

CURRENT AFFAIRS

WEEKLY



MAINS ARTICLE

GS-I

- ▣ HARAPPAN CIVILIZATION
- ▣ MASSIVE GREENLAND LANDSLIDE

GS-II

- ▣ LEBANON ATTACK
- ▣ INDIA'S FIRST NATIONAL SECURITY SEMICONDUCTOR FABRICATION PLANT
- ▣ INDIA'S LOW CONVICTION RATE IN MONEY LAUNDERING: FATF
- ▣ RISING ATROCITIES AGAINST DALITS
- ▣ WATCHING, POSSESSING CHILD PORN A CRIME: SC

GS-III

- ▣ INDIA 3RD MOST POWERFUL COUNTRY IN ASIA: ASIA POWER INDEX
- ▣ TRANSPORTATION REVOLUTION IN INDIAN CITIES
- ▣ 10 YEARS OF 'MAKE IN INDIA'
- ▣ GLOBAL WARMING AND CLIMATE FORECASTING
- ▣ ON THE PITFALLS OF ESTIMATING GDP
- ▣ ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

PRELIMS ARTICLE

GEOGRAPHY

- ▣ Crimean Bridge

POLITY & GOVERNANCE

- ▣ Food Safety in India
- ▣ Secularism
- ▣ AFSPA in Manipur
- ▣ Swachh Bharat Mission 2.0
- ▣ Lokayukta

ECONOMY

- ▣ India-Australia Comprehensive Economic Cooperation Agreement (CECA)
- ▣ Government Takes Steps to Support Oilseed Farmers in India
- ▣ Resilience of India's NBFC Sector

SCIENCE & TECHNOLOGY

- ▣ China's launch of an intercontinental ballistic missile
- ▣ Earth to get a mini-moon
- ▣ Robotic Mules and High-Altitude Innovations
- ▣ India Reports First Case of New Mpox Strain
- ▣ Amoebic Meningoencephalitis
- ▣ Environment
- ▣ World Environmental Health Day
- ▣ India's Rhino Conservation Success

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DISCLAIMER

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

CONTENT

4th WEEK - SEPTEMBER, 2024

SECTION - A

HISTORY (GS-I)

- Harappan Civilization..... 01

GEOGRAPHY (GS-I)

- Massive Greenland landslide.....04

INTERNATIONAL RELATIONS (GS-II)

- Lebanon Attack 05
- India's first National Security Semiconductor Fabrication Plant 06

POLITY & GOVERNANCE (GS-II)

- India's low conviction rate in Money Laundering: FATF 07
- Rising atrocities against Dalits.....09

- Watching, possessing child porn a crime: SC 10

ECONOMY (GS-III)

- India 3rd most powerful country in Asia: Asia Power Index11
- Transportation Revolution in Indian Cities.....12
- 10 Years of 'Make in India'13
- On the pitfalls of estimating GDP.....13

ENVIRONMENT (GS-III)

- Global Warming & Climate Forecasting 14
- Environmental Impact Assessment (EIA).....16

SECTION - B

GEOGRAPHY

- Crimean Bridge 18

POLITY & GOVERNANCE

- Food Safety in India 18
- Secularism.....19
- AFSPA in Manipur19
- Swachh Bharat Mission 2.0..... 20
- Lokayukta 20

ECONOMY

- India-Australia Comprehensive Economic Cooperation Agreement (CECA)21
- Government Takes Steps to Support Oilseed Farmers in India21

- Resilience of India's NBFC Sector.....22

SCIENCE & TECHNOLOGY

- China's launch of an intercontinental ballistic missile23
- Earth to get a mini-moon.....23
- Robotic Mules and High-Altitude Innovations23
- India Reports First Case of New Mpox Strain24
- Amoebic Meningoencephalitis24

ENVIRONMENT

- World Environmental Health Day.....24
- India's Rhino Conservation Success25



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SECTION -A

MAINS ISSUES

HARAPPAN CIVILIZATION

CONTEXT

On September 20, 2024, the centenary of **John Marshall's groundbreaking article** in *The Illustrated London News* is being observed. Marshall, then-Director General of the **Archaeological Survey of India (ASI)**, announced the **discovery of the Indus Valley civilization**, now known as the **Harappan civilization**. This event has significant historical implications, as it revealed a sophisticated urban culture in South Asia that existed around 2500 BCE, reshaping understandings of ancient history.

About Harappan Civilization

- The Harappan civilization, also known as the **Indus Valley civilization**, flourished during the **Bronze Age**, approximately from **3300 BCE to 1300 BCE**.
 - ▶ **Early Harappan**: 3300–2600 BCE
 - ▶ **Mature Harappan**: 2600–1900 BCE
 - ▶ **Late Harappan**: 1900–1300 BCE
- **Other important Civilizations**: Egyptian (7000BC to 3000BC) and Mesopotamian (6500BC to 3100BC) civilizations.
- It is characterized by **advanced urban planning, agricultural practices, and trade networks**.
- The civilization was **technologically sophisticated**, exhibiting expertise in various fields including **metallurgy, ceramics, and hydraulic engineering**.
- The name "**Harappan**" derives from the archaeological site of Harappa, one of the first sites to be discovered in modern-day Pakistan.

Key features of the civilization include:

- ▶ **Urban Planning**: Cities like Harappa and Mohenjodaro featured grid patterns, advanced drainage systems, and standardized fired-brick construction.
- ▶ **Economy and Trade**: The civilization engaged in extensive trade with regions such as Mesopotamia, evidenced by found seals and artifacts.
- ▶ **Script and Art**: The Harappans developed a writing system (Indus script), and their artisans created intricate seals, pottery, and jewelry.

(Figure No. 01 on next page)

Architectural Features (Mohenjodaro)

Town Planning

- ▶ The city showcases a well-planned large-scale town layout.
- ▶ **Division of the City**: Mohenjodaro was divided into two main parts: the Citadel and the Lower Town.
 - ◆ **Citadel**: Constructed on mud brick platforms, it was walled and likely served special public purposes.
 - ◆ **Lower Town**: Also walled, built on a raised platform, indicating a systematic approach to construction.
- ▶ **Uniform Bricks**: The buildings were made from uniformly sized bricks.
- ▶ **Grid Pattern Streets**: The roads and streets were laid out in a grid pattern, intersecting at right angles.
- ▶ **Residential Buildings**: The Lower Town featured residential buildings, typically centered around a courtyard.



Figure No. 01

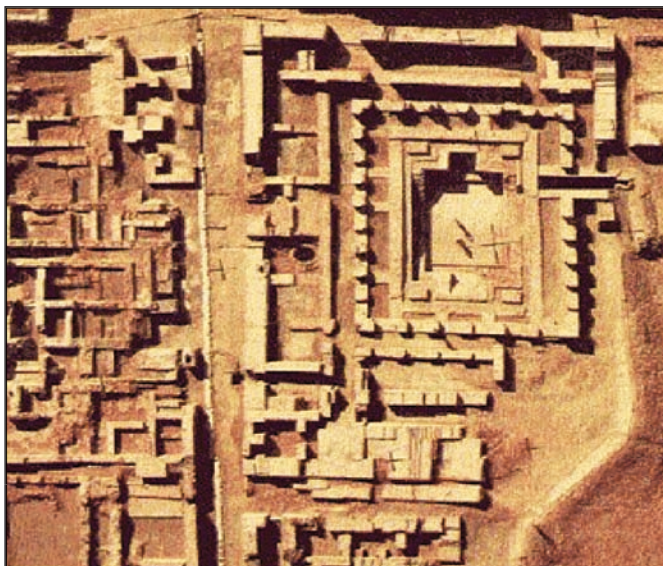


Figure No. 02

- ◆ **Privacy Features:** Ground floor walls lacked windows, ensuring privacy; entrances did not directly expose the courtyard.
- ◆ **Bathrooms and Drains:** Every house had a brick-paved bathroom connected to street drains. Many houses also had staircases leading to upper levels.

Drainage System

- A well-designed drainage system was a hallmark of Harappan cities. Every house was connected to street drains made of **mortar, lime, and gypsum**.
- **Cleanable Drains:** Drains were covered with large bricks for easy lifting and maintenance.
- **Sewage Pits:** Pits were located on either side of the streets for sewage management.
- **Long Channels:** Long drainage channels with sumps for cleaning were constructed at intervals.



Figure No. 03

- **Smaller Settlements:** In places like Lothal, houses were made of mud bricks, and the drains used burnt bricks.

The Great Bath

- The Great Bath is one of the special buildings located on the citadel. It was used for religious ceremonies or public gatherings.
- **Design:** A large rectangular tank surrounded by corridors, with steps leading into the tank from the north and south. The tank was made watertight using mortar and gypsum.
- **Connected Rooms:** Rooms flanked the tank, one of which housed a large well, with water flowing into a massive drain.



Figure No. 04

Key Excavations, Locations, Findings

- **Mohenjo-daro, Harappa, Ganweriwala (all now in Pakistan), Rakhigarhi, and Dholavira (both in India)** are the five biggest Harappan sites out of about 2,000 sites in the civilisational area, which is spread over 1.5 million sq.km. in India, Pakistan, and Afghanistan.
- There are about 1,500 sites in northwestern India, including in **Gujarat, Haryana, Jammu and Kashmir, Maharashtra, Rajasthan, and Uttar Pradesh.**
- The **village of Daimabad** on the banks of the **Godavari river in Maharashtra** is the southernmost outpost of the Harappan civilisation.
- There are about 500 sites in Pakistan, and a few in Afghanistan.
- The civilisation burgeoned on the banks of the **Indus and Saraswati rivers**, the latter of which is believed to have dried up circa 1900 BCE.

<p>Mohenjo-daro</p>	<ul style="list-style-type: none"> ◦ Excavator: Rakhal Das Banerji (1922) ◦ Findings: Seals, pottery, and copper artifacts; the "Great Bath" indicates communal bathing practices and ritualistic significance. ◦ Significance: Mohenjo-daro is crucial for understanding urban life and social structures within the civilization.
<p>Dholavira</p>	<ul style="list-style-type: none"> ◦ Location: Gujarat, India ◦ Excavations: Led by R.S. Bisht (1989-2005) ◦ Findings: Extensive water conservation systems, large reservoirs, and inscriptions in the Indus script. ◦ Significance: Dholavira offers insights into advanced water management practices and urban planning.
<p>Rakhigarhi</p>	<ul style="list-style-type: none"> ◦ Location: Haryana, India ◦ Excavations: Ongoing research has revealed extensive urban remains and indications of trade and craftsmanship. ◦ Significance: It is one of the largest Harappan sites and challenges previous notions about the extent of the civilization.
<p>Ganweriwala</p>	<ul style="list-style-type: none"> ◦ Location: Punjab, Pakistan ◦ Findings: Less extensively excavated but contributes to the understanding of the civilization's distribution across a vast geographical area.
<p>Mehrgarh</p>	<ul style="list-style-type: none"> ◦ Location: Balochistan, Pakistan ◦ Significance: This site, dating back to 7000 BCE, is considered the precursor to the Harappan civilization and illustrates the transition to settled agricultural life.

<p>Harappa</p>	<ul style="list-style-type: none"> ◦ Excavator: Daya Ram Sahni (1921-22) ◦ Findings: Seals, painted pottery, and beads; the discovery of a curved drainage wall indicates advanced sanitation systems. ◦ Significance: Harappa was pivotal in identifying the civilization's characteristics and its geographical spread.
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Decline of Harappan Civilization

- **Climatic Change** could have affected agricultural productivity and water supply.
- **Deforestation** may have led to soil erosion and reduced agricultural output.
- **Excessive Floods** could have devastated settlements and agricultural lands.
- **Unsustainable agricultural practices** may have depleted resources and affected the ecosystem.

- **Shifting or Drying Up of Rivers** could have severely impacted water availability.
- **The arrival of outside groups**, possibly including the Aryans, might have contributed to the decline.
- **A marked decline in distinctive artifacts**, such as seals and pottery, suggests a breakdown in the civilization's cultural practices.

MASSIVE GREENLAND LANDSLIDE

CONTEXT

A massive landslide in a **remote fjord in Greenland** created a wave so powerful that it sent vibrations through the Earth for nine days. This unusual event took place in September 2023 and was detected by seismic sensors around the world, sparking an investigation by scientists to trace its origin.

What happened?

- Unlike typical earthquake vibrations, this signal lasted for nine days and exhibited characteristics not caused by earthquakes, leading to a collaborative investigation by researchers across multiple countries.
- Scientists classified it as a “**USO**” — an **unidentified seismic object**.
- Eventually, the source of the signal was traced to a massive landslide in **Greenland's remote Dickson Fjord**.
- The landslide occurred when a mountainside collapsed, bringing with it a large chunk of glacial ice. The force of the collapse triggered a gigantic 200-meter-high wave in the narrow Dickson Fjord. This wave became “trapped” in the fjord and moved back and forth, creating seismic signals that puzzled researchers.

What caused it?

After investigation, researchers discovered that this unusual signal was caused by a **massive landslide** in Greenland.

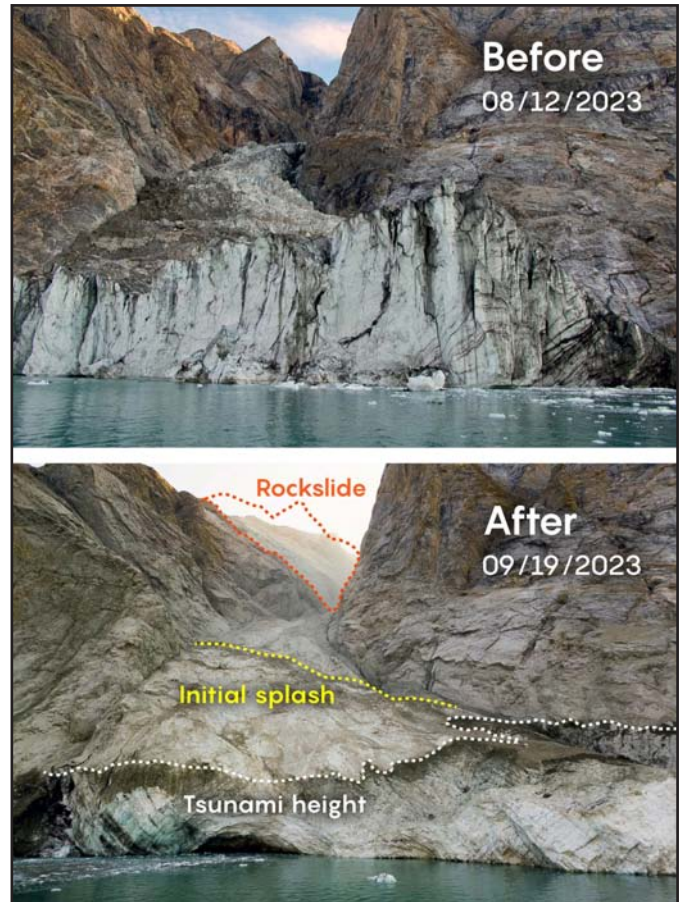


Figure No. 05

- **Landslide Event:** A peak called **Hvide Støvhorn** collapsed. This collapse created a huge avalanche of ice and rock, which then crashed into the nearby Dickson Fjord.
 - ▶ A huge amount of rock and ice, enough to fill 10,000 Olympic swimming pools, had plunged into the fjord. This caused a mega-tsunami with a wave 200 meters high.

The landslide also triggered a **seiche**, a back-and-forth wave in the fjord, which continued for nine days. The landslide's immense power was due to the thinning of the glacier, caused by global warming.

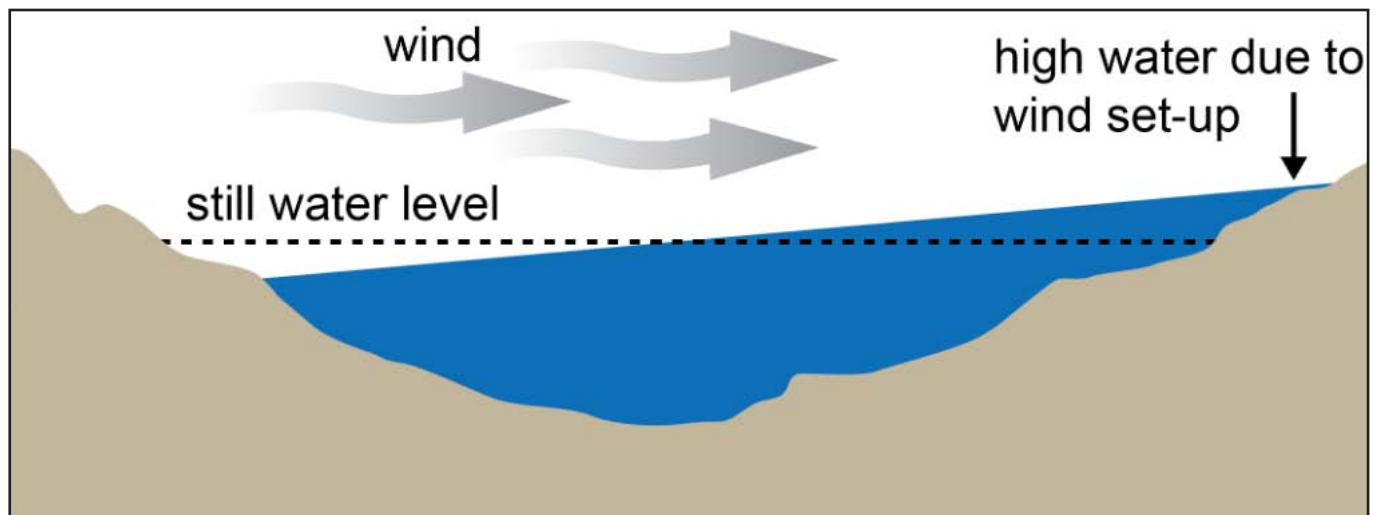


Figure No. 06

- **Tsunami Generation:** The force of the falling ice and rock displaced a large amount of water in the fjord, creating a **mega-tsunami**—a giant wave that reached about 200 meters high (almost three times the height of the **Srirangam Temple**).
- **Seismic Waves:** As the landslide occurred and the mega-tsunami formed, it generated seismic waves that traveled across the globe, ringing out like a bell. These waves were recorded by seismic stations all over the world.
 - ▶ The seismic waves produced by this landslide were distinct from typical earthquake signatures. They exhibited a single frequency, akin to a plucked violin string, rather than the complex patterns associated with tremors.
 - ▶ These waves traveled globally, resonating for days, as the landslide’s impact rang out like a gong, causing the Earth to vibrate.

The Seiche Effect

- Inside the **fjord**, the waves reflected off the **steep cliffs**, causing a phenomenon called a **seiche**.
 - ▶ This is when water oscillates back and forth, creating **repeating waves**. The waves continued to bounce around the fjord for over nine days, which matched the long-lasting seismic signal recorded.
- **Geographical Importance:** The Dickson Fjord is a unique geographical feature—it’s deep and U-shaped, which made the waves behave in this unusual way. Additionally, the warming climate is causing glaciers in the area to melt, which increases the risk of such landslides happening more frequently.

LEBANON ATTACK

CONTEXT

Recent violence between **Israel and Hezbollah** has led to significant casualties (at least **492 deaths**) in Lebanon, marking one of the deadliest days since the 2006 conflict. The situation has escalated following attacks from both sides, with fears of broader regional conflict intensifying.

Background on Hezbollah and Israel Relations

- **Rocket Attacks:** Following the assassination of a Hezbollah commander, the group retaliated by launching hundreds of rockets at Israel, which responded with airstrikes and increased military presence.
- **Military Warnings:** The Israeli military has urged residents in southern Lebanon to evacuate as it prepares for an expanded campaign against Hezbollah, leading to a significant exodus of civilians.
- **Leadership Statements:** Israeli officials maintain that they do not seek war but assert their right to defend

their citizens, highlighting the presence of Hezbollah weapons stored in civilian areas.

Potential for Regional Escalation

- **Concerns of War:** While both sides have not officially declared war, tensions remain high, with Israel’s Prime Minister vowing to protect northern communities and respond decisively.
- **Pressure Dynamics:** Analysts suggest that Hezbollah’s actions may be aimed at pressuring Israel into negotiations with Hamas, particularly given the high casualties in Gaza since October 7.
- **Military Disparities:** Despite Hezbollah’s extensive arsenal, Israel’s superior military capabilities may limit Hezbollah’s ability to escalate the conflict effectively.

Understanding Hezbollah

- Hezbollah, meaning “Party of God,” emerged during the **Lebanese Civil War**, backed by Iran, and opposes Israel and Western influence in the region.
- **Military Strength:** Described as the world’s most heavily armed non-state actor, Hezbollah possesses a vast array of rockets and military equipment, with estimates of around **130,000 rounds** currently in its arsenal.
- **Political Role:** Hezbollah has significant political influence in Lebanon, holding 13 seats in Parliament, but faces increasing opposition domestically amid economic struggles.

About Location (Lebanon)

- Lebanon is a country located in the **Middle East**, in the western part of the Asian continent.
- It is situated on the eastern shore of the **Mediterranean Sea**.
- Lebanon shares borders with several neighboring countries.
 - ▶ To the north and east, it is bounded by **Syria**
 - ▶ To the south, it shares a border with **Israel**
 - ▶ To the west, it is bordered by the **Mediterranean Sea**.



Figure No. 07

INDIA'S FIRST NATIONAL SECURITY SEMICONDUCTOR FABRICATION PLANT

CONTEXT

India, with the help of US Space Force, will set up its first semiconductor fabrication plant solely dedicated to national security, an initiative that will provide critical chips to the US military, allied forces, and India's own defence sector.

Key Highlights

- Named 'Shakti,' the fabrication plant will be one of the world's first multi-material fabs dedicated to national security. The facility is likely to come up in UP's Jewar in 2025.
- The new semiconductor plant is set to specialise in the production of advanced components for a range of crucial applications, including **national security, next-generation telecommunications, and green energy technologies**.
- **Key Partnerships:** The initiative involves collaboration with strategic partners like Bharat Semi and 3rdiTech, alongside the US Space Force.
- **Types of Semiconductors:** The facility will specialize in advanced semiconductors, including infrared, gallium nitride, and silicon carbide, vital for cutting-edge applications.
 - ▶ The infrared, gallium nitride and silicon carbide semiconductors fall under the category known as **compound semiconductors**. According to sources, **India's current imports bill** for these semiconductors for national security alone is USD 1 billion a year
- The initiative supports **India's National Quantum Mission** and aligns with India's broader goals in semiconductor manufacturing (**India Semiconductor Mission**).
- **Future Space Cooperation:** Furthermore, both countries are also likely to work in the space sector, with both countries making strides towards the **first joint NASA-ISRO mission** to the **International Space Station in 2025**.
- **Other efforts to strengthen semiconductor supply chains**
 - ▶ **GlobalFoundries' (GF) new GF Kolkata Power Center:** It will foster collaboration in chip manufacturing research and development. It is expected to drive breakthroughs in zero and low-emission technologies, connected vehicles, the Internet of Things (IoT), artificial intelligence (AI), and data centers.

Role of Semiconductors

- Semiconductors is a foundational industry. With the advent of **artificial intelligence (AI)**, chips are being used in **medical instruments, mobile phones, laptops, cars, trucks, trains, televisions** and practically every

device on earth India is a major consumer of chips and has built the world's best digital public infrastructure (DPI) on this chip.

- This small chip is playing a significant role in ensuring last-mile delivery in Bharat.
- Whether it is the **unified payments interface (UPI), RuPay card, Digi Locker, or Digi Yatra**, various digital platforms have become part of everyday life.
- The demand for data centres in the country is continuously rising and these run on chips.
- **Key-Initiatives:** Semicon India Programme and the India Semiconductor Mission (ISM)
 - ▶ India has been elected Vice Chair of the **Indo-Pacific Economic Framework's Supply Chain Council**.
 - ▶ India is also a significant partner in the **QUAD Semiconductor Supply Chain Initiative**.
 - ▶ Other than US, it has recently signed agreements with several countries including **Japan and Singapore**.
 - ▶ The **chip fabrication facility** in **Dholera, Gujarat**, is being set up by **Tata Electronics**.
 - ▶ The **Semiconductor Assembly, Testing, Marking and Packaging (ATMP) facility** in Morigaon, Assam is being set up by Tata Electronics.
 - ▶ The Maharashtra government has approved a **chip manufacturing project** (Panvel in Raigad district), to be jointly set up by **Israel's Tower Semiconductor and the Adani Group**.
 - ▶ The **Outsourced Semiconductor Assembly and Test (OSAT) facility** in Sanand, Gujarat is being set up by CG Power and Industrial Solutions Ltd.
 - ▶ The Cabinet has also approved the proposal of **Kaynes Semicon** to set up a semiconductor unit in **Sanand, Gujarat**.

Significance of the Agreement

- **Strengthening commercial sector:** It will focus on three essential pillars for modern war fighting: **advanced sensing, advanced communications and high voltage power electronics**. These three areas also have huge growing needs for commercial sectors such as **railways, telecom infrastructure and data centres and green energy**.
- **National asset:** This facility will be seen as a national asset, further advancing India's ambitions to become a net security provider in the region. India currently imports semiconductors worth USD 1 billion annually for national security purposes alone.



FACT BOX

Technology behind manufacturing a semiconductor chip

- A semiconductor chip, often referred to as an **integrated circuit (IC)**, is a **small electronic component** made from **semiconductor materials**, primarily **silicon**.

- These chips are fundamental to modern electronics, as they can perform various functions such as processing, memory storage, and signal amplification.
- **Manufacturing**
 - ▶ **Purification:** The process begins with purifying silicon to create high-purity silicon, known as “single-crystal silicon.” This is achieved through methods like the **Czochralski process**, which involves melting silicon and allowing it to cool slowly to form a crystal.
 - ▶ **Wafer Creation:** The single-crystal silicon is sliced into thin disks called wafers. These wafers serve as the base for the semiconductor devices.
 - ▶ **Doping:** To modify the electrical properties of silicon, small amounts of dopants (like phosphorus or boron) are introduced to create n-type (negative) or p-type (positive) semiconductors. This is done through processes like diffusion or ion implantation.
 - ▶ **Photolithography:** A photosensitive material called photoresist is applied to the wafer. Ultraviolet light is then used to expose the photoresist through masks that define the patterns of the circuit. The exposed areas are developed, leaving behind a patterned layer.
 - ▶ **Etching:** The wafer is then subjected to chemical or plasma etching processes that remove the unprotected silicon, creating the intricate patterns of the integrated circuit.
 - ▶ **Deposition:** Additional materials, such as metals for interconnections, are deposited onto the wafer. Techniques like chemical vapor deposition (CVD) or physical vapor deposition (PVD) are commonly used.
 - ▶ **Layering and Repetition:** The processes of photolithography, etching, and deposition are repeated multiple times to build up the various layers and components of the chip.
 - ▶ **Testing and Dicing:** Once the chip has been fully manufactured, it undergoes rigorous testing to ensure functionality. The wafer is then diced into individual chips.
 - ▶ **Packaging:** Finally, the chips are packaged in protective casings that allow for electrical connections while safeguarding against environmental damage.

INDIA'S LOW CONVICTION RATE IN MONEY LAUNDERING: FATF

CONTEXT

As per a report by the **Financial Action Task Force (FATF)**, India has employed an **effective system** that has improved **anti-money laundering (AML)** and tackled counter-

terrorist financing over the past 5 years, but there is **room for improvement** in aspects such as **long pendency of trials and shortcoming in assessment of money laundering risks** emanating from offences such as human trafficking.

Key Findings

▢ Progress in AML/CFT Framework

- ▶ India's AML/CFT framework shows good results in risk understanding, access to beneficial ownership information, and asset deprivation from criminals.
- ▶ Authorities effectively utilize financial intelligence and cooperate well domestically and internationally.

▢ Economic and Risk Landscape

- ▶ As a lower-middle-income country with the world's fifth-largest economy, India faces significant money laundering risks from fraud, corruption, and drug trafficking.
- ▶ India confronts serious threats from terrorist groups like ISIL and Al Qaeda, necessitating improved prosecution and sanctions for terrorist financiers.

▢ Financial Inclusion and Transparency

- ▶ **Increased Bank Access:** India has significantly boosted financial inclusion, with more citizens gaining access to bank accounts and digital payment systems.
- ▶ **Financial Sector Understanding:** There is a strong understanding of risks in the financial sector, particularly among commercial banks, although smaller institutions require further development.

▢ Areas for Improvement

- ▶ **Court Backlog:** A significant backlog of pending money laundering cases hampers progress in prosecution.
- ▶ The number of investigations has been increasing but the number of prosecution complaints has not kept pace. To increase the rate of conviction,
- ▶ Enforcement Directorate has made non-conviction based seizures to the tune of Rs 16,497 crore from FY19 to FY23, while confiscations based on convictions were worth Rs 39 crore. During the five-year period, the ED started 4,163 investigations, of which 28 cases ended in conviction. In 132 cases, the ED decided to not probe further.

What is Money Laundering?

- Money laundering is the process of transforming proceeds from criminal activities to disguise their illegal origin. This allows criminals to enjoy their profits without attracting attention to the underlying illicit activities
- **Common Sources of Criminal Proceeds**
 - ▶ **Illegal Activities:** Arms sales, drug trafficking, smuggling, and organized crime (e.g., prostitution rings).

MONEY LAUNDERING INVESTIGATIONS					
CATEGORY	2018-2019	2019-20	2020-21	2021-22	2022-Oct 23
● Probe launched	195	562	981	1,180	1,245
● Cases where decision was taken not to probe	39	17	12	18	46
● Prosecution complaints filed	216	51	130	144	323
● Cases convicted	4	4	1	3	16
● Cases acquitted	1	0	0	0	0

Figure No. 08

- ▶ **Financial Crimes:** Embezzlement, insider trading, bribery, and computer fraud.
- **Objectives of Money Laundering:** Criminals aim to control their funds while minimizing attention to their illegal activities. They achieve this by:
 - ▶ Disguising the sources of funds
 - ▶ Changing the form of the money
 - ▶ Moving funds to jurisdictions where they are less likely to attract scrutiny
- **Authorities investigate and prosecute anti-money laundering offences in India**
 - ▶ **The Directorate of Enforcement (ED):** Directorate of Enforcement (ED) is the principal legal entity in charge of looking into and prosecuting money laundering offences under the PMLA.
 - ◆ ED comes under the **Department of Revenue within the Ministry of Finance.**
 - ▶ **Financial Intelligence Unit – India (FIU-IND):** It is a part of the Department of Revenue and Ministry of Finance. It is the primary national body in charge of collecting, processing, assessing, and disseminating data about suspicious financial transactions to law enforcement authorities and foreign FIUs.
 - ▶ **Others:**
 - ◆ **Economic Offences Wing**
 - ◆ **Central Bureau of Investigation (CBI)**
 - ◆ Income Tax Department
 - ◆ Registrar of Companies (RoC)
 - ◆ **Regulators** (Reserve Bank of India (RBI), Securities & Exchange Board of India (SEBI), and Insurance Regulatory & Development Authority of India (IRDAI))
- standards to combat money laundering and terrorist financing.
- As part of its mandate, the FATF issued 40 recommendations, providing a framework for countries to prevent and combat these financial crimes.
 - ▶ India became the 36th member of the watchdog in 2010.
- In response to this international obligation, India enacted as the **Prevention of Money Laundering Act (PMLA) in 2002** (under Article 253).
 - ▶ The core objective of the PMLA is to address the laundering of illicit funds generated through activities such as drug trafficking.
 - ▶ By targeting the flow of illegal proceeds, the legislation aims to protect the financial infrastructure of the country.

Initiatives by the Indian government against money laundering

- Know Your Customer (KYC) procedures
- Fugitive Economic Offenders Act in 2018
- Anti-black money Act, 2015
- Foreign Exchange Regulation Act (FERA), 1973
- Foreign Exchange Management Act (FEMA) in 1999
- Indian Customs Act, 1962
- Smugglers and Foreign Exchange Manipulators Forfeiture of Property Act, 1975
- Foreign Contribution (Regulation) Act, 1976
- The promulgation of the Prevention of Terrorism Act (POTA), 2002
- India is a signatory to the **1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (the Vienna Convention).**

Anti-Money Laundering Laws

- The international community has established the **Financial Action Task Force (FATF) in 1989**, an intergovernmental organisation that sets international

RISING ATROCITIES AGAINST DALITS

CONTEXT

The recent report on **atrocities against Scheduled Castes (SCs) and Scheduled Tribes (STs)** in India has garnered significant attention due to **alarming statistics regarding caste-based violence**. Released under the **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act**, the report sheds light on the prevalence of these crimes, the efficacy of legal responses, and the overall safety of marginalized communities in India.

Key Highlights of the Report

Concentration of Cases:

- ▶ **Scheduled Castes:** Nearly 97.7% of atrocities against SCs in 2022 were reported from just 13 states, with Uttar Pradesh, Rajasthan, and Madhya Pradesh leading in numbers.
 - ◆ **Uttar Pradesh:** 12,287 cases (23.78% of total).
 - ◆ **Rajasthan:** 8,651 cases (16.75%).
 - ◆ **Madhya Pradesh:** 7,732 cases (14.97%).
 - ◆ Other significant states include Bihar (6,799 cases), Odisha (3,576), and Maharashtra (2,706), which collectively account for approximately 81% of all SC-related cases.
- **Scheduled Tribes:** For STs, 98.91% of reported atrocities also concentrated in 13 states.
 - ▶ **Madhya Pradesh:** 2,979 cases (30.61% of total ST cases).
 - ▶ **Rajasthan:** 2,498 cases (25.66%).
 - ▶ **Odisha:** 773 cases (7.94%).
 - ▶ Other notable states include Maharashtra (691 cases) and Andhra Pradesh (499 cases).
- **Total Registered Cases:** A total of **51,656 cases** were registered under the SC/ST Act for SCs, while **9,735 cases** were reported for STs in 2022.

Investigation and Charge-Sheeting:

- ▶ **SC Cases:**
 - ◆ 60.38% resulted in charge sheets.
 - ◆ 14.78% were concluded with final reports due to false claims or lack of evidence.
 - ◆ **Pending Investigations:** 17,166 cases.
- ▶ **ST Cases:**
 - ◆ 63.32% resulted in charge sheets.
 - ◆ 14.71% concluded with final reports.
 - ◆ **Pending Investigations:** 2,702 cases.
- **Conviction Rates:** The conviction rate for cases under the Act declined to **32.4%** in 2022 from **39.2%** in 2020, indicating a worrying trend in legal accountability.

- **Special Courts:** Of **498 districts** in 14 states, only **194** have established special courts to expedite trials under the SC/ST Act, highlighting inadequate judicial infrastructure to handle such cases.
- **Atrocity Prone Districts:** Only **10 states and Union Territories** identified districts prone to atrocities, while Uttar Pradesh, despite high case numbers, claimed no atrocity-prone areas.

Why violence against dalits continues to rise?

- **Brahmanical Order and Caste Hierarchies:** The deeply entrenched Brahmanical social structure perpetuates notions of superiority among upper castes, reinforcing their control over Dalits. This psychological ascendancy enables continued discrimination and violence.
- **Feudal Power Dynamics:** In rural areas, the feudal system is closely tied to caste and gender hierarchies. Upper and middle castes, who predominantly own land, maintain power over landless Dalits.
- **Economic Disparities:** Dalits often work as landless laborers with little access to education and economic opportunities. The disparity in land ownership leads to a systemic oppression that manifests as violence, as upper castes feel threatened by any assertion of rights or autonomy from Dalits.
- **Normalization of Atrocities:** Dehumanizing acts, such as **forced consumption of waste or physical humiliation**, are prevalent in certain areas. Such atrocities are often normalized within communities.
- **Urbanization and Globalization:** Rapid urbanization, influenced by globalization, has created new forms of caste-based exploitation. In urban settings, Dalits often find themselves relegated to **low-wage, menial jobs**. The exploitation continues, with **manual scavenging** being a particularly egregious example of caste violence.
- **Intersection of Gender and Caste:** It amplifies violence, particularly against Dalit women. They face dual oppression, both from their caste status and gender, leading to increased vulnerability to sexual violence and discrimination.

Solutions

- **Strengthening Legal Frameworks:** While laws exist to protect Dalits, enforcement remains weak. Strengthening the implementation of the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act and ensuring swift justice can deter violence.
- **Education and Awareness:** Comprehensive education programs aimed at both Dalits and upper-caste communities can challenge caste-based prejudices and promote social equality. Awareness campaigns should focus on the rights of Dalits and the importance of respecting human dignity.
- **Providing access to education, vocational training, and employment opportunities** can empower Dalits economically.
- **Encouraging dialogue and engagement** between different caste communities can foster mutual understanding and respect.

- **Policies addressing the specific challenges faced by Dalit women** should be prioritized. Empowering women through education, economic opportunities, and legal protections can mitigate violence and promote gender equality.
- **Regular monitoring of violence** against Dalits and the effectiveness of protective measures is crucial. Accountability mechanisms for law enforcement and local authorities can help ensure that perpetrators are prosecuted and victims receive justice.



FACT BOX

Initiatives/Welfare Schemes for Tribals

- **Article 17** of the Indian Constitution banned the practice of untouchability
- **Schedule Caste/ Schedule Tribes (Prevention of Atrocities Act), 1989** was introduced to combat persecution and discrimination against Dalits and Adivasi (tribal) people.
- **In Union Budget 2024-25**, the allocation for the welfare of Scheduled Castes is Rs 1,65,493 crore, while Scheduled Tribes receive Rs 1,24,909 crore.
- **The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993 (the 1993 Act)**, declared the employment of manual scavengers and construction of dry toilets to be punishable with fines and imprisonment.
- **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013** provide for the prohibition of employment as manual scavengers, rehabilitation of manual scavengers and their families, and for matters connected therewith or incidental thereto.
- **Pre-Matric Scholarship:** This scheme provides support to the parents of SC children to help ensure that their children continue their education.
- **Stand-Up India Scheme:** This scheme provides subsidies to SC/ST entrepreneurs, including a subsidized term loan, **Swachhta Udyami Yojana (SUY)**, and **Special Credit Linked Capital Subsidy Scheme (SCLCSS)**.
- **Microfinance:** For Dalit women, the Reserve Bank of India underwrites incentives including interest rates about half that offered to other women.
 - ▶ Microloans are offered by for-profit, not-for-profit and government-owned banks. The Reserve Bank of India regulates the sector and acts as a guarantor of microloans given by banks under national government-sponsored poverty alleviation schemes.
- **National SC-ST Hub:** This hub provides support to SCs and STs, including testing fee reimbursement and participation in business accelerator programs.

Other Schemes

- ▶ Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
- ▶ Skills Acquisition and Knowledge Awareness for Livelihood (SANKALP) Scheme
 - ◆ Pradhan Mantri Mudra Yojana
 - ◆ Dr. Ambedkar Central Sector Scheme
 - ◆ National Overseas Scholarship Scheme
 - ◆ Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)
 - ◆ Pradhan Mantri Awas Yojana (PMAY)
 - ◆ Integrated Child Development Services (ICDS)
 - ◆ Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

WATCHING, POSSESSING CHILD PORN A CRIME: SC

CONTEXT

The Supreme Court of India recently delivered a landmark judgment regarding **child pornography**, establishing critical clarifications on related laws and emphasizing the need for comprehensive changes in terminology and approach to child sexual exploitation.

Key Points from the Judgment:

- **Terminology Change:** The Court rejected the term "child pornography" as a misnomer, coining the term "**child sexual exploitative and abuse material**" (**CSEAM**) to reflect the serious nature of the crime, emphasizing the exploitation and abuse involved.
- **Legal Implications:** The judgment clarifies that both **Section 15 of the Protection of Children from Sexual Offences (POCSO) Act** and **Section 67B of the Information Technology (IT) Act** penalize not only the creation and distribution but also the **storage and viewing of CSEAM**.
- **Mandatory Reporting:** The Court mandated that social media intermediaries must report instances of child abuse to local authorities, reinforcing that compliance with the IT Act does not exempt them from responsibilities under the POCSO Act.
- **Comprehensive Sex Education:** The judgment stressed the importance of positive, age-appropriate sex education to combat misconceptions and prevent youth from engaging in harmful sexual behaviors, including the distribution and viewing of CSEAM.
- **Focus on Intent:** The judgment outlined specific provisions under Section 15 of POCSO, categorizing different offenses based on intent, such as:
 - ▶ **Sub-section (1):** Storage with intent to transmit.
 - ▶ **Sub-section (2):** Actual transmission or facilitation.
 - ▶ **Sub-section (3):** Storage for commercial gain.

- **Presumption of Culpability:** The Court noted that a statutory presumption of culpable mental state can be invoked if foundational facts of the offense are established.
- **Recommendations:** The Court suggested that the government amend the POCSO Act to reflect the new terminology and recommended comprehensive sex education programs, victim support services, and community awareness campaigns.
- **Expert Committee:** The Court proposed forming an Expert Committee to develop a nationwide strategy for health and sex education, emphasizing child protection and well-being.

(Table No. 1 given below)

Impact

- **Mental Health Issues:** Survivors often face depression, anxiety, post-traumatic stress disorder (PTSD), and dissociation. Feelings of shame, guilt, and worthlessness are common, affecting overall quality of life.
- **Health Issues:** There can be physical manifestations of trauma, such as chronic pain, gastrointestinal problems, and other stress-related ailments.
- **Risk of Re-Victimization:** Survivors may be at increased risk for further victimization or abusive relationships, often due to learned behaviors and vulnerability.
- **Substance Abuse:** Some survivors may turn to drugs or alcohol as a way to cope with emotional pain, leading to potential substance abuse issues.
- **Impact on Life Success:** The trauma can hinder educational attainment and career prospects, affecting concentration, motivation, and interpersonal skills.
- **Risky Behaviors:** In some instances, survivors may engage in delinquent behavior or criminal activities as a response to their trauma.
- **Social Isolation:** Emotional consequences often lead to social withdrawal, isolating survivors from friends, family, and community support.

Laws Governing Child Abuse in India

- The core child protection legislation for children is enshrined in four main laws:
 - ▶ The Juvenile Justice (Care and Protection) Act (2000, amended in 2015)
 - ▶ The Prohibition of Child Marriage Act (2006)
 - ▶ The Protection of Children from Sexual Offences Act (2012)
 - ▶ The Child Labour (Prohibition and Regulation) Act (1986, amended in 2016)
- **Bharatiya Nyaya Sanhita**, which replaces the **British-era Indian Penal Code**, has made sexual offences "gender neutral" for the victim and the perpetrator, according to official documents.

INDIA 3RD MOST POWERFUL COUNTRY IN ASIA: ASIA POWER INDEX

CONTEXT

India has officially surpassed Japan to become the third most powerful country in Asia, as reported by the latest **Asia Power Index** released by the **Lowy Institute**. This significant shift underscores India's expanding influence across the continent and positions it as a major global player with aspirations of superpower status.

What the Asia Power Index Measures?

- The Asia Power Index, compiled annually by the **Australian think tank Lowy Institute**, evaluates power dynamics across Asia using a comprehensive set of metrics. These include:
 - ▶ **Economic Resources:** It measures GDP, trade, and investment capabilities.

Table No. 01: Causes of Child Abuse

Societal Factors	Economic Factors	Lack of Sex Education	Dysfunctional Families
<ul style="list-style-type: none"> ◦ Families lacking social connections may struggle to find support and resources, increasing the risk of abuse. ◦ Economic stressors can exacerbate tensions within families, contributing to an environment where abuse may occur. 	<ul style="list-style-type: none"> ◦ Children from low-income families are at a higher risk of developmental issues and victimization. Financial hardship can lead to neglect or abusive situations. ◦ Families with limited access to educational and healthcare resources may struggle to provide adequate care and support for their children. 	<ul style="list-style-type: none"> ◦ Many children lack the knowledge to recognize and report abuse 	<ul style="list-style-type: none"> ◦ Dysfunctional families often exhibit patterns of abuse, neglect, and unhealthy coping mechanisms (e.g., substance abuse). ◦ Dysfunctional families may discourage children from speaking out about their experiences, creating a culture of secrecy that perpetuates abuse.

- ▶ **Military Capability:** It assesses defense spending, armed forces strength, and technological advancements.
- ▶ **Diplomatic Influence:** It evaluates participation in international organizations and bilateral relations.
- ▶ **Cultural Reach:** It considers the impact of cultural exports and soft power.
- ▶ **Future Resources:** It looks at population dynamics and potential growth.
- India's rise to third place reflects improvements in these key areas, particularly in defense, diplomacy, and economic growth.
- **Strategic Position in Global Politics:** As a democratic nation with a crucial role in the Indo-Pacific region, India is integral to global geopolitical dynamics. Its participation in regional security alliances and expanding partnerships with key global players highlights its importance in maintaining stability in the region.
- **Economic Reforms and Infrastructure Development:** India's focus on economic self-reliance, combined with reforms in infrastructure, manufacturing, and technology, is expected to attract significant foreign investment, propelling the country further into the ranks of the world's largest economies.
- **Leadership in Climate Change and Sustainability:** India is making notable strides in addressing climate change through ambitious renewable energy goals and efforts to reduce carbon emissions. This leadership is positioning India as a crucial player among emerging economies in setting environmental standards.

Key Drivers Behind India's Rise

- **India is one of the world's fastest-growing major economies.** Significant advancements in technology, manufacturing, and services have fueled this expansion. With a youthful and dynamic workforce, India is becoming a hub for innovation and investment, bolstered by initiatives like "Make in India" and "Atmanirbhar Bharat" aimed at enhancing its industrial base.
- **India's substantial investments in military modernization** have amplified its strategic importance. The development of advanced missile systems, nuclear capabilities, and an expanding naval presence, particularly in the Indian Ocean, positions India as a key player in regional security. A growing defense budget further emphasizes India's rising military stature.
- **India has increasingly asserted its role in international diplomacy,** participating actively in multilateral organizations such as the **United Nations, G20, BRICS, and the Quad.** Strategic partnerships with nations like the United States, Australia, Japan, and the European Union have enhanced India's presence in global affairs, solidifying its position on the world stage.
 - ▶ In 2023, **India ranked sixth in terms of diplomatic dialogues,** due to its active participation in multilateral forums and its expanding role in the Indo-Pacific.

Japan's Decline in Regional Power

- **Slow Population Growth:** Japan's stagnant demographic trends limit its potential for economic expansion.
- **Limited Military Expansion:** Japan's reserved geopolitical stance, especially in military matters, has hindered its influence compared to India's assertive foreign policy.
- **Economic Stagnation:** Japan's relatively stagnant economic performance has contributed to its slipping influence in favor of rising powers like India.

India's Path to Global Superpower Status

- **Demographic Dividend:** By 2030, India is projected to have the world's largest working-age population. This demographic advantage presents tremendous opportunities for economic growth and innovation, positioning India as a key engine for global development.

Challenges on India's Road to Superpower Status

- **Income Disparities:** Significant income inequality persists, particularly in rural areas, posing a challenge to long-term growth and stability. Addressing this divide will be critical for inclusive development.
- **Infrastructure Needs:** To fully leverage its demographic advantages, India must invest substantially in physical infrastructure, including transportation, healthcare, and education, which are vital for sustaining economic growth.
- **Geopolitical Tensions:** India's complex relationships with neighboring countries, particularly ongoing tensions with China and Pakistan, present challenges to regional stability. Navigating these delicate geopolitical dynamics will be essential for India's continued rise as a global power.

TRANSPORTATION REVOLUTION IN INDIAN CITIES

CONTEXT

Indian cities are on the verge of a major transformation in transportation, with plans to invest a staggering **Rs 3 trillion** in metro rail projects between **2022 and 2027**. This investment is not just about improving urban mobility; it has the potential to unlock significant economic growth and create thousands of jobs.

Impact of Public Transportation Investment

- Research shows that investing in public transportation can generate returns of **5 to 7 times** the initial investment. Recognizing this, the Government of India approved the **National Transit Oriented Development (TOD) Policy** and **Metro Rail Policy** in 2017. These policies promote TOD as a strategy for urban planning, encouraging mixed-use developments close to public transport.
- Currently, **27 Indian cities** are building metro systems, and many others are developing bus and rail networks to enhance public transport.

How will TOD address urban challenges?

- As cities expand, job centers are increasingly located in suburban areas, making it difficult for public transport systems to keep up. This leads to longer commutes, congestion, and pollution from private vehicles.
 - ▶ For example, **Bengaluru** is one of the world's most congested cities, costing the economy around **Rs 38,000 crore annually** (about **5%** of the city's GDP).
- **TOD** offers a solution by promoting compact, mixed-use development. This approach integrates land use and transport, supporting sustainable modes like walking, cycling, and mass transit.
 - ▶ A recent study by **WRI India** highlights the importance of bringing jobs closer to transit stations to improve accessibility and productivity.

Key Findings from Bengaluru's Job Market

- WRI India's study focused on the **Bengaluru Metropolitan Area (BMA)**, analyzing job distribution and proximity to the metro network. Here are some key insights:
- There are about **200,000 registered enterprises** in the BMA, employing nearly **4.6 million workers**, primarily in the service sector.
- Large enterprises (those with 100+ employees) make up only **2%** of businesses but account for **60%** of jobs.
- Job densities are highest in central areas and tech hubs, like **Whitefield** and **Electronic City**, with densities reaching **58,000 to 109,000 jobs/sq. km**.
- Once the metro expansions are completed (totaling **172 km**), it is projected that **28%** of jobs in the BMA will be within **500 meters** of a metro station, **59%** within **1 km**, and **85%** within **2 km**. However, many large job clusters remain disconnected, underscoring the need for better pedestrian infrastructure and feeder services.

Benefits of Job Clustering Near Transit

- When businesses cluster near transit, they benefit from increased accessibility for both workers and customers.
- This agglomeration leads to enhanced innovation, productivity, and competitiveness.
- Additionally, businesses near metro stations often experience growth in local economic activity and real estate development.

Challenges to Business Location

Despite the benefits, there are hurdles for large businesses looking to establish themselves near metro stations:

- **Limited Property Availability:** Inner-city areas have high property prices and small plot sizes, which can deter larger businesses.
- **Regulatory Hurdles:** Development regulations and zoning laws can restrict higher-density development.
- **Market Saturation:** Smaller businesses may struggle to compete with established ones in high-traffic areas.

Lessons from Global Cities

- Cities like **Hong Kong** have successfully integrated jobs and transit, with **57%** of jobs located within **500 meters** of transit stations.
- This efficient transport system contributes to high levels of transit use and low car ownership, resulting in increased economic output and reduced carbon emissions.

10 YEARS OF 'MAKE IN INDIA'

CONTEXT

The 'Make in India' initiative, which aims to transform India into a global manufacturing hub was launched on September 25, 2014 and has completed a decade into existence.

About 'Make in India' Initiative

- The '**Make in India**' initiative aims to establish India as a **global manufacturing hub**. Over the past decade, it has focused on **enhancing investment, fostering innovation, and developing a robust manufacturing infrastructure**.
- **Objectives:** The campaign promotes investment, skill development, intellectual property protection, and aims to enhance India's manufacturing capabilities.
- **Vocal for Local:** It emphasizes boosting local manufacturing while showcasing India's industrial potential globally.
- **Make in India 2.0:** This phase encompasses 27 sectors, integrating both manufacturing and services.

Four Pillars of the Initiative

- ▶ **New Processes:** Enhancing the business environment and promoting entrepreneurship through improved ease of doing business.
- ▶ **New Infrastructure:** Development of industrial corridors and smart cities, integrating technology and communication to improve infrastructure and IPR.
- ▶ **New Sectors:** Opening FDI in critical sectors such as defense, insurance, and railways.
- ▶ **New Mindset:** Shifting the government's role from regulation to facilitation, partnering with industry for economic development.

Key Achievements of Make in India

- **Mobile Manufacturing Growth:** From just **two mobile manufacturing units in 2014**, the number has skyrocketed to **over 200**. Mobile exports surged from **₹1,556 crore to ₹1.2 lakh crore**, a remarkable **7,500% increase**. Today, **99% of mobile phones** used in India are domestically produced, positioning India as the **second-largest mobile manufacturer** globally.
- **Steel and Semiconductor Production:** India has become a **net exporter of finished steel**. Investments in semiconductor manufacturing exceeded **₹1.5 lakh crore**, with new plants projected to produce over **seven crore chips daily**.

- **Renewable Energy Expansion:** India is now the **4th largest producer** of renewable energy globally, with capacity increasing by **400%** in the past decade.
- **Electric Vehicle Industry:** The electric vehicle sector, nearly non-existent in 2014, has grown to a market worth **\$3 billion**.
- **Defence Exports:** Defence exports have surged from **₹1,000 crore to ₹21,000 crore**, reaching more than **85 nations**.
- **Toy Industry Success:** The toy industry has witnessed a **239% increase** in exports while imports have halved, significantly benefiting local manufacturers.
- **Empowerment of MSMEs:** The initiative has empowered ordinary citizens, especially within the **Micro, Small and Medium Enterprises (MSME)** sector, fostering entrepreneurship and wealth creation.
- **Production Linked Incentive (PLI) Schemes:** PLI schemes have attracted thousands of crores in investments and created millions of jobs, improving the ease of doing business.
- **Cultural and Industrial Pride:** Iconic projects like **Vande Bharat trains, BrahMos missiles**, and various consumer electronics proudly carry the **Make in India** label, reflecting Indian innovation and quality.

Key Initiatives to enable Make in India

- **Production Linked Incentive (PLI) Schemes:** These schemes attract investment and promote technology in 14 key sectors to enhance global competitiveness.
- **PM GatiShakti:** It is a strategic initiative for creating multimodal connectivity to achieve a \$5 trillion economy by 2025, driven by seven engines: **Railways, Roads, Ports, Waterways, Airports, Mass Transport, and Logistics Infrastructure**.
- **Semiconductor Ecosystem Development:** It encompasses four key schemes:
 - ▶ Modified Scheme for Setting Up Semiconductor Fabs in India
 - ▶ Modified Scheme for Setting Up Display Fabs in India
 - ▶ Modified Scheme for Setting Up Compound Semiconductors, Silicon Photonics, Sensors Fabs, and Discrete Semiconductors, along with Semiconductor Assembly, Testing, Marking, and Packaging (ATMP) / OSAT Facilities in India
 - ▶ Design Linked Incentive (DLI) Scheme
- **National Logistics Policy:** Complementing PM GatiShakti, it enhances the logistics sector's soft infrastructure through the Comprehensive Logistics Action Plan (CLAP).
- **National Industrial Corridor Development Programme:** It focuses on creating smart cities and advanced industrial hubs.
- **Startup India:** Supports entrepreneurs and aims to shift India into a job-creating economy.
- **Implementation of GST:** It streamlines taxation to facilitate manufacturing and trade.

- **Unified Payments Interface:** It aims to bolster India's digital economy, enhancing ease of doing business.
- **Ease of Doing Business:** Continuous efforts to simplify regulations and reduce bureaucratic hurdles to boost investor confidence.

ON THE PITFALLS OF ESTIMATING GDP

CONTEXT

India's GDP measurement is in discussion due to the **proposed revision of the base year from 2011-12 to 2020-21**, with the **National Statistical Office** considering the use of **Goods and Services Tax (GST) data**, raising concerns about accuracy and the need for validation amidst skepticism over past overestimations.

What is GDP?

- Gross Domestic Product (GDP) is a key indicator of a country's economic size. It measures the total value of goods and services produced over a specific period and is used to compare economic performance across countries.
- The GDP growth rate is calculated by comparing the GDP of one period with the GDP of a previous period.
- **Current Base Year and Proposed Change**
 - ▶ The current GDP calculation uses 2011-12 as the base year.
 - ▶ A revision is planned to change the base year to 2020-21.
 - ▶ This change aims to better reflect economic conditions and improve accuracy.

Why Change the Base Year?

- The National Statistical Office (NSO) is considering **using Goods and Services Tax (GST) data** instead of the current **MCA-21 database**, which records corporate financial data.
- GST data is thought to provide a more comprehensive view of economic activity.

Challenges with the Current System

- ▶ The MCA-21 database was introduced in the last revision but has faced criticism for **overestimating growth**.
- ▶ Previous estimates showed a significant difference in growth rates between the new GDP series and older data, **raising doubts about accuracy**.

Concerns About Using GST Data

- ▶ While GST data could enhance GDP estimates, its effectiveness is uncertain without thorough testing.
- ▶ The NSO is urged to conduct pilot studies to validate GST data for specific industries and regions.
- ▶ Transparency and independent verification of the GST data are crucial for establishing trust in GDP estimates.



FACT BOX

Calculation of GDP

- GDP is calculated using the following formula:
$$Y = C + I + G + (X - M)$$
- **C = consumption** (spending on services, non-durable goods, and durable goods)
- **G = government expenditure** (salaries of employees, construction of roads, railways, airports, schools, and military expenses)
- **I = investment** (spending on housing and equipment)
- **X-M = net exports** (difference between total exports and imports)
- In this context, Y represents the Gross Domestic Product.

Base Year

- The base year serves as a reference point for measuring changes in economic variables and comparing the relative performance of indicators over time.
 - ▶ **For example**, real GDP growth is currently calculated with reference to FY12 prices.
- Currently, key economic measures like the **Index of Industrial Production (IIP), Wholesale Price Index (WPI), and National Income** are anchored to FY12, previously benchmarked to FY05.
- The last change in the GDP computation base year, from FY05 to FY12, improved coverage of financial corporations, local bodies, and autonomous institutions and included methodological changes.

- **Unexpected Extremes:** The warming has produced a mix of weather extremes that defy predictions. For instance, while a strong El Niño was anticipated, the actual warming was much greater, likely influenced by factors like volcanic activity and wildfires.
- **Erratic Monsoon Patterns:** The 2023 monsoon was below normal but did not classify as an **El Niño drought**. Future predictions about monsoon patterns, including expectations for 2024, remain uncertain.
- **Cyclone Activity:** The **North Indian Ocean cyclone season** has been weaker than expected for a La Niña year, indicating unpredictability in weather patterns.

Challenges in Prediction

- **Model Limitations:** Existing climate models struggle to accurately reproduce monsoon trends over the past 50 years, leading to questions about their reliability for future forecasts.
- **Increasing Complexity:** As the climate continues to warm, predictions may become even more challenging due to the complex interactions among various climate systems (e.g., hurricanes, El Niño, Indian Ocean Dipole).
- **Natural Variability:** There is still much to learn about how climate change affects natural variability and whether current observed patterns are short-term fluctuations or longer-term trends.

GLOBAL WARMING & CLIMATE FORECASTING

CONTEXT

The **record warming of 2023-2024** has highlighted the profound effects of global warming, as extreme weather events such as **heatwaves, cyclones, floods, droughts, and wildfires** become more frequent and severe. Given these experiences, there is the urgent need to **improve climate predictions and adapt to an increasingly volatile climate**.

Current Climate Observations

Key observations and implications from this period include:

- **Crossing the 1.5° C Threshold:** Some estimates suggest the world may have surpassed the critical 1.5° C warming threshold, although the exact duration of this warming's impact remains uncertain.



FACT BOX

Prediction of weather in India

- India Meteorological Department is solely responsible for issuing operational long range forecast for India.
- The forecasts are prepared at the National Climate Center of IMD located at Pune.
- At present, empirical (statistical) methods are used for the preparation of operational long range forecasts.
- India, at present, depends on satellite data and computer models for weather prediction.
- The IMD uses the INSAT series of satellites and supercomputers.
- Forecasters use satellite data around cloud motion, cloud top temperature, and water vapour content that help in rainfall estimation, weather forecasting, and tracking cyclones.
- The weather agency is now using manned and automatic weather stations, aircraft, ships, weather balloons, ocean buoys and satellites to gather information on atmospheric temperature, pressure humidity, wind speed and direction and sea surface temperatures.
 - ▶ The data is then fed into a supercomputer at the Indian Institute of Tropical Meteorology in Pune.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

CONTEXT

The Central government's decision to designate the environmentally significant **Galathea Bay** as a 'Major Port' under the **Great Nicobar Island Development Project** raises serious concerns. Central to this situation is the **Environmental Impact Assessment (EIA)**, which is intended to safeguard against ecological harm, however, got overlooked by the **Ministry of Environment, Forest and Climate Change (MoEFCC)**.

What is Environmental Impact Assessment (EIA)?

- Environmental Impact Assessment (EIA) is a systematic process that evaluates the potential environmental effects of proposed projects or developments before they are approved.
- It aims to balance economic growth with environmental protection, particularly in developing countries like India, where there are challenges of environmental degradation and climate change.

Objectives of EIA

- Evaluate Impacts:** To assess both positive and negative environmental, economic, and social impacts of development projects.
- Informed Decision-Making:** To provide detailed analysis to aid decision-makers.
- Promote Sustainable Development:** To identify potential negative effects early in the planning stage and suggest alternatives and mitigation measures.
- Public Participation:** To engage local communities and stakeholders through consultations, allowing them to voice concerns.

Evolution of EIA in India

- EIA was first established in the US in 1969. India started its EIA process in 1978-79, focusing initially on large infrastructure projects like dams and power plants.
- Legal Framework:** The **Environment (Protection) Act of 1986** made **EIA mandatory for large projects**. The first EIA norms were notified in 1994, requiring all development projects to undergo the EIA process for prior environmental clearance.
- The 1994 EIA notification was revised in 2006, and again in 2020 to make the process more transparent and efficient.

Steps Involved in EIA

- Screening** determines if a project needs an EIA based on size and potential impacts.
- Scoping** identifies possible environmental impacts, viable alternatives, and mitigation measures.

- Public Consultation** allows local communities and stakeholders to express their concerns.
- Authorities review the EIA report to decide** on project approval, rejection, or conditional approval.

EIA Process in India

Projects are classified into two main categories based on their potential environmental impacts:

- Category A:** Requires prior clearance from the Central Government based on recommendations from an Expert Appraisal Committee (EAC).
- Category B:** Requires clearance from the State Environment Impact Assessment Authority (SEIAA) based on recommendations from a State Expert Appraisal Committee (SEAC). Category B projects are further divided into:
 - B1:** Requires a full EIA report.
 - B2:** Exempt from EIA requirements.

Supreme Court Observations

The Supreme Court of India has emphasized the importance of the EIA process:

- In **TN Godavarman Thirumulpad v Union of India** (1997), the Court recognized the right to a clean environment and the need for EIA before starting projects in forest areas.
- In **MC Mehta v Union of India** (1996), the Court stressed the necessity of EIAs for projects affecting water bodies.
- In **Centre for Environmental Law v Union of India** (2018), the Court reiterated the importance of EIA procedures and public consultations.

Government Initiatives

- ENVIS (Environmental Information System):** Established in 1982 to collect and disseminate environmental information, aiding decision-making.
- PARIVESH:** A single-window platform launched for efficient environmental clearance processes and compliance monitoring.

Suggestive Measures

India aims to balance economic development with environmental sustainability. Key recommendations for improving the EIA process include:

- Reducing Delays:** Addressing the average delay of 238 days in granting environmental clearances.
- Strengthening Public Engagement:** Extending public consultation periods and providing information in local languages.
- Independent EIA Authority:** Considering the establishment of an independent authority for more effective decision-making.
- Standalone EIA Law:** Exploring the possibility of a separate law for EIA to enhance governance.



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SECTION - B

QUICK BYTES

CRIMEAN BRIDGE

CONTEXT

Ukraine has said the Crimean Bridge “must come down” as it accused Russia of flouting maritime laws at the Permanent Court of Arbitration. Russia’s war with Ukraine started when it seized Crimea in February 2014.

Crimea and the Russian link

- The Kerch Bridge is **Russia’s only physical connection to Crimea**.
- It stretches 19km (12 miles) from the **region of Krasnodar Krai** to the eastern side of the peninsula.
- Russian President Vladimir Putin inaugurated it in 2018.
- It consists of a separate roadway and railway, both supported by concrete stilts, which give way to a wider span held by steel arches at the point where ships pass between the **Black Sea** and the smaller **Azov Sea**.

- Since Russia’s full-blown invasion of Ukraine in February 2022, it has been a vital conduit for men and materiel to Russia’s southern front.

Permanent Court of Arbitration (PCA)

- Set up in 1899, the PCA is the **world’s oldest arbitral tribunal**.
- It resolves disputes between countries and private parties over contracts, special agreements and various treaties, such as the **UN Convention on the Law of the Sea**.

FOOD SAFETY IN INDIA

CONTEXT

The recent controversy surrounding adulterated ghee in Tirupati’s laddus has shone a spotlight on a broader issue: the oversight of food safety in India.



Figure No. 01

Food safety framework in India

- The **Food Safety and Standards Authority of India (FSSAI)**, established in 2006, is the **central body responsible** for ensuring food safety and regulating the food industry.
- The FSSAI sets science-based standards for food production, storage, distribution, and sale.
- It also licenses food businesses and conducts inspections to ensure compliance.

Key Regulations and Standards

- ▶ **Food Safety and Standards Act, 2006:** This act consolidates various laws related to **food safety standards** and establishes the FSSAI. It provides a single reference point for all matters related to food safety and standards, thereby ensuring a more streamlined regulatory approach.
 - ◆ The Act covers all food businesses
- ▶ **Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011:** These regulations mandate that all food businesses, from small vendors to large manufacturers, obtain a license or register with the FSSAI. This helps in maintaining a database of food business operators and ensures that they comply with food safety standards.

Challenges of Food Safety in India

- **Low Awareness:** Many people, especially outside urban areas, are unaware of food hygiene practices. Safe food is often seen as a luxury rather than a necessity.
- **Limited Infrastructure:** Food manufacturing and processing facilities often lack resources for maintaining proper hygiene.
- **Food Adulteration:** There has been a significant increase in food adulteration cases, rising from 15% in 2012 to 28% in 2019. Many manufacturers evade mandatory product registration, complicating detection.
- **Poor Traceability:** Companies struggle to trace ingredients, particularly raw agricultural products.
- **Price Sensitivity:** Many food manufacturers focus on keeping costs low to remain affordable.

Food Safety in India

- **World Food Safety Day** is celebrated annually on June 7 to raise awareness about food safety and encourage actions to prevent foodborne illnesses.
- **Safe and Nutritious Food (SNF) initiative** takes a citizen centric approach to transformative social and behavioural change.
- **Eat Right India** is nationwide initiative promoting safe and healthy eating habits among consumers.
- **Eat Right Station** is designed to ensure that railway stations provide safe and nutritious food options for travelers.

- **Eat Right Mela** is a public event that showcases safe and healthy food choices, often featuring workshops and demonstrations.

State Food Safety Index (SFSI) serves as a benchmarking framework, both quantitative and qualitative, to assess the performance of States and Union Territories across various food safety parameters.

Kerala, Tamil Nadu, and Jammu & Kashmir have emerged as the top three performers in the **State Food Safety Index (SFSI) 2024**.

- **RUCO (Repurpose Used Cooking Oil)** is an initiative to promote the safe disposal and repurposing of used cooking oil, reducing health risks and environmental impact.
- **Food Safety Mitra** is a program to support food businesses by providing guidance on food safety regulations and best practices.
- **100 Food Streets** is an initiative to promote hygiene and safety in street food vending, enhancing the quality of food sold in popular areas.

SECULARISM

CONTEXT

Tamil Nadu Governor RN Ravi described secularism as a concept that came from distant lands in the West, which does not have a home in India. Secularism is a European concept, and it is not an Indian concept.

What is Secularism?

- Secularism in India means equal status and treatment to all the religion.
- The word 'secular' was added to the Indian Constitution's preamble through the 42nd Amendment in 1976, although the idea of secularism was implicit from the start.
- India was declared a secular State to differentiate it from Pakistan, whose *raison d'être* was a separate nation for Muslims.
- The Preamble to our Constitution resolves to constitute India into a Secular Republic. So the Constitution of India stands for a Secular state.
- Secularism consists of three commitments:
 - ▶ **Firstly**, that there is no religion that the State identifies with
 - ▶ **Secondly**, that the people are free to follow religion of their choice
 - ▶ **Thirdly**, that the State does not discriminate between people following different religions.

AFSPA IN MANIPUR

CONTEXT

As ethnic violence continues, the Centre and the Manipur government are set to review the scope of the **Armed Forces Special Powers Act (AFSPA)** in the northeastern State.

What is AFSPA?

- The Armed Forces (Special Powers) Act was enacted in 1958 to bring under control what the government of India considered 'disturbed' areas.
- Under the Act, an area is declared as "**disturbed**" for the convenience of security forces.
 - ▶ The government (either the state or centre) considers those areas to be 'disturbed' "by reason of differences or disputes between members of different religious, racial, language or regional groups or castes or communities."
- **Section (3) of the AFSPA Act** empowers the governor of the state or Union territory to issue an official notification on The Gazette of India, following which the centre has the authority to send in armed forces for civilian aid.
- Once declared 'disturbed', the region has to maintain status quo for a minimum of three months, according to **The Disturbed Areas (Special Courts) Act, 1976**.

Positives of AFSPA	Negatives of AFSPA
<ul style="list-style-type: none"> • It is necessary tool to tackle unconventional threats posed by insurgent groups operating in remote and inaccessible terrain. • Withdrawal of AFSPA could embolden militant outfits and compromise the safety and security of both civilians and security personnel. 	<ul style="list-style-type: none"> • It shields security personnel from accountability for excesses committed in the course of their duties. • It leads to abuse of power and violations of fundamental rights.

SWACHH BHARAT MISSION 2.0

CONTEXT

The legacy waste management project under **Swachh Bharat Mission 2.0** has faced significant challenges since its launch.

Current Status

- **Progress:** Out of 2,424 identified dumpsites, only **470** have been completely remediated, which represents about **19%** of the total.
- **Area Reclaimed:** Approximately **4,552 acres** (16%) of the total **28,460.33 acres** of legacy waste sites have been reclaimed, leaving **84%** still untouched.
- **Ongoing Projects:** Remediation is ongoing for **1,224** sites, while **730** remain untouched.
- **Top Performers:** **Tamil Nadu** has reclaimed **837 acres** (42% of its total dumpsite area). **Gujarat** leads in the percentage of area reclaimed, with **75%** of its landfill area remediated.



FACT BOX

About Swachh Bharat Mission 2.0

- The Swachh Bharat Mission had been launched on October 2, 2014. Its second phase (2.0) was launched on October 1, 2021 for a period of five years, up to October 1, 2026, with a vision of achieving "Garbage-Free Status" for all by:
 - ▶ Achieving **100% source segregation** of waste.
 - ▶ Implementing **door-to-door collection**.
 - ▶ Ensuring **scientific management** of all waste types.
 - ▶ Converting dumpsites into **green zones**.

LOKAYUKTA

CONTEXT

In a significant legal development, the **Special Court for MLAs and MPs in Bengaluru** has directed the **Lokayukta** to investigate Karnataka Chief Minister Siddaramaiah regarding allegations linked to land allotment by the **Mysuru Urban Development Authority (MUDA)**.

Who is a Lokayukta?

- The **Lokayukta** is an **independent anti-corruption** authority designed to address complaints of corruption and misconduct against public servants, including government officials and elected representatives.
- Its establishment is rooted in the **Lokpal and Lokayuktas Act, 2013**, which aims to create a framework for investigating allegations of corruption at both national and state levels.

Functions and Jurisdiction

- ▶ **Independent Investigations:** The Lokayukta can initiate inquiries independently or in response to citizen complaints, focusing on corruption, abuse of power, and maladministration within government offices.
- ▶ **Diverse State Frameworks:** While the Lokayukta system is prevalent across various Indian states, there are notable differences in jurisdictions, definitions of public servants, and procedural frameworks among the states.
- ▶ **Historical Context:** The concept of the Lokayukta is inspired by the Scandinavian Ombudsman model, with the first such institution established in Sweden in 1809.
- ▶ The **first Administrative Reforms Commission (ARC)** in India advocated for the creation of both Lokpal and Lokayukta to safeguard citizens against governmental malpractice.



FACT BOX

Can a Chief Minister Be Arrested?

- Chief Ministers (CMs) in India do not enjoy immunity from arrest while in office.
- Under Article 361 of the Indian Constitution, only the President of India and state governors are granted protection from arrest during their terms.
- According to the Code of Criminal Procedure (CrPC) of 1973, law enforcement can arrest any individual against whom a warrant has been issued by a court. The grounds for arresting a CM may include:
 - ▶ Reason to believe the individual would abscond.
 - ▶ Potential destruction of evidence.
 - ▶ Attempts to evade legal processes.
- Moreover, a CM can be removed from office only upon conviction in a criminal case, and there are no legal restrictions preventing them from holding office while under investigation.

- Bilateral trade between both sides, including goods and services, stood close to USD 50 billion at the end of calendar year 2023.
- Both the countries are part of the Indo Pacific Economic Forum for Prosperity (IPEF) and Trilateral Supply Chain Resilience Initiative (SCRI).
- The Australia-India Economic Cooperation and Trade Agreement (ECTA), which came into effect in December 2022, has led to about USD 30 billion worth of Australian exports entering India tariff-free, with Australians saving around USD 225 million on goods from India.

**INDIA-AUSTRALIA
COMPREHENSIVE ECONOMIC
COOPERATION AGREEMENT
(CECA)**

CONTEXT

Australia is actively negotiating a **Comprehensive Economic Cooperation Agreement (CECA)** with India.

What is CECA?

- A CECA is a **free-trade agreement** between two countries that strengthens their bilateral trade.
 - ▶ A **free trade agreement** is an arrangement between two or more countries where they agree either to end or reduce customs duties on the maximum number of goods traded between them, besides cutting down non-trade barriers on a significant value of imports from partner countries and easing norms to promote services exports and bilateral investments.
- It promotes **bilateral trade and investment** between the two countries.
- It eliminates tariffs on goods traded and liberalises services sectors to facilitate great business opportunities and cooperation between Singapore and India.

India-Australia Trade Relations

- Australia is an important trade and strategic partner of India.
- India is one of Australia’s largest trading partners, with two-way trade in goods valued at over USD 6.7 billion in 2023-24.

**GOVERNMENT TAKES STEPS TO
SUPPORT OILSEED FARMERS
IN INDIA**

CONTEXT

In recent weeks, the Indian government has made significant decisions aimed at protecting oilseed farmers.

Key-decisions taken by the Government

- **Import Duty Increases:** The government raised the **basic customs duty (BCD)** on imported oils:
 - ▶ **Crude Oils** (like palm, soybean, and sunflower oil): Increased from 0% to **20%**.
 - ▶ **Refined Oils:** Increased from **12.5% to 32.5%**.
 - ◆ After including additional charges, the effective import duty on crude oils is now **27.5%**, while refined oils face a **35.75%** duty. This marks the first time since **October 2021** that these duties have been reinstated, restoring protection for domestic growers against imports.

Support for Soybean Farmers

- ▶ Alongside the duty increase, the government has authorized several states—including **Maharashtra, Madhya Pradesh, Karnataka, and Telangana**—to procure soybeans at a **minimum support price (MSP)** of **₹4,892 per quintal**.
- ▶ This move has helped stabilize prices in wholesale markets, where soybean prices have risen from **₹4,200-4,300** to **₹4,600-4,700** per quintal in the past month.



FACT BOX

Edible oil production

- India imports over 70% of its edible oil needs, with more than half of this coming from palm oil, primarily sourced from Indonesia, Malaysia, and Thailand. The insufficiency in edible oil is negatively impacting FOREX.

- India is the **4th largest oilseeds producer** in the world. It has 20.8% of the total area under cultivation globally, accounting for 10% of global production.
- The country produces **groundnut, soybean, sunflower, sesamum, niger seed, mustard and safflower oilseeds**.
- Largest oilseed-producing states** in India include Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

Important Missions

- Mission Palm Oil:** It is a special campaign carried out by the central government with a focus on the Northeast, and inaugurated the first oil mill under this mission.
- National Mission for Edible Oils - Oil Palm (NMEO-OP):** Launched in 2021, the mission is committed to escalating oil palm cultivation and elevating Crude Palm Oil production to 11.20 lakh tonnes by 2025-26.

Government Bodies

- Directorate of Oilseeds Development (DOD):** DOD was formed in the year 1942 and is responsible for supervising the **Oilseed Development Programmes** and Oil Palm Development Programmes across the country and in the designated states of Andhra Pradesh, Kerala, Tamil Nadu, and Karnataka.
- Indian Oilseeds and Produce Export Promotion Council (IOPEPC):** IOPEPC was formed in 1956. Its primary aim is to promote and protect India's export trade in commodities like oilseeds, vegetable oil and oilcake.

UPSC PYQ

Q: Consider the following statements: (2018)

- The quantity of imported edible oils is more than the domestic production of edible oils in the last five years.
- The Government does not impose any customs duty on all the imported edible oils as a special case.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Solution: (a)

RESILIENCE OF INDIA'S NBFC SECTOR

CONTEXT

The **non-banking financial companies (NBFC) sector in India** continues to show strong performance under the **scale-based regulations (SBR) framework**, demonstrating improved asset quality and diversified funding sources, according to recent insights from the **Reserve Bank of India (RBI)**.

Key Highlights from RBI's Review

- Credit Growth and Asset Quality:** As of December 2023, the NBFC sector has maintained double-digit credit growth, with a low delinquency ratio.
 - The gross non-performing asset (GNPA) ratio has significantly improved, dropping from **4.4%** for government NBFCs and **10.6%** for non-government NBFCs in December 2021 to **2.4%** and **6.3%**, respectively, by December 2023.
- Profitability Metrics:** The sector has seen a consistent rise in profitability, reflected in improved return on assets (RoA) and return on equity (RoE).
- Prompt Corrective Action (PCA) Framework:** The extension of PCA norms to government-owned NBFCs, effective from October 1, 2024, aims to enhance financial discipline. Key areas of focus will be capital adequacy and asset quality.
- Diversification of Funding:** With increasing risk weights on bank lending, NBFCs are diversifying their funding sources to lessen reliance on bank borrowings. This strategy is vital for maintaining financial stability.
- Growth in Retail Credit:** There has been robust growth in secured retail credit, particularly in areas such as gold loans, vehicle loans, and housing loans, alongside expansion in the industrial and service sectors.

Non-Banking Financial Companies (NBFCs)

- NBFCs are financial institutions that provide various banking services but do not hold a banking license.
- In India, NBFCs are regulated by the Reserve Bank of India (RBI) and must comply with specific regulatory norms.
- They primarily raise funds through public deposits, borrowings from banks, and capital markets.
- No Deposit Insurance:** Unlike banks, deposits made in NBFCs are not insured by the Deposit Insurance and Credit Guarantee Corporation (DICGC).
- They play a crucial role in the financial system, offering services such as: **Loans and Credit, Investment Services, Financial Leasing, Microfinance, Insurance and Asset Management**

CHINA'S LAUNCH OF AN INTERCONTINENTAL BALLISTIC MISSILE

CONTEXT

China conducted a successful test of an intercontinental ballistic missile (ICBM) designed to potentially reach US cities. This marked a rare public display of military capability aimed at showcasing China's strategic deterrence. China choosing the Pacific Ocean as the location for test-firing its missile comes across as both a display of its increased nuclear capabilities and as a warning to the United States and its allies in the region.

About intercontinental ballistic missile (ICBM)

- China's latest ICBM is known to be **DF-41 (Dongfeng-41)**, which first came into service in 2017. It is known to have an operational range of up to 12,000–15,000 km, capable of reaching the United States' mainland.
- Chinese state-run media have claimed the missile can load up to 10 MIRV warheads with a total weight of 2,500 kg.
- An ICBM typically has a range greater than 5,500km (3,420 miles) and is designed to carry nuclear warheads.
- How common are missile tests in the Pacific region?**
 - Few countries have ICBMs in their arsenal, and testing is usually restricted to their own territory.

China's military

- China boasts the **world's largest standing army** and the **biggest navy**.
- The U.S. report also estimated China had more than 500 operational nuclear warheads as of May 2023 and was on track to accumulate more than 1,000 operational nuclear warheads by 2030.
- China has not revealed the size of its nuclear arsenal.
- In comparison, Russia is believed to have a total inventory of more than 5,580 warheads — including 4,380 stockpiled warheads for operational forces, as well as an additional 1,200 retired warheads awaiting dismantlement — according to a report this year by the Federation of American Scientists.
- The same report put the U.S. nuclear warheads at 5,044.

EARTH TO GET A MINI-MOON

CONTEXT

A small asteroid named **2024 PT5** is set to become a temporary "mini-moon" of Earth. It will be captured by our planet's gravitational pull and orbit for a short time (September 29, 2024- November 25, 2024).

About the Asteroid

- Size:** Estimated to be about **37 feet in diameter**, but could range from **16 to 138 feet**.
- Discovery:** First spotted on August 7, 2023, by NASA's Asteroid Terrestrial-impact Last Alert System (ATLAS).
- Distance:** It will orbit Earth at a safe distance of **2.6 million miles**, roughly **10 times** farther than the Moon.

Characteristics of Mini-Moons

- Temporary Visitors:** 2024 PT5 is classified as a mini-moon, a type of asteroid that can temporarily orbit Earth.
- Duration:** These mini-moons can stay for varying lengths of time—some for weeks, like 2024 PT5, while others may linger for years.
- Future Returns:** After its brief stay, 2024 PT5 is expected to make another close flyby in January 2025, with potential returns as a mini-moon in **2055** and **2084**.

ROBOTIC MULES AND HIGH-ALTITUDE INNOVATIONS

CONTEXT

The Indian Army is making significant strides in logistics capabilities, particularly in high-altitude areas, with the introduction of **100 robotic mules** and new high-altitude tents. These innovations were showcased at the **Himtech symposium** in Leh.

Robotic Mules

- The Army has procured **100 robotic mules** as part of an emergency procurement initiative.
- The robotic mule is designed for diverse environments and can operate in extreme temperatures, ranging from **-40 to +55 degrees Celsius**.
- These robotic mules are crucial for enhancing logistical support in remote and rugged terrains, especially following tensions with China in **Eastern Ladakh**.

Key features include:

- High endurance:** Can navigate obstacles, climb stairs, and cross rivers.
- Payload capacity:** Able to carry up to **15 kg**.
- Advanced sensing:** Equipped with electro-optics and infrared for object recognition.

Innovative High-Altitude Tents (Peak Pods)

- The Army is also evaluating a new tent called **Peak Pods**, designed for extreme cold environments. Developed by **DTECH 360 Innovations**, these tents can maintain an internal temperature of **15°C** even when external temperatures drop to **-40°C**.

Key highlights include:

- Sustainable design:** No fuel or electricity is needed for heating.

- ▶ **Unique features:** Includes an inbuilt bio-toilet, making it a comprehensive solution for soldiers in high-altitude conditions.
- The Peak Pods have undergone trials in various locations, including **Leh, Daulat Beg Oldie, and Durbuk**, showing promising results for future deployment.

INDIA REPORTS FIRST CASE OF NEW MPOX STRAIN

CONTEXT

India has confirmed its first case of a **new strain of mpox**, known as **clade 1b**, which has prompted a public health emergency alert from the **World Health Organization (WHO)**. This variant is highly transmissible and is linked to recent outbreaks in Africa.

About Mpox

- The WHO declared mpox a public health emergency in **August 2023** due to its spread, particularly the more dangerous clade 1b variant.
- Mpox is a viral infection caused by the monkeypox virus, a species of the genus Orthopoxvirus.
- There are two variants of mpox that are distinct in nature that influence the severity of the disease and its impact on affected populations.
- **Symptoms:** Previously known as monkeypox, mpox can lead to painful skin lesions and other symptoms, including: **Fever, Muscle aches, Swollen lymph nodes, Body lesions**
- If untreated, mpox can be serious and potentially deadly.
- **Transmission of Mpox:** Mpox spreads from animals to humans and can also be transmitted between people through:
 - ▶ Close contact, including skin-to-skin interaction
 - ▶ Sexual contact
 - ▶ Breathing or talking closely with an infected person

What is clade 1b?

- These strains are:
 - ▶ **clade 1b** (The Central African (Congo Basin) strain)
 - ▶ **clade 2** (West African strain)
- The clade 1b strain is known for its higher virulence, leading to more severe symptoms and complications.
- Patients infected with the Central African strain are at greater risk of experiencing serious health issues, including a higher mortality rate of up to 10%.

AMOEBIC MENINGOENCEPHALITIS

CONTEXT:

Kerala has recently faced a worrying surge in cases of **amoebic meningoencephalitis**, particularly affecting young children during the summer months.

Amoebic Meningoencephalitis

- Amoebic encephalitis is a rare but lethal **central nervous system** infection.
- It is caused by **free-living amoebae (FLA)** found in freshwater bodies.
- There are 2 types of amoebic encephalitis, namely **primary meningoencephalitis and granulomatous amoebic encephalitis (GAE)**.

Primary Amoebic Meningoencephalitis (PAM): It is most commonly caused by ***Naegleria fowleri***, this infection attacks brain tissue, leading to severe swelling and a high fatality rate, typically

WORLD ENVIRONMENTAL HEALTH DAY

CONTEXT

Every year on September 26, World Environmental Health Day is observed to safeguard environment for a healthier future.

History of World Environmental Health Day

- The day was established in 2011 by the **International Federation of Environmental Health (IFEH)**.
- This observance highlights the critical link between our environment and human health.
- According to the World Health Organization (WHO), improving environment could prevent approximately **25% of global diseases**.
- **Theme for 2024: "Environmental Health: Creating Resilient Communities through Disaster Risk Reduction and Climate Change Mitigation and Adaptation"**
- World Environmental Health Day reinforces the importance of global efforts (United Nations' Sustainable Development Goals (SDGs)) such as:
 - ▶ **SDG 3 (Good Health and Well-Being)**
 - ▶ **SDG 13 (Climate Action)**

Relationship of human health and environment health

- Human health is intrinsically linked to the health of the environment. **Environmental health challenges** such as rapid urbanisation, industrial growth, deforestation, and resource depletion have led to serious issues such as air pollution, water scarcity, and biodiversity loss.
- **Clean air, water, and food sources** are vital to human survival, and when these resources are compromised, public health suffers.
 - ▶ **Polluted air** can cause respiratory and cardiovascular diseases like asthma, lung cancer, and heart conditions.

- ◆ Long-term exposure to pollutants such as **particulate matter (PM), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂)** leads to chronic illnesses and premature deaths.
- ▶ **Contaminated water** leads to waterborne diseases (cholera, typhoid, and dysentery)
- ▶ **Poor soil quality** affects food safety.
- **Climate change**, a major environmental threat, amplifies these issues, resulting in heat-related illnesses and the spread of diseases like malaria to new areas.

- ◆ It is the single largest undisturbed and representative area in the Brahmaputra Valley floodplain.
- ◆ It was declared as a National Park in 1974.
- ◆ It has been declared a tiger reserve since 2007. It has a total tiger reserve area of 1,030 sq km with a core area of 430 sq. km.
- ◆ It was declared a **UNESCO World Heritage Site** in 1985.
- ◆ It is recognized as an **Important Bird Area** by **BirdLife International**.
- ▶ **Dudhwa National Park, Uttar Pradesh**, where a population of 38 rhinos now thrives after re-introduction efforts in the 1980s.
- ▶ Manas National Park (UNESCO World Heritage Site)
- ▶ Jaldapara National Park
- ▶ Pobitora Wildlife Sanctuary
- ▶ Rajaji National Park
- ▶ Keoladeo National Park (UNESCO World Heritage Site)

INDIA'S RHINO CONSERVATION SUCCESS

CONTEXT

The Indian rhinoceros, once on the brink of extinction, has seen a remarkable resurgence in its population, thanks to decades of dedicated conservation efforts by the government and the forest department. From a staggering low of just 200 individuals at the start of the 20th century, India now boasts over 2,600 rhinos, housing approximately 85% of the world's total Indian rhino population.

Key-initiatives to conserve Rhino

- **India banned rhino hunting** in 1910.
- **World Rhino Day** is celebrated every 22 September.
- **The Indian Rhino Vision 2020 (IRV 2020)** program aimed to reintroduce rhinos to Laokhowa Wildlife Sanctuary in Assam.
- **Project Rhino** is an initiative that aims to protect India's rhino population. It focuses on preventing poaching, improving habitats, and raising public awareness.
- **Important Rhino Habitat:**
 - ▶ **Kaziranga National Park in Assam.** Kaziranga has become synonymous with rhino conservation, with over 2,600 individuals residing there today—making it home to more than 70% of the world's Indian rhinoceros population.

About Rhino

- There are five species of Rhinos
 - ▶ Black African rhino (critically endangered)
 - ▶ White African rhino (near threatened)
 - ▶ **Asian rhino rhino**
 - ◆ Greater one-horned rhino or Indian rhino (vulnerable)
 - ◆ Sumatran rhino (critically endangered)
 - ◆ Javan rhinos (critically endangered)
- The greater one-horned rhino (*Rhinoceros unicornis*) is the largest rhino species on Earth.
- They are semi-aquatic and are great swimmers.
- The rhinoceros is a megaherbivore and primarily a grazer.





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TOP 100 ALL INDIA RANKING CSE 2023

