NEXT IAS

DAILY CURRENT AFFAIRS (DCA)

Time: 45 Min

Date: 11-11-2025

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News In Short

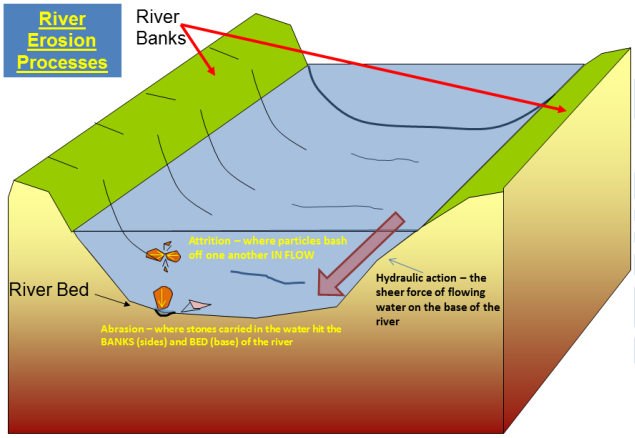
RIVER BANK EROSION

Context

- The **Brahmaputra, Teesta, and Dharla rivers** have become **unpredictable, eroding land faster than ever before.**

About Riverbank Erosion

- **Riverbank erosion** is the wearing away of the banks of a river due to the continuous action of flowing water.
- It is a natural geomorphological process but **can be accelerated by human activities or environmental changes.**
- When water flows along a river channel, it **exerts shear stress on the riverbanks.**
  - Over time, this force removes soil, sand, and rock particles from the bank, leading to **undercutting, collapse, and retreat of the riverbank.**



Causes of Riverbank Erosion

- **Natural Causes**
  - **Strong river currents:** Fast-flowing water erodes the outer banks of bends (meanders).
  - **Floods:** High water volume and velocity during floods intensify erosion.
  - **Soil composition:** Loose or sandy soils erode more easily.
  - **Lack of vegetation:** Roots help bind the soil; their absence makes banks fragile.
  - **River meandering:** Continuous shifting of river channels causes lateral erosion.
- **Human-Induced Causes:**
  - Deforestation near riverbanks.
  - Sand mining and gravel extraction.
  - Construction of dams and embankments altering natural flow.
  - Overgrazing or cultivation close to the river edge.

Impacts

- Loss of agricultural land and livelihoods.
- Displacement of people, which is also a major problem in states like Assam and West Bengal.
- Damage to infrastructure such as roads, bridges, and embankments.
- Sedimentation downstream, affecting navigation and aquatic life.

Control and Mitigation Measures

- **Bioengineering methods:** planting grasses, shrubs, and trees to stabilize banks.
- Construction of revetments, spurs, and gabion walls.
- River training and dredging to manage flow.
- Community-based riverbank management and land-use planning.

Source: TH

INDIA AND VIETNAM: STRENGTHENING DEFENCE TIES

Context

- Recently, **India and Vietnam** convened the **15th Defence Policy Dialogue** in Hanoi, reaffirming their commitment to deepening defence cooperation across traditional and emerging domains.

Key Agreements Signed

- A **Memorandum of Agreement on Mutual Submarine Search, Rescue Support and Cooperation**, marking a new phase of operational coordination in maritime safety.
- A **Letter of Intent on Defence Industry Cooperation**, aimed at expanding collaboration in defence manufacturing, research, and technology exchange.
- **Reinforcing the Comprehensive Strategic Partnership:** Both nations underscored that their **defence partnership remains a cornerstone of the Comprehensive Strategic Partnership** between India and Vietnam.
  - They reaffirmed shared commitment to regional stability, maritime security, and a free, open, and **rules-based Indo-Pacific region.**

About India–Viet Nam Relationship

- **Evolution of Relations:** India and Viet Nam share a **long-standing bilateral relationship** built on historical, cultural, and political foundations, rooted in the shared ideals of Mahatma Gandhi and President Ho Chi Minh.
  - India established **full diplomatic relations** with Viet Nam in **1972**, and further evolved into political, economic, defence, cultural, and people-to-people cooperation.
  - **2016:** Bilateral ties were elevated from a 'Strategic Partnership' to a **Comprehensive Strategic Partnership**. It was further defined by the *'Joint Vision for Peace, Prosperity and People'* adopted during the **Virtual Summit (2020)**.
  - **2022:** 50th anniversary of diplomatic relations observed.
- **Political Exchanges:**
  - **Vietnamese Prime Minister's Visit to India (2024):** It led to the **signing of a Plan of Action for 2024–2028** and **ten bilateral agreements,** expanding cooperation across diverse sectors.
  - **High-level meetings** were held between the two Prime Ministers on the sidelines of major global summits **such as ASEAN, BRICS, and G7 Plus.**
  - Bilateral exchanges between ministers of defence, justice, and public security, along with frequent interactions at multilateral forums, further strengthened political understanding.
- **Institutional Mechanisms:**
  - **Joint Commission Meeting (JCM), 2023:** The 18th JCM on Economic, Trade, Scientific, and Technological Cooperation was held in Hanoi.
  - **Strategic Dialogue & Foreign Office Consultations, 2025:** The 13th round was conducted in **New Delhi**.
  - **Defence, Maritime, Atomic Energy, and Policy Planning Dialogues** are held periodically to coordinate activities.
  - Parliamentary exchanges, such as the **Viet Nam – India Parliamentary Friendship Group**, enhance inter-parliamentary collaboration.

Defence and Security Cooperation

- Guided by the **Joint Vision on Defence Partnership towards 2030**, cooperation includes logistics, training, and defence production.
- India gifted an **indigenously built missile corvette INS Kirpan** to Viet Nam in 2023.
- Regular **staff talks**, **joint exercises**, and **naval visits** underscore strong defence collaboration.
- The **5th Viet Nam–India Bilateral Army Exercise (VINBAX-2024)** and participation in **MILAN-2024** demonstrate operational cooperation.
- Security dialogue mechanisms focus on **counter-terrorism** and **transnational crime prevention**.

Trade and Economic Cooperation

- Bilateral trade has reached **USD 15.76 billion (2024–25)**.
  - **India's exports** include engineering goods, pharmaceuticals, and agricultural products.
  - **India's imports** mainly consist of electronics, machinery, coffee, and garments.
- **Indian investments** in Viet Nam total around **USD 2 billion**, with over 430 active projects.
  - Viet Nam's investments in India stand at approximately **USD 12.69 million**.
- **VinFast's EV assembly plant** in Tamil Nadu marks a new chapter in industrial cooperation.
- **Trade fairs and business forums** such as VINAMAC, Vietramed, and Bharat Global Mobility Expo promote mutual business engagement.

Development Partnership

- India's development cooperation with Viet Nam spans education, capacity building, and community development:
  - Over **200 Vietnamese nationals** receive training annually under the **ITEC** and **ICCR** programmes.
  - India has contributed to institutions like the **Cuu Long Delta Rice Research Institute**, **Hi-Tech Cyber Forensic Laboratory**, and **Advanced ICT Centre** in Hanoi.
  - **Quick Impact Projects (QIPs),** 46 completed since 2017, benefit local communities in over 39 provinces.
  - India supports **heritage conservation** projects such as the **My Son Sanctuary restoration**, reinforcing civilizational ties.
  - Under **Operation Sadbhav (2024)**, India extended humanitarian aid worth USD 1 million to typhoon-affected regions in Viet Nam.

Cultural, Academic, and Provincial-Level Exchanges

- The **Swami Vivekananda Cultural Centre (SVCC)** in Hanoi promotes yoga, art, and cultural programmes.

- **Vesak celebrations (2025)** saw 15.5 million devotees venerate the **Sacred Relics of Lord Buddha** across Viet Nam.
- **Academic cooperation** includes partnerships between ICWA, HCMNAP, and IIPA, fostering policy and research collaboration.
- Cultural troupes, youth exchanges, and **India–Viet Nam Film Festivals** enhance mutual understanding.
  - The co-production **'Love in Vietnam'**, premiered at the **Da Nang Asian Film Festival 2025**, symbolizes growing cultural ties.
- **Indian Community in Viet Nam:** Approximately **8,000 Indians** reside in Viet Nam, primarily in **Ho Chi Minh City and Hanoi**, contributing to sectors such as IT, mining, education, and trade.

Key Concerns & Related Suggestions

- **China's Assertiveness:** Both countries share concerns over China's growing influence — **India in the Himalayas** and **Vietnam in the South China Sea**.
  - Vietnam's proximity and economic ties with China require careful diplomatic balancing, which may limit overt strategic alignment with India.
- **ASEAN Dynamics:** Vietnam's role within ASEAN sometimes requires **consensus-based diplomacy,** which **can slow bilateral initiatives with India** that demand quicker execution.
- **Technology Transfer & Capacity Gaps:** While India and Vietnam have signed agreements on defence manufacturing and training, actual implementation is often hampered by bureaucratic delays and limited industrial capacity.
  - Operationalizing the recent MoU on submarine search and rescue requires sustained investment and trust-building.
- **Low Bilateral Trade Volume**: Despite growing ties, trade between India and Vietnam remains below potential.
  - Tariff barriers, logistical bottlenecks, and lack of awareness among businesses hinder deeper economic integration.
- **Digital & Infrastructure Gaps:** Vietnam's digital transformation is accelerating, but India's engagement in tech and innovation sectors remains limited compared to **other partners like South Korea or Japan.**

Conclusion

- The **India–Viet Nam Comprehensive Strategic Partnership** continues to thrive as a model of mutual respect, shared growth, and regional stability. Guided by the vision of *'Peace, Prosperity, and People'* both nations remain committed to expanding cooperation across political, economic, defence, and cultural dimensions.
  - India and Viet Nam stand as steadfast partners in shaping a secure, sustainable, and inclusive future for the region, with a shared Indo-Pacific outlook and centuries-old civilizational ties.

Source: TH

TRANSPLANTATION OF HUMAN ORGANS AND TISSUES RULES, 2025

In News

- The Union Ministry of Health and Family Welfare has amended the Transplantation of **Human Organs and Tissues (Amendment) Rules, 2025** under the **Transplantation of Human Organs and Tissues Act, 1994.**

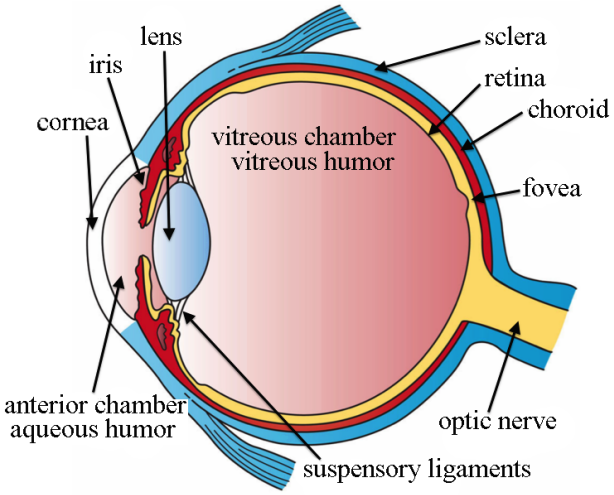
Key Highlights

- The amendment strengthens the **National Organ Transplant Programme (NOTP)** and streamlines functioning of corneal transplantation centres, while facilitating wider **accessibility to eye donation and transplantation services across the country.**
- The amendment removes the mandatory requirement of **Clinical Specular Microscope equipment** in corneal transplantation centers, which was used earlier to assess corneal endothelial cell health.

About the Cornea

- The cornea is the **transparent, dome-shaped outermost layer of the eye** that acts like a window, allowing light to pass and focus on the retina for clear vision.
- It serves as a protective barrier against dust, microbes, and physical injury and maintains the eye's shape and fluid balance.
- The **cornea comprises six layers** — Epithelium, Bowman's Layer, Stroma, Pre-Descemet's (Dua's) Layer, Descemet's Layer, and Endothelium — each essential for transparency and refraction.

- It is **highly sensitive with 300–600 time**s more pain receptors than skin, ensuring rapid reflex protection.
- While minor injuries heal quickly, deeper damage or scarring can cause opacity and vision loss, often requiring a corneal transplant (keratoplasty) or artificial cornea (keratoprosthesis) to restore vision.



Significance

- Corneal blindness has been the **second-leading cause of blindness** in the over-50 age group in India
  - India has an estimated 1.2 million corneal blind persons, to which 25 000–30 000 people are added every year.
- The amendment aims to **boost cornea donation and transplantation services by streamlining the functioning of corneal transplantation centers** and improving coordination among hospitals, tissue banks, and regulatory authorities.
- It aligns with the government's vision of equitable healthcare access and is expected to strengthen India's cornea donation and transplantation ecosystem in the long term.
- The overarching objective is to reduce the burden of corneal blindness, which is the second-leading cause of blindness among Indians over 50 years old.

Source: TH

RECURRING RAIL TRAGEDIES IN INDIA

Context

- India has witnessed a worrying recurrence of train accidents caused by technical failures & human error in the recent.

What are the Major Causes of Accidents?

- **Staffing Shortages in Safety-Critical Roles:** Out of the one million positions that are directly engaged in operations and maintenance, there are more than 1.5 lakh vacancies in safety/ operational posts.
- **Infrastructure Constraint:** Persistent concerns exist over delayed track renewal, outdated signalling systems, and frequent damage to signal and communication cables during maintenance and construction works — issues that the Railway Board has warned could have "catastrophic consequences."
- **Inadequate Safety Systems:** Slow deployment means that most of the routes remain without a KAVACH, leaving them vulnerable to human-error or signalling failures.
- **Human Error:** It remains a key contributor like errors in signal setting, point switching, train control, fatigue due to long hours.
- **Resource Allocation Imbalance:** The Rashtriya Rail Sanraksha Kosh (RRSK) was instituted for safety upgrades, but utilisation has been uneven.
- **Organisational and Accountability Deficit:** Fragmented chain of responsibility among zones, divisions, and departments. Post-accident inquiries often end with suspension of staff but not structural reform.

Implications

- **Economic Impact:** Train accidents cause direct loss of life, infrastructure damage, compensation burden, and service disruption.
- **Public Confidence:** Repeated mishaps erode trust in public transport safety.
- **Governance Credibility:** Reflects weak oversight, bureaucratic inertia, and reactive rather than preventive administration.
- **Technological Lag:** Highlights India's slow pace of safety technology adoption compared to global standards (e.g. Europe's ETCS or Japan's Shinkansen).

Related Government Measures and Initiatives

- **KAVACH:** An **Automatic Train Protection (ATP)** system that halts trains automatically to prevent collisions.
- **Introduction of Modern trains:** To enhance passenger experience and provide a comfortable journey, State of the Art Vande Bharat trains, Amrit Bharat Trains and Namo Bharat Rapid Rail with

modern features have been introduced on Indian Railways.

- **Elimination of level crossings:** To improve safety of train operations and road users, all unmanned level crossings on Broad gauge have been eliminated.
- **Amrit Bharat Station Scheme:** It signifies a concerted effort by Indian Railways to modernize its infrastructure in order to elevate the travel experience for millions of passengers.
- **Rashtriya Rail Sanraksha Kosh (RRSK):** 1 lakh crore fund (2017–2022) for safety-related works — track renewal, bridge rehabilitation, signaling upgradation, etc.

Way Forward

- Railways need to accelerate the implementation of the Kavach system, apart from regular maintenance of tracks to avoid future accidents.
- There is also an urgent need to expedite the installation of **black-box-type devices** across its locomotives to enable the voice and video recording of the train's crew member.

Do you Know?

- Indian Railways, often called the *'Lifeline of India'*, is the **fourth-largest rail network in the world**, spanning nearly **1,15,000 kilometres**.
- Indian Railways is the **eighth-largest commercial employer in the world,** with **over 12 lakh employees.**
- The **Commissioner of Railway Safety (CRS) under the Ministry of Civil Aviation** investigates accidents, but its reports are largely recommendatory, not binding.

Source: TH

ALTERMAGNETISM

Context

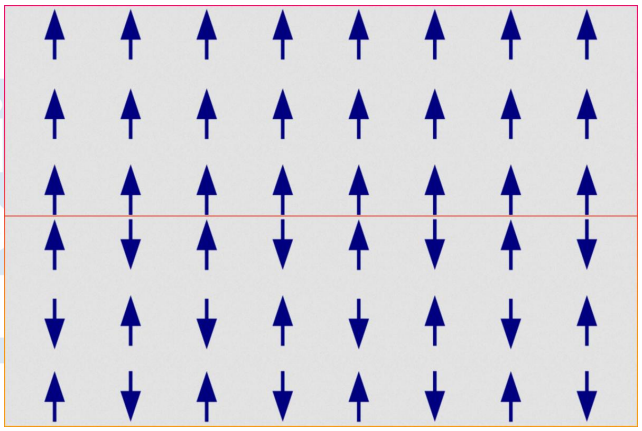
- The discovery of altermagnetism has emerged **as a new class of magnetic order.**

Magnetism and Types

- Magnetism is a **force of attraction or repulsion** that **acts between certain materials** — mainly those containing iron, nickel, cobalt, or their alloys — due to the motion of electric charges (like electrons).
- For more than a century, scientists recognized **only two main types of magnetism:**
  - **Ferromagnetism:** All atomic magnetic moments (spins) align in the same direction, producing a strong external magnetic field — like a fridge magnet.
  - **Antiferromagnetism:** Neighboring atomic spins point in opposite directions ("up" and "down"), cancelling each other's fields and resulting in no external magnetism.
- Recently, researchers have **discovered a third form,** called **altermagnetism**, first theorized around 2019 and confirmed through experiments in 2024.

Altermagnetism

- It is rotating or mirror-flipping the crystal pattern matches sites in cancelling pairs, **leaving no net magnetisation** — thus bridging the gap between other two types.



- In altermagnets, the **magnetic moments of neighbouring atoms point in opposite directions** — one up, the next down — just like in **antiferromagnets.**
  - These opposite spins cancel each other, so the material shows **no overall (net) magnetic field.**
  - However, their **internal electronic structure** resembles that of ferromagnets, where electrons have different energy levels depending on their spin.
  - This unusual combination of no net magnetisation but internal spin imbalance **gives altermagnets unique properties.**

Applications

- **Quantum Computing:** Altermagnets are also being explored for quantum computing applications.

- Their lack of stray magnetic fields helps reduce magnetic noise, which is crucial for maintaining quantum coherence (stability of quantum bits).

- **Spintronics:** These properties make them very attractive for spintronics — a technology that uses electron spin (not just charge) to store and process information, enabling faster, smaller, and more efficient electronics.
- **Wide Range of Materials:** One of the most exciting findings is that altermagnetism can exist in many types of materials including insulators, semiconductors, metals, and possibly even organic crystals.
    - This opens vast opportunities for materials design and new device architectures.

Key Challenges

- **Material Quality:** Producing high-quality, single-domain altermagnetic materials is a major hurdle.
- **Fabrication and Scalability:** Developing scalable and cost-effective fabrication methods is essential to use these materials in commercial electronic or spintronic devices.
    - This includes perfecting the crystal synthesis process for large-scale production.
- **Limited Tested Materials:** So far, only a few materials—like manganese telluride (MnTe) and chromium antimonide (CrSb) have clearly shown altermagnetic effects.
    - Expanding the material library is a current focus of global research.

Way Ahead

- Despite these difficulties, the rapid progress of discoveries, strong global scientific interest, and ongoing experimental breakthroughs are all encouraging signs that these challenges can be overcome with time.
- With continued progress in material design and fabrication, it holds promise to revolutionize next-generation information and quantum technologies.

Source: TH

NEWS IN SHORT

RIFT VALLEY FEVER

In News

- The World Health Organization (WHO) confirmed an outbreak of **Rift Valley Fever** (RVF) affecting Mauritania and Senegal in Western Africa.

About Rift Valley Fever (RVF)

- RVF derives its name from Kenya's Rift Valley, where the disease was first recognised in the early 1930s.
- It is caused by a **Phlebovirus** belonging to the **Phenuiviridae family.**
- It primarily affects animals such as sheep, goats, cattle, and camels.
- Humans become infected through close contact with infected animals or by the bite of infected mosquitoes.
- There is **no evidence of human-to-human transmission.**
- Currently, there is **no specific antiviral treatment.**

Source: TH

MOLASSES

Context

- The Central government is looking to permit around **1.5 million tonnes of sugar exports in 2025–26** and abolish the **50% export tax on molasses** to improve realisations and help farmers receive faster payments.

About

- The export decision was communicated to the chief minister while listing out the **steps taken by the central government to protect the interest of sugarcane farmers in the country.**
- **Gross sugar production** stood at 29.1 million tonnes in the 2024–25 and is estimated to rise 16% to 34.35 million tonnes in the current 2025–26.
- It is projected that 3.4 million tonnes of sugar will be diverted to ethanol production in 2025–26, compared to 3.5 million tonnes in the preceding year.

Molasses

- Molasses is a thick, dark brown syrup obtained as a byproduct during the process of **refining sugarcane or sugar beet into sugar.**
- **Uses**
    - **Food industry:** Used in baking (e.g., gingerbread), rum production, and animal feed.
    - **Industrial use:** In ethanol, citric acid, and yeast production.
    - **Agriculture:** As a component in cattle feed and for soil conditioning.

- It is a key raw material for **ethanol production under India's ethanol blending programme** to reduce crude oil imports.

Source: BS

PERIODIC LABOUR FORCE SURVEY (PLFS) REPORT

Context

- **The Periodic Labour Force Survey (PLFS)** was conducted by the Labour Bureau for the July-September 2025 quarter.

About

- **Unemployment Rate:** Overall it dropped to 5.2% in July-September, 2025 from 5.4% in the previous quarter.
  - **Rural:** It declined to 4.4% during the period from 4.8%.
  - **Urban:** Increased from 6.1% to 6.2% for males, and from 8.9% to 9.0% for females.
- **Employment Pattern:**
  - **Rural areas:** Dominated by self-employment – increased to 62.8% (from 60.7%). Majority engaged in the agriculture sector – 57.7% (up from 53.5%), due to seasonal operations.
  - **Urban areas:** Regular wage/salaried employment rose slightly to 49.8% (from 49.4%). The workforce was concentrated in the tertiary sector – 62.0% (up from 61.7%).
- **Labour Force Participation Rate (LFPR):**
  - **Overall LFPR:** 55.1% (steady from 55.0% last quarter).
  - **Rural LFPR:** 57.2% (up from 57.1%).
  - **Urban LFPR:** 50.7% (up from 50.6%).
  - **Female LFPR:** Increased to 33.7% (from 33.4%).
  - **Rural female LFPR:** 37.5% (up from 37.0%).
- **Worker Population Ratio (WPR):** For persons of age 15 years and above in the country during the quarter was 52.2%.
  - In rural areas, WPR was 54.7% as compared to WPR of 47.2% recorded in urban areas for the same quarter.

Key Takeaway

- Rural employment improved, driven by agriculture and self-employment.
- Urban employment remained stable, with a slight rise in salaried jobs.
- Female participation in the labour force showed a gradual rise.
- Overall unemployment declined, reflecting a moderate labour market recovery.

Source: TH

RICIN

In News

- The Gujarat Anti-Terrorism Squad (ATS) foiled an alleged terror plot and arrested men with suspected links to terrorism who were reportedly attempting to produce **Ricin chemical**

About Ricin

- Ricin is a highly toxic protein extracted from the castor bean plant (Ricinus communis).
- It blocks protein synthesis in cells, causing multiple organ failure and death within hours of exposure. Even a few milligrams can be fatal.
- It is listed under **Schedule-1 of the Chemical Weapons Convention (CWC)**, supervised by the **Organisation for the Prohibition of Chemical Weapons (OPCW)**, as it has no legitimate civilian use.
- There is **no known antidote for Ricin poisoning**.

Chemical Weapons Convention (CWC)

- **Adopted:** 1992 and came into force in 1997.
- **Administered by:** Organisation for the Prohibition of Chemical Weapons (OPCW), headquartered at The Hague, Netherlands.
- **Objective:** To eliminate an entire category of weapons of mass destruction (WMD) by prohibiting the development, production, acquisition, stockpiling, transfer, and use of chemical weapons and by ensuring their destruction.
- **India:** Among the original signatories and one of the first countries to ratify the Convention in 1996.
- **Schedule system:** Chemicals are divided into three schedules based on lethality and civilian use:
  - **Schedule 1:** High toxicity, no legitimate civilian use (e.g. Ricin, Sarin, VX).
  - **Schedule 2:** Can be used as weapon precursors but have limited industrial uses.
  - **Schedule 3:** Used in large-scale industry but can be weapon precursors (e.g. Phosgene, Hydrogen Cyanide).

Source: IE

WORLD ARTIFICIAL INTELLIGENCE COOPERATION ORGANIZATION (WAICO)

In News

- At the APEC Summit in Busan (2025), President Xi Jinping proposed forming the World Artificial Intelligence Cooperation Organization (WAICO).

About

- It is a new global **AI governance initiative** proposed by Chinese President Xi Jinping, with the headquarters **proposed in Shanghai, China.**
- WAICO intends to address the **current fragmented governance of AI** by fostering international cooperation, aligning AI strategies and technical standards, and promoting inclusive innovation ecosystems, especially for developing countries.

Source: IE

JAMES WATSON, NOBEL PRIZE-WINNING DNA PIONEER DIES

In News

- James Dewey Watson, the Nobel Prize-winning biologist renowned for co-discovering the **double-helix structure of DNA**, died in New York.

DNA (deoxyribonucleic acid)

- It is the molecule that stores genetic instructions essential for an organism's growth and function.
- It is a double helix formed by base pairs attached to a sugar-phosphate backbone.
- It consists of two strands twisted into a double helix, with each strand made of a sugar-phosphate backbone and four nitrogen bases — adenine (A), thymine (T), cytosine (C), and guanine (G).
- Most DNA is located in the cell nucleus (where it is called nuclear DNA), but a small amount of DNA can also be found in the mitochondria

Major Contributions of James Dewey Watson

- Watson's landmark 1953 collaboration with Francis Crick, aided by X-ray data from Rosalind Franklin and Maurice Wilkins, **revolutionized biology by revealing DNA's structure and replication mechanism**.
- He contributed to **cancer research** and played a key role in the **Human Genome Project (1988–1992)**, overseeing the mapping of human genes.
- He also served as a professor at Harvard and transformed Cold Spring Harbor Laboratory into a leading molecular biology center.

Discovery of double-helix structure of DNA

- **James Dewey Watson** was globally celebrated for co-discovering the double-helix structure of DNA in **1953** with Francis Crick .
- Their model revealed how genetic information is stored and replicated, explaining heredity and enabling vast advances in biology.
- The discovery built on decades of prior research, including Friedrich Miescher's identification of DNA in 1869 and the realization in the 1940s that DNA, not proteins, carried genetic information.
- It was catalyzed by X-ray crystallography data, especially Photo 51 taken by Rosalind Franklin's team, which revealed the **molecule's double-helical shape.**
  - Their model showed that DNA consists of two strands with complementary base pairs — A with T, and C with G — arranged like a twisted ladder, allowing precise replication.

Impacts

- The elegant structure explained how traits are inherited and sparked the birth of molecular biology, biotechnology, and genetic engineering.
- It led to transformative tools like CRISPR, revolutionized agriculture and medicine, and enabled genetic analysis in forensics and evolutionary biology.

Recognition

- This breakthrough earned Watson, Crick, and Wilkins the 1962 Nobel Prize and laid the foundation for modern genetics, enabling advances in medicine, forensics, and biotechnology.

Source :TH

V. RAJARAMAN: ARCHITECT OF INDIA'S PROGRAMMING REVOLUTION

In News

- Prof. Vaidyeswaran Rajaraman, a pioneering engineer and academic who helped establish computer science education in India, passed away.

Vaidyeswaran Rajaraman

- He was Born in Tamil Nadu and he studied physics at St. Stephens College, earned an

engineering diploma from IISc Bengaluru, and completed his PhD at the University of Wisconsin-Madison.

- He was a pioneering **computer scientis**t and educator, who played a foundational role in **shaping India's software programming** and services sector.

Major Contributions

- His early work on **analogue computing** at IISc led to advanced training abroad at MIT and Wisconsin, after which he returned to India to build one of the country's **first computer centres around an IBM mainframe**.
- Rajaraman's intensive Fortran courses trained early programmers and forged links with emerging firms like TCS and HCL.
- His students went on to **lead India's software industry.**
- His **1968 Fortran booklet became a bestseller,** prompting a prolific publishing career that made him a household name in programming education.
- He was instrumental in launching **India's first B.Tech in computer science** at **IIT-Kanpur in 1979** and later helped design the **MCA programme to meet industry needs.**
- He advanced India's computing capabilities as head of IISc's Supercomputer Education and Research Centre (1982–1994).

Recognition and legacy

- A Bhatnagar Prize winner, Rajaraman was also honoured with a Padma Bhushan in 1998, besides several other awards.
- He wrote more than 20 textbooks on computer science which are still being taught in colleges and universities across the country.
- His legacy spans analogue machines to supercomputers, and his quiet dedication shaped generations of programmers, educators, and tech leaders.

Source :TH

BOOKER PRIZE 2025

Context

- **David Szalay** won this year's Booker Prize for fiction for his novel **'Flesh**,' is the **first Hungarian-British author** to win the Booker Prize.

About

- The Booker Prize, is a **prestigious literary award conferred each year** for the **best single work of sustained fiction** written in the **English language**, which was published in the United Kingdom and/or Ireland.
- **Launch:** It was first awarded in **1969** to promote reading and literature.
  - The inaugural Booker Prize was awarded to **PH Newby for Something to Answer For.**
- **The Booker Prize Foundation** has an in-house team who select a multicultural group of creative artistes, experts and critics.
- **Indian Winner:** Several Indian writers as well as writers of Indian-origin have won the Prize.
  - These include VS Naipaul in 1971 for In A Free State, Salman Rushdie for Midnight's Children in 1981, Arundhati Roy for The God of Small Things (1997), Kiran Desai for The Inheritance of Loss (2006), Aravind Adiga for The White Tiger (2008).

International Booker Prize

- This prize is awarded **annually** to the best works of long-form fiction or collections of short stories, translated into English and published in the United Kingdom (UK) or Ireland.
- It was established in **2005.**
- In 2022 Geetanjali Shree for her Hindi novel, **Tomb of Sand** received the prize.
- **In 2025, Banu Mushtaq and Deepa Bhasthi** won it for the translated anthology of Mushtaq's short stories from Kannada into English, Heart Lamp.

Source: IE

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