Alupas, Gangas, Banas, and Sendraka.

## Sant Ravidas

### Why in the news?

Recently, Prime Minister Narendra Modi unveiled the **statue of Sant Ravidas in Varanasi** and offered floral tribute on the occasion of his **647th birth anniversary**.

### About Sant Ravidas



Figure 9. Source- Jagran

#### 1. About

- Guru Ravidas was a mystic poet saint of the Bhakti Movement from the 15th and 16th centuries, and founded the **Ravidassia religion**.
- He was a **revered poet** and a **renowned philosopher**.

**2. Birth-** He was born in **1377 CE** in **Seer Govardhanpur** in **Uttar Pradesh**.

His place of birth is now known as **Shri Guru Ravidass Janam Asthan**.

#### 3. Life history:

- Despite belonging to a community whose initial occupation was in leatherwork, Ravidas shifted his focus to spiritual pursuits, spending much of his time on the banks of the Ganges.
- Throughout his life, he associated with **Sufi saints, sadhus, and ascetics**.
- At the age of 12, Ravidas was married to Lona Devi, and they had a son named **Vijay Dass**.

#### 3. Teachings and Works:

- Since his birth, Guru Ravidas devoted his life to advocating for **human rights and equality**.
- A few of his compositions were also included in **Guru Granth Sahib Ji**.
- He is one of the most famous personalities of the **nirguna sampradaya (sant parampara)** and was one of the prominent leaders of the North Indian Bhakti movement.
- He also became a **symbol of opposition to untouchability in society** by the higher caste people for lower caste people.
- Sant Guru Ravidas Jayanti is hugely observed in the **Northern part of India including Punjab, Himachal Pradesh, and Haryana**.

#### About Guru Ravidas Jayanti

- Sant Ravidas Jayanti or birthday anniversary is celebrated every year on **Magh Purnima** on **full moon day of Magh month**.
- On this special day, a ceremony of **Nagar Kirtan** procession is performed by people with the chants of mantras during Aarti.
- Music, songs, and Doha are sung in the temples located on the streets.
- Some of the followers and devotees also perform the ceremony of holy bath in the Ganga River or other holy places then go to worship his image at home or in a temple.

## Subject: Geography & Places in News

### Badwater Basin In Death Valley

#### Why in the News?

In North America's driest region, Badwater Basin in Death Valley has been persisting and expanding as a temporary lake. This Phenomenon has been documented by NASA through satellite imagery.

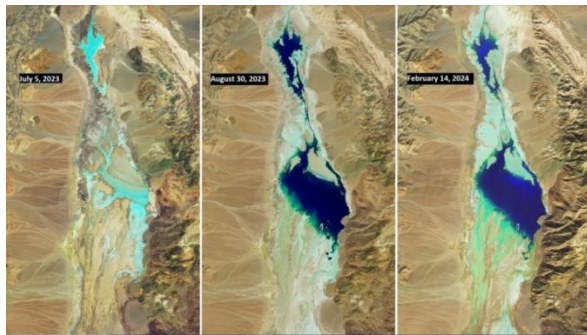


Figure 10. Source-DownToEarth

#### About Badwater Basin

**1. About-** It is an **endorheic basin**. The endorheic nature implies that water does not naturally exist there, but rather flows into it. It often leads to swift evaporation and the formation of temporary lakes.

**2. Location-** It is located in **Death Valley, California, USA**. It holds the distinction of being the **lowest point in North America**, with an elevation of 282 feet (86 meters) below sea level.

**3. Nearby landscape-** It is just 84.6 miles east-southeast of **Mount Whitney**, the highest point in the

United States.

#### 4. Recent phenomenon which has been observed:

**a.** Recent heavy rainfall, following Hurricane Hilary in August 2023, has altered the landscape of the region and has resulted in the **appearance of Manly Lake**.

**b.** The lake **initially reduced in size**, but surprisingly persisted through the fall and winter seasons. Its recovery in February 2024 was facilitated by a robust **atmospheric river** that replenished its waters.

**c.** In Death Valley, which usually sees just 51 millimeters of rain per year, there was an extraordinary **125 millimeters rainfall in the last six months**.

#### About Death Valley

##### 1. About:

**a.** It is a desert valley in Eastern California, US in the northern **Mojave Desert**, bordering the Great Basin Desert.

**b.** It is one of the **hottest places on Earth**, along with deserts in the Middle East and the Sahara.

**2. Climate:** Death Valley has a scorching desert climate, with summer temperatures frequently exceeding 100°F (38°C). It holds the **world record** for the highest reliably recorded air temperature, **hitting 134°F (56.7°C) in July 1913 at Furnace Creek**.

**3. Flora and Fauna:** Even in its tough conditions, Death Valley hosts diverse plant and animal life well-suited to desert settings. Typical plants include **creosote bush, desert holly**, and different types of cacti. The park is home to wildlife like **bighorn sheep, coyotes, kit foxes**, and various reptiles.



## Flue Cured Tobacco

### Why in the News?

The Government of India recently approved an interest-free Loan to FCV Tobacco growers in Andhra Pradesh.

### About Flue Cured Tobacco



Figure 11. Source- virgotobacco

1) **About:** Flue-Cured Virginia (FCV) Tobacco is a type of tobacco that undergoes a specific curing process to achieve its desirable qualities.

#### 2) Characteristics:

- a) FCV tobacco is primarily used for cigarette production.
- b) It contains a higher sugar content.
- c) It has medium to high levels of nicotine.
- d) It is rich in natural tannins which contributes to its mild and slightly sweet flavour and aroma.

3) **Appearance:** It is **yellow to orange in colour**. These colour appear when it is dried using a process called flu-curing.

#### 4) Curing Process:

- a) Curing is the process by which harvested tobacco leaves are prepared for the market. In the case of FCV tobacco, this process is well-standardized.
- b) The **primary goal of curing** is to achieve specific qualities in the cured leaf while removing excess moisture.
- c) There are **three traditional methods of tobacco curing**:
  - i) Air-Cured: Leaves are dried naturally in the open air.
  - ii) Fire-Cured: Leaves are exposed to smoke and heat during the drying process.
  - iii) Flue-Cured: This method is used for FCV tobacco. Each curing method results in a tobacco product with distinct characteristics based on nicotine content and aroma.

5) **Key Geographical Production:** In India, FCV tobacco is mainly produced in two states: a) **Andhra Pradesh** and b) **Karnataka**.

It is also produced in Bangladesh, in regions of Kushtia, Chittagong and Rangpur.

## Banihal-Sangaldan railway line

### Why in the News?

PM Narendra Modi recently inaugurated the Banihal-Sangaldan section of the railway line which aims to **connect Baramulla in North Kashmir to Udhampur in Jammu**. He also flagged off **Jammu and Kashmir's first electric train** from Sangaldan to Srinagar and Baramulla



## About Banihal-Sangaldan railway line

**48** km Sangaldan-Banihal stretch goes from 1,232 m to 1,705 m above sea level.

**30** curves over 23.72 km have ensured a 0.5-1% track gradient between the two stations.

**272** km Udhampur-Srinagar-Baramulla line; almost 209 km has been commissioned. 95% work complete on remaining 63 km stretch between Sangaldan and Katra. Valley likely to be linked with the Indian Railways network this summer.



Banihal-Sangaldan railway line.

Figure 12. Source-The Indian Express

**1. About-** It is the 48-kilometer-long railway line which connects Banihal in the Ramban district to Sangaldan in the Doda district.

**2. Part of USBRL project-** It is part of the [Udhampur-Srinagar-Baramulla Rail Line \(USBRL\) project](#).

**3. Features:**

- Over 90% of this 48 km line runs through tunnels in the hilly Ramban district.
- It includes the country's longest 12.77-km tunnel (T-50). It also has 16 bridges.
- It has three escape tunnels for passenger safety and emergency rescues.

### Why it is significant?

#### Alternative mode of transportation to the Valley when roads are not accessible:

- The train to Sangaldan offers a new travel option between Jammu and Kashmir, especially when landslides block National Highway-44 between Ramban and Banihal.
- Travelers can cover a distance of 30-35 km by road from Ramban town to Sangaldan, from where they can catch the train to Kashmir.

**2. Promote tourism and economy-** The train route also connects remote parts of Jammu division to tourists, enhancing economic activity. Hot springs are just 5 km from Sangaldan, and the scenic Gool Valley is nearby. Limited road access has kept these areas largely unexplored.

## Subject: Defence Exercises

### Exercise Dosti

#### Why in the news?

Indian and Sri Lankan coast guard ships have recently reached the Maldives to participate in the trilateral coast guard exercise Dosti 16.

#### About Exercise Dosti

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Source- PSM news

Aspect	Details
<b>Description</b>	It is a trilateral coast guard exercise between <b>India, Sri Lanka, and the Maldives</b> .
<b>Frequency</b>	It is a <b>biennial</b> exercise.
<b>History</b>	1) It was <b>first conducted in 1991</b> between the Indian and Maldives Coast Guards. 2) Sri Lanka joined the exercise for the first time in 2012. Exercise Dosti was last conducted in 2021.
<b>Objective</b>	To fortify the <b>friendship, enhance mutual operational</b> capability, build cooperation between the <b>Coast Guards of India, Sri Lanka, and the Maldives</b> .
<b>Areas of cooperation</b>	1) Providing assistance in <b>sea accidents</b> 2) Eliminating <b>sea pollution</b> and addressing issue of <b>oil spill</b>
<b>Some important points about Dosti 16</b>	1) It is the <b>16th edition</b> of the exercise. 2) The Coast Guards of the Maldives, India, and Sri Lanka, along with <b>observers from Bangladesh</b> , are participating in Dosti 16 to enhance collaboration between the forces. 3) India is sending ICGS Samarth (with integral helo), ICGS Abhinav, and ICG Dornier for the exercise.

## NATO Exercise- Steadfast Defender 2024



Figure 13. Source- The Hindu

### Why in the news?

Recently, the North Atlantic Treaty Organization (NATO) started the Steadfast Defender 2024 exercise.

### About Steadfast Defender 2024

1) **About:** Steadfast Defender 24 is **NATO's largest military exercise**

since the Cold War.

2) **Duration:** It is being

held from **January to May 2024**.

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3) **Location:** The first part of the exercise focuses on securing the **Atlantic up to the Arctic** and the second part focuses on moving troops across **Europe, from the High North to Central and Eastern Europe**

4) **Purpose:** Its main purpose is **to highlight its collective military might and commitment** to the security of its members.

5) **Participants:** It has approximately 90,000 troops from all 31 NATO Allies and Sweden as Invitee.

6) **Features:**

a) The exercise will **showcase a wide range of military equipment**, with more than 50 naval vessels, from aircraft carriers to destroyers, and an air force consisting of over 80 units, including fighter jets, helicopters, and drones

b) The ground forces will **demonstrate NATO's capabilities** with at least 1,100 combat vehicles, including 133 tanks and 533 infantry fighting vehicles.

c) The drills are strategically designed **to rehearse Nato's execution of its regional plans**. These plans are the first of their kind in decades.

d) It outlines the **alliance's response mechanisms** to potential threats, addressing concerns regarding Russian aggression.