

NEWS TODAY

Israeli strike directly hit Iran's Natanz underground enrichment plant: IAEA

The revelation by International Atomic Energy Agency (IAEA) about recent damage of **uranium** enrichment facilities in Iran has raised concerns about **nuclear safety and security in the ongoing conflict in the middle east**.

About Nuclear Safety and Security

› Definition:

- ⊕ Nuclear security is the **prevention and detection of, and response to**
 - ◆ **unauthorised access or removal,**
 - ◆ **sabotage, and illegal transfer or**
 - ◆ **other malicious acts involving nuclear or radiological material or their associated facilities.**
- ⊕ **Nuclear safety** involves **prevention of and protection against accidents involving such material** or related facilities that could give rise to radiation risks.

› **Nuclear safety vs nuclear security:** Unlike Nuclear safety, nuclear Security deals with **intentional threats** (e.g., terrorism, sabotage)

Role of IAEA in ensuring nuclear safety and Security

- › **Genesis:** IAEA, an **autonomous organisation of the UN**, founded in 1957 (india is a founding member).
- › **Functions:** works on issues like **peaceful uses of nuclear energy, food safety, cancer control and sustainable development**.
- › **Conventions on Nuclear Safety and Security**
 - ⊕ **Convention on the Physical Protection of Nuclear Material:** First multilateral agreement and the **only internationally legally binding treaty** for physical protection of nuclear material.
 - ⊕ **Code of Conduct in Safety and Security of Radioactive Source:** A **non-legally binding legal instrument** issued by the IAEA.
 - ⊕ **Convention on Nuclear Safety (CNS):** Aims to commit Contracting Parties operating **land-based civil nuclear power plants** to maintain a high level of safety.
 - ⊕ **Vienna Declaration on Nuclear Safety:** To prevent **accidents and mitigate radiological consequences**.

Other UN initiatives for nuclear safety and security

- › **Terrorist Bombings Convention:** Covers **explosive attacks** including those using radioactive materials.
- › **Nuclear Terrorism Convention:** Requires **States to criminalize nuclear terrorism offenses**.
- › **UN Security Council Resolution for**
 - ⊕ **Comprehensive counter-terrorism measures.**
 - ⊕ **Preventing non-State actors from acquiring weapons of mass destruction (WMD).**

Union Finance Minister called Fintech firms to create new markets in agriculture sector and rural areas

The Finance Minister stressed that fintech firms should view rural India as a fertile ground **not just as a social responsibility but as an opportunity to create new markets**.

About Fintech Sector

- › **Fintechs**—short for financial technology—are companies that **rely primarily on technology to provide financial services**.
- › **Fintech sector** comprises Digital Payments, Alternative Lending (crowd funding), InsureTech, Wealth Tech (investment platform) and Enabling Tech (services using AI, big data to support fintech).
- › India's Fintech ecosystem is the **3rd largest in the world** and **growing at 14% CAGR**

Role of fintech sector in rural India

- › **Financial Inclusion:** Mobile apps and digital wallets bring banking to the unbanked via UPI.
 - ⊕ **E.g., Aadhaar-Enabled Payment Systems (AEPS).**
- › **Access to Credit:** Microloans using alternative data help farmers and small businesses.
 - ⊕ **E.g., Agri-fintech platforms like CropFunds** use transaction histories, farm outputs, etc. to assess creditworthiness of farmers.
- › **Agriculture Support:** Apps offer market prices, weather updates, and insurance, linking farmers to buyers.
 - ⊕ **E.g., Ministry of Agriculture's AgriMarket Mobile App and Crop Insurance Mobile App.**
- › **Digital Payments and Remittances:** Low-cost, secure transactions and remittances reduce cash use.
 - ⊕ **E.g., UPI-enabled apps (Paytm, PhonePe)** are increasingly becoming popular in rural areas for transactions.

Challenges for fintech sector in rural areas

- › **Digital divide:** Both **digital infrastructure** (e.g., internet connectivity) and **digital literacy** hinder access to fintech apps, especially for women and marginalised groups.
- › **Mistrust of digital solutions:** Skepticism toward digital financial services due to unfamiliarity, negative experiences like cyberfraud and preference for cash.
- › **Geographic and Physical Barriers:** Lack of traditional banking infrastructure in remote areas make it challenging for fintech companies to reach and serve all rural customers.

US Food and Drug Administration (FDA) approves new HIV prevention drug Lenacapavir

FDA approval also **paves the way for WHO prequalification**, which can accelerate national regulatory approvals.

- WHO Prequalification of Medicines Programme (PQP) helps ensure that medicines supplied by procurement agencies meet **acceptable standards of quality, safety and efficacy**.

About Lenacapavir

- Lenacapavir is an antiretroviral medicine that is used for **HIV prevention as a Pre-Exposure Prophylaxis or PrEP**.
 - ⊕ PrEP is a medication that **can reduce the risk of HIV infection for individuals** who are **HIV-negative but are at risk of contracting the virus**.
 - ⊕ WHO currently recommends **oral PrEP**, the **dapivirine vaginal ring**, and **long-acting injectable cabotegravir (CAB-LA)** as options for HIV PrEP.

About HIV

- Human Immunodeficiency Virus (HIV) is a **virus that attacks the body's immune system**.
- **Mechanism:** HIV damages the immune system by infecting and destroying **CD4 T lymphocytes**, a **type of white blood cells**.
- **Transmission:** HIV is **spread from the body fluids** of an infected person, including blood, breast milk, semen and vaginal fluids.
 - ⊕ It can also **spread from a mother to her baby**.
- **Treatment:** HIV can be prevented and treated with antiretroviral therapy (ART).
 - ⊕ Untreated HIV can progress to **Acquired immunodeficiency syndrome (AIDS)**.
- According to HIV Estimations 2023 report, over **2.5 million people are living with HIV in India**.

India's Initiatives

- **National AIDS Control Programme Phase-V (2021-26)** aims at achieving 80% reduction in new infections.
 - ⊕ **95-95-95 Target:** 95% of HIV-positive individuals know their status, 95% of those diagnosed are on treatment, and 95% of those patients achieve viral suppression.
- **HIV and AIDS (Prevention and Control) Act 2017** prohibits discrimination against HIV-positive people.
- Commitment to **End HIV/AIDS as a public health threat by 2030**.
- **Youth-targeted initiatives** like Red Ribbon Clubs in educational institutions.

Fifth Edition of National Time Release Study (NTRS) Shows Faster Import Clearance At Ports

Prepared by the **Central Board of Indirect Taxes and Customs (CBIC)**, the report assesses the speed at which goods are cleared at ports across **land, sea, and air**, thereby helping to **boost India's logistics efficiency**.

- The report shows notable progress in cargo clearance times at key import gateways between **2023 and 2025 (refer to the infographics)**

Why Logistics Matters for India?

A robust logistics sector **supports trade, reduces business costs, and connects Indian industries with global markets**, thereby helping initiatives like 'Make in India' succeed.

- **Employment:** Over 22 million people work in the logistics sector.
- **Competitiveness:** Lower logistics costs help **Indian products compete globally**.
- **Current Status:** India ranked **38th out of 139 countries** in the **2023 World Bank's Logistics Performance Index**, improving from 44th in 2018.
- **Goal for 2030:**
 - ⊕ Rank among the **top 25 nations** in logistics.
 - ⊕ Reduce logistics costs to **less than 10% of GDP**

Steps taken leading to improvements in India's Logistics Sector

- **Dedicated Freight Corridors (DFCs):** The **Eastern and Western DFCs** have cut goods transit time by **20-30%**.
 - ⊕ 96% (2,741 km) of the route is now operational.
- **E-Way Bill System:** Introduced under GST, it has made **goods tracking easier** and reduced **road transport delays**.
- **National Logistic Policy (2022):** Aims to lower the cost of logistics **from 13-14% to around 8-9% of the GDP**.
- **National Trade Facilitation Action Plan (NTFAP) 3.0 (2024-27):** Launched by CBIC, it focuses on reducing **cargo release times** across ports.
 - ⊕ Aligned with the **WTO Trade Facilitation Agreement** to promote smoother cross-border trade.

What is NTRS?



Genesis

Since 2019, the Time Release Study has been conducted annually across 15 major locations and sea ports.



Recommended by

World Customs Organization (WCO)

An intergovernmental body founded in 1952
Representing 186 members that process 98% of global trade

Key Findings of the 5th NTRS (2023-2025)



Improvements (Time Reduction)

SEAPORTS ◀ **AIR CARGO (ACCS)** ◀ **ICPs (Check Posts)**
-6 hours -5 hours -18 hours

Average release times decreased



Challenges (Time Increase)

INLAND CONTAINER DEPOTS (ICDs)
+12 hours

Hindustan Aeronautics Limited (HAL) wins ISRO bid to build Small Satellite Launch Vehicles (SSLVs)

Out of three bidders including Alpha Design Technologies Ltd. and Bharat Dynamics Ltd., HAL has bagged a **Transfer of Technology (ToT)** deal from ISRO to build and operate SSLVs.

- During the technology transfer phase, HAL will have to **make at least two SSLVs** end-to-end while observing the procedure ISRO followed for the three developmental flights.

About SSLV

- SSLV is a **three-stage solid propulsion rocket** designed to launch satellites weighing under 500 kg into 500 km planar orbit.
- It is a **low-cost vehicle** with **low turn-around time** and has flexibility in accommodating multiple satellites.

Initiatives for Opening Up the Space Sector

- **Liberalisation of the Space Sector:** Private entities can now carry out end-to-end space activities, from satellite manufacturing to launch services.
 - ⊕ **100% FDI allowed** in Space sector.
- **Creation of IN-SPACE:** Indian National Space Promotion and Authorization Centre (IN-SPACe) promotes, authorizes, and supervises non-governmental space activities.
- **Indian Space Policy 2023:** Provides regulatory clarity and long-term policy stability, encouraging private investment.
- **Venture Capital Fund:** A dedicated ₹1,000 crore fund has been approved to finance startups and boost private investment in the space sector.

Privatisation of Space Sector in India

- There are more than **200 space-based start-ups** in India and so far, ISRO and IN-SPACe/NSIL has done around 478 Transfer of Technology to private players.
- **Developments by Private Players:**
 - ⊕ **Vikram-S, India's first privately built rocket** was launched under 'Mission Prarambh'.
 - ⊕ IIT Madras-incubated startup Agnikul Cosmos test launched the indigenously designed and developed **world's first rocket with a single-piece 3D printed engine**.

Atlantic Meridional Overturning Circulation (AMOC) Collapse Could Cause Severe Cooling in Northern Europe: Study Warns

A study by **Utrecht University** (Netherlands) finds that under moderate emissions, **global warming may not be enough to offset the cooling** caused by a potential collapse of the **AMOC**.

About AMOC

- **Ocean Current:** The **AMOC** is a system of ocean currents that circulates water within the Atlantic Ocean, bringing warm water north and cold water south.
 - ⊕ Differences in **water temperature and salinity** power it.
 - ◆ Warm surface water moves toward the poles and cools down.
 - ◆ As **sea ice forms**, it leaves behind salt, making surrounding water denser.
 - ◆ Dense water sinks and **flows southward at deep ocean levels**.
 - ◆ This deep water eventually **rises again through upwelling**, warms up, and restarts the cycle.
- **Significance:**
 - ⊕ AMOC is part of a "**global conveyor belt**" of ocean currents, exchanging cool and warm water.
 - ⊕ Thus, it helps **distribute heat, moisture, and nutrients** across the oceans over long periods of time.
- **Impact of Climate Change:** Global warming can weaken major ocean currents, such as the AMOC.
 - ⊕ This occurs because the **melting of Arctic ice adds cold, fresh water to the North Atlantic**, thereby **reducing the water's salinity and density**.
 - ⊕ As a result, the **dense water needed to sink and drive the AMOC becomes scarce**.

What Happens if AMOC Weakens or Collapses?

A weakening or collapse of AMOC could become a **climate tipping point**, with global consequences:

- **Climate Disruption:** Even a slight slowdown in the AMOC can
 - ⊕ **Cool Europe and change precipitation patterns** in parts of Europe, South America, and Africa,
 - ⊕ Affect the **timing of the Indian monsoon**
 - ⊕ **Lead the tropical rain belt to shift southward**, resulting in droughts over the African Sahel
- **Threat to Ocean Life:** Fewer nutrients reach surface waters, harming marine food chains.

Although a full AMOC collapse is debated, its current weakening is worrying.

Also In News



Stablecoins

The US Senate passed the **Guiding and Establishing National Innovation for U.S. Stablecoins (GENIUS) Act** in a major boost for stablecoins.

About Stablecoins

- Stablecoins are a type of crypto asset that is **tied to the value of another asset**, such as the US dollar or gold.
- **Unlike Bitcoin (volatile cryptocurrency)**, stablecoins are more stable as they aim to minimize price fluctuations.
 - ⊕ This feature makes them suitable for transactions, savings, and as a **bridge between traditional finance and crypto ecosystems**.



Anti-Dumping Duty

India has imposed five-year anti-dumping duties on **imports of Chinese aluminium foil, Pretilachlor and Acetonitrile from China, Russia, and Taiwan**.

About Anti-Dumping Duty

- An anti-dumping duty is a **protectionist tariff that a domestic government imposes on foreign imports** that are said to be dumped in the domestic market.
 - ⊕ Dumping is a process wherein a company **exports a product at a price that is significantly lower** than the price it normally charges in its domestic market.
- General Agreement on Tariffs and Trade (GATT) allows countries to take action against dumping.



India Post Payments Bank (IPPB)

IPPB received the **2024-25 Digital Payments Award** from the Ministry of Finance for its **inclusive, tech-driven, citizen-centric banking solutions**.

About IPPB

- **Ownership:** IPPB is a **100% government-owned payments bank** under the Department of Posts, Ministry of Communications.
- **Significance:** Leverages ~ **1.55 lakh post offices** to extend its reach to every corner of the country.

What is a payment bank?

- It provides basic **banking services to underserved individuals, including** deposits, withdrawals, remittances, and payments, primarily through digital channels.
- It can **accept deposits (up to ₹2 lakh)**, and enable money transfers and bill payments, but **cannot give loans or issue credit cards**.



Commission for Air Quality Management (CAQM)

From July 2025, CAQM will ban fuel refills for end-of-life vehicles in Delhi to help reduce pollution.

About CAQM

- **Genesis:** Established under the CAQM Act, 2021 for the **National Capital Region (NCR) and adjoining areas** (i.e., Haryana, Punjab, Rajasthan, and Uttar Pradesh)
- **Objective:** To improve coordination, research, and problem-solving related to air pollution and air quality
- **Chairperson:** Must have experience either:
 - ⊕ At least 15 years in **environment protection/pollution control**, or
 - ⊕ At least 25 years in **administration**
- **Key power:** CAQM's orders **override** those of state governments, CPCB, state PCBs, and other bodies in case of conflict.



Srisailem Mallikarjunaswamy temple

Recently, the first Indian **epigraphical reference to Halley's Comet** has been found in a copper plate inscription preserved in **Srisailem Mallikarjunaswamy temple in Andhra Pradesh**.

- The inscription dated 1456 CE is written in **Sanskrit in Nagari script**.
- It records a grant made by the **Vijayanagar ruler Mallikarjuna** to a Vedic scholar.

About Mallikarjunaswamy Temple

- **Location:** Srisailem, Andhra Pradesh, on **Nallamalai Hills** along the Krishna River.
- **Dedicated to Lord Shiva and Goddess Parvati**, it is **both a Jyotirlinga and a Shakti Peetha**.
- **Patronized by:** Initially Satavahana dynasty, and later by Rashtrakuta dynasty and Vijayanagara rulers.



Ottawa Convention

Finland's Parliament approves withdrawal from Ottawa Convention or Anti-Personnel Mine Ban Convention.

- Earlier, Estonia, Lithuania, Latvia and Poland also announced their withdrawal from the Treaty.

About Ottawa Convention

- **Genesis:** Concluded by the Diplomatic Conference on an International Total Ban on Anti-Personnel Land Mines at Oslo in 1997.
- **Objective:** End harm from anti-personnel mines by promoting global participation, clearing mines, destroying stockpiles, and helping victims.
- **Membership:** 165 countries have joined the treaty. **India is not one of them.**



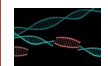
Taiwan Strait

Taiwan recently detected **Chinese military aircraft** near its territory, just days after a **British naval ship** passed through the sensitive **Taiwan Strait**.

- China claims Taiwan as its own and has not ruled out using **force** to bring the democratic, self-ruled island under its control.

About Taiwan Strait (Or Black Ditch)

- A **strait** is a narrow body of water that connects two larger bodies of water.
- **Named by:** Portuguese in the 16th century as Formosa ("Beautiful")
- **Connects:** **South China Sea** and **East China Sea**
- **Rivers:** Jiulong and Min rivers from China flow into it
- **Significance:** More than 40% of the world's container fleet moves through it.
- **Median Line or Davis Line:** Runs approximately down the middle of the Taiwan Strait.



Jumping Genes

A new study reveals that **LINE-1, a jumping gene, binds to cellular DNA during brief periods** of cell division.

About Jumping Gene

- **Transposable Elements** or **Jumping Genes** are **DNA sequences** that **move from one location to another on the genome** thus **affecting the expression of genes**.
 - ⊕ They can do so either by **physically cutting and pasting themselves** or by **copying themselves** to new locations.
 - ⊕ In the process, they may cause **mutations** and **increase (or decrease) the amount of DNA** in the cell genome.
- In human beings, more than **50% of the genome is composed of transposable elements**.



Gharial Conservation

Seven gharial yearlings were released into the Girwa River at Katarniaghat Wildlife Sanctuary (Uttar Pradesh).

About Gharials:

- **Name Origin:** Comes from ghara (pot) due to the bulb-like knob on males' snouts—making them the only visibly **sexually dimorphic** crocodilian.
- **Diet:** Mainly eat **fish** (piscivorous).
 - ⊕ Long, thin snout with sharp teeth and a strong neck makes them excellent fish hunters.
- **Threats:** **Dams, barrages, and water extraction** harm their river habitats by turning them into unsuitable lakes and reducing water flow downstream.
- **Habitat:** Found mainly in three Ganga River tributaries:
 - ⊕ Chambal and Girwa rivers of India
 - ⊕ Rapti -Naryani River of Nepal
- **Conservation Status:**
 - ⊕ **IUCN:** Critically Endangered
 - ⊕ **Wildlife (Protection) Act, 1972:** Schedule I
 - ⊕ **Crocodile Conservation Project** launched in 1975
 - ⊕ **Gharial reserves** set up in **Uttar Pradesh, Madhya Pradesh, and Rajasthan**



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI