

DAILY CURRENT AFFAIRS (DCA)

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99TH BIRTH ANNIVERSARY OF BHUPEN HAZARIKA

Context

 Recently, the Prime Minister of India penned a heartfelt tribute on the occasion of Bhupen Hazarika's 99th birth anniversary.

About Dr. Bhupen Hazarika

- Early Life and Education: Dr. Bhupen Hazarika, also known as the 'Bard of Brahmaputra' and 'Sudhakantha' (the Nightingale), was born on September 8, 1926, in Sadiya, Assam, to Nilakanta and Shantipriya Hazarika.
 - Later, his family later moved to Guwahati, Dhubri, and Tezpur, where he was introduced to the world of music and cinema.
 - By 1936, he had recorded his first song in Kolkata and sung for Agarwala's film Indramalati.
 - In 1949, he secured a scholarship at Columbia University, completing his **Ph.D. in 1952** on audio-visual techniques in adult education.

Multifaceted Career

- Teaching and Early Career: Hazarika briefly worked at All India Radio, Guwahati, and later as a lecturer at Gauhati University.
 - He composed the university's anthem Jilikaba Luitare Paar before moving to Kolkata to pursue music and cinema full-time.
- Music and Cultural Contributions: His music reflected nature, love, and fraternity, drawing richly from Assamese landscapes and tribal traditions.
 - Songs like Bistorno Parare (inspired by Robeson's Ol' Man River) and Xoixobore Dhemalite captured both local beauty and universal struggles.
 - He composed in Assamese, Hindi, Bengali, and several other languages, spreading messages of unity and peace.
- Cinema: Notable Assamese films include Era Bator Sur (1956), Shakuntala (1960), and Siraj (1988).
 - His influence reached Hindi and Bengali cinema with films such as *Rudaali* (1994) and *Simana Periye* (1978).
 - He created documentaries like *Through Melody and Rhythm* (1977) showcasing Northeast India's folk culture.

Political and Social Engagement

 He was elected to the Assam Legislative Assembly in 1967 and served as President of the Assam Sahitya Sabha in 1993. He worked to bridge diverse communities, promoting fraternity across Northeast India's many tribes and cultures, through Indian People's Theatre Association (IPTA).

Awards and Recognition

- Dr. Bhupen Hazarika received numerous national and international honors:
 - Dadasaheb Phalke Award (1992);
 - National Film Award (1975) for Chameli Memsahab:
 - Padma Shri (1977), Padma Bhushan (2001),
 Padma Vibhushan (2012, posthumous),
 Bharat Ratna (2019, posthumous);
 - Muktijoddha Padak (2011, Bangladesh, posthumous).
- He was honored with commemorative postal stamps and the naming of the Dr. Bhupen Hazarika Setu, India's longest river bridge.

Legacy

- Dr. Bhupen Hazarika passed away on November
 5, 2011, in Mumbai. His life embodied the spirit of Assam and the Northeast, weaving music, poetry, and cinema into a unifying cultural force.
- His songs, sung across borders and generations, remain timeless testaments to humanity, fraternity, and the beauty of life.
- Bhupen Hazarika's journey epitomized the spirit of Ek Bharat, Shreshtha Bharat. Through his art, he gave Assam visibility on the national stage and shaped its modern cultural identity.

Source: IE

INDIA'S FOREIGN CAPITAL PARADOX

Context

India is the world's fastest-growing major economy, with its annual GDP increase averaging 8.2% during 2021 to 2024, yet, it is not attracting commensurate foreign capital inflows.

About

- India is among the world's fastest-growing major economies (GDP growth 7.4% in Jan–Mar 2025, 7.8% in Apr–Jun 2025).
- Despite this momentum, foreign capital inflows are declining, creating a "foreign capital paradox".
 - Normally, high growth attracts global investors. In India's case, inflows are not commensurate with its growth performance.



Trends in Capital Flows

- The net capital flows into India includes foreign investment, commercial borrowings, external assistance and non-resident Indian deposits.
- It was just **\$18.3 billion in 2024-25**, the lowest since the \$7.8 billion in the global financial crisis year of 2008-09 and well below the all-time-high of \$107.9 billion in 2007-08.
- The trend has continued in the current fiscal, with capital inflows during 2025 falling over 40% compared to that for 2024.
 - This was despite a stronger-than-expected
 GDP growth of 7.8% in the latest quarter.

Net Foreign Direct Investment

- Net FDI is gross FDI, which is the total money coming in, minus the money being repatriated out by foreign companies doing business in India and the outward FDI by Indian companies.
 - Net FDI = Gross FDI Inflows (Repatriation by foreign firms + Outward FDI by Indian firms).
- Key Components:
 - Gross FDI Inflows: Total new investments made by foreign entities into the country. It includes setting up factories, acquiring local companies, or expanding operations.
 - Repatriation & Disinvestment: Profits or capital that foreign companies send back to their home countries. Includes sale of assets or shares in domestic firms.
 - Outward FDI: Investments made by domestic companies in foreign countries (e.g., acquisitions, setting up subsidiaries).

Why Net FDI Matters?

- Positive Net FDI: Indicates more foreign investment is coming in than going out, often seen as a sign of economic attractiveness.
- Low or Negative Net FDI: May suggest capital is being withdrawn or domestic firms are investing more abroad than foreigners are investing locally.
 - Not always negative but it may reflect economic maturity or global ambition.

Why Have Capital Flows Dipped?

 Private Equity/Venture Capital (PE/VC) Exit Cycle: A major share of FDI inflows into India since the mid-2010s — peaking in 2020–21 came through PE and VC funds across diverse sectors: retail, e-commerce, fintech, green energy, healthcare, and real estate.

- These were largely **growth investments** intended for medium- to long-term returns.
- Currently, many of these investments have matured, leading investors to exit and realise profits.
- **High Market Valuations:** It encourages profittaking and discourages fresh entry.
- **Global Factors:** Uncertainty due to trade wars, and U.S. tariffs on Indian goods.
- Merchandise Trade Deficit: India's goods imports far exceed exports.
 - Deficit has more than trebled since 2007–08, reaching \$287.2 billion in 2024–25.
- **Investor Perception:** Foreign investors focus less on headline GDP growth and more on:
 - Corporate earnings (sustainability, profitability).
 - Business climate and reasonable market valuations.
 - If earnings don't justify valuations, investors prefer to exit rather than invest afresh.

Implications

- **Economic:** Possible stress on external sector financing, and higher current account deficit.
 - External sector financing refers to the flow of funds between a country and the rest of the world to finance its economic transactions.
- **Currency:** Rupee depreciation due to capital flight.
- **Investor Confidence:** Weak participation in India's growth story.
- **Policy Space:** May limit the government's ability to finance growth through external resources.

Way Forward

- **Deepen Structural Reforms:** Land, labour, taxation, and regulatory clarity to attract stable FDI.
- **Encourage Long-Term Capital:** Focus on infrastructure, green energy, and manufacturing investments.
- Strengthen Corporate Earnings: Improve productivity, lower costs, and reduce compliance burden.
- Enhance Export Competitiveness: Diversify markets beyond US/EU, boost Make in India.
- Stabilise Rupee & Macro Fundamentals: Maintain forex reserves, prudent fiscal and monetary policies.
- Investor Confidence Building: Transparent policy regime, predictable taxation, and consistent reforms.

Source: IE

NEXT-GEN GST REFORMS TO TAKE EFFECT FROM SEPTEMBER 22

In Context

- The GST Council has simplified the existing fourtier system (5%, 12%, 18%, and 28%) into a twoslab structure:
 - 5% for essential goods
 - 18% for most standard goods and services
- Additionally, a new 40% slab is introduced to tax sin and luxury items.

More About the News

- 0% GST on vital goods/services: Basic food items, health and life insurance, educational materials, select medical devices.
- 33 life-saving drugs + 3 key cancer medicines have zero GST.

Benefits of Key Changes

- For Consumers: Lower living costs and improved access to healthcare and education due to reduced or zero GST.
- For Businesses: Fewer slabs mean less confusion and classification disputes, promoting easier compliance.
 - Lower GST rates for autos, durables,
 FMCG stimulate demand and encourage formalization of smaller enterprises.
- For Economy & Government: CPI inflation down by ~1.1 percentage points projected by experts, easing household budgets.
 - Demand stimulus coincides with the festive season to energize consumption.
 - A predictable regime strengthens the investment climate.

Key Challenges

- **Government Revenue:** 48,000 crore (\$5.5 billion) expected short-term fiscal loss that may stress fiscal consolidation aims.
- **Centre–State Tensions:** Compensation worries and disputes over revenue-sharing could arise.
- Removal of Input Tax Credit (ITC): Certain sectors like healthcare products and insurance are exempted from GST. Exemption means businesses cannot claim ITC, leading to cascading taxes (tax on tax) and higher hidden costs in the supply chain.
- Uncertainty over National Anti-Profiteering Authority (NAA): The NAA was set up to ensure businesses passed on GST rate cuts to consumers.
 - Initially meant for 2 years (extendable by GST Council), but uncertainty over revival

- or replacement creates gaps in monitoring profiteering.
- **Sectoral Unevenness:** Luxury taxed at 40% could spur illicit markets; mid-tier industries (textiles, construction) concern at 18%.
- **Transitional Issues:** Re-labeling MRPs on old stock risks wastage of packaging materials.

Source: TH

IMPACT OF GST REFORMS ON COOPERATIVE SECTOR

Context

 The government has said the GST reforms will strengthen the cooperative sector, make their products competitive, increase demand for their products and increase the income of cooperatives.

About

- In the dairy sector: The tax on butter, ghee and similar products has been reduced from 12% to 5%.
 - GST on milk cans made of iron, steel or aluminium has also been lowered from 12% to 5%.
 - These measures will make dairy products more competitive, provide direct relief to dairy farmers, and strengthen women-led rural enterprises.
 - **GST** on Tractors: The GST on tractors below 1800 cc has been reduced to 5%, which will make tractors more affordable and benefit not only crop farmers but also those engaged in animal husbandry and mixed farming.
- **GST on key fertiliser** inputs such as ammonia, sulphuric acid and nitric acid has been reduced from 18% to 5%.
 - This has lowered input costs for fertiliser companies, preventing price hikes for farmers, and ensuring the timely availability of affordable fertilisers during sowing seasons.

What are Cooperatives?

- A cooperative (or co-op) is an organization or business that is owned and operated by a group of individuals who share a common interest, goal, or need.
- These individuals, known as members, participate in the cooperative's activities and decision-making process, typically on a onemember, one-vote basis, regardless of the amount of capital or resources each member contributes.
- The main purpose of a cooperative is to meet the economic, social, or cultural needs of its



- **members,** rather than to maximize profits for external shareholders.
- The UN SDGs recognize cooperatives as crucial drivers of sustainable development, particularly in reducing inequality, promoting decent work, and alleviating poverty.

97th Constitutional Amendment Act 2011

- It established the right to form cooperative societies as a **fundamental right (Article 19).**
- It included a new Directive Principle of State Policy on the Promotion of Cooperative Societies (Article 43-B).
- It added a new Part IX-B to the Constitution titled "The Co-operative Societies" (Articles 243-ZH to 243-ZT).
- It authorizes the Parliament to establish relevant laws in the case of multi-state cooperative societies (MSCS) and state legislatures in the case of other cooperative societies.

Benefits of Cooperatives

- Democratic Control: Members have a voice in decision-making.
- Economic Participation: Profits are distributed based on usage or contribution, not capital invested.
- **Community Focus:** Co-ops often aim to benefit local communities by keeping resources and profits within the group.
- **Better Services/Prices**: By pooling resources, cooperatives often offer better services or prices than for-profit businesses.

Types of Cooperatives in India

- Agricultural Cooperatives:
 - Dairy Cooperatives: Focus on the collective production, processing, and marketing of dairy products (e.g., Amul).
 - Farmers' Cooperatives: Provide services like access to seeds, fertilizers, and agricultural equipment, and help with marketing and processing crops.
 - **Fishermen Cooperatives:** Support fishermen in managing resources and marketing their catch collectively.
- Consumer Cooperatives: These cooperatives are formed to provide goods and services to members at reasonable prices, reducing reliance on middlemen. Examples include consumer stores and fair-price shops.

- Worker Cooperatives: In these cooperatives, workers own and manage the business, sharing profits and decision-making. Examples include small-scale manufacturing cooperatives or artisan co-ops.
- Credit Cooperatives: Cooperative Banks and Credit Societies offer financial services, such as savings accounts, loans, and credit, to members, particularly in rural and underserved areas.
- Housing Cooperatives: These cooperatives help members collectively build or manage housing projects, providing affordable living spaces, especially in urban areas.

Success Stories of Cooperatives in India:

- Amul (Gujarat): Amul, a dairy cooperative, has been one of India's most successful cooperatives, transforming the dairy sector by empowering millions of small farmers and bringing India to the forefront of the global dairy market.
- Irrigation Cooperatives in Maharashtra:
 Water-user associations and cooperatives in
 Maharashtra have successfully managed water
 resources for irrigation purposes, helping farmers
 achieve better yields.
- Kerala's Co-operative Movement: Kerala has one of the most successful cooperative movements in India, with strong cooperatives in sectors like banking, farming, consumer goods, and housing.

Challenges Faced:

- Weak Governance: They are issues of poor management, corruption, and political interference, leading to inefficiency and lack of transparency.
- Limited Access to Credit: Many cooperatives struggle with access to financing, which hinders their ability to expand or improve their operations.
- Competition from Private Sector: Cooperatives often face stiff competition from large private enterprises and multinational corporations, especially in sectors like retail and agriculture.
- **Technological Gaps:** Many cooperatives, especially in rural areas, lack access to modern technology or are slow to adopt new systems that could improve efficiency.

Legal Framework and Support for Cooperatives:

- In India, cooperatives are governed by the Cooperative Societies Act, which is implemented at both the state and national levels.
 - The Multi-State Cooperative Societies Act (2002): This law regulates cooperatives that operate in more than one state.

- The National Cooperative Policy (2002):
 Aimed at creating an enabling environment for the cooperative movement, it focuses on improving governance, member participation, and financial sustainability.
- The Ministry of Cooperation: Established in 2021, this ministry focuses on supporting the growth of cooperatives in India, including reforming their governance and providing financial support.

Way Ahead

- Cooperatives in India have proven to be an essential tool for economic empowerment, especially for marginalized groups, and contribute significantly to rural development.
- The GST reforms will directly impact cooperatives, farmers, rural enterprises and benefit more than 10 crore dairy farmers in the country.
- With the right support and reforms, cooperatives can continue to contribute to inclusive growth and social development in India.

Source: AIR

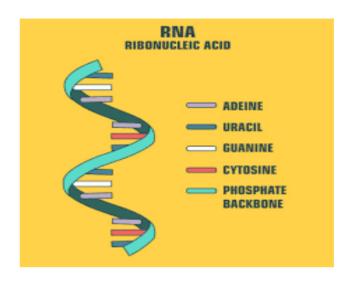
RNA-AMINO ACID LINK ON EARLY EARTH

Context

- A new study by researchers has revealed how two fundamental building blocks of life, RNA (ribonucleic acid) and amino acids, could have joined together under conditions resembling those of early Earth about four billion years ago.
 - This discovery advances the understanding of how the interaction between genes and proteins may have first emerged.

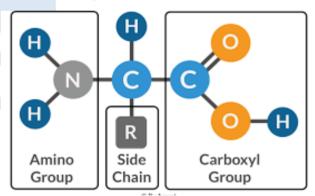
What is Ribonucleic acid (RNA)?

- Ribonucleic acid (RNA) is a fundamental biomolecule essential for life. It carries genetic information, helps in the synthesis of proteins, and performs catalytic and regulatory roles.
 - While similar to DNA, it is chemically less stable and functionally more versatile.
- **Nucleotides:** RNA is made of nucleotides, each containing a phosphate group, a ribose sugar, and one of four nitrogenous bases.
- **Single-stranded:** Unlike DNA's double helix, RNA usually exists as a single strand. However, it can fold into complex three-dimensional structures with loops and helices.
- RNA is built from four nitrogenous bases: Adenine, Guanine, Cytosine and Uracil.
 - Base Pairing: Uracil pairs with Adenine and Guanine pairs with Cytosine.



What is Amino Acid?

- An amino acid is an organic compound that serves as a **fundamental building block for proteins.**
 - They can be used as a source of energy for the body when carbohydrates and fats are not readily available.
- Types of amino acids: There are 20 standard amino acids that combine to form proteins in the human body.



Key Findings of the Study

- Researchers found that **amino acids can attach directly to RNA** without enzymes, using only simple **prebiotic chemistry** in water at neutral pH.
- The amino acids first reacted with this thiol compound (pantetheine) to form a thioester, a high-energy intermediate, and then the thioester transferred the amino acid onto the end of the RNA strand.
- Peptide formation: Once amino acids were linked to RNA (aminoacyl-RNA), further reactions in the same system produced short peptides (chains of two or more amino acids) without any proteins or enzymes.
 - This demonstrates a potential primitive pathway to proteins.

NEXTIRS

Significance for Origin-of-Life Theories

- The findings effectively bridge two theoretical frameworks:
 - RNA World Hypothesis: Proposes that selfreplicating RNA molecules were the first "lifelike" entities, storing genetic information and performing catalytic functions.
 - Thioester World (Metabolism-First)
 Hypothesis: Suggests that energy-rich
 thioester compounds drove early metabolic
 reactions before genetic systems evolved.

Source: TH

NEWS IN SHORT

SREE NARAYANA GURU

In News

 Recently, the birth anniversary of Sree Narayana Guru was observed.

About Sree Narayana Guru (1856-1928)

- He was born in 1856 in Kerala into the Ezhava community, which faced severe caste disabilities.
- He was a saint, philosopher, and one of the foremost social reformers in modern India who challenged caste oppression and emphasized spiritual reform as the path to social reform.
- Sree Narayana Guru known for blending Advaita Vedanta with a call for social justice.

Key Contributions

- Social Philosophy: Propagated the radical message: "One Caste, One Religion, One God for Man".
 - Rejected birth-based caste hierarchy and promoted dignity of labour.
- Institution Building: Founded Sree Narayana Dharma Paripalana Yogam (SNDP, 1903) to advance education, social empowerment, and reform.
- Aruvipuram Movement (1888): Consecrated a Shiva idol himself, breaking the Brahmin monopoly over temple rituals. Built temples, schools, and ashrams for the common people with egalitarian access.
- **Political & Social Movements:** Extended moral and ideological support to the Vaikom Satyagraha (1924–25) for temple entry rights of lower castes.
- **Educational Upliftment:** Stressed education as the foundation of empowerment and upliftment.

Source: PIB

BLOOD MOON

Context

 A total lunar eclipse, popularly called a "Blood Moon", was recently witnessed across the globe.

What is a Lunar Eclipse?

- A lunar eclipse occurs when the Earth comes between the Sun and the Moon, blocking sunlight from directly reaching the lunar surface.
- Depending on the alignment, it can be total (Moon passes fully through Earth's umbra) or partial.
- Unlike a solar eclipse, it is safe to watch with the naked eye.

Why does the Moon appear Red (Blood Moon)?

- During a total lunar eclipse, sunlight passing through Earth's atmosphere gets scattered.
- Rayleigh Scattering: Blue light (shorter wavelength) scatters away, while red/orange light (longer wavelength) bends towards the Moon, making it glow red.
- The exact hue depends on atmospheric conditions: more dust or pollution makes the Moon appear a deeper red.

Source: IE

PROTEIN LANGUAGE MODELS

In News

 The recent emergence of large language models (LLMs) has revolutionised the research on proteins — the microscopic mechanisms that are involved in virtually every important activity happening inside all living things.

About Protein Language Models

Protein Language Models (PLMs) are machine learning models adapted from Large Language Models (LLMs) in NLP, designed to interpret protein sequences by treating each amino acid as a token (like a word) and entire proteins as sentences.

Applications of PLMs

- Drug Discovery: Rapid identification of protein interactions accelerates the search for new drug targets.
- Vaccine Development: PLMs help predict and model critical viral protein structures, guiding vaccine design.
- Disease Research: Understanding the impact of mutations and misfolding in proteins is crucial for conditions like Alzheimer's and cancer.
- **Synthetic Biology:** Enables design of novel proteins with desired properties or functions

Source: IE

PARRONDO'S PARADOX BASICS

Context

 Scientists in a new study used the Parrondo's Paradox basics to enhance the efficacy of cancer therapy.

Parrondo's Paradox

- A paradox is something (such as a situation) with opposing elements which seems impossible, but is actually true.
- The theory was initially proposed in physics (Brownian ratchets) and then brought into game theory.
 - If you play two losing games separately, you always lose. But if you mix or alternate them in the right way, you can actually start winning.
- **Example:** In coin toss games, each game alone is bad, but switching between them in a pattern can give you profit.

How does it connect to Cancer Therapy?

Doctors use two main ways of giving chemotherapy drugs:

- Maximum Tolerated Dose (MTD): Very high dose at long intervals.
 - Works strongly in the beginning.
 - But they are resistant cancer cells that survive and later grow faster.
- Low-Dose Metronomic (LDM): Small continuous doses and it works slowly.
 - Concern: If too weak, cancer escapes; if too strong, resistant cells still take over.
- Both methods have weaknesses. Alone, each one eventually fails.

New Study

- Scientists tried alternating between MTD and LDM using computer models.
- Result:
 - Resistant cells appeared later.
 - Healthy cells survived longer.
 - Tumour stayed under control for more time.
- This is like Parrondo's paradox where two weak strategies, when mixed, give a better result.

Source: TH

1ST INTERPOL SILVER NOTICES

Context

 The Narcotics Control Bureau (NCB) has got its first Interpol silver notice issued, against the recovery of around 82 kg of cocaine in Delhi.

About

- A silver notice is issued by Interpol to identify, locate, and trace assets acquired through criminal proceeds by a fugitive.
- **Aim:** Helping trace and recover criminal assets for combating transnational organised crime through enhanced international police cooperation.
- The Interpol launched 'Silver Notice', the newest addition to the organisation's list of colour-coded notices and diffusions, as part of a pilot project involving 52 countries and territories.
 - The pilot project will run at least till November 2025. India is one of the participating countries.



 Through Silver Notices and Diffusions, member countries can request information on assets linked to a person's criminal activities such as fraud, corruption, drug trafficking, environmental crime and other serious offences.

INTERPOL

- Full Form: International Criminal Police Organization.
- **Nature:** An intergovernmental organization.
- Founded: In 1923 Vienna, Austria.
- **Motto:** "Connecting police for a safer world".
- **HQ:** Lyon, France
- Members: 196 countries. India has been a member since 1949.
- Governing Body: The General Assembly, it brings all countries together annually to make decisions.
- Legal Status:
 - INTERPOL does not have its own police force.
 - It cannot make arrests; it only assists member countries.
 - All actions depend on national laws and cooperation of member states.



Source: IE

NILGIRIS TEA

Context

 The Nilgiris tea, famous for "champagne among teas," is facing prolonged crisis as small growers face unstable green tea leaf prices, high production costs, and inadequate institutional support.

About Nilgiris Tea

- Region: Grown mainly in the Nilgiris district, Tamil Nadu (Western Ghats, Blue Mountains), at an altitude of around 900–2,600 metres above sea level.
- History: Introduced by the British in the mid-19th century (first plantations around Coonoor, 1850s).
- **Taste Profile:** Fragrant, brisk, floral, citrus-like; suitable for iced tea.
- Geographical Indication (GI): Granted GI tag in 2008.

Source: TH

PAPUA NEW GUINEA

Context

 Recently, the Indian Navy's indigenously built Anti-Submarine Warfare Corvette, INS Kadmatt, led the Fleet Review during Papua New Guinea's 50th Independence Day celebrations.

About the Papua New Guinea

- It is the largest Pacific Island nation by land mass and population, located at the crossroads of Southeast Asia and Oceania.
 - The region falls under the seismic 'Ring of Fire'.
- Capital: Port Moresby



- Official Languages: English, Tok Pisin (a creole), and Hiri Motu.
- Government: Parliamentary democracy, part of the Commonwealth.
 - It serves as a key partner in regional forums like the Forum for India-Pacific Islands Cooperation (FIPIC).

India & Papua New Guinea

- India emphasized that INS Kadmatt's participation reflects its strategic outreach under the Act East Policy, aimed at strengthening ties with Pacific Island nations.
- It highlighted the Indian Navy's rising stature as a Preferred Security Partner in the Indo-Pacific.

Development Partnerships and Capacity Building

- \$100 million Line of Credit for infrastructure development;
- MoUs in agriculture research, healthcare, and IT education;
- Establishment of a Centre of Excellence in IT and an ICCR Chair of Indian Studies at UNITECH, Lae;

Source: PIB

