

DAILY CURRENT AFFAIRS (DCA)

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Table of Content

Ambedkar Jayanti

Startup India Fund of Funds 2.0

Subhas Chandra Bose: The Paradox of a Revolutionary's Theory and Praxis

Rising Vulnerability of India's Middle Class

EAM Addressed the 9th Indian Ocean Conference

NEWS IN SHORT

Whip

Right to Vote in India

India Rejects China's Fictitious Naming of Places in Arunachal Pradesh

Project HIM SAROVAR

Transition Metals

CAFE-III Norms

National Agriculture Market (e-NAM)

Atlantic Meridional Overturning Circulation (AMOC)

AMBEDKAR JAYANTI

Context

- On April 14, India commemorates **Ambedkar Jayanti**, marking the **135th birth anniversary of Dr. BR Ambedkar**.

About Dr. Bhim Rao Ambedkar

- Early Life:** Baba Saheb Dr. Bhim Rao Ambedkar was born on 14 April 1891.
 - He belonged to a Dalit (Scheduled Caste) family and faced severe caste discrimination.
 - Despite hardships, he excelled in education with strong determination.

Major Contributions:

- In Framing of Constitution:** He is known as the **principle architect of the Constitution**, as the Chairman of the Drafting Committee of the Indian Constitution, he ensured inclusion of: Fundamental Rights, Equality before law and Abolition of untouchability (Article 17).
 - His vision established a democratic framework with checks and balances among the Executive, Legislature, and Judiciary.
 - He considered the 'Right to Constitutional Remedies', enshrined in Article 32, as the '**heart and soul**' of the Indian Constitution.
- Social:** He led movements against caste discrimination and advocated for dalit rights, gender equality and social justice.
 - He founded **Bahishkrit Hitkarini Sabha** (Society for Welfare of the Ostracized) and led social movements such as Mahad Satyagraha in 1927, Kalaram Satyagraha in Nashik (1930).
- Political:** He was the **first Law Minister** of independent India and also founded political organizations like the **Independent Labour Party (1936)**.
 - He advocated for **reservation/affirmative action for SCs and STs**.
 - Promoted labour rights** such as 8-hour workday, maternity benefits, etc.
 - Worked for women's rights, including reforms in Hindu personal laws.
- Major Literary Works:** Annihilation of Caste, The Problem of the Rupee, Who Were the Shudras?, Mooknayak (fortnightly newspaper, in 1920) and The Bahiskrit Bharat (newspaper, 1927).
- Conversion to Buddhism:** In 1956, he embraced Buddhism along with millions of followers.
 - He started a socio-religious movement for equality and dignity.
 - Dr Babasaheb Ambedkar was conferred with the title of "**Bodhisattva**" by the Buddhist

monks at "Jagatik Buddhism Council" in 1954 in Kathmandu, Nepal.

Legacy:

- He is known as the "Father of the Indian Constitution".
- He was awarded Bharat Ratna (posthumously in 1990).
- His birth anniversary (14 April) is celebrated as Ambedkar Jayanti.

Source: IE

STARTUP INDIA FUND OF FUNDS 2.0

Context

- The Government of India has notified Startup India Fund of Funds 2.0 (FoF 2.0) with a corpus of ₹10,000 crore to mobilize capital for startups.

What is Startup India Fund of Funds (FoF 2.0)?

- It is a **government-backed fund** designed to **indirectly invest in startups** through SEBI-registered **Alternative Investment Funds (AIFs)**.
- Total corpus:** ₹10,000 crore, to be deployed over **16th and 17th** Finance Commission cycles.
- It builds upon the earlier **Fund of Funds for Startups (FFS 1.0)** launched in **2016** under the **Startup India Action Plan**.
- Objectives:** It aims to enhance access to venture capital for startups across sectors and stages.
 - It seeks to **provide a focused thrust on innovation-driven manufacturing** and the **development of long-gestation technologies**, which typically face funding constraints.

Governance and Monitoring Mechanism of FoF 2.0

- Selection of AIFs:** A Venture Capital Investment Committee (VCIC) will screen and recommend eligible **Alternative Investment Funds (AIFs)**.
- Implementation Agency:** Small Industries Development Bank of India, will be the primary Implementation Agency (IA) for FoF 2.0.
- Oversight Mechanism:** An **Empowered Committee (EC)** will be constituted under the chairmanship of the Secretary of Department for Promotion of Industry and Internal Trade to monitor implementation and performance of the scheme.

Startup Ecosystem of india

- India is the world's **third-largest startup ecosystem** (after the US and China), featuring over **120 unicorns** (valued >\$1 billion) and over 157,000 government-recognized startups.

- **The startup ecosystem is growing** at ~12–15% annually, with some years witnessing even higher growth (~30%).
- **Key Sectors:** Dominant sectors include **Fintech, E-commerce, Supply Chain, and Health-tech.**
- **Regional Hubs:** Bengaluru, Mumbai, Hyderabad, and Delhi-NCR.
- **Job Creation Engine:** Startups have generated over **21 lakh jobs**, making them a major employment driver.
- **Funding Landscape:** Startups raised around **\$10–11 billion in 2025**, maintaining India's position as a top funded ecosystem.

Eligibility Criteria for a Startup

- **Company Age:** The period of existence and operations should not exceed 10 years from the date of incorporation.
- **Company Type:** Incorporated as a Private Limited Company, a Registered Partnership Firm, or a Limited Liability Partnership.
- **Annual Turnover:** Should have an annual turnover not exceeding **Rs. 100 crore** for any of the financial years since its incorporation.

- ♦ **A deep tech company** can consider itself a start-up for as long as **20 years** and has a turnover of up to **₹300 crore.**
- **Original Entity:** An entity should not have been formed by splitting up or reconstructing an already existing business.

Challenges in India's Startup Ecosystem

- **Funding Constraints:** Early-stage startups often struggle with insufficient capital, affecting hiring, marketing, and operations.
- **Misreading Market Demand:** A major reason for startup failure is the lack of real market need, with nearly 42% startups failing due to poor demand assessment.
- **Talent Retention:** Startups face difficulty in attracting and retaining skilled talent due to competition from established firms.
- **Concentration in Few Sectors:** Majority of funding is concentrated in fintech, e-commerce, and edtech.
 - ♦ **Critical sectors like manufacturing, agritech, and deep-tech** remain underfunded.

Schemes Strengthening India's Startup Ecosystem

Scheme	Ministry	Objective
Atal Innovation Mission (AIM) (2016)	NITI Aayog	Foster nationwide innovation culture
GENESIS (Gen-Next Support for Innovative Startups) (2022)	Ministry of Electronics & IT (Meity)	Deep-tech startups in Tier II/III cities
Technology Incubation and Development of Entrepreneurs (TIDE) 2.0 (2019)	Ministry of Electronics & IT (Meity)	ICT startup incubation & scale-up
MeitY Startup Hub (MSH) (2016)	Ministry of Electronics & IT (Meity)	Integrate tech startup ecosystem
NIDHI (National Initiative for Developing and Harnessing Innovations) (2016)	Department of Science & Technology (DST)	Support S&T startups from idea to market
Startup Village Entrepreneurship Programme (SVEP) (2015)	Ministry of Rural Development (DAY - NRLM)	Promote rural entrepreneurship
ASPIRE (Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship) (2015)	Ministry of MSME	Strengthen rural enterprise incubators
Prime Minister's Employment Generation Programme (PMEGP) (2008)	Ministry of MSME (KVIC)	Subsidised credit for self-employment

Way Ahead

- **Shift from "Valuation-led" to "Value-led" Growth:** There is a need to Move beyond the unicorn obsession towards sustainable, profitable business models.
- **Deep-Tech Priority:** Treat sectors like AI, semiconductors, space tech, biotech as part of economic and national security.
- **Decentralised Innovation Clusters:** Move beyond metro-centric growth to cluster-based innovation ecosystems such as;
 - ♦ Agri-tech clusters in rural belts,

- ◆ Manufacturing clusters in industrial corridors,
- ◆ Deep-tech hubs near research institutions.

Source: PIB

SUBHAS CHANDRA BOSE: THE PARADOX OF A REVOLUTIONARY'S THEORY AND PRAXIS

In News

- Recently, it has been highlighted that Subhas Chandra Bose moved from idealism to a practical, balanced approach combining moral vision with effective action.

Subhas Chandra Bose

- **Early life:** He was a major Indian nationalist leader in the freedom struggle against British rule.
 - ◆ He was born on 23 January 1897 in Cuttack, Odisha, and was an academically brilliant student who studied in Calcutta, later going to England to prepare for the Indian Civil Services (ICS).
 - ◆ Despite clearing the ICS examination, he chose to resign and join the freedom movement under the leadership of Mahatma Gandhi.

Contribution in Freedom struggle

- He was elected President of the Indian National Congress in 1938 at the Haripura session, where he advocated making swaraj a national demand and opposed British-controlled federation plans.
- In 1939, he was re-elected after defeating the Gandhi-backed candidate Dr. Pattabhi Sitaramayya, but soon faced internal opposition when he was unable to form a working committee.
 - ◆ As a result, he resigned from the Congress presidency and was replaced by Rajendra Prasad.
- He formed the **Forward Bloc** to unite the more radical left-wing members within the Congress.
 - ◆ In 1940, he was arrested before launching a protest against the "Black Hole of Calcutta" memorial and was later released in December after a hunger strike.
- During World War II, he sought support from Axis powers, including meeting Adolf Hitler in Germany and later moving to Japan.
- He led the **Indian National Army (INA)**, formed from Indian prisoners of war and expatriates, to fight against British forces in Southeast Asia.

Ideological differences between Subhas Chandra Bose and Mahatma Gandhi

- Gandhi supported a **gradual path to independence**, while Bose demanded immediate and decisive action.
- Gandhi rejected materialism and modern technology, whereas Bose viewed technology and mass production as essential for India's progress and dignity.
- Gandhi favored a decentralized social order and was skeptical of the modern state, while Bose believed a strong centralized state was necessary to solve India's problems.
- Bose also rejected Gandhi's strict commitment to non-violence.
- Despite these differences, Bose respected Gandhi's importance and was the first to call him the "**father of the nation**" in a 1944 broadcast from Singapore on Azad Hind Radio.

Philosophy

- Subhas Chandra Bose evolved from **Vedanta-inspired idealism to a pragmatic, dialectical worldview** combining spirituality with Hegelian thought.
- He developed **Samyavada**, a doctrine of harmony that sought to synthesize opposing ideologies and build a modern socialist India based on equality, industrialization, and social justice.
- He believed independence meant not just political freedom but full social and economic transformation through centralized planning and rapid modernization.
- His political vision blended moral ideals with practical state-building, though it also included support for strong centralized authority during reconstruction.

Death and Legacy

- He is believed to have died in a plane crash in Taiwan in August 1945, though the circumstances remain disputed.
- He is remembered in India as a national hero symbolizing courage, sacrifice, and determination in the freedom struggle.

Governments steps to honour

- Since 2021, January 23 has been observed as Parakram Diwas to honour Subhas Chandra Bose and inspire courage, especially among youth, by celebrating his legacy of bravery and patriotism.
- Each year features commemorative events, including the inaugural ceremony at Victoria

Memorial Hall in 2021, a hologram statue at India Gate in 2022, naming of 21 Andaman and Nicobar islands after Param Vir Chakra awardees in 2023, and a 2024 event held at the Red Fort, highlighting his connection to India's freedom struggle.

Indian National Army (INA)

- It was formed on 17 February 1942 after the British surrender in Singapore, mainly consisting of Indian prisoners of war captured by the Japanese in Southeast Asia.
- Subhas Chandra Bose took command of the INA in Singapore on 4 July 1943, leading a force of about 12,000 soldiers.
- He gave the famous call “Delhi Chalo” and aimed to march toward Delhi to liberate India from British rule.
- In 1944, the INA advanced into India, reaching areas like Imphal and Kohima, but the campaign ultimately failed at Imphal.
- By 1945, British forces had regained control in Burma, forcing the INA into retreat.

Source :TH

RISING VULNERABILITY OF INDIA'S MIDDLE CLASS

Context

- India has reduced income-based poverty, but widespread economic vulnerability and limited upward mobility persist, shifting the policy focus from poverty alleviation to income security and mobility.

Changing Approach to Welfare Measurement

- **Traditional poverty measures** classify individuals as **poor or non-poor** based on a fixed income threshold.
- **The World Bank** has proposed measuring welfare by assessing the **distance from a reasonable standard of living**.
 - ♦ This approach **treats well-being as a continuum** rather than a binary condition.
 - ♦ It helps in identifying vulnerable populations who are just above the poverty line but lack economic stability.

Trends in India's Growth Experience

- **Decline in Poverty but Rise in Vulnerability:** A large number of individuals have crossed the poverty line due to economic growth, but many of these continue to live with low and unstable incomes.

- **Emergence of a Vulnerable Middle Class:** India is witnessing the expansion of a “vulnerable middle” rather than a stable and secure middle class.
 - ♦ This group is characterised by limited savings, lack of social protection, and uncertain employment conditions.
- **Informalisation of Workforce:** A significant proportion of India's workforce continues to be employed in the **informal sector lacking job security, written contracts, and social security benefits**.
- **Sectoral Imbalances in the Economy:** The manufacturing sector has not expanded sufficiently to absorb surplus labour from agriculture.
 - ♦ A significant share of the workforce remains engaged in agriculture despite its low contribution to GDP.
- **Rising Inequality:** Income and wealth inequality have increased alongside economic growth.
 - ♦ A disproportionate share of national income is concentrated among the top income groups.

Socio-Economic Implications

- **Labour Market Distress:** High levels of unemployment, particularly among youth and educated individuals, persist.
- **Financial Fragility of Households:** Household financial savings have declined while debt levels have increased.
- **Human Development Challenges:** Indicators such as child malnutrition and stunting remain significant concerns.
 - ♦ **Poor health and nutrition outcomes** affect long-term productivity and economic mobility.

Initiatives taken by Government

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** The scheme aims to provide industry-relevant skill training to youth in order to improve employability and enhance job opportunities.
- **Production Linked Incentive (PLI) Scheme:** The government has introduced the PLI scheme to boost domestic manufacturing and integrate India into global value chains, which can generate large-scale formal employment if effectively implemented.
- **Digital Public Infrastructure (DPI):** Platforms such as **Aadhaar, UPI, and DBT** have improved financial inclusion, reduced leakages, and enabled direct income support, thereby enhancing household resilience.

- **e-Shram Portal:** The government has created a national database of unorganised workers to enable targeted delivery of social security benefits.

Way Ahead

- The government should **promote labour-intensive manufacturing sectors** such as textiles, food processing, and electronics assembly to generate large-scale employment opportunities.
- The government should **increase public investment in education** in order to improve learning outcomes and employability of the workforce.
- The government should **strengthen the Direct Benefit Transfer (DBT)** system to provide timely and targeted financial support to vulnerable households.

Source: TH

EAM ADDRESSED THE 9TH INDIAN OCEAN CONFERENCE

Context

- The External Affairs Minister addressed the **9th Indian Ocean Conference**, which was centered on the theme “**Collective Stewardship for Indian Ocean Governance.**”

EAM Highlighted Five Key Priorities for Indian Ocean Nations:

- **Need for Stability:** The Indian Ocean is not merely a geographic space but a living ecosystem that sustains economies, livelihoods, connectivity, resources and shared cultural heritage.
 - ♦ He warned that any disruption to this interconnected system has far-reaching consequences, underscoring the need for stability and careful stewardship.
- **Historical Ties:** Countries of the region must continue efforts to overcome historical barriers and deepen regional cooperation and stress the importance of stronger economic linkages, improved connectivity and the revival of traditional ties.
- **Changing Global Order:** EAM highlighted the changing nature of the global order, noting that the world has become more competitive, inward-looking and fractured, prompting countries to seek more reliable partnerships and greater resilience.
- **Concern over Choke Points:** He pointed to the growing concern over “choke points,” both physical and conceptual.

- ♦ Overcoming the controlled mindset is essential for the well-being of the international economy,” he added.

- **Deeper Cooperation:** EAM called for deeper cooperation among Indian Ocean nations, describing the region as a “Global South ocean” facing shared challenges.

The Indian Ocean Conference

- It was started in **2016** by **India Foundation** in association with think tanks and institutions from the region, with participation from **30 countries**.
- **In the last 8 years**, the Conference has emerged as the flagship forum for countries to discuss and deliberate on issues of mutual interest.
- Over the years, the Conference has been addressed by over a 100 Ministers from 55 countries.
- The Conference provides a **platform** to deliberate upon the prospects of regional cooperation for Security And Growth for All in the Region (SAGAR).

Significance of the Indian Ocean Region (IOR)

- **Geostrategic Importance:** The Indian Ocean is the third largest ocean, linking the Middle East, Africa, South Asia, and Southeast Asia.
 - ♦ It is home to **crucial maritime chokepoints** i.e Strait of Hormuz, Bab-el-Mandeb, Malacca Strait, Lombok Strait which together handle a bulk of global energy and trade flows.
 - ♦ The IOR acts as a **bridge between the East and the West**, making it a central theatre for power competition among India, China, the U.S., and other major players.
- **Economic Significance:** The region carries nearly 50% of global container traffic and 80% of seaborne oil trade.
 - ♦ It is a hub of blue economy activities: shipping, fisheries, seabed mining, and tourism.
- **Energy Security:** The IOR is the lifeline of global energy flows: oil and gas from West Asia transit to East Asia via its sea lanes.
 - ♦ Countries like India, China, Japan, and South Korea are energy-import dependent, making stability of the IOR vital.
- **Blue Economy Potential:** The IOR offers opportunities in fisheries, seabed minerals, renewable energy, and tourism—requiring secure seas for sustainable exploitation.

Need to Strengthen Maritime Security in IOR

- **Indo-Pacific Construct:** The Indo-Pacific combines the Indian and Pacific Oceans into one strategic theatre and highlights the centrality of IOR in shaping new global maritime order.

- **Implications for Global Order:** Control over the IOR can shape:
 - ♦ Trade flows (especially oil & gas),
 - ♦ Strategic maritime chokepoints (like the Strait of Hormuz, Malacca, Bab el-Mandeb),
 - ♦ Military posturing and base logistics.
- **Fragmented maritime governance:** Many littoral states lack capacity for surveillance, law enforcement, and HADR (humanitarian & disaster response).
- **Diverse asymmetric threats:** Illegal, unregulated and unreported (IUU) fishing, trafficking, piracy resurgence and attacks on commercial shipping complicate security.
- **Expansion of Chinese Naval Power in IOR:** Increased naval vessel deployments in the region in terms of both number and duration.
 - ♦ Deployment of Chinese research and survey vessels to gather sensitive oceanographic and marine data under the guise of scientific research.

Government Initiatives

- **Sagarmala Programme:** Focuses on leveraging India's coastline and of navigable waterways.
 - ♦ Supports port infrastructure, coastal development, and connectivity.
 - ♦ Financial aid for projects like coastal berths, rail/road connectivity, fish harbours, cruise terminals.
- **Maritime India Vision 2030 (MIV 2030):** Aiming for India to become a top 10 shipbuilding nation by 2030 and create a world-class, efficient, and sustainable maritime ecosystem.
- **Sagarmanthan Dialogue:** An annual maritime strategic dialogue to position India as a global center for maritime conversations.
- **Maritime Development Fund:** 25,000 crore fund for long-term financing to modernize ports and shipping infrastructure, encouraging private investment.
- **Launch of MAHASAGAR** (Mutual and Holistic Advancement for Security and Growth for All in the Region) reflects India's strategic rebranding in the IOR.
- **Naval Modernisation and Indigenous Development:** India is modernising naval capabilities:
 - ♦ Commissioning indigenous warships (e.g., INS Vikrant, INS Visakhapatnam).
 - ♦ Boosting maritime domain awareness and power projection.
 - ♦ This strengthens India's force posture and maritime deterrence in the IOR.

- **India's Response and Regional Diplomacy:** India is working with regional partners to raise awareness about the long-term implications of Chinese infrastructure projects.
 - ♦ Emphasize the risks to internal and regional security from China's military use of these assets.

Conclusion

- India's maritime security initiatives reflect a blend of military capability, infrastructure readiness, regional partnerships, and legal-institutional frameworks.
- Initiatives such as Act East Policy, Indo-Pacific Vision, and Blue Economy strategy reinforce India's centrality in the IOR.

Source: MEA

NEWS IN SHORT

WHIP

Context

- The ruling political party has issued a **three-line whip to all its MPs**, urging them to remain present in their respective Houses during the extended Budget session of Parliament.

What is Whip?

- **A whip** refers to an order **to members of a party in the House** to abide by a certain direction of the party.
- Political parties issue whips to their MPs to either vote for or against the bill, depending on their party line.
 - ♦ Once the whip is issued, the MPs from each party will **necessarily have to obey the whip** or else risk losing their seat in Parliament.
- The term is derived from the old **British practice of "whipping in"** lawmakers to follow the party line.
- **It is not mentioned in the constitution** but is considered a parliamentary convention.
- Parties appoint a senior member from among their House contingents to issue whips — this member is called a **chief whip**, and he/ she is assisted by **additional whips**.

Types of Whip

- **There are three kinds.**
 - ♦ **A one-line whip** just informs members about a vote but permits them to abstain.
 - ♦ **A two-line whip** asks them to be present but does not tell them how to vote.

- ♦ **The three-line whip**, largely the norm these days, directs members to be present and vote as per the party line.

Importance of a whip

- The whip maintains discipline, secure attendance of, and gives necessary information to, members of the party.
- It is a **channel of communication** between the political party and the members of the party in the legislature.
- They also serve the **function of gauging the opinion** of the members, and communicating it to party leaders.

Source: TH

RIGHT TO VOTE IN INDIA

Context

- The Supreme Court of India has reiterated that a person born in India has the right to remain on the electoral roll and to vote.

About

- The Supreme Court of India has held that the **right to be included in the electoral roll and to vote** is also a **“sentimental right.”**
- The observation came amid large-scale voter deletions during the **Special Intensive Revision (SIR)** of electoral rolls in West Bengal ahead of Assembly elections.

Right to Vote in India

- **Article 326** of the Indian Constitution provides that every citizen of India, not less than **18 years of age** is entitled to be registered as a voter for Elections to the House of the People and Legislative Assembly of every State on the basis of **adult suffrage**.
- However, voting is a **statutory right**, not a fundamental right (as held by the Supreme Court of India in various judgments).
 - ♦ In the case of **N.P. Ponnuswami v. Returning Officer (1952)**, the Supreme Court of India held that the right to vote and the right to contest elections are statutory rights.
 - ♦ The SC in **Kuldip Nayar v. Union of India (2006)** reiterated that voting is a **statutory right**, though crucial for democracy.

Source: TH

INDIA REJECTS CHINA'S FICTITIOUS NAMING OF PLACES IN ARUNACHAL PRADESH

In News

- India has strongly rejected China's attempts to assign “fictitious names” to places it considers part of its territory, calling such actions “mischievous” and harmful to bilateral relations.

China's actions

- China claims Arunachal Pradesh as “southern Tibet” (Zangnan) and has issued multiple lists of renamed locations since 2017, which India consistently rejects as invalid.
- China is creating administrative units such as He'an and Hekang counties in areas of Ladakh, including parts of Aksai Chin, which is a long-standing border dispute region.
- China has also reportedly created a new county, Cenling.

Cenling

- It is located near the Karakoram mountain range, which falls in the vicinity of Pakistan-occupied Kashmir (PoK) and Afghanistan's Wakhan corridor.

He'an

- It included parts of the Aksai Chin plateau, which has been in focus because of the long-running India-China border issue.

India's Response

- The Ministry of External Affairs (MEA) reiterated that regions like Arunachal Pradesh and other disputed areas are “integral and inalienable” parts of India.
- India views such moves in the broader context of border tensions and strategic concerns, including the **China-Pakistan Economic Corridor (CPEC)**, which India opposes due to sovereignty issues over PoK.

Line of Actual Control (LAC)

- The LAC is the **demarcation** that separates Indian-controlled territory from Chinese-controlled territory.
- India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km.
- It is divided into three sectors: the eastern sector which spans Arunachal Pradesh and Sikkim, the middle sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh.

Source :TH

PROJECT HIM SAROVAR

Context

- Project Him Sarovar has been launched in **Ladakh**.

About

- Aim:** The project aims at **scientific snow harvesting** and the creation of water bodies to address the pressing challenge of water scarcity in Ladakh.
- The project will build **storage ponds** to collect melting snow and glacial water.
 - These ponds will support irrigation and rural water needs.
- The initiative also aims to develop a **local model for climate-resilient water management**.
 - As valleys in Ladakh rely on snowfall and glaciers for their water needs, unpredictable weather changes are leading to water scarcity, severely affecting the livelihood of villagers.
- The project has received support from the Indian Army, ITBP, BRO, and local communities.
- Significance:**
 - This will help boost **local livelihoods and agriculture** in the region.
 - It will address **water scarcity, boost irrigation, and enhance climate resilience in region**.

Source: ET

TRANSITION METALS

Context

- Recent research published in Nature has demonstrated that **aluminium** can mimic certain catalytic properties of **transition metals**.

What are Transition Metals?

- Transition metals are elements **located in the d-block** of the periodic table and are characterised by **partially filled d-orbitals**.
 - Examples:** Palladium, Platinum, and Rhodium.
- Applications:** These metals are widely **used as catalysts** due to their **unique electronic configurations**. Their catalytic properties significantly reduce reaction time and improve yield and efficiency.
 - They play a vital role in **petrochemical refining, polymer manufacturing, and agrochemical industries**.

Key Properties of Transition Metals

- Transition metals **exhibit variable oxidation states**, which allow them to gain and lose electrons easily.
- They facilitate **Redox Reaction processes**, which are essential for catalytic activity.
- They form **stable complexes with ligands**, enabling controlled chemical transformations.

Significance for India

- Transition metals are **rare and expensive**. Aluminium is abundant, inexpensive, and widely available in India.
- Aluminium-based catalysts can reduce import dependence on critical transition metals.

Source: TH

CAFE-III NORMS

Context

- The **Corporate Average Fuel Efficiency (CAFE) III norms** are proposed to be implemented from April 1, 2027, to March 31, 2032, with stricter fuel efficiency requirements for automobile manufacturers.

About CAFE Norms

- Corporate Average Fuel Efficiency or CAFE norms were first introduced in **2017** under the **Energy Conservation Act, 2001**, as part of India's efforts to curb fossil fuel dependence and air pollution from road transport.
- Issued by the **Bureau of Energy Efficiency (BEE)**, the fuel efficiency regulations apply to **M1 category vehicles**—passenger cars with seating for up to nine persons and a maximum weight of 3,500 kg.
- The regulations set limits on corporate average fuel consumption, measured in litres per 100 kilometres, based on the average weight of vehicles sold by an automaker during a financial year.
- Since fuel consumption and carbon dioxide (CO₂) emissions are directly linked, the rules aim to reduce carbon intensity by pushing companies to improve the efficiency of their overall fleet.
- Phases of CAFE Norms:**
 - The first phase, implemented in 2017–18, capped average fuel consumption at 5.5 litres/100 km and emissions at <130 gm CO₂/km.
 - The second phase, in force since 2022–23, tightened this to 4.78 litres/100 km and <113 gm CO₂/km.

- ♦ The third iteration, CAFE III (or CAFE 2027), proposes to reduce permissible fuel consumption to a range of 3.72–3.01 litres/100 km, with emissions expected to fall below 91.7 gm CO₂/km.

Source: BS

NATIONAL AGRICULTURE MARKET (E-NAM)

Context

- The **e-NAM portal** reflects increasing market integration, with the number of connected mandis rising from 1,389 in 2024 to 1,656 as of March 2026, spanning **23 States and 4 Union Territories**.

About National Agriculture Market (e-NAM)

- **Pan-India electronic trading portal** for agricultural commodities.
- Integrates **APMC mandis into a unified national market**.
- Operated by the **Small Farmers Agribusiness Consortium (SFAC)** under the Ministry of Agriculture.
- Objectives:
 - ♦ **'One Nation, One Market'** for agricultural produce;
 - ♦ Better **price discovery, transparency, and competition**.

Key Features

- **Online Trading Platform:** Farmers can sell produce electronically across markets; and removes **geographical barriers**
- **Quality Assaying:** Scientific quality testing ensures **fair pricing**
- **Transparent Bidding System:** Reduces middlemen/cartelization; and promotes **competitive price discovery**
- **Unified License:** Traders can operate across multiple mandis
- **Online Payment System:** Direct payment to farmers reduces delays & exploitation

e-NAM Portal

- **Single-Window Service:** Commodity arrivals, quality assaying, bidding, payment, all on one platform.
- **Unique Lot ID Tracking:** Each lot tracked from gate entry to final sale via mobile.
- **Live Price Dashboard:** Real-time commodity prices, mandi arrivals, trade volumes, publicly accessible.
- **12-language Interface:** Hindi, English, Gujarati, Marathi, Telugu, Bengali, Tamil, Odia and others.
- **Secondary Sale Module:** Enables resale of already-purchased lots within the platform.
- **Inter-state Trade Facility:** State Unified License enables traders to bid across State boundaries.

Source: PIB

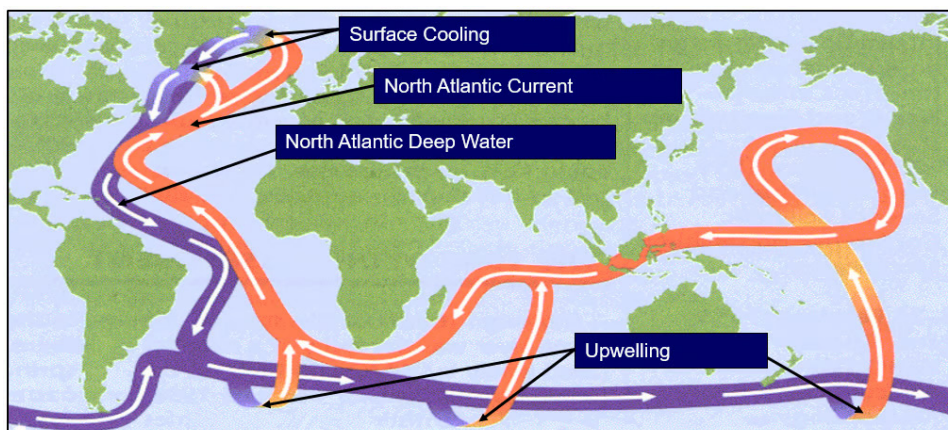
ATLANTIC MERIDIONAL OVERTURNING CIRCULATION (AMOC)

Context

- Recent scientific studies highlight that the weakening **Atlantic Meridional Overturning Circulation (AMOC)** could trigger **major climatic disruptions**.

What is AMOC?

- The AMOC is a large system of ocean currents that transports heat:
 - ♦ Warm, salty water flows **northward near the surface** (e.g., Gulf Stream)
 - ♦ Cold, dense water sinks in the North Atlantic and flows **southward at depth**.
- It regulates **global climate**, keeps **Europe warmer than comparable latitudes**, and drives **rainfall patterns in tropics**.
- In the **North Atlantic**, water cools, becomes denser, and **sinks**. It then flows **southward at depth**, completing a **circulation loop**.



Importance

- Keeps **Europe relatively warm** despite high latitude.
- Influences **Indian monsoon patterns**.
- Regulates **global climate and rainfall distribution**.
- Supports **marine ecosystems** by nutrient circulation.

Evidence of Weakening

- Observational data (last 20 years) shows **consistent decline in AMOC strength**.
- Western Atlantic boundary contributes **about 90% of weakening**.
- Strongest decline observed at **16.5°N latitude**.

Impacts of AMOC Collapse

- **Carbon Cycle Disruption:** Release of **47–83 gigatonnes of CO₂** into the atmosphere.

- ♦ **The Southern Ocean shifts** from carbon sink to carbon source, adding about **0.2°C global warming**.
- **Temperature Changes:**
 - ♦ **Northern Hemisphere:** Arctic cooling up to **7°C**; reduced heat transport and **sea-ice albedo feedback**.
 - ♦ **Southern Hemisphere:** Antarctic warming up to **6–10°C**.
- **Global Temperature Effect:** Net global warming increase: **0.17–0.27°C**.
- **Oceanic and Atmospheric Changes:** AMOC weakening disrupts **monsoons, storm tracks, and marine ecosystems**
 - ♦ It can trigger **cascading tipping points**.

Source: DTE

