

# NEWS TODAY

## “Mastering frontier technologies is need of the hour” - Raksha Mantri

Frontier technologies such as **AI, proxy warfare, space warfare** and **cyber-attacks** are posing a big challenge and **reshaping nature of warfare**.

### Frontier Technologies in Warfare

- **AI based warfare:** AI based tools are designed to assist complex decisions like target selection, collateral damage assessments, providing recommendation etc. **e.g. AI-powered drones**
- **Electromagnetic warfare:** It is a military capability that exploits electromagnetic energy across the battlespace to create offensive and defensive effects.
- **Space warfare:** Military operations in outer space, utilizing both kinetic (physical) and non-kinetic (electronic, cyber) means to achieve strategic objectives. **E.g. Anti-satellite (ASAT) weapons**
- **Cyber attacks:** it is deliberate exploitation of computer systems to steal critical data of a country. **E.g. cybersecurity breach at Kudankulam Nuclear Power Plant**

### Issues with Frontier Technologies

- **Challenges to International Security:** Increased risk of destabilization due to asymmetry in technological capabilities and Proliferation of advanced technologies to non-state actors.
- **Legal gaps:** lack of international laws on use of these technologies in warfare further increases vulnerability of human rights violation.
- **Dual use dilemma:** Technologies designed for peaceful purposes can be repurposed for military applications, blurring lines between civilian and military tech use.
- **Other Issues:** Risks of algorithmic bias, accountability issues, potential for AI arms races etc.

### Steps taken by India for adopting Frontier Technologies:

- **Establishment of Defence AI Council (DAIC)** and Defence AI Project Agency (DAIPA)
- **Project Seeker:** AI-based facial recognition, surveillance, monitoring system of Indian Army
- **'Antariksha Abhyas – 2024':** First Ever Space Exercise to integrate India's space capability in military operations.
- **DRDO Young Scientists' Laboratories:** To provide solutions in advanced technology areas of warfare.

## India Reported Decline in Internet Shutdowns in 2024

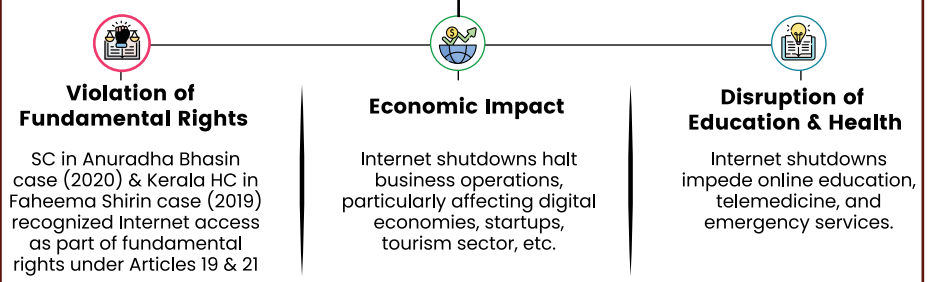
According to data from the Software Freedom Law Centre, India recorded **60 internet shutdowns in 2024**, the **lowest in 8 years**.

- The **United Nations** declared internet access a **fundamental human right** in 2016.
- Internet access is crucial for achieving SDGs, including **education (SDG 4)**, **gender equality (SDG 5)**, & **reduced inequalities (SDG 10)**.

### Legal Backing for Internet Shutdowns in India

- **Constitutional Provisions:** **Article 19 (2)** allows the government to impose reasonable restrictions on freedom of speech and expression for security of the state, public order, etc.
  - ⊕ Internet shutdowns have historically been used as measures to control **misinformation, protests, or unrest** etc.
- **Statutory Provisions:**
  - ⊕ **Telegraph Act, 1885:** Under the **Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017** of the Act, telecom services, including Internet, can be suspended in cases of public emergency or public safety.
  - ⊕ **Section 144** of the erstwhile CrPC (**section 163** of the Bharatiya Nagarik Suraksha Sanhita).
- **Anuradha Bhasin case (2020) Judgement:** The Supreme Court (SC) ruled that **internet restrictions must be temporary, lawful, necessary, and proportionate**.

### Impact of Internet Shutdowns



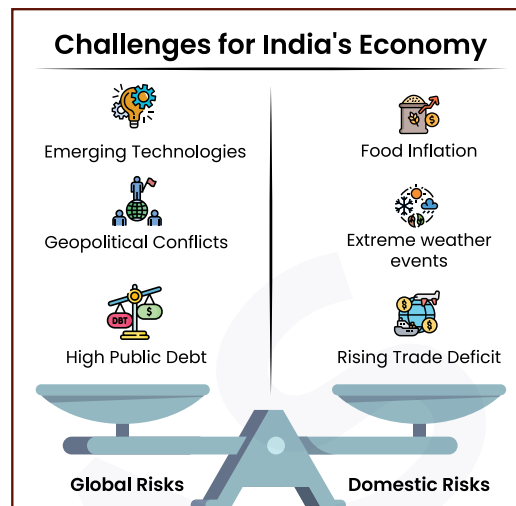
## RBI releases 'Financial Stability Report, December 2024'

It is a **half-yearly publication**, with contributions from all financial sector regulators.

- It presents the collective assessment of the **Financial Stability and Development Council (FSDC) subcommittee** on current and emerging risks to the stability of the Indian financial system.

### Key Highlights:

- Resilient Indian Economy:** Gross domestic product (GDP) is projected to grow at 6.6 % in 2024-25, aided by a revival in rural consumption, Government spending, & services exports.
- Government Finance:** Central government's **debt-to-GDP ratio** is expected to decrease from its pandemic peak of 62.7% (2020-21) to 56.8% by 2024-25.
  - States' **outstanding liabilities** are projected to decline from **31% to 28.8%** during same period.
- Stable Financial System:** The soundness of scheduled commercial banks (SCBs) has been bolstered by **strong profitability, declining non-performing assets & adequate capital and liquidity buffers.**



### About FSDC

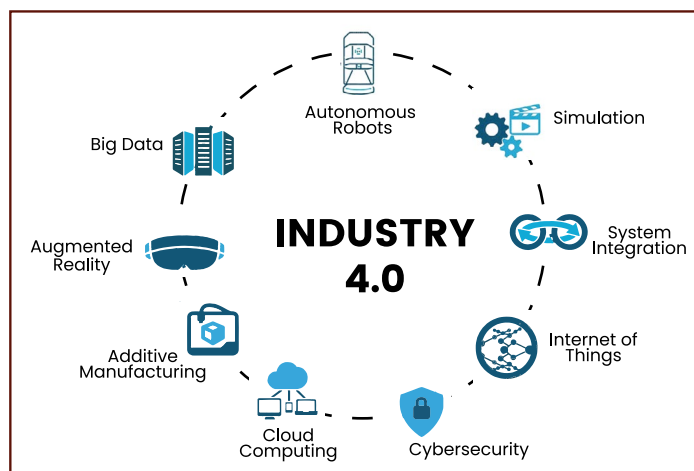
- Genesis:** It is **Non-statutory body** set up by the Government as the apex-level forum in 2010.
- Chairmen:** Union Finance Minister.
- Members:** Heads of financial sector Regulators (RBI, SEBI, PFRDA, IRDA & FMC), Finance Secretary, etc. In 2018, FSDC was reconstituted to include more members.
- Functions:** The Council deals, inter-alia, with issues relating to **financial stability, financial sector development, and inter-regulatory coordination**, etc.

## 'Industry 4.0 adoption and strategic roadmap for Indian manufacturing Report' released by Confederation of Indian Industry

Industry 4.0 refers to "smart" and connected production systems that are designed to sense, predict, and interact with physical world.

### Key Highlights of Report

- Industry 4.0 adoption in India:** Automotive, electronics, and pharmaceuticals are frontrunners. In contrast, **textiles, metals & mining** face significant barriers.
- Key Drivers of Industry 4.0 in India**
  - Workforce Up-skilling, Digital Infrastructure, Sustainability (To meet global consumer and regulatory expectations for green manufacturing).
- Barriers to Adoption**
  - Awareness:** Many MSMEs lack understanding of Industry 4.0's benefits versus costs.
  - Technological Barriers:**
    - Legacy Systems:** Difficult to integrate with modern tech.
    - Data Integration:** Challenges in handling big data across systems.
    - Cyber-security Risks:** Increased digital exposure brings higher risks.
  - Financial Constraints:** High initial investment and ongoing costs, limited access to funding.
  - Human Resource Issues:** Shortage of skilled workers and cultural resistance to new methods.
- Way forward:**
  - Harnessing Global Value Chains (GVCs)** present immense opportunities for MSMEs to access global markets and enhance competitiveness.
  - Develop comprehensive **digital strategies** and **phased implementation roadmaps.**
  - Other focus areas:** Prioritize key technologies such as AI and automation, invest in workforce up-skilling etc.



### Government Support and Policy Interventions

- SAMARTH Udyog Bharat 4.0:** Provides infrastructure and training to accelerate advanced manufacturing adoption.
- Make in India 2.0:** Attracts investment in high-tech manufacturing.
- Digital India:** Aims at digital empowerment through better connectivity and innovation ecosystems.

## ISRO launches Space Docking Experiment (SpaDeX) Mission

SpaDeX along with 24 PS4-Orbital Experiment Module (POEM-4) payloads was launched on a PSLV-C60 rocket from Satish Dhawan Space Centre in Sriharikota (Andhra Pradesh).

- The spacecraft was designed and realised by the **UR Rao Satellite Centre (URSC)** with support of other ISRO centres.
  - ⊕ **U R Rao Satellite Centre (URSC)**, Bengaluru, is lead centre of ISRO for building satellites and developing associated satellite technologies.

### SpaDeX Mission Overview

- **Orbit Details:** 470 km circular orbit at 55° inclination.
- **Mission Life:** Up to two years post-docking operations.
- **Objectives:**
  - ⊕ **Primary:** To develop and demonstrate the technology needed for rendezvous, docking, and undocking of two small spacecraft (SDX01(Chaser), and SDX02(Target) in a low-Earth circular orbit.
  - ⊕ **Secondary:** Transfer of electric power between docked spacecraft and Composite spacecraft control and payload operations post-undocking.
- **Indigenous technologies Developed:**
  - ⊕ **Inter-satellite communication link (ISL)** for autonomous communication between spacecraft.
  - ⊕ **GNSS Based Novel Relative Orbit Determination and Propagation (RODP) processor:** To determine relative position and velocity of other spacecraft.
    - ◆ **Global Navigation Satellite System (GNSS)** refers to any satellite constellation that provides global positioning, navigation, and timing services. E.g. **Galileo (EU) GPS (USA) etc.**
  - ⊕ **Other indigenous technologies developed for enabling this mission:** Docking mechanism, Sensor Suite, autonomous rendezvous and docking strategy etc.

### Significance of Mission

- **Self Reliance:** India aims to become **fourth nation (after China, Russia, US)** to achieve space docking technology.
- **Enabler for Future Missions:** Technology is essential for India's space ambitions such as Indian on Moon, sample return from Moon, building Bharatiya Antariksh Station (BAS), etc
- **Cost-Efficiency in Space Operations:** This **cost-effective technology** will allow multiple rocket launches to achieve common mission objectives.

## CPGRAMS successfully resolved over 70 lakh grievances in the last 3 years

It has been playing key role in bridging the gap between citizens and the government by swiftly addressing their concerns.

- More than 25 lakhs citizens have registered on CPGRAMS from 2019 to 2024.
- Average Closing Time for **grievance redress** declined from 22 days in 2022 to 12 days in 2024.

### What is Centralized Public Grievance Redress and Monitoring System (CPGRAMS)?

- **About:** CPGRAMS is an **online platform** available to the citizens **24x7 to lodge their grievances** to the public authorities on any **subject related to service delivery**.
  - ⊕ It is a **single portal connected to all Ministries/ Departments** of Government of India & States.
- **Developed & Monitored by:** Department of Administrative Reforms and Public Grievances (DARPG).
- **Global Recognition:** CPGRAMS recognized by commonwealth secretariat as **best practice in governance** that can be replicated across Commonwealth nations.

### Key Reforms to Improve CPGRAMS (Part of 10-step CPGRAMS Reforms)

- **Technological Enhancement:** Use of **AI/ML technologies** to prioritize grievances, detect patterns, & flag systemic issues etc.
- **Language Translation:** **AI-based Bhashini** integrated with CPGRAMS, enabling Grievance Redressal in language in which grievance was submitted.
- **Grievance Redressal Assessment & Index:** It evaluates **effectiveness of Ministries/Departments in grievance redressal**, fostering healthy competition to enhance efficiency & accountability.
  - ⊕ It has **4 dimensions**—Efficiency, Feedback, Domain, & Organisational Commitment & **11 indicators**.

## Also in News

### Private Members' Bill

The 17<sup>th</sup> Lok Sabha spent only 9.08 hours on Private Members' Bills.

#### Private Members' Bill

- It is a legislative proposal initiated by an individual Member of the Parliament, who is not a Minister.
- **Allotment of time:** Last two and a half hours of a sitting on Friday in Lok Sabha is allotted for Private Members Bills.
  - ⊕ In Rajya Sabha last two & a half hours of a sitting on alternate Friday is allotted.
- **Period of notice** to introduce a Bill is 1 month.
- Till date, **only 14 Private Members' Bills** have been passed & received assent.
  - ⊕ No Private Members' Bill has been passed by Parliament since 1970.

### Suez Canal

Recently, Egypt completed a trial run of new **Suez Canal channel extension**.

- The channel's two-way section **now extends from 72 km to 82 km**, with a total length of 193 km.

#### About Suez Canal

- **Opening Date:** Construction began in 1859, completed in 1869
- **Location:** Man-made waterway in **Egypt**, crossing the Isthmus of Suez
- **Connects:** Mediterranean Sea to the Indian Ocean via the **Red Sea**.
- **Significance:** Handles about **12% of global trade** and is accessed by vessels travelling from Asia via the 30km wide Bab-el-Mandeb strait.







### Coastal Security Scheme

As per reports, During a recent review of Coastal Security Scheme's phases I and II, 13 coastal states flagged critical shortages.

#### Coastal Security Scheme

- Scheme implemented in **Phase I (2005-2011)** and **Phase II (2012-2020)** in all Coastal States/UTs.
- **Objective:** Providing additional infrastructural support to the Coastal States/UTs for marine patrolling and to supplement other coastal security initiatives
  - ⊕ **Scheme involves infrastructure supports like** jetties, Marine Operational Centres, motorcycles, etc.
- **Current Status:** Under the scheme around 204 Coastal Police Stations have been operationalized.



### Teesta River

The West Bengal has decided to supply water to farmlands through pipelines from the Teesta river.

#### About Teesta River

- **Length:** It is an about 400 km long **right bank tributary of the Brahmaputra River**, flowing through **India and Bangladesh**.
- **Origin:** It originates as Chhombu Chhu from a glacial lake **Khangchung Chho in Sikkim**.
  - Teesta river is **lifeline of people of Sikkim and North West Bengal**.
- **Major Tributaries:** Lachung Chhu, Chakung Chhu, Zemu Chhu, Rangit etc.



### Direct Tax Vivad Se Vishwas scheme (DTVSV), 2024

Central Board of Direct Taxes (CBDT) on Monday announced an extension of the deadline for taxpayers participating in the Vivad Se Vishwas scheme.

#### About DTVSV scheme

- **In her Budget 2024 speech**, Union Finance Minister announced the scheme to help taxpayers **resolve disputes with the income tax department**.
- It enables taxpayers to settle their outstanding tax liabilities by paying the disputed amount along with a specified percentage.



### Pangong Lake

Indian Army installs Shivaji statue on the banks of Pangong Lake.

#### About Pangong Lake

- **Location:** Situated at the height of **4350 m in eastern Ladakh**, **Pangong Lake is World's highest saltwater lake**.
- **Area:** Extending to almost **160km**, **one-third of the Pangong Lake lies in India and other two-thirds in China**.
- **Features:**
  - ⊕ It is **endorheic (landlocked) lake** and is known to **change colors**, appearing blue, green and red at different times.
  - ⊕ It derives its name from the Tibetan word, "**Pangong Tso**", which means "**high grassland lake**".



### H1-B Visas

H1-B visas were in news recently as **Indians continue to dominate the list of recipients with more than 70%** of total approvals.

#### About H1-B Visas

- **Purpose:** Initiated in **1990 to fill skill gaps** in the U.S. by allowing employers to **hire immigrant workers in specialized occupations** requiring "**a high level of skill**".
- **Duration:** valid for **up to six years**. After this period, the visa holder must either leave the U.S. for at least 12 months or apply for permanent residency.



### Calamity of Severe Nature

The Inter-Ministerial Central Team (IMCT) has declared **Wayanad landslides** as a '**calamity of severe nature**'.

#### Calamity of Severe Nature

- **Legal provision:** **No specific criterion** is given in the **State Disaster Response Fund (SDRF) or National Disaster Response Fund (NDRF) guidelines** for declaring a natural calamity as a calamity of severe nature.
  - ⊕ However, based on the intensity and magnitude of losses to life and property, the Central government treats it as a calamity of severe nature, mostly based on the **recommendations of the IMCT**.
- **Funding Support:** For a "calamity of severe nature," **additional funding comes from the NDRF** in excess of the balances available in the state's own SDRF.

## Places in News



### Azerbaijan ( Capital: Baku)

The Russian President apologised to Azerbaijani president following the crash of an Azerbaijani airliner in Kazakhstan that killed 38 people.

#### Physical Features

- **Land boundary:** **Russia( North); Iran (South); Armenia (West) and Georgia (Northwest)**.
- **Marine boundary:** Caspian Sea in East.
- **Territorial Dispute with Armenia:** Over Nagorno-Karabakh region.

#### Geographical Features

- **Climate:** Highly varied (9 of world's eleven climate zones exist in country).
- **Highest Peak:** Bazardyuzyu ( Part of Greater Caucasus range)
- **Major River:** Kur river and Aras rivers
- **Natural Resources:** Oil and Natural Gas, lead, zinc, etc.

