



## MAINS ARTICLE

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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.

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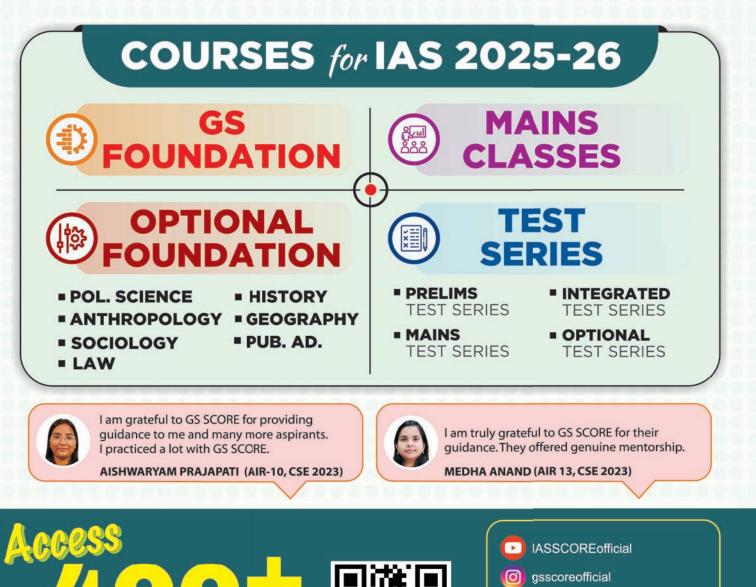
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# SECTION -A MAINS ISSUES

## CITIES GROWING UPWARD THAN OUTWARD

#### CONTEXT

A recent study published in *Nature Cities* highlights a **significant trend in urban growth worldwide**, with cities increasingly **expanding vertically rather than horizontally**. This shift is particularly notable in Asia, where **rapid urbanization and high population** densities necessitate taller buildings to accommodate growing populations.

#### **Issues highlighted in the Study**

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- Infrastructural Strain: As cities grow upwards, existing infrastructure—such as roads, sewage systems, and public transport—may struggle to keep pace with the increased demands. This can lead to inefficiencies and overburdened services.
- Environmental Impact: Increased vertical growth can exacerbate urban heat island effects, where the concentration of buildings and reduced green spaces lead to higher temperatures and altered local climates. Taller buildings may also contribute to higher energy consumption and greater carbon footprints.
- Planning and Regulation Challenges: Urban areas with stringent building regulations, such as those seen in parts of India, face difficulties in accommodating vertical growth. In some cases, regulatory frameworks and master plans are outdated, failing to address the complexities of modern urban development effectively.

#### **Reason Behind the Trend:**

 The primary driver of vertical growth is the necessity to accommodate a rapidly increasing urban population within limited spatial boundaries.

- As cities reach the limits of horizontal expansion, building upwards becomes a practical solution.
- This vertical growth trend is particularly pronounced in densely populated cities across East Asia, where high population densities and economic factors push for taller structures.

#### Impact:

- Urban Density: Vertical growth increases population density within urban areas, potentially improving land use efficiency and making it possible to house more people within a smaller footprint.
- Economic Considerations: Tall buildings can enhance property values and contribute to economic growth by providing more commercial and residential space in prime locations. However, they also require substantial investment in specialized construction and maintenance.
- Climate Resilience: The increased density and reduced green space associated with vertical growth can impact local climate conditions and increase vulnerability to heat-related issues. Urban planning must incorporate climate resilience strategies to mitigate these effects.
- Public Services: The demand for enhanced public services, including transportation and utilities, grows with vertical expansion. Effective urban planning and infrastructure development are crucial to ensuring that these services can meet the needs of a growing population.

#### Positive Impacts:

Rapid urbanisation is crucial for harnessing the demographic dividend of a young population. With 12 million more people joining the country's labour force every year, the potential of that dividend is huge. As the urbanisation process continues, connectivity, proximity, and diversity will accelerate knowledge diffusion, spark further innovation, and enhance productivity and employment growth.

## FACT BOX

#### Urbanisation in India (United Nations-Habitat's World Cities Report 2022)

- India's urban population is estimated to stand at 675 million in 2035, the second highest behind China's one billion.
- India's urban population is projected to be 67,54,56,000 in 2035, growing from 48,30,99,000 in 2020 to 54,27,43,000 in 2025 and 60,73,42,000 in 2030.
- By 2035, the percentage of population in India at mid-year residing in urban area will be 43.2%.

#### Government Initiatives

- > Pradhan Mantri Awas Yojana (Urban)
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
- Swachh Bharat Mission (Urban)
- Smart Cities Mission
- Pradhan Mantri-eBus Sewa Scheme
- National Urban Digital Mission
- Deendayal Antyodaya Yojana or National Urban Livelihood Mission
- City Investment to Innovate, Integrate and Sustain 2.0

#### **UPSC PYQ**

Q: Does urbanization lead to more segregation and/or marginalization of the poor in Indian metropolises? (2023)

#### Q: Consider the following statements: (2021)

- 1: Right to the city' is an agreed human right and the UN-Habitat monitors the Commitments made by each country in this regard.
- 2: "Right to the City" gives every occupant of the city the right to reclaim public spaces and public participation in the city.
- 3: "Right to the City" means that the State cannot deny any public service or facility to the unauthorized colonies in the city.

Which of the statements given above is/are correct?

(a) 1 only	(b) 3 only
(c) 1 and 2	(d) 2 and 3

Solution: (c)

## WAKE-UP CALL TO JUDICIARY

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#### CONTEXT

President Droupadi Murmu addressed the National Conference of District Judiciary on September 1, 2024, focusing on the **pressing issue of delays in justice delivery in India**. Her remarks come amid growing concerns over the inefficiencies within the **judicial system**, especially regarding the handling of heinous crimes such as **rape**.

#### **Key Issues Highlighted:**

- Inordinate Delay in Justice Delivery: The President underscored the detrimental impact of prolonged delays in legal proceedings, particularly in sensitive cases like rape. She pointed out that *justice delayed is justice denied*, leading to a loss of faith in the judicial system.
- Culture of Adjournments: Murmu criticized the prevalent practice of frequent adjournments in courts, which she believes exacerbates the delay in delivering justice. She described this as a significant issue affecting the efficiency of the judiciary.
- **Impact on Victims:** The President highlighted the specific plight of victims, especially women, who endure prolonged suffering due to delayed justice. She emphasized the emotional and psychological toll on victims who face fear and stigma while perpetrators often continue with impunity.
- "Black Coat Syndrome": She coined the term "black coat syndrome" to describe the anxiety and distress experienced by ordinary citizens when interacting with the judicial system, likening it to the phenomenon of "white coat hypertension" seen in medical settings.

#### **Reason behind issues in the Judiciary**

- The delay of justice is attributed to the **burdened courts** and the **accumulation of pending cases**.
  - As of 2024, about 3.5 million cases are still stuck in the courts, waiting to be resolved.
- The considerable number of legal cases, in combination with deficient infrastructure and insufficient judicial resources, imposes a burden on the legal system. As a result, litigants are subjected to prolonged waiting periods.
- The issue of prolonged court proceedings can be attributed to a multitude of factors. The issue is further compounded by the limited availability of judges. India is confronted with a persistent insufficiency of judges, resulting in an unfavorable ratio of judges to population.
  - India has a low judge-to-population ratio. Compared to developed nations, India has only 21 judges per million citizens while the US has 107 judges per million.
- The non-existence of dedicated courts or tribunals for specific legal domains imposes extra weight on the judicial system.

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#### **Required Interventions:**

- Call for Judicial Reforms: President Murmu urged for a reform in the judicial process to end the culture of adjournments and improve the speed and efficiency of justice delivery.
- Coordination Among Stakeholders: She called for better coordination between the judiciary, government, and police to address the issues facing the legal system comprehensively.
- Moral Responsibility: Emphasizing the moral responsibility of judges and judicial officers, she urged them to uphold justice, truth, and dharma with sensitivity and promptness, particularly at the district level.

## **FACT BOX**

#### Important Initiatives for Judicial Reforms

- National Mission for Justice Delivery and Legal Reforms: It was launched in 2011 with the twin objectives of
  - increasing access by reducing delays and arrears in the system
  - enhancing accountability through structural changes and by setting performance standards and capacities
- **Alternate Dispute Resolution** methods have been promoted wholeheartedly.
  - LokAdalat is an important Alternative Disputes Resolution Mechanism available to common people.

#### **Technological Initiatives**

- **E-Courts Mission Mode Project** aims for the computerization of district and subordinate courts with the aim of improving access to justice using technology, which is one of the parts
- **National Judicial Data Grid (NJDG)** is a database of orders, judgments, and cases, created as an online platform under the eCourts Project.
- National Service and Tracking of Electronic Processes (NSTEP) enables process serving and issuing of summons.
- **e-Sewa Kendras** provide e-filing services to lawyers and litigants to bridge the digital divide.
- **Digital Supreme Court Reports (SCR)** aims to make SC judgments available to the citizens of the country free of cost and in electronic format.
- Digital Courts 2.0 application is a recent initiative under the e-Courts project to make court records available to the Judges of the district courts in electronic form.

## WEST BENGAL'S NEW LAW FOR DEATH PENALTY IN RAPE CASES

#### CONTEXT

In response to the tragic rape-murder of a woman medic at RG Kar Medical College and Hospital, the West Bengal Assembly has passed the **Aparajita Woman and Child** (West Bengal Criminal Laws Amendment) Bill, 2024. This bill aims to enhance legal measures for protecting women and children by proposing significant amendments to existing criminal laws.

#### What is the Aparajita Bill?

 The Aparajita Bill seeks to amend the Bharatiya Nyay Sanhita 2023, Bharatiya Nagarik Suraksha Sanhita 2023, and the Protection of Children from Sexual Offences Act 2012, specifically for West Bengal.

#### Amendments to Bharatiya Nyaya Sanhita, 2023 (BNS):

- Section 64 Penalties for Rape:
  - Current Provision: Under BNS, a rape convict faces rigorous imprisonment for not less than 10 years, which may extend to a life term.
  - Aparajita Bill Amendment: The bill enhances the **penalty to a life sentence** for the remainder of the convict's natural life or death. It also mandates a fine that is fair and reasonable to cover the victim's medical expenses and rehabilitation costs.
- Section 66 Penalties for Rape Resulting in Death or Vegetative State:
  - Current Provision: BNS stipulates a jail term of up to 20 years, life imprisonment, or death if rape leads to the victim's death or a vegetative state.
  - Aparajita Bill Amendment: The bill proposes the death penalty as the sole punishment for such cases, eliminating the options of imprisonment or life term.
- Section 70 Penalties for Gang Rape:
  - **Current Provision:** BNS allows for a 20-year jail term, life imprisonment, or death for gang rape.
  - Aparajita Bill Amendment: The bill removes the 20-year imprisonment option, mandating life imprisonment or death for those convicted of gang rape.
- Amendments to the Protection of Children from Sexual Offences (POCSO) Act: The Bill introduces tougher penalties for child abuse cases, aligning with its broader objective of strengthening protections for children.

#### • Key Provisions:

> Capital Punishment: The bill proposes the death

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penalty for individuals convicted of rape if their actions result in the victim's death or a vegetative state. For gang rape and rape, it mandates a life sentence lasting for the convict's natural life.

- Medical Expenses: The bill stipulates that the special rape court will determine the victim's medical expenses, which will be borne by the convict or their family. Failure to pay can result in recovery through legal means.
- ➤ Time-bound Investigations: The bill mandates that investigations into rape cases must be completed within 21 days from the initial report, a reduction from the previous two-month deadline.
- Penalties for Repeat Offenders: Repeat offenders would receive a life sentence, meaning they would be imprisoned for the remainder of their natural life.
- Publication Restrictions: The bill penalizes the unauthorized printing or publishing of matters related to court proceedings with imprisonment of three to five years and a fine.
- Justice Verma Committee strongly opposed the capital punishment.

#### Punishment for rape across the globe

- Egypt- The rapist is hanged till death
- **Israel-** Rape convict gets 4 years minimum and 16 years maximum imprisonment
- United Arab Emirates- Death
- China- Death Penalty is awarded to Rapist
- **Afghanistan-** The rapist is hanged to Death or shot dead by a bullet in the head
- **France-** 10 years of imprisonment, but if victim dies, punishment is increased to 30 years
- **USA-** Maximum punishment granted in 30 years in jail
- Greece- Rapist is punished with incarceration
- Iran- Death Penalty is granted to rapist
- **North Korea-** The offender is either shot in his head or vital organs by a firing squad

## Can states make amendments to national laws?

- Article 254(2) of the Constitution allows state legislatures to enact laws that contradict central laws on matters in the concurrent list, provided these laws receive Presidential Assent.
  - The President is not obligated to grant assent, and there is no stipulated time frame for this process.
- West Bengal is not the first state to propose amendments to central laws. Andhra Pradesh's Disha Bill (2019) and Maharashtra's Shakti Criminal Laws Bill (2020) also sought to impose the death penalty for rape but are yet to receive presidential assent.

	Positive Side		Negative Side
0	Death penalty may act as a strong deterrent against rape and sexual violence by imposing severe consequences, potentially discouraging offenders from committing such heinous acts. For some, the death penalty provides a sense of justice and closure for victims and their families, especially in cases where the crime is exceptionally brutal or leads to death or severe trauma. Executing convicted rapists ensures that they cannot commit further crimes, thereby protecting society from potentially dangerous individuals who might reoffend if given a life sentence. It sends a strong message that sexual violence is intolerable and will be met with the harshest penalties, reflecting a commitment to protecting vulnerable populations.	000000000000000000000000000000000000000	Death penalty could also compel the accused to attemp to murder the victim to prevent her from giving a testimony and avoiding detection. Death penalties may cause a lower rate of conviction and put more pressure on the victim not to report the assault. It would also lead to an increased emphasis on corroborative evidence and a more rigorous and traumatic examination process The death penalty conflicts with the right to life, a fundamental huma right. Capital punishment cases often involve lengthy and complex appeal processes, which can delay justice for victims and strain judicial resources. Research on the death penalty's effectiveness as a deterrent is mixed

**Governor (LG) of Delhi** expanded powers. This change centralizes authority previously shared with the Delhi government.

#### **Key Changes:**

• **Expanded Authority:** The LG now has the **sole authority** to create and oversee various statutory bodies, boards,

and commissions. This includes bodies such as the **Delhi Commission for Women and the Delhi Electricity Regulatory Commission.** 

- Previously, these functions were collaboratively managed with the Delhi government, but the new directive centralizes this power with the LG.
- Control Over Appointments: The LG is now empowered to appoint members to these statutory bodies and commissions. This marks a departure from previous arrangements where the Delhi government and its officials had a significant role in these appointments.

#### Legal and Constitutional Basis:

- Article 239 of the Constitution: Article 239 provides the constitutional framework for the administration of Union territories, specifying that the President administers these regions through appointed administrators, such as the Delhi LG. This article supports the recent changes in administrative powers.
- Section 45D of the Government of National Capital Territory of Delhi Act: The amendment under Section 45D reinforces the President's authority to appoint members and constitute bodies for Delhi. The recent notification aligns with this section, assigning the execution of these powers to the LG.

#### **Implications:**

- Centralization of Power: The new powers consolidate administrative authority with the LG, potentially reducing the influence of the Delhi government in managing statutory bodies and boards.
- Impact on Governance: This shift may lead to a realignment in governance, affecting how statutory bodies operate and are constituted, potentially impacting policy implementation and local governance.

## **FACT BOX**

#### Lieutenant Governor (L-G)

- The Lieutenant Governor is the appointed head of the Union Territory of Delhi.
- The L-G is appointed by the President of India and acts as the representative of the central government in Delhi.
- The role of the L-G is defined under **Article 239** of the Indian Constitution, which governs the administration of Union Territories.
- The L-G operates under the **authority of the President** of India and executes presidential directives in the territory.

## GOVERNMENT PLANS PHASE 2 OF SEMICONDUCTOR INCENTIVE POLICY

#### CONTEXT

The Indian government is preparing for the second phase of its ambitious **semiconductor manufacturing incentive policy**, aiming to bolster the country's position in the global chip industry. The proposed plan could see an increase in funding from \$10 billion to \$15 billion, with adjustments to the subsidy structure to attract more semiconductor manufacturing plants.

#### **Current Status of the Scheme**

- In the initial phase of the semiconductor policy, India committed nearly all of the \$10 billion allocated. This included substantial subsidies to attract both chip fabrication and assembly plants. Notable developments include:
  - ➤ Tata Electronics: Secured approval for an \$11 billion fabrication plant in partnership with Taiwan's Powerchip.
  - Micron Technology: Received approval for a chip assembly plant in Gujarat.
  - Murugappa Group's CG Power: Partnered with Japan's Renesas for another assembly plant.

#### **Proposed Changes in Phase 2**

- Increased Outlay: To remain competitive amidst global efforts to attract semiconductor investments, the government plans to raise the incentive fund to \$15 billion.
- Focus Shift: The new scheme will likely emphasize support for chip fabrication and advanced technologies rather than assembly and testing plants. The government plans to reduce subsidies for assembly and testing plants (ATMP/OSAT) from the current 50% to:
  - > 30% for conventional packaging technologies.
  - ▶ 40% for advanced packaging technologies.
- Support for Raw Materials and Ecosystem: The government is considering offering capital support for essential raw materials, chemicals, gases, and other ecosystem components needed for chip manufacturing.
- Exclusion of Technology Transfer Costs: The new policy may not cover technology transfer costs. Companies seeking to use partner technologies might need to cover these expenses independently.
- Advanced Display Technologies: The policy may also include incentives for the fabrication of micro-LED displays and other advanced display technologies.

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## **FACT BOX**

#### **Semiconductors (Chips)**

- Semiconductors, commonly referred to as chips, serve as the backbone of virtually all electronic devices, powering everything -- from smartphones and laptops to household appliances, and automobiles.
- Much of chip manufacturing are concentrated in countries like Taiwan, Japan, Singapore, and China.
- Semiconductors are crystalline or amorphous solids that have electrical conductivity opposite at temperatures to those of metal, higher electrical resistance than typical resistant materials, but still of much lower resistance than insulators.
- There are two basic groups or classifications that can be used to define the different semiconductor types:
  - Intrinsic material: An intrinsic type of semiconductor material made to be very pure chemically.
  - ► **Extrinsic material**: Extrinsic types of semiconductor are those where a small amount of impurity has been added to the basic intrinsic material.

#### India Semiconductor Mission (ISM)

- The India Semiconductor Mission (ISM) was launched in 2022 with the aim of establishing a robust semiconductor ecosystem within the country.
- This initiative, housed under the Digital India Corporation, is tasked with catalysing semiconductor manufacturing, packaging, and design capabilities in India.

## CORPORATE TAX CUTS: THE CASE OF U.S. AND INDIA

#### CONTEXT

In recent years, two major economies—the United States and India—decided to cut corporate tax rates with hopes of boosting their economies.

#### The U.S. Tax Cuts

 In 2017, the U.S. government passed the Tax Cuts and Jobs Act. One of its biggest changes was lowering the corporate tax rate from 35% to 21%. This meant companies would pay less in taxes, with the goal of encouraging them to invest more in their businesses, create jobs, and improve worker wages.

#### What Were the Results?

 More Investment: Studies show that the tax cuts led to an increase in investment by around 8-14%. This is a positive outcome because investing more in businesses can lead to new technology and higher productivity.

- Wage Increase: However, wages only went up by less than \$1,000 per worker. This is much lower than the \$4,000 to \$9,000 increase that was initially promised.
- Lower Tax Revenue: The U.S. government's tax revenue dropped by nearly 41% because of these cuts. This made it harder for the government to fund various services and programs.

#### **The Indian Tax Cuts**

In 2019, India reduced corporate tax rates as well. For existing companies, the rate went from **30% to 22%**, and for new companies, it dropped from 25% to 15%. The aim was to boost investment and create jobs.

#### What Were the Results?

- Limited Impact on Jobs: Although unemployment has decreased, much of the new employment has been in less secure jobs. The corporate sector hasn't significantly contributed to this improvement, and wages have not increased substantially.
- Shift in Tax Burden: With the reduction in corporate taxes, the share of revenue collected from corporate taxes has decreased. The government now relies more on income taxes and Goods and Services Tax (GST) to make up for this loss.
- Increased Revenue: Despite these challenges, corporate tax collections have grown since the pandemic. However, this hasn't translated into significant benefits for workers or an increase in job security.

#### What's the Takeaway?

Both the U.S. and India aimed to stimulate their economies through corporate tax cuts, but the results have been mixed:

- In the U.S., while investment increased, wages didn't rise as much as expected, and the government saw a big drop in tax revenue.
- In India, the tax cuts didn't significantly boost job security or wages, and the burden of tax revenue has shifted from corporations to individuals.

Tax cuts alone may not be enough to solve broader economic issues. They need to be part of a larger strategy that includes investments in job creation, wage growth, and sustainable fiscal policies.

## FACT BOX

#### Taxation

Indian taxes are broadly divided into two categories:

- Direct Taxes: These are taxes levied directly on individuals and businesses based on their income or profits. The taxpayer pays these taxes directly to the government.
  - Examples include personal income tax and corporate tax.

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- **Indirect Taxes**: These are taxes collected on goods and services rather than directly on income. Consumers pay these taxes when purchasing goods or services, and businesses pass these taxes on to the government.
  - Examples include Goods and Services Tax (GST) and excise duties.

#### Income Tax:

- Personal Income Tax: This is the tax you pay on the money you earn from your job or investments.
- Corporate Income Tax: This is the tax businesses pay on their profits.

#### Corporate Tax:

 Corporate tax is a type of tax that businesses, including companies, pay on their income. In India, both domestic and foreign companies must pay corporate tax based on their earnings.

## AI REDUCES LABOUR INCOME: ILO

#### CONTEXT

The International Labour Organisation's (ILO) World Employment and Social Outlook: September 2024 Update highlights rising global inequality, stagnating labour income shares, and significant youth unemployment or inactivity. The report attributes some of these issues to technological advancements, particularly artificial intelligence (AI).

#### Key Points Made by the Report

- The global labour income share fell by 0.6 percentage points from 2019 to 2022 and has remained flat since, reflecting a long-term downward trend.
- The labour income share continued to decrease since 2019, declining to 52.3pc in 2022 and remaining at that level in 2023 and 2024.
- While the decrease appears modest in terms of percentage points, in 2024 it represents an annual shortfall in labour income of USD 2.4 trillion compared to what workers would have earned had the labour income share remained stable since 2004.
- Impact of Technological Innovations: Technological advancements, especially automation and AI, have led to increased labour productivity and output but have also contributed to a reduced share of labour income.
- **COVID-19 Impact:** The pandemic significantly worsened inequalities, with nearly 40% of the reduction in the labour income share occurring during 2020-2022.
- The report warns that without stronger policy interventions, the labour income share could continue to decline, further entrenching economic disparities.

 To mitigate adverse effects, the report advocates for policies that ensure equitable distribution of technological benefits, including freedom of association, collective bargaining, and effective labour administration.

#### Situation in India

- Labour Income Share: In India, like many other countries, the labour income share has faced challenges due to technological advancements and economic shifts. The impact of automation and AI on Indian industries and labor markets is evident, with significant effects on job security and wage growth.
- Youth Unemployment: India has a high rate of youth unemployment and underemployment, exacerbated by economic disruptions and technological changes. Many young people are either unemployed or not engaged in education or training, impacting their future economic prospects.
- Policy Responses: India has initiated various schemes and policies aimed at boosting employment and skill development, such as the Skill India Mission, Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and the National Career Service (NCS). However, challenges remain in addressing the full impact of AI and ensuring inclusive growth.
- Economic Inequality: Economic disparities in India are widening, influenced by factors such as
  - unequal access to technology
  - regional imbalances
  - concentration of wealth among the top income earners

## **FACT BOX**

#### **About Labour Income**

- Labor Income represents the total value of all forms of employment-based income paid to Households by a given Industry or throughout a defined economy during a specified period of time.
- It represents the portion of total income distributed to workers as opposed to capital income, which goes to owners of capital and assets.
- The labour income share is a widely used measure of **inequality.**
- A declining labour income share indicates that workers are receiving a smaller proportion of total economic output compared to capital owners, contributing to growing income inequality.

## ETHANOL PUSH TURNS INDIA INTO CORN IMPORTER

#### CONTEXT

India has recently embarked on a **new policy paradigm** to permit the blending of maize and grain-based ethanol under the **National Policy on Biofuels (NPB) 2018.** This policy has led to a significant change in its role in the **global corn market**, turning it from a major corn exporter into a net importer for the first time in decades.

#### Why demand for ethanol is increasing?

- Looking to curb carbon emissions, India aims to increase the share of ethanol in gasoline to 20% by 2025-26, from 13% now.
- To achieve its 20% blending target, India will need more than 10 billion litres of ethanol, which is double the volume the country produced in the marketing year ended October 2023.
- This year, around 3.5 million tons of corn has been used to make 1.35 billion litres of ethanol, about four times more than a year earlier.
- Sugarcane can start contributing more from the next season, but it cannot contribute more than 5 billion litres. The government's priority is to fulfil domestic sugar consumption.
- That would mean an increase in corn-based ethanol production to 3 billion litres, requiring nearly 8 million tons of corn.

#### Impact of shift in Corn demand

- Impact on Local Industries: The surge in corn prices due to increased domestic demand has significantly affected India's poultry sector.
  - Rising feed costs, driven by higher corn prices, are pushing poultry producers into financial difficulty. They are calling for government intervention, including duty-free imports and the lifting of restrictions on genetically modified (GM) corn.
- Global Market Disruptions: India's shift from exporter to importer is reshaping global corn supply chains. Countries that traditionally sourced corn from India are now looking to other suppliers, such as South America and the United States, leading to shifts in global corn prices and trade patterns.
- Environmental and Economic Goals: India's goal to increase the ethanol blend in gasoline to 20% by 2025-26 necessitates a significant rise in corn-based ethanol production. This shift reflects India's broader environmental and energy policy goals but also highlights challenges in balancing domestic and global market needs.
- Trade Imbalances: The reversal in India's corn trade balance—transitioning from exporting millions of tons annually to importing a record amount—illustrates the broader impact of its domestic policy changes on international trade dynamics.

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#### **Maize Cultivation**

- In India, maize is principally grown in two seasons, rainy (kharif) and winter (rabi). Kharif maize represents around 83% of maize area in India, while rabi maize correspond to 17% maize area.
- Temperature: 250 Celsius-300 Celsius
- **Soil:** Fertile well-drained alluvial or simply red loams free of coarse elements and full off nitrogen.
- As per estimates, India produced 34.6 million tonnes (mt) of maize in 2023-24. India has 110 lakh hectares under maize cultivation.
- Maize Producing States: Karnataka, Madhya Pradesh, Maharashtra, Telangana, Rajasthan, Tamil Nadu, Bihar, Uttar Pradesh, and Gujarat.
- Globally, maize is grown over 207 million hectares producing over 1,218 mt in 2022-23. The United States remains the largest producer of maize.
- The US, Brazil and Argentina the three largest producers of maize - dominate the global trade of 197 mt of maize exported primarily to China, the European Union, Mexico, Japan, South Korea, Vietnam, Iran and Egypt.
- India barely contributed **3 per cent** at 34.6 mt from around 11 million hectares in 2022-23.

#### **Government Policies for Ethanol Push**

The Government has taken several measures to meet the ethanol blending targets which includes

- National Policy of Biofuels-2018 provided indicative targets of 20% ethanol blending in petrol and 5% biodiesel blending in diesel by 2030.
- Ethanol Blended with Petrol (EBP) Programme: Government has fixed the target of 20% blending of ethanol with petrol by 2025.
- Expansion of feedstock for production of ethanol
- Administered price mechanism for procurement of ethanol under the Ethanol Blended Petrol (EBP) Programme
- Lowered GST rate to 5% on ethanol for EBP Programme
- Amendment in Industries (Development & Regulation) Act for free movement of ethanol across states for blending
- Interest subvention scheme for enhancement and augmentation of ethanol production capacity in the country
- Regular floating of Expression of Interest (EoI) by Public Sector Oil Marketing Companies (OMCs) for procurement of ethanol.

9

• ETHANOL 100, a cleaner, greener alternative to gasoline, boasting lower emissions of greenhouse gases and pollutants, thus aiding in combating climate change and enhancing air quality

## QUICK COMMERCE

#### CONTEXT:

The quick commerce (q-commerce) sector in India is experiencing significant growth, driven by changing consumer preferences for rapid and on-demand delivery. The sector has evolved quickly from near-zero to a major component of the e-commerce market, with projections estimating its value at \$6 billion by 2025. Major players like Blinklt and Zepto dominate the market, while global giants like Amazon are preparing to enter the space.

#### **Key Issues Highlighted:**

- The Indian q-commerce market has surged, with almost 40% of online grocery sales now attributed to q-commerce.
- India's e-commerce market grew 18-20% by value in the first half of 2024, with grocery sales rising over 38%, primarily due to q-commerce.
- Global Trends: Q-commerce is expanding globally, with the Asia-Pacific region holding the largest market share, followed by North America. The global q-commerce market was valued at \$68.82 billion in 2022 and is projected to grow at a CAGR of 22.2% through 2030.

#### • Technological Innovations:

- Dynamic Pricing: Blinklt uses AI algorithms to adjust prices in real-time based on demand and competitor pricing.
- Dynamic Widgets: Swiggy Instamart's dynamic UI rendering allows for real-time updates without new app releases.
- Demand Forecasting: Zepto employs machine learning for accurate demand prediction and efficient inventory management.
- ➤ Smart Logistics: Dunzo utilizes AI for demand prediction, dynamic pricing, automated dispatch, and fraud detection.
- Automated Billing: BigBasket's AI-driven self-billing system enhances efficiency and accuracy in checkout processes.

#### **Reason Behind Innovations:**

- Consumer Demand: The rise in demand for instant delivery and convenience has driven the adoption of advanced technologies in q-commerce.
- **Competitive Edge**: Companies use innovative technologies to maintain a competitive edge in a rapidly growing market.

 Operational Efficiency: Technological solutions are aimed at improving efficiency, reducing errors, and enhancing customer experience.

#### Impact:

- Enhanced Convenience: Q-commerce provides unprecedented convenience, delivering a wide range of products almost instantly.
- **Improved Efficiency:** Innovations such as dynamic pricing and AI-driven demand forecasting have streamlined operations and reduced costs.
- Market Expansion: The growth of q-commerce has expanded the e-commerce market and created new opportunities for technological advancements.
- Potential Applications and Future Directions:
  - The rapid delivery model could extend to critical services, potentially revolutionizing sectors like healthcare.
  - Innovations from q-commerce can be applied to various industries, including government services, enhancing efficiency and responsiveness.

#### PYQ

Q: What are the impediments in marketing and supply chain management in developing the food processing industry in India? Can e-commerce help in overcoming this bottleneck? [2015]

## TARGET 3 "BEYOND 30X30"

#### CONTEXT

**Target 3 of the Kunming-Montreal Global Biodiversity Framework (GBF)** aims to protect 30% of the Earth's lands and waters by 2030. With only six years left to meet the target, the focus is on evaluating current progress, addressing challenges, and preparing for upcoming discussions at the 16th Conference of the Parties (COP16) to the Convention on Biological Diversity (CBD).

#### What is Target 3 "beyond 30x30"?

- Target 3 is a global commitment under the Kunming-Montreal GBF, aiming to protect 30% of the Earth's terrestrial, freshwater, and marine environments by 2030.
- **Components**: Beyond the 30% coverage, Target 3 includes ensuring that protected areas and other effective area-based conservation measures (OECMs) are:
  - ► **Geographically Well-Connected**: Ensuring ecological networks and connectivity.
  - Representative of Biodiversity: Covering all types of ecosystems and species.
  - **Effectively Managed**: Ensuring proper governance and management.
  - Equitably Governed: Respecting the rights of Indigenous Peoples and local communities.

 Inclusion of Indigenous Territories: Recognizing Indigenous and traditional territories as part of the target and ensuring actions are taken with respect for Indigenous rights.

In total, 118 countries have joined a **High Ambition Coalition** to deliver on **30×30's ambitious targets**.

#### What is the Current Status?

- As of August 2024, 17.5% of terrestrial and inland waters and 8.5% of marine areas are protected or conserved. This shows an improvement from the earlier figures of 16% and 8% respectively.
- **India's progress:** India has designated 22% of its terrestrial area and 5% of its marine and coastal areas as protected. Protected areas are those that are designated and managed in order to achieve conservation goals

#### Types of Protected Areas:

- National Parks
- Wildlife Sanctuaries
- Conservation Reserves
- Community Reserves (under the Wildlife (Protection) Act, 1972)
- Reserve Forests, Protected Forests, and Village Forests (under the Indian Forest Act, 1927)
- Lakes and Water Bodies (under the Wetland (Conservation and Management) Rules, 2017)
- Biodiversity Heritage Sites (under the Biological Diversity Act, 2002)

#### Issues

- Coverage vs. Effectiveness: Protecting 30% of the Earth's surface is not sufficient on its own. There is a need to ensure that these areas are effectively managed, equitable, and truly representative of global biodiversity.
- Indigenous Rights and Inclusion: There is a gap in data regarding protected and conserved areas managed by Indigenous Peoples, which skews the overall picture. Ensuring equitable governance and recognizing Indigenous contributions is critical.
- Global Reporting and Standards: Currently, there is no standardized global system for assessing the effectiveness of protected areas. UNEP-WCMC and partners are working to address this gap, but significant challenges remain.

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#### Kunming-Montreal Global Biodiversity Framework

- The Kunming-Montreal Global Biodiversity Framework was adopted in December 2022 by the 15th Conference of Parties to the Convention on Biological Diversity (CBD).
- Among the Framework's key elements are 4 goals for 2050 and 23 global targets for 2030.

 It also signifies the recognition of indigenous people and local communities' rights to land and resources, includes the protection of environmental and human rights defenders, and includes gender equality by recognising women's role in biodiversity conservation.

GSSCORE

## HARNESSING BIOTECHNOLOGY FOR ECONOMIC DEVELOPMENT

#### CONTEXT

In recent years, the growing recognition of **environmental sustainability** and technological advancement has led to significant innovations in biotechnology. One of the most forward-looking initiatives in India, the **BioE3 policy**, aims to harness these advancements to transform the nation's economy and address critical challenges like climate change and resource scarcity.

#### What is the BioE3 Policy?

- The BioE3 policy is an ambitious strategic framework developed by the Indian government to integrate biotechnology into the economic and environmental fabric of the country.
- The policy envisions leveraging the potential of biomanufacturing and other biotechnological advancements to address current and future challenges.
- Although the immediate economic benefits might not be apparent, the policy is designed to build foundational competencies, promote research, train talent, and prepare India for a future where biotechnology plays a crucial role.
- Similar to India's initiatives (Artificial Intelligence Mission, the Quantum Mission, and the Green Hydrogen Mission), the BioE3 policy represents a strategic effort to stay at the forefront of technological advancements and their applications.

#### Key Components of the BioE3 Policy

- Biomanufacturing Hubs: These hubs will serve as centers of innovation where industry partners, start-ups, and researchers can collaborate to produce specialized chemicals, smart proteins, enzymes, functional foods, and other bio-products.
- Focus Areas: The policy emphasizes six critical areas:
  - Bio-Based Chemicals and Enzymes: Developing environmentally friendly chemicals and enzymes using biological processes, reducing reliance on traditional, harmful chemicals.
  - ➤ Functional Foods and Smart Proteins: Creating advanced food products that offer enhanced nutritional benefits and cater to specific health needs.

- Precision Biotherapeutics: Innovating in the field of personalized medicine and therapies that are tailored to individual genetic profiles.
- Climate Resilient Agriculture: Advancing agricultural practices that can withstand climate change and ensure food security.
- Carbon Capture and Utilization: Employing biological processes to capture and convert CO2 into useful compounds, thus addressing greenhouse gas emissions.
- Futuristic Marine and Space Research: Developing technologies for life support systems in space and exploring marine ecosystems for novel bioproducts.

#### **Benefits for India**

GSSCORE

- **Economic Impact:** Biomanufacturing alone is projected to have a significant economic impact, potentially worth \$2-4 trillion over the next decade. By investing in biotechnology now, India aims to be a key player in this growing sector, fostering economic growth and job creation.
- **Environmental Sustainability:** The shift towards bioplastics and bio-based chemicals can significantly reduce environmental hazards associated with traditional plastics and chemicals. Additionally, carbon capture technologies developed through the policy can contribute to climate change mitigation.
- Advancing Technology and Research: By setting up biomanufacturing hubs and focusing on cuttingedge research areas, India positions itself as a leader in biotechnology. This includes advancements in precision medicine, climate-resilient agriculture, and space research.
- Training and Talent Development: The policy aims to educate and train young talent, ensuring that India has a skilled workforce ready to drive future innovations. This proactive approach is crucial for maintaining competitiveness in the global biotech arena.
- Collaborative Efforts: Successful implementation of the BioE3 policy requires collaboration across various government departments and sectors. This multifaceted approach ensures comprehensive support and integration of biotechnological advancements into national strategies.

#### TRIPURA INSURGENCY ENDS

#### CONTEXT

A historic peace agreement was signed in New Delhi, marking the end of a **35-year insurgency** in Tripura. Two insurgent groups (**National Liberation Front of Tripura**, **and All Tripura Tiger Force**) in Tripura have agreed to give up arms and join the mainstream. With the singing of this agreement, Tripura is left with no insurgent groups after many decades.

#### **Key Details of the Agreement**

- The agreement outlines the surrender of arms by over 328 cadres from the NLFT and ATTF.
  - The insurgency in Tripura, which began in 1967, peaked in the late 1980s with the rise of the NLFT and ATTF.
- To facilitate the transition, the Central Government has sanctioned a ₹250-crore package to assist former insurgents in reintegrating into society and accessing various development schemes.
- The Northeastern region of India, encompassing Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura, has faced persistent internal security challenges for decades. This area has been afflicted by a variety of issues including insurgency, ethnic conflicts, economic marginalization, and cross-border infiltration.
- This accord marks the **12th settlement for the Northeast region** and the third related to Tripura.
- It follows several significant peace agreements in the region, including:
  - Achik National Volunteer Council agreement (2014)
  - National Liberation Front of Twipra (Sabir Kumar Debbarma) of 2019
  - Bru Accord (2020)
  - Bodo Accord (2020)
  - Karbi Accord (2021)
  - ► Tribal Peace Agreement (2022)
  - Dimasa National Liberation Army Agreement (2023)
  - Assam-Meghalaya Interstate Border Agreement (2022)
  - Assam-Arunachal Pradesh Inter-State Boundary Agreement (2023)
- The scope of the Armed Forces (Special Powers) Act, or AFSPA, has also been reduced in many parts of the northeast as peace returned gradually.

#### **Government Measures for North-East**

The NER a strategic geographical location situated between India and Southeast Asia over the Bay of Bengal, has emerged as a precinct of promoting development and economic opportunities with international cooperation. The government has taken various initiatives to develop the region, including-

- Act East Policy: Launched in 2014, this policy aims to enhance economic ties between India and ASEAN countries, as well as other East Asian nations. It emphasizes the strategic importance of the Northeast for fostering regional cooperation and development.
- Act East Forum: Initiated in 2017 through a partnership between India and Japan, this forum facilitates close discussions and collaborative efforts focused on the development of the Northeast. It underscores the commitment to leveraging international partnerships for regional advancement.

- Free and Open Indo-Pacific (FOIP) Initiative: In March 2023, Japan launched a new initiative under FOIP to promote stability and prosperity in the Indo-Pacific region. This initiative includes a tripartite collaboration between India, Japan, and Australia, aimed at enhancing connectivity between the Northeast and the broader Indo-Pacific region.
- Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC): BIMSTEC plays a crucial role in facilitating connections and cooperation with countries bordering the Northeast. It supports the development of economic and technical links crucial for the region's progress.
- Connectivity Projects: India actively pursues regional connectivity with Myanmar through critical projects like the Kaladan Multi-Modal Project (KMMP) and the India-Myanmar-Thailand Trilateral Project (IMTTP).
  - The KMMP aims to improve connectivity to India's NER via Bangladesh and Myanmar, linking India's Kolkata port to Myanmar's Sittwe port and extending to Mizoram through highways in Myanmar.
  - The IMTTP, conversely, will connect India's border town, Moreh, to Mae Sot in Thailand via Myanmar, establishing a land route for seamless trade, business, education, and tourism among all three countries.

## THE HARM PRINCIPLE

#### CONTEXT:

Recently, a minor girl was gang-raped in Assam's Dhing area, allegedly by three Muslim men. This incident sparked significant outrage, and Assam Chief Minister Himanta Biswa Sarma made controversial remarks targeting the Muslim community. The remarks, given their potential to incite communal tensions and their derogatory nature, challenge the boundaries of free speech as articulated by **John Stuart Mill (Harm Principle)** 

#### Legal and Ethical Concerns:

- Free Speech vs. Hate Speech: While free speech is a fundamental right under the Indian Constitution, it is subject to "reasonable restrictions" for maintaining public order and protecting communal harmony.
  - The remarks made by Sarma raise questions about the boundary between free speech and hate speech. The Indian legal framework does not explicitly define hate speech, leading to ambiguity in its application.

Hate Speech and Legal Implications: Hate speech, while not clearly defined, is generally understood to include speech that incites violence or discrimination against a particular group. Sarma's comments could be viewed as hate speech if they are seen to incite hostility or violence against the Muslim community. Indian laws such as Section 153A and 295A of the IPC address such offenses, but enforcement can be inconsistent.

#### Philosophical Perspective - John Stuart Mill's Harm Principle:

- Mill's Theory: John Stuart Mill's "harm principle" suggests that freedom of speech should only be restricted when it causes harm to others. Mill argues that the only legitimate reason for restricting freedom is to prevent harm to others, not to prevent harm to oneself.
  - According to Mill, speech that merely offends or disturbs without inciting violence may not justify restriction.
- Application to Hate Speech: Mill's perspective implies that while free speech should be protected, there is a legitimate concern when speech incites violence or discrimination. The challenge lies in defining what constitutes harm, especially in cases where speech could potentially lead to societal or psychological harm, as seen in historical instances like the Rwandan genocide.
- While Mill's harm principle supports minimal restrictions on speech, it also recognizes the need to address speech that causes tangible harm to others. Balancing free speech with preventing harm, particularly in sensitive communal CONTEXTs, remains a complex issue requiring careful legal and ethical consideration.

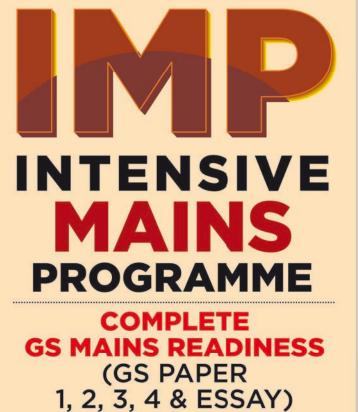
#### **Practical Implications:**

- Impacton Community Relations: Sarma's statements, if viewed as hate speech, could exacerbate communal tensions and contribute to a hostile environment. Such remarks may incite further violence or discrimination against the targeted community, undermining social cohesion.
- State Responsibility and Accountability: When state actors engage in potentially harmful rhetoric, it raises concerns about accountability and the role of regulatory bodies in addressing hate speech. Effective mechanisms are necessary to prevent abuse of free speech and to protect vulnerable communities from incitement and discrimination.

















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# SECTION -B QUICK BYTES

## 85<sup>TH</sup> ANNIVERSARY OF WORLD WAR II OUTBREAK

#### CONTEXT

On **September 1, 1939**, German troops invaded Poland, marking the **beginning of World War II**, the deadliest conflict in human history involving approximately 100 million people from 30 countries. Following this invasion, Great Britain and France declared war on Germany on September 3, 1939, honoring their commitment to assist Poland. This event highlights the failure of the Munich Agreement, signed less than a year earlier, which is now viewed as a significant miscalculation in dealing with Adolf Hitler's expansionist ambitions.

#### **About Munich Agreement**

- Date of Signing: September 29-30, 1938
- Participants: Germany, France, Italy, and Great Britain
- Objective: To address Hitler's demands regarding the Sudetenland, a region of Czechoslovakia with a large ethnic German population.
  - Czechoslovakia was not a signatory and was compelled to agree to the terms under pressure from the signatory powers.
- The Agreement allowed Germany to annex the Sudetenland, which was home to over three million ethnic Germans.

## **ГАСТ ВОХ**

#### World War II (1939-1945)

• World War 2 was a battle between two groups of countries the "Allies" and the "Axis".

- ► Allies: The major Allied Powers were Britain, France, Russia, China and the United States.
- ► Axis: The major Axis Powers were Germany, Italy and Japan.
- The War began on September 1, 1939, when German troops invaded Poland, leading Britain and France to declare war on Germany on September 3, 1939.

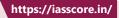
#### Key events included the

- Battle of Stalingrad (August 23, 1942 February 2, 1943), a significant turning point on the Eastern Front
- ► **D-Day (June 6, 1944)**, which marked the beginning of the liberation of Western Europe
- ➤ The atomic bombings of Hiroshima (August 6, 1945) and Nagasaki (August 9, 1945), leading to Japan's surrender and the end of the war.
- The war resulted in the end of European colonial empires, the formation of the United Nations (October 24, 1945), and the onset of the Cold War between the United States and the Soviet Union.

## CONSERVATION OF JAIPUR'S WALLED CITY

#### CONTEXT

In 2019, **Jaipur's Walled City** was honored with **UNESCO World Heritage status**, recognizing its exceptional architectural and cultural value. To ensure the preservation and enhancement of this historic site, the state government has allocated Rs 100 crore for conservation and development initiatives.



#### **About Jaipur's Walled City:**

- The Walled City of Jaipur was founded in 1727 by Sawai Jai Singh II (the ruler of the Kachwaha Rajput dynasty). The city was designed by Vidyadhar Bhattacharya, a Bengali architect, and was built according to the principles of Vastu Shastra, an ancient Indian system of architecture.
- Architectural Features: It is a prime example of Vedic urban planning, combining ancient Hindu, Mughal, and Western architectural styles.
  - The city's grid-based layout, characterized by its pink facades, large public squares (*chaupars*), and colonnaded streets, was pivotal in its recognition as a UNESCO World Heritage Site.

Key landmarks include the City Palace, Jal Mahal, Hawa Mahal, Amber Fort, Jaigarh Fort, and Nahargarh Fort.

- There are 8 gates in Jaipur including the Jorawar Singh Gate, Surajpole Gate, Sanganeri Gate, New Gate, Ajmeri Gate, Chandpole Gate, Ghat Gate, and Samrat Gate.
  - > Famous dances of Jaipur: Ghoomar, Chari
  - > Traditional instruments: Sarangi, Ektara, and Jhalar

## 🅑 FACT BOX

#### Kachwaha Rajput dynasty

- The Kachwaha are a Rajput clan who ruled a number of kingdoms and princely states such as Alwar, Amber (now Jaipur), Maihar and Talcher in India. Their largest kingdom was Jaipur (Jainagara).
- Maharaja Sawai Jai Singh II is regarded as the head of the extended clan of Kachhwaha.
- The Kachwaha Rajputs are believed to be the descendants of Kush the eldest son of Shri Ram. This Kshatriya clan of Rajput thus belongs to the Suryavanshi/Sooryavanshi.

## PARIS ZINC ROOFERS SEEK UNESCO HERITAGE STATUS

#### CONTEXT

The zinc covering the roofs of central Paris has given the French capital's skyline its distinctive grey hue for almost two centuries. The French culture ministry has chosen the zinc roofers as the country's entry for the **UNESCO list of Intangible Cultural Heritage**.

#### About

- The rooftops of Paris are made using zinc and are built in the Mansard roof style.
  - These zinc rooftops were largely installed across Paris during the city's massive redo during the 1800s

under city planner Baron Haussmann. He chose zinc as it was cheap, light, weather repellant, and easy to install.

- Paris has 128,000 roofs covering a surface area of 32 million square metres, of which 21.4mn are of the traditional zinc-covered variety.
- Heating Problem: The zinc the covers almost 80% of Parisian roofs has come under criticism for its role in overheating buildings.
  - Darker roofs absorb more solar energy, leading to increased indoor temperatures.
  - The heat retention of zinc roofs contributes to the urban heat island effect

## ARCHAEOLOGICAL SURVEY OF INDIA (ASI) INSCRIPTIONS PROJECT

#### CONTEXT

The Archaeological Survey of India (ASI) has recently undertaken the task of copying significant stone inscriptions from various temples in Tamil Nadu to preserve and study these historical records.

#### Key details of the project:

#### Locations and Temples Involved:

- ► Tiruchi District:
  - Mattrurai Varadeswarar Temple at Thiruvasi, Manachanallur taluk.
  - Agneeswarar Temple at Periya Karuppur village, Srirangam taluk.
- Theni District:
  - Mayapandieswarar Temple and Varadharaja Perumal Temple at Melmangalam, Periyakulam taluk.
- Madurai District:
  - Moolanathaswamy Temple in Sholavandan taluk.
- Methodology: Inscriptions are copied onto maplitho papers to create accurate reproductions. These copies are then used for detailed study. The process involves tracing the inscriptions to preserve the exact details for further research.

#### • Major inscriptions identified:

- Thiruvasi Temple Inscriptions: Believed to date back to the Kulothunga Chola period; exact dates are pending further analysis.
- Periya Karuppur Temple Inscriptions: Date back to the 14th Century|during the Vijayanagara Kingdom, with references to donations made to temples.
- ➤ Theni Temples Inscriptions: From the 12th Century, with references to the Pandiya king

**Sundarapandiyan** and **Devadana** (land donated to temples).

 Madurai Temples Inscriptions: Found on nearly 30 pillars at Moolanathaswamy Temple.

## **CONSERVATION OF HAMPI**

#### CONTEXT

Hampi, a **UNESCO World Heritage Site**, stands as a testament to the grandeur of the **Vijayanagara Empire**. Despite its historical significance and designation as a **World Heritage Site in 1986**, Hampi faces ongoing challenges in conservation, management, and community integration.

#### **About Hampi**

- Hampi is a **UNESCO World Heritage Site** on the southern bank of the **Tungabhadra river** in the Vijayanagara district of Karnataka.
- It was a **fortified city and the capital of the Vijayanagara empire** in the 14th century.
- It is totally bounded by mountains (Anjaneya, Malyavanta and Matanga Hills) by the three sites and rest one site is bordered by Tungabhadra River.
- Architecture: The structures boast of Dravidian architecture. It is characterized by their massive structures, cloistered enclosures, and enormous towers over the entrances encased by pillars engraved with folklore and mythologies.
- Important complex: Krishna temple complex, Narasimha, Ganesa, Hemakuta group of temples, Achyutaraya temple complex, Vitthala temple complex, Pattabhirama temple complex, and the Lotus Mahal complex

 Today, the site is a sprawling expanse of around 250 square kilometers, housing approximately 1,600 monuments that range from majestic temples to crumbling ruins

#### About Vijayanagara Empire

- The Vijayanagara empire was based in the Deccan, in peninsular and southern India, from 1336 onwards. At its zenith, the empire controlled much of southern India and was renowned for its opulence.
- Founded by: Harihara I (Hakka), and his brother Bukka Raya.
- **Duration:** It lasted from about 1336 to perhaps about 1660
- Dominance and Regional Power: During the 15th and 16th centuries, the Vijayanagara Empire established itself as a dominant force in southern India. The empire effectively served as a bulwark against invasions from the Turkic Sultanates of the Indo-Gangetic Plain and remained a formidable competitor to the five Deccan Sultanates that emerged in the northern Deccan region.
- Relations with the Portuguese: Around 1510, the Portuguese captured Goa, which had been under the control of the Sultan of Bijapur. The subsequent establishment of trade relations between the Portuguese and Vijayanagara became crucial for both parties.
- Cultural and Architectural Zenith: The Vijayanagara Empire is often regarded as having reached its zenith during the reign of Krishna Deva Raya, who ruled from 1509 to 1529.
  - Key architectural achievements from Krishna Deva Raya's reign include the Hazara Rama Temple, the Krishna Temple, and the Ugra Narasimha Idol, all located in Vijayanagara.

	Sangama Dynasty	Saluva Dynasty	Tuluva dynasty
0 0 0 0 0 0 0 0 0 0 0 0 0	Harihara I (Deva Raya) 1336-1343         Bukka I 1343-1379         Harihara II 1379-1399         Bukka II 1399-1406         Deva Raya I 1406-1412         Vira Vijaya 1412-1419         Deva Raya II 1419-1444         (unknown) 1444-1449         Mallikarjuna 1452-1465         Rajasekhara 1468-1469         Virupaksha I 1470-1471         Praudha Deva Raya 1476         Rajasekhara 1479-1480         Virupaksha II 1483-1484         Rajasekhara 1486-1487	<ul> <li>Narasimha 1490-?</li> <li>Narasa (Vira Narasimha) ?-1509</li> <li>Krishna Deva 1509-1530</li> <li>Achyuta 1530-1542</li> <li>Sadasiva (in name only) 1542-1567</li> </ul>	<ul> <li>Rama (ruled in practice) 1542-1565</li> <li>Tirumala (ruled in practice) 1565-1567</li> <li>Tirumala (crowned ruler) 1567-1575</li> <li>Ranga II 1575-1586</li> <li>Venkata I 1586-1614</li> </ul>

- Decline and Fall: Following Krishna Deva Raya's death in 1529, his successors were Achyuta Raya (1530-1542) and Sada Siva Raya (1542-1565). However, the effective power during this period was wielded by Rama Raya of the third dynasty. Rama Raya's aggressive policies and provocations eventually led to the formation of a coalition of the Deccan Sultanates against Vijayanagara.
  - The turning point came in 1565 with the Battle of Talikota, where the Vijayanagara forces were decisively defeated by the alliance of the Deccan Sultanates. Rama Raya was killed in the battle. The fall of Vijayanagara marked the end of the last significant Hindu kingdom in the Deccan.
- Foreign travelers, including the *Portuguese Domingo Paes*, who visited in 1520, noted Hampi's magnificence, comparing it to **Rome in grandeur**.
- Despite this, Hampi remained largely forgotten until the late 18th century, when British explorers like Colin Mackenzie and Alexander Greenlaw began documenting its ruins.
  - Mackenzie created the first map of Hampi in 1799, while Greenlaw's photographs from the 1860s captured the site before significant restoration efforts began.

#### NAGALAND LANDSLIDE

#### CONTEXT

Due to incessant rain in the past few weeks and cloud burst, a massive landslide occurred in Nagaland's Pherima village.

#### Why Landslide Took Place in Nagaland?

- A landslide is defined as the **movement of a mass of** rock, earth, or debris down a slope.
- Triggering factors: It can be triggered by various factors, including rainfall, undercutting of slopes, earthquakes, snowmelt, overgrazing, terrain cutting, and excessive development.
  - Rainfall is a primary natural trigger, influencing landslides through its combined action on topography, geology, soil, and vegetation.
- Nagaland's hilly terrain, consisting of steep slopes and high relief, is highly susceptible to landslides. The state is predominantly composed of shales and sandstones, which are often sheared, fractured, and weathered.
- Saturation of these rocks with water builds up high porewater pressure, leading to a loss of shearing strength and collapse of the soil structure.
- Repeated thrusting and faulting further weaken the rocks, making them prone to rock falls and debris slides.
- Monsoon Influence: Landslides in Nagaland are exacerbated during the monsoon season when heavy rainfall increases the risk of landslides. The combination of steep slopes and saturated soil creates a high vulnerability to landslides.

#### Landslide Vulnerability in India

- **Extent of Vulnerability:** Approximately 0.42 million square kilometers of India's landmass, or about 13% of its area, is prone to landslides. This includes regions across 15 states and four Union Territories.
- Northeastern Region: About 0.18 million square kilometers, or 42% of the vulnerable area, is in the Northeastern region, characterized by hilly terrain and a high incidence of earthquakes, which are significant landslide triggers.
- Regional Distribution: The Northwest Himalayas account for 66.5% of landslides in India, followed by the Northeast Himalayas at 18.8%, and the Western Ghats at 14.7%.

## **FACT BOX**

#### Landslide Atlas of India

- The "Landslide Atlas of India" has been generated by the National Remote Sensing Centre (NRSC), Hyderabad, part of the Indian Space Research Organisation (ISRO).
- This atlas provides detailed information on landslideprone areas across the country, aiding in risk assessment and management.

## **CYCLONE ASNA**

#### CONTEXT

A deep depression currently situated over Saurashtra and Kachchh regions of Gujarat is expected to intensify into a **cyclonic storm** (Cyclone Asna). Cyclone Asna would be the first cyclone to form in August in the **North Indian Ocean (NIO) region** since 1981 and the first in the Arabian Sea since 1976.

#### What are Cyclones?

- A cyclone is a **large-scale system of air** that rotates around the centre of a **low-pressure area**.
- The cyclone forms around the low-pressure area, called a depression, along a zone of cold and warm air exchange called the 'eye wall'. The eye is the central and calmest part of the cyclone.
  - From this eye wall, long, arching cloud and rain systems called rainbands spiral outwards, which bring alternating periods of intense rain and calm spells during a cyclone.
- The air circulates inward in an:
  - ► anticlockwise direction in the Northern hemisphere
  - clockwise in the Southern hemisphere

https://iasscore.in/

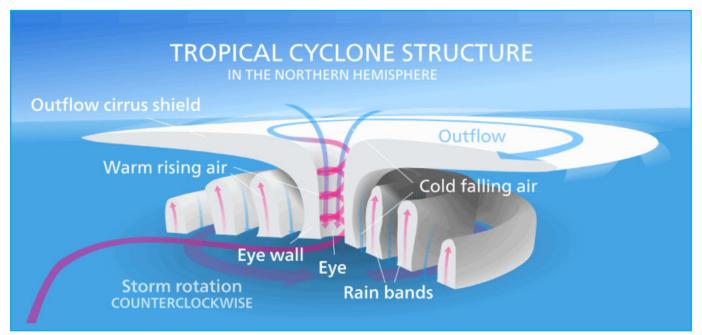


Figure No. 01

#### Cyclones are classified as:

Extra tropical cyclones (also called temperate cyclones): They occur outside of the tropic. They have "cold air at their core, and derive their energy from the release of potential energy when cold and warm air masses interact"

**Tropical cyclones**: Tropical cyclones are those which develop in the regions between the Tropics of Capricorn and Cancer

• India is exposed to nearly 10 per cent of the world's tropical cyclones. More cyclones occur in the Bay of Bengal than the Arabian Sea and the ratio is approximately 4:1.

## 🖉 ГАСТ ВОХ

#### Worldwide terminology

- Cyclones are given many names in different regions of the world – They are known as:
  - > Typhoons in the China Sea and Pacific Ocean
  - ► **Hurricanes** in the West Indian islands in the Caribbean Sea and Atlantic Ocean
  - Tornados in the Guinea lands of West Africa and southern USA
  - ► Willy-willies in north-western Australia

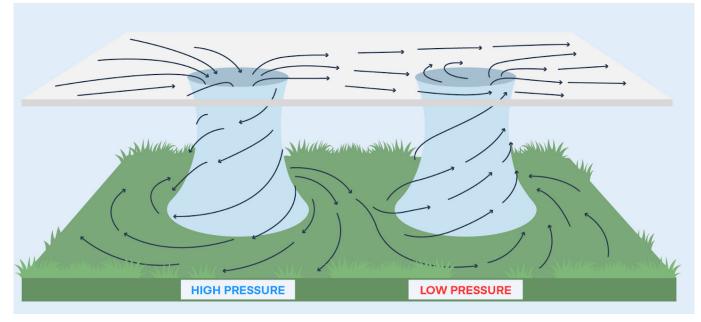


Figure No. 02

**Tropical cyclones** in the Indian Ocean

## High Pressure Area and Low Pressure Area

- **In high-pressure systems**, air descends toward the ground, resulting in stable atmospheric conditions.
- **In low-pressure systems**, air rises, leading to more unstable atmospheric conditions.

(see Figure No. 2 below)

## TELANGANA AND ANDHRA PRADESH BATTLE FLOOD FURY

#### CONTEXT

Massive floods, due to relentless rain disrupted life in Andhra and Telangana, following a low-pressure system in the Bay of Bengal.

#### What factors are responsible?

- The torrential rains were fueled by a low-pressure system in the Bay of Bengal.
- The situation had intensified, with Vijayawada caught between the surging Krishna river on one side and the overflowing Budameru rivulet, known as the 'Sorrow of Vijayawada', on the other.
  - The Budameru rivulet, which originates in Khammam district, saw a significant rise in floodwaters.

#### River of Telangana and Andhra Pradesh

- Telangana is drained by two major rivers namely, Godavari (in the north) and Krishna (in the south) and their tributaries before entering in to the state of Andhra Pradesh (riverine state) and finally to Bay of Bengal. Telangana is separated from Andhra Pradesh by the Krishna River, which acts as a geographical divider between the two.
  - Other rivers such as Bhima, Manair, Penganga, Akeru, Dindi, Manjeera, Paleru, and Pedda Vagu also irrigate the state.
- Andhra Pradesh like many other states of India is a riverine state with two major rivers – the Godavari and the Krishna – and, three medium size rivers – Penner, Nagavali, Vamsadhara – along with many other minor streams, flowing through it, and it is the 'rice bowl' of India.
- Krishna River is the third-longest river of the country, originating in the Satara District of Maharashtra in the Western Ghats. This rivers flows across the state of Karnataka before reaching Telangana and Andhra Pradesh.

- ► **Bhima** is one of the prominent tributaries of Krishna River in Telangana.
- River Godavari is the second-longest river of the country. This river originates in the Nashik district of Maharashtra and runs across the Deccan Plateau, before crossing Telangana and entering the Bay of Bengal.
  - > Manjeera is one of its major tributaries.
- (See Map No: 1 on next page)

#### INDIA-BRUNEI RELATIONS

#### CONTEXT

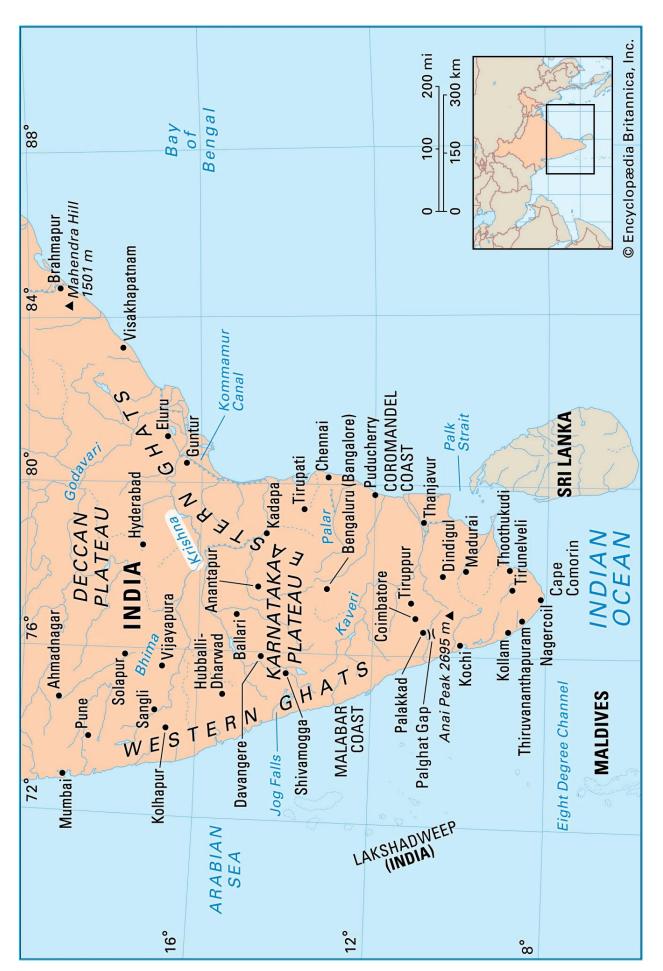
Prime Minister Narendra Modi is on a two-day visit to Brunei, the first by an Indian PM. This visit marks 40 years of diplomatic relations between India and Brunei.

#### **Key-highlights of the visit**

- Modi is the first Indian Prime Minister to make a state visit to Brunei, while Bolkiah – who has ruled his country for the last 57 years – made two state visits to India, in 1992 and 2008.
- The two sides renewed a memorandum of understanding (MoU) on **space-related cooperation**.
- ISRO has a telemetry tracking and telecommand centre in Brunei that tracks and monitors those Indian satellites and satellite launch vehicles that are launched eastward.
- The space document is the only MoU the two sides signed during Modi's visit.
- Apart from space, India and Brunei also discussed enhancing cooperation on issues relating to defence, connectivity, trade and investment, energy, health, pharmaceuticals and tourism among others.

#### India-Brunei Relations

- The diplomatic relations between India and Brunei were established in **1984** following Brunei's independence from the British.
- The year 2024 marks the 40th anniversary of the establishment of the relationship between the two countries.
- **Common membership:** United Nations, NAM and Commonwealth.
- Brunei is part of India's 'Act East' Policy and Indo-Pacific Vision.
  - The 'Act East' Policy was formulated as the next step to the 'Look East' Policy which originated in the 1990s.
- Brunei is India's key partner in the ASEAN region. As Country Coordinator in ASEAN-India relations from July 2012 to June 2015, Brunei played an important role in India's engagement with ASEAN.



Map No. 02

21

- Brunei is also a participant country in India's Nalanda University endeavour.
- Indo-Bruneian bilateral trade amounted to \$195.2 million as of 2023 and there are about 14,000 Indians living in Brunei as per the MEA's estimates.

## 💋 ГАСТ ВОХ

#### Istana Nurul Iman Palace

- PM Modi met Sultan Hassanal Bolkiah, the ruler of Brunei, at the Istana Nurul Iman Palace, the official residence of the Sultan.
- The Istana Nurul Iman Palace, located near Brunei's capital, Bandar Seri Begawan, is the world's largest residential palace and has its name registered in Guinness World Records. It boasts 1,788 rooms, 257 bathrooms and 44 staircases made of 38 kinds of marble.
- Istana Nurul Iman was commissioned by **Sultan Hassanal Bolkiah** in 1981.
- It was designed by Filipino architect Leonardo Locsin.
- The palace's architectural design is a blend of Brunei's Islamic culture and Malay traditions.

#### SHE-BOX PORTAL

#### CONTEXT

The government launched a centralised platform 'SHe-Box portal', designed to make workplaces safer for women by addressing and managing complaints of sexual harassment.

#### **About SHe-Box Portal**

- The SHe-Box portal is an online platform to file complaints related to sexual harassment at the workplace.
- Nodal Ministry: Ministry of Women and Child Development (MWCD)
- The portal would function as a centralised repository for information related to internal committees and local committees across the country, covering both the government and private sectors.
- The portal will allow women to file complaints, track their status, and ensure that the grievances are processed in a timely manner.
- It also features a designated nodal officer to enable real-time monitoring of complaints, thereby providing a streamlined and assured redressal process.
- It also aligns with the government's broader vision of Viksit Bharat by 2047, with a strong emphasis on women-led development

## 🕑 FACT BOX

#### **About SHe-Box**

- Launched in: 2018
- Sexual Harassment electronic Box (SHe-Box) aims to provide a single window access to every woman, irrespective of her work status, whether working in organised or unorganised, private or public sector, to facilitate the registration of complaint related to sexual harassment.
- To enforce She-box effectively, MWCD intimated under Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act (the SH Act), 2013.
  - The act provides a safety measure to all women registering at the portal by securing all the information such as address, names of witnesses, inquiry proceedings or any action taken by the employer.

## SMART CITIES MISSION (SCM)

#### CONTEXT

The **Smart Cities Mission (SCM)**, which was launched to enhance the quality of life in urban spaces, has completed more than 90% of the total projects.

#### About Smart Cities Mission (SCM)

- Launched in: 2015
- The Smart City Mission is designed to enhance urban infrastructure, ensure a sustainable environment, and improve the quality of life for city residents.
- The mission encompasses the development of over 8,000 multi-sectoral projects with a total investment of approximately Rs 1.6 lakh crore, set to be completed by March 31, 2025.
- Current Progress: As of now, 7,188 projects, or 90% of the total, have been completed with a cumulative expenditure of Rs 1.4 lakh crore. The remaining 830 projects, valued at Rs 19,926 crore, are in the final stages of development.
- Implementation: The mission is carried out primarily through two approaches:
  - First, under the mission, cities are being developed using an Area-Based Development (ABD) approach, where each of the 100 cities has selected a defined area for targeted interventions. These ABD areas, chosen through citizen participation, are being developed as replicable models for other parts of the city.
  - Second, every city has included Pan-City Projects, which are technology-driven solutions.

 Some of the major projects under the SCM include Integrated Command and Control Centres (ICCC), which utilise data for making informed decisions, CCTV surveillance cameras which have aided in crime monitoring, emergency call boxes, public address systems and traffic enforcement systems for red light violations and automatic number plate recognition have been installed, enhancing public safety.

## FAME POLICY FOR ELECTRIC VEHICLES

#### CONTEXT

The government is expected to finalise the third phase of its flagship electric mobility adoption scheme FAME. FAME 3 will replace the temporary **Electric Mobility Promotion Scheme (EMPS) 2024**, which is set to expire in September.

#### About Faster Adoption and Manufacturing of Electric and Hybrid Vehicles (FAME)

- Fame India scheme is an incentive scheme that encourages the adoption of electric and hybrid vehicles.
- It was launched by the Ministry of Heavy Industries and Public Enterprises.
- Manufacturers and infrastructure providers of electric vehicles receive this incentive in the form of subsidies.
- Fame India scheme is a part of the **National Electric Mobility Mission Plan.**
- Fame India Scheme operates in two phases. These are,
  - **Phase I:** The first phase of Fame India Scheme started in 2015 and was functional till 31st March 2019.
  - ➤ Phase II: The second phase of this scheme started in April 2019 for three years. It was later extended up to March 2024 with an additional outlay of Rs 1,500 crore.

#### **Other Government Schemes for EVs**

- Production Linked Incentive (PLI) Scheme for Automotive Sector: The Government approved the PLI Scheme for Automotive Sector in 2021 with a budgetary outlay of Rs. 25,938 crores to support domestic manufacturing of vehicles. Electric vehicles are covered under this PLI scheme.
- PLI Scheme for Advanced Chemistry Cell (ACC): The Government approved PLI Scheme for manufacturing of ACC for 50 GWh in the country. Additionally, 5GWh of niche ACC technologies is also covered under the Scheme.
- GST on EVs has been reduced from 12% to 5%; GST on chargers/ charging stations for EVs has been reduced from 18% to 5%.
- Ministry of Road Transport & Highways (MoRTH) announced that the battery-operated vehicles will be given green license plates and be exempted from permit requirements.

## 23<sup>RD</sup> LAW COMMISSION OF INDIA

#### CONTEXT

The **23rd Law Commission** has been constituted for a period of three years, effective September 1, following the conclusion of the term of the **22nd Law Commission** on August 31.

#### About the New Commission

- The new commission will advise the government on complex legal issues.
- It will consist of a full-time chairperson, four full-time members, and the secretaries of the Department of Legal Affairs and the Legislative Department as ex-officio members.
- Appointment of Members: The commission can include serving Supreme Court and High Court judges as its chairperson and members, continuing the precedent set by the 21st and 22nd Law Commissions. However, recent commissions have predominantly been headed by retired judges or former Chief Justices of High Courts.
- The terms of reference include reviewing the judicial administration system to make it more responsive to the demands of the time. Among the goals are eliminating delays, simplifying High Courts rules and implementing a framework for case flow management.
- It also includes examining laws in the CONTEXT of the Directive Principles, which advocate for a Uniform Civil Code under Article 44 of the Constitution.

## 🕑 FACT BOX

#### Law Commission of India

- Law Commission of India is a non-statutory body. It acts as an advisory body to the Ministry of Law and Justice
- The Commission was originally constituted in 1955 and is re-constituted from time to time.
- It is constituted by a notification of the Ministry of Law & Justice, Department of Legal Affairs with a definite terms of reference to carry out research in the field of law and the Commission makes recommendations to the Government (in the form of Reports) as per its terms of reference.
- The Law Commission has taken up various subjects on references made by Department of Legal Affairs, Supreme Court and High Courts and submitted 277 reports. The Law Commission of India provides excellent thought provoking and vital review of the laws in India.

## ANDAMAN AND NICOBAR ISLANDS INTEGRATED DEVELOPMENT CORPORATION

#### CONTEXT

The Andaman and Nicobar Islands Integrated **Development Corporation (ANIIDCO)** is currently under scrutiny due to its role as the project proponent for a massive Rs 72,000 crore infrastructure development project on Great Nicobar Island.

#### About ANIIDCO

- ANIIDCO was founded on June 28, 1988, under the Companies Act.
- **Objective**: To develop and commercially exploit natural resources for balanced and environmentally friendly development of the Andaman and Nicobar Islands.
- Main Activities: Trading petroleum products, Indianmade foreign liquor, and milk; managing tourism resorts; and infrastructure development for tourism and fisheries.
- Financial Performance: Average annual turnover of ₹370 crore and a profit of ₹35 crore over the last three financial years.

#### Concerns Regarding ANIIDCO's Capability

- Lack of Environmental Policy: ANIIDCO did not have an environment policy or cell when appointed as project proponent in July 2020.
- Delayed Recruitment: Only began recruiting experts in late 2022, over two years after being appointed.
- Conflicts of Interest: Several ANIIDCO employees hold civil servant positions related to environmental and tribal welfare issues, suggesting possible conflicts of interest. Despite these concerns, ANIIDCO received environmental clearance in November 2022.

## 🕑 ГАСТ ВОХ

#### **Great Nicobar Project**

- The project, promoted by **NITI Aayog**, is in **Great Nicobar**, southernmost island in the Andaman and Nicobar archipelago, a **biodiversity hotspot and tectonically active zone.**
- It includes constructing a trans-shipment port, a greenfield airport, a tourism and township development, and a solar and gas-based power plant.

## SUBMARINE RESCUE SUPPORT COOPERATION

#### CONTEXT

In a significant milestone to develop bilateral naval cooperation, the Indian Navy and the South African Navy have signed an **Implementing Agreement (IA)** that ensures the safety of the **South African Navy's submarine crew** in times of distress or accident.

#### **Key-highlights of the Agreement**

- Under this agreement, the Indian Navy will provide assistance by deploying its Deep Submergence Rescue Vehicle (DSRV) when required, further strengthening the collaborative ties between the two navies. This partnership reinforces the longstanding maritime relationship between India and South Africa.
- Need: In 2023, three South African Navy personnel were killed after an incident at sea off the coast of Cape Town with SAS Manthatisi, one of the three HDW submarines from Germany in service. South Africa is among a handful of African countries with submarines.

#### Capabilities of India's Deep Submergence Rescue Vehicle (DSRV)

- A **deep-submergence rescue vehicle** (**DSRV**) is a type of deep-submergence vehicle used for the rescue of sunk submarines and clandestine missions
  - ► A clandestine operation is an intelligence or military operation carried out in such a way that the operation goes unnoticed by the general population or specific enemy force).
- While DSRV is the term most often used by the United States Navy, other nations have different designations for their vehicles.
- India procured two DSRVs from the UK, operationalized in 2018 and stationed in Mumbai and Visakhapatnam. The DSRV can reach depths up to 650 meters and rescue up to 14 people at a time. It is equipped with a remotely operated vehicle (ROV).
- The DSRV system is modular, consisting of 24 components for ease of transportation by road, sea, or air.
- It can be deployed from the mother ship INS Sabarmati or heavy transport aircraft like IL-76 and C-17.

## INS ARIGHAT, INDIA'S SECOND NUCLEAR-POWERED BALLISTIC SUBMARINE

#### CONTEXT

The Indian Navy welcomed its second Arihant-Class submarine, INS Arighat, at the Shipbuilding Centre (SBC) in Visakhapatnam.

#### **About INS Arighat**

- The name "Arighat" is derived from the Sanskrit term meaning "Destroyer of the Enemy."
- INS Arighat can reach a speed of 12–15 knots (22–28 km/h) on the surface and up to 24 knots (44 km/h) when submerged. It features four missile launch tubes and can carry up to four K-4 Submarine Launched Ballistic Missiles (SLBMs) with a range exceeding 3,500 kilometers or twelve K-15 SLBMs with a range of about 750 kilometers.
  - The K-15 missile can be fitted with a strategic nuclear warhead, and in addition to these missile systems, INS Arighat will also be armed with torpedoes.

#### India's submarine fleet

 India's submarine fleet includes six new Kalvari-class boats already delivered, with 15 more scheduled as part of Projects 75 AS, 76, and 75 India.

- India will now have two SSBNs INS Arihant (S-2) and INS Arighat -- patrolling the high seas as a crucial part of the country's nuclear triad and second-strike capability (due to its no-first-use policy).
  - India's first SSBN, INS Arihant, was commissioned in 2016. Both submarines are part of a four-SSBN project, with two more, currently known as S4 and S4\*, still under construction.
- The Navy has sought approval for two more nuclearpowered conventionally armed submarines (SSNs) from the government.
- With this, India continues to strengthen its nuclear triad, enhancing its ability to maintain a credible second-strike capability. The addition of INS Arighat, the second SSBN (Ship, Submersible, Ballistic, Nuclear), marks an important milestone in India's nuclear submarine program.

