

NEWS TODAY

Research, Development, and Innovation (RDI) Scheme gets approval from Cabinet

The scheme aims to strengthen India's capabilities in strategic technologies and promote technological self-reliance, aligning with the nation's long-term innovation and Atmanirbhar Bharat vision.

Funding Mechanism

- **Corpus:** ₹1 lakh crore / Rs. One lakh Crore
- **Two-tiered funding mechanism.**
 - ⊕ Level 1 (Custodian): Special Purpose Fund (SPF) established within the ANRF.
 - ⊕ Level 2 (Disbursement): Funds allocated to a variety of Second-Level Fund Managers
- **Mode of Funding:** Long-term concessional loans (at low or nil interest rates), Equity infusion (especially for startups), Contributions to Deep-Tech Fund of Funds (FoF)

Key Objectives

- Encourage private sector to scale up RDI in sunrise domains and sectors relevant for economic security, strategic purpose, and self-reliance
- Finance transformative projects at higher Technology Readiness Levels
- Support acquisition of critical technologies or those of high strategic importance
- Facilitate establishment of a dedicated Deep-Tech Fund of Funds

Targeted Sectors

- **Sunrise Sectors:** Energy Security, Deep Technology (includes quantum computing, robotics & space), Artificial Intelligence, Biotechnology & Health, Digital Economy.
- **Strategic Sectors:** Technologies whose indigenization is necessary for strategic reasons, economic security, or Atmanirbharta.
- **Public Sector:** Any other sector or technology where it is deemed necessary in public interest.

Governance and Implementation Frameworks

- **Nodal Department:** Department of Science and Technology (DST).
- **Strategic Direction:** Provided by the Governing Board of ANRF chaired by the Prime Minister.
- **Approval of Scheme Guidelines:** Handled by the Executive Council (EC) of ANRF
- **Changes in Schemes:** Managed by an Empowered Group of Secretaries (EGoS) led by the Cabinet Secretary.

India's Information Technology Industry is undergoing a transformation

The Indian IT industry is undergoing major transformation due to automation, shifting global trends, steepest workforce layoffs, and evolving skill needs.

Indian IT Industry

- Contributes about 12% to total services GVA and nearly 7% to India's GDP, adding over \$280 billion to the economy.
- Employs around 1% of the workforce, with nearly 6 million people working in the sector.
 - ⊕ Women form about 36% of the total workforce, reflecting growing gender inclusion.
- Industry has positioned India as a global hub for software services and digital innovation while providing upward mobility for youth, especially from smaller towns.

Transformations in the IT Industry

- **Technology transformation:** AI-driven automation is disrupting the sector by automating routine work like reporting, basic coding, and coordination.
 - ⊕ It is drastically improving developer productivity, and shifting the industry's focus towards high-value, AI-driven digital transformation.
- **Global Realignments:** Restrictive U.S. immigration policies with hike in H-1B visa fees and tariff threats are prompting Indian IT firms to localise their overseas workforce.
- **Outdated outsourcing model:** Mass hiring and cost-based services are giving way to solution-driven demand powered by specialised expertise and AI fluency.
- **Skill gap:** Many professionals lack expertise in evolving fields of AI, cloud, and cybersecurity.

Way Forward

- **Reimagine skilling:** Include AI, emerging technologies and product thinking in regular school curriculum and provide industry-oriented large scale upskilling.
 - ⊕ For instance, government has announced that AI curriculum will be introduced in all schools from Class 3 from 2026–27.
- **Support startups:** Strengthen AI and deep-tech ecosystems through policy and funding, shifting focus from outsourcing to product innovation.
- **Policy and social protection:** Mandate 6–9 months' salary compensation, provide retraining, career transition aid, and mental health support to employees.

Food and Agriculture Organization of the United Nations (FAO) released The State of Food and Agriculture (SOFA) 2025 Report

SOFA 2025 provides the most comprehensive analysis of how **human-driven land degradation impacts agricultural productivity, food security and ecosystem resilience.**

Key Highlights of Report

- **Land Degradation** is defined as a long-term decline in the land's ability to deliver essential ecosystem functions and services.
 - ⊕ It is driven by natural causes (soil erosion and salinization) and anthropogenic causes (deforestation, overgrazing, unsustainable cropping and irrigation practices etc.)
- **Impact of Land Degradation:**
 - ⊕ **Yield Loss:** For about 1.7 billion people, crop yields are 10% lower because of human-induced degradation.
 - ◆ **Asian countries are the most affected** - both because of their accumulated degradation debt and their high population densities.
 - ⊕ **Productivity Loss: Total factor productivity growth**, which reflects technological advancement and efficiency improvements, has **declined since the 2000s**, particularly in the Global South.
 - ⊕ **Convergence with Food Security:** Globally, 47 million children under five years of age suffer from stunting live in hotspots where stunting overlaps with significant yield losses.
 - ⊕ **Ecosystem Impact:** Degradation affects all agricultural systems, **undermining livestock production** in rangelands and – through forest loss driven by agricultural expansion – **disrupting climate patterns and biodiversity.**

Policy Options for Sustainable Land Use

- **Regulatory Policies:** Land use zoning, deforestation bans, soil conservation mandates etc.
- **Incentive-based Policies:** Uses voluntary and flexible financial rewards for sustainable practices such as payments for ecosystem services.
- **Cross-compliance Mechanisms:** Link government subsidies or government support to adherence to environmental standards.
- **Land Degradation Neutrality (LDN) Hierarchy** of avoid > reduce > reverse land degradation.

NITI Aayog's Frontier Tech Hub Unveils "Reimagining Agriculture: A Roadmap for Frontier Technology Led Transformation"

The report highlights the structural barriers slowing agricultural transformation and shows how frontier technologies can directly address these gaps to drive higher productivity, resilience, and farmer incomes.

Barriers affecting Agricultural Transformation

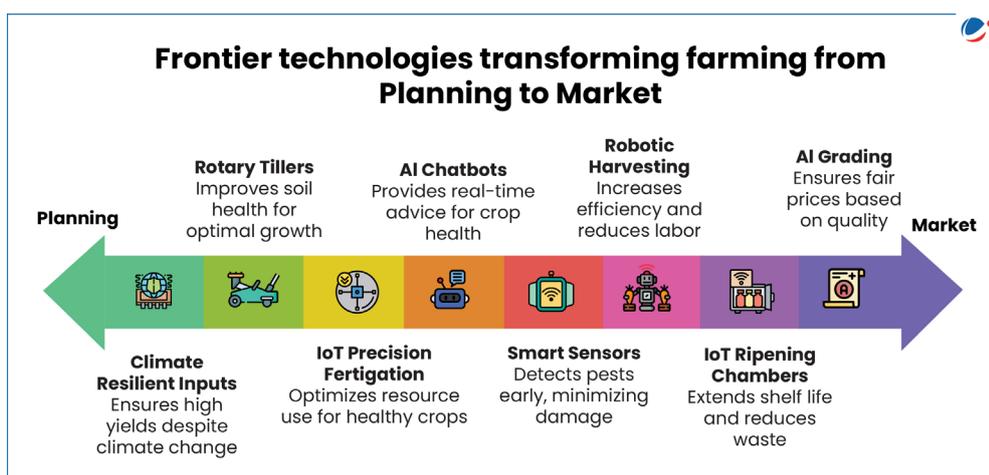
- **Data:** Siloed data, no single-source of truth, lack of localized, high-quality AI-ready datasets.
- **Limited Phygital Approach:** Limited internet access, inadequate physical infrastructure, field force and touchpoints to integrate with digital solutions.
- **Fragmentation:** Limited coordination and siloed functioning across industry, academia, policymakers & regulatory bodies.
- **Capital:** Gap in funding for high-risk, slow-scaling AgTech innovations, constrained credit access for farmers.

Role of Frontier Technologies in Agricultural Transformation

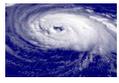
Frontier technologies includes **seed technologies, vertical farming, digital twins, precision tools and smart sensors, agentic AI, predictive analytics, and advanced mechanisation** aimed at boosting productivity, sustainability, and farmer incomes.

Path ahead for scaling up of frontier technologies

- A **three-pillar framework for a Digital Agriculture Mission 2.0:**
 - ⊕ **Enhance foundational systems to be frontier-tech ready:** by 360-degree data ecosystem, digital enablement of the last-mile interventions and upgrading the AgriTech startup accelerator ecosystem.
 - ⊕ **Reimagine Agri-Innovations & Agri-Talent Systems for Future-readiness:** by globally competitive talent & innovation ecosystems, focusing on a shift to translational R&D, interdisciplinary industry-aligned talent and revamping the institutional architecture for innovation.
 - ⊕ **Converge public-private efforts to accelerate agricultural transformation:** by building instruments for public-private dialogue to align industry and government efforts for agile policy making.



Also In News



Typhoon

Typhoon Kalmaegi made landfall in the central Philippines.

About Typhoon

- Typhoons are **essentially tropical cyclones** that originate over Western Pacific Ocean.
 - ⊕ A tropical cyclone is a **rapidly rotating storm** that begins over tropical oceans, and they can vary in speed, size, and intensity.
- **Favourable conditions** for tropical cyclones include warm ocean waters, atmosphere cooling fast with height, relatively moist air, pre-existing near-surface disturbance etc.
- **Other names** for Tropical Cyclones include:
 - ⊕ **Hurricane** in Atlantic Ocean and Northeast and South Pacific Ocean.
 - ⊕ **Cyclones** in the Indian Ocean,
 - ⊕ **Willy-willies** in the Western Australia.



Alternative investment funds (AIF)

Real Estate is now the single largest recipient of AIF capital in India.

About Alternative Investment Fund (AIF)

- AIF means any fund established or incorporated in India which is a **privately pooled investment vehicle** which collects funds from sophisticated investors, whether **Indian or foreign**, for investing it in accordance with a defined investment policy for the benefit of its investors.
- It can be set up in the form of a **trust or a company or a limited liability partnership or a body corporate**
- **Regulated by: Securities and Exchange Board of India**
- **Types:**
 - ⊕ **Category I - Investments in Startups & Social Ventures.**
 - ◆ E.g: Venture Capital Funds (VCFs), SME Funds, Social Venture Funds, Infrastructure Funds
 - ⊕ **Category II** - which do not fall in Category I and III and which do not undertake leverage or borrowing other than to meet day-to-day operational requirements
 - ◆ E.g: Real Estate, Private Equity Funds, funds for distressed assets
 - ⊕ **Category III** - employ diverse or complex trading strategies and may employ leverage including through investment in listed or unlisted derivatives
 - ◆ E.g: Hedge Funds, Private Investment in Public Equity (PIPE) Funds

Note: AIF does not include funds covered under the **SEBI (Mutual Funds) Regulations, 1996, SEBI (Collective Investment Schemes) Regulations, 1999** or any other regulations of the Board to regulate fund management activities.



Generational Ban on Tobacco

Maldives becomes first country to impose generational ban on tobacco.

About Generational Ban

- **Generational Tobacco Ban, or Lifetime Tobacco Ban**, refers to a policy that permanently prohibits the sale of cigarettes or other tobacco products to anyone born after a specified date—meaning they can never legally purchase tobacco at any age.
- **Other measures used for tobacco control:** monitoring use, warning about harms, banning advertising, raising taxes, stopping illicit trade, and regulating new nicotine products.

Status of Tobacco consumption

- **Status:** Around 80% of the world's 1.3 billion tobacco users live in low- and middle-income countries.
- **Forms of Tobacco Use** includes cigarette smoking, waterpipe tobacco, cigars, heated tobacco, roll-your-own tobacco, pipe tobacco, smokeless tobacco products, etc.
- **Steps Taken:**
 - ⊕ WHO Member States adopted the WHO Framework Convention on Tobacco Control (WHO FCTC) in 2003. Currently 183 countries are Parties to this treaty.

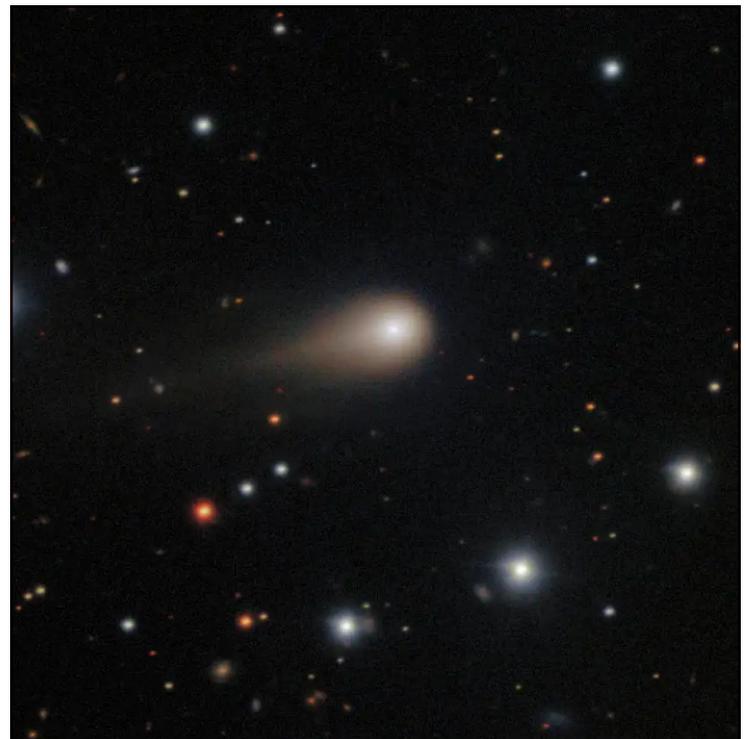


3I/ATLAS

Comet 3I/ATLAS has been found to contain water, marking a significant discovery in understanding cometary evolution.

About 3I/ATLAS

- Comet 3I/ATLAS is the **third known object** from outside our solar system to be discovered passing through our celestial neighborhood.
- ⊕ Other two are **1I/Oumuamua** seen in 2017 and **2I/Borisov** seen in 2019.
- Astronomers have categorized this object as **interstellar** because of the hyperbolic shape of its orbital path. (It does not follow a closed orbital path about the Sun).
- It was first spotted by NASA-funded **Asteroid Terrestrial-impact Last Alert System (ATLAS) telescope** in Río Hurtado, Chile.



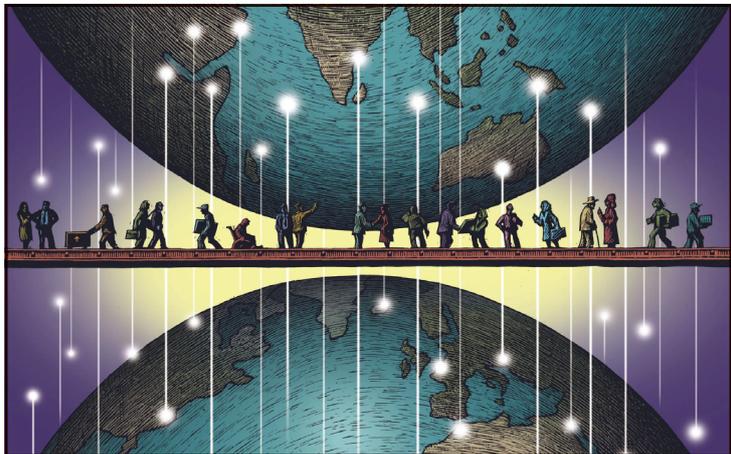


International Migration Outlook 2025

Recently, the International Migration Outlook 2025 report has been released by the Organization for Economic Co-operation and Development (OECD).

Major Findings

- In 2023, 225 000 Indian citizens acquired the nationality of an OECD country.
- China and India continued to account for a third of all international students in OECD countries.



Typhoid Conjugate Vaccine

Bangladesh became the eighth country in the world to introduce the Typhoid Conjugate Vaccine (TCV).

About Typhoid Conjugate Vaccine

- It is a **single-dose, injectable vaccine** that protects against typhoid fever by triggering the body to produce antibodies against the Salmonella Typhi bacterium.
- ⊖ Eg- Typbar TCV (manufactured by Bharat Biotech).

About Typhoid

- **Caused by:** Bacterium Salmonella Typhi.
- **Spread through:** Contaminated food or water.
- **Symptoms include:** Prolonged high fever, fatigue, headache, nausea, abdominal pain, and constipation or diarrhoea.



Mussels

Mussels reveal growing microplastic pollution in Greece's seas.

About Mussels

- Mussels are **bivalve mollusks** characterized by a blue-black shell that lives attached to surfaces in marine environments.
 - ⊖ The molluscs include many familiar animals, including clams, snails, slugs, squid, tusk shells and chitons.
- These are **filter-feeding organisms** that absorb a range of contaminants into their tissue, including invisible microplastics.
- They are known for their **efficient feeding, higher protein content** compared to oysters.
- They have been used globally for decades as a **barometer of marine pollution**.



State Human Rights Commission (SHRC)

Chandigarh High Court reminds Punjab State Human Rights Commission (SHRC) that it can only recommend, not issue directions like court.

About SHRC

- Statutory body formed under the **Protection of Human Rights Act, 1993**.
- Inquires into human rights violations under the **State List and Concurrent List**.
- Its **recommendations are advisory**, not legally binding.
- **Composition:** A Chairperson (retired Chief Justice or Judge of a High Court) and two members.
- **Appointment of Chairpersons and Members:** Appointed by the Governor on the recommendation of a committee.
- **Members can be removed by the President of India.**



Place in News



Bahrain (Capital: Manama)

India and Bahrain hold talks on boosting defense and trade ties.

Political Features

- Bahrain is the third-smallest nation in Asia.
- **Location:** Lies in West Asia, in the Persian Gulf.
- **Border:** It is an archipelago of islands and **has no land borders** with other countries.
- **Neighbouring Water Bodies:** Persian Gulf.

Geographical Features

- **Major physical region:** Most of Bahrain is a desert with low-lying rocky and sandy plains.
- **Highest point:** Jabal ad Dukham.
- **Umm er Radhuma- Dammam Aquifer System** extends over Bahrain along with Qatar and Saudi Arabia

