

NEWS TODAY

Govt is creating 'Adaptive Defence' in India to deal with emerging challenges : Raksha Mantri

The Raksha Mantri highlighted that traditional notions of war are being reshaped by **emerging technologies and evolving strategic partnerships**, necessitating an 'Adaptive Defense' strategy to address the new challenges.

About 'Adaptive Defence'

- **Definition:** It's a **strategic approach** where a nation's military and defence mechanisms **continuously evolve** to counter emerging threats effectively.
- **Principle of 'Adaptive Defence':** It involves cultivating a **proactive mindset** to **anticipate** threats, **adapt**, **innovate** and **thrive** in the face of **unpredictable circumstances**.
- **Capabilities needed for 'Adaptive Defence':** Situational awareness, flexibility at strategic and tactical levels, resilience, agility, and integration with the futuristic technologies.
- **Significance:** Secure the future beyond just protecting borders; Designed to address both traditional (e.g., **armed aggression**) and non-traditional security challenges (e.g., **Drug trafficking**), **counter the menace of information warfare against national security**, etc.

Emerging Technologies: The Driver of Future Warfare

- **Information warfare (IW):** It relies upon networked information systems where an operation conducted in order to gain an information advantage over the opponent. E.g., Cyberwarfare.
- **Lethal Autonomous weapon systems (LAWS):** Weapons system once activated can engage targets without further human interference.
- **Lasers & Electromagnetic railguns:** For space-based attacks on satellites.
- **Synthetic biology:** Crimes like, illegal gene-editing, cyber-bio crime, bio-malware, bio-hacking, etc.

International Carbon Market Standards agreed at Conference of Parties (CoP)-29 of UNFCCC in Baku

These standards provide for a **centralized carbon market** under **United Nations (UN)**, a landmark step towards the conclusion of negotiations under **Article 6 of the Paris Agreement**.

Article 6 of the Paris Agreement

- It provides principles through which countries can "**pursue voluntary cooperation**" to reach their **climate targets**.
 - ⊕ Allows countries to **transfer carbon credits** earned from the reduction of greenhouse gas emissions helping other countries meet their climate targets.
- It **comprises two significant sub-sections: Article 6.2 and Article 6.4**.
 - ⊕ **Article 6.2:** Countries can trade emission reductions/removals through **bilateral or multilateral agreements**.
 - ◆ Traded credits are called **Internationally Transferred Mitigation Outcomes (ITMOs)** measured in carbon dioxide equivalent (CO_{2e}) or any other metric.
 - ⊕ **Article 6.4 or the Paris Agreement Crediting Mechanism:** Seeks to create a **global carbon market** overseen by a **UN entity** called **Article 6.4 Supervisory Body (6.4SB)**.
 - ◆ Credits under this are called **A6.4ERs**, and can be bought by countries, companies, or individuals.
 - ◆ Currently agreed standards were proposed at the meeting of the **Supervisory Body for Article 6.4 at Baku** last month

Carbon Markets or Carbon Pricing Instruments

- **About:** Enable **governments and non-state actors** to trade greenhouse gas emission credits.
- Can be of **two types Compliance mechanisms** (implemented and managed by governments) and **Voluntary mechanisms** (managed by independent standards or non-governmental organizations).
- **In India**, framework exists for both:
 - ⊕ **Compliance** (Perform Achieve Trade-Energy Saving Certificates)
 - ⊕ **Voluntary** (offset) mechanisms (Clean Development Mechanism)

Significance of the agreed Carbon Market Standards

- Unlock **financial support** to developing countries.
- Facilitate **post-credit monitoring** and **long-term market reliability**.

RBI & SEBI issues framework for reclassification of FPI to FDI

Under current regulations, **foreign portfolio investment (FPIs)** can hold a **maximum of 10%** of an Indian company's total **paid-up equity capital** (amount of money that a company receives from shareholders in exchange for shares).

- **Exceeding this 10% cap** (prescribed limit of FPI) had previously left FPIs with **two choices: Divesting** (selling off) the **surplus shares** or **reclassifying** them as **Foreign Direct Investment (FDI)**.
- In case the **FPI intends to reclassify its FPI into FDI**, the FPI shall follow the operational framework as given below:

RBI'S New Operational Framework on reclassification of FPI to FDI

- The facility of reclassification **shall not be permitted in sectors prohibited for FDI**. E.g., **Chit funds, gambling, etc.**

- FPI investments **require government approvals**, especially from **land-bordering countries**, and **need Indian investee company's concurrence**.

- ⊕ Also, investment should be in adherence to **entry route, sectoral caps, investment limits, pricing guidelines**, and other attendant conditions for FDI under the rules.

- FPI reclassification will be guided by **Foreign Exchange Management (Mode of Payment and Reporting of Non-Debt Instruments) Regulations, 2019**.

- **Significance:** Becomes easier to attract more foreign investment; Offer greater flexibility to FPI to transit to a more strategic investment, enhance clarity and transparency for foreign investors in the Indian market.

About Foreign Direct Investment

- FDI involves a foreign investor **acquiring a stake in a company or project promoted by an investor, institution or the government in India**.
- It's usually a **long-term investment** and is largely a **non-debt creating capital flow**.
- **FDI Approval Route:**
 - ⊕ **Automatic Route:** Non-resident or Indian company does not require any approval from the Government.
 - ⊕ **Government route:** Proposals for foreign investment under the Government route are considered by the respective Administrative Ministry/Department.

NITI Ayog CEO pitched for India's membership in RCEP and CPTPP

He highlighted India to be among few countries not a part of large trade agreements like Regional Comprehensive Economic Partnership (RCEP) and Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

- These agreements aim to **remove trade barriers and promote reciprocal investment** by **tariff facilitation** and **harmonizing environmental and labor protection standards**.

Benefits of Joining to India

- **Support Micro, Small & Medium Enterprises (MSME):** They constitute 40% of India's exports.
- **Integrate into Global Supply Chain:** Constituting 70% of the World's trade
- **Harness China plus one opportunity: High tariffs** prevent diversification of supply chains away from China.
- **Increase India's productive capacity:** Facilitate easy import creating job prospects; enhance profits and capacity utilization of the private sector, etc.
- **Political Advantage:** Opportunity to shape emerging trade architecture like E-commerce.

Concerns for India

- **Cheap Imports:** Elimination of tariffs may lead to greater rise in imports worsening trade deficits.
- **Impact on Indian Enterprises:** Stricter rules like labor conditions and environmental protection impact local and less competitive Indian industries.
- **Domestic considerations:** Opposition from Indian dairy sector on joining RCEP fearing strict competition from industrialised countries.

Way Forward

- **Revisiting past agreements:** Data-driven approach to navigate complex global economic landscapes.
- **Prioritise long-term economic goals:** In terms of self-reliance, job creation, and strategic autonomy.

About RCEP

- **Comprises 10 ASEAN members** (Brunei, Cambodia, Indonesia, Malaysia, Myanmar, Singapore, Thailand, Philippines, Laos and Vietnam) and their **6 free trade agreement partners-** India, China, Japan, Korea, Australia and New Zealand.
- ⊕ **India pulled out of its negotiations in 2019.**

About CPTT

- ⊕ **Free Trade Agreement (FTA)** between **11 nations** (Australia, Brunei, Canada, Chile, Japan, Malaysia, Singapore, Vietnam, Peru, Mexico, and New Zealand)

'Unlocking the Power of Healthy Longevity: Demographic Change, Non-communicable Diseases (NCDs), and Human Capital' Report by World Bank

It focuses on **demographic transformation** as one of the challenges to human capital and well-being, demonstrating that addressing the major **NCDs** could contribute to healthy longevity.

- **Demographic transformation** depicts the **changing pattern of mortality, fertility and growth from high to lowers birth/death rates.**
- **Healthy longevity** refers to **reducing preventable deaths and disabilities** across life, maintaining physical, mental, and social wellbeing into older age

Key Findings of the Report:

- **Impact of Non-communicable diseases (NCDs):** Like heart disease, diabetes, cancer, etc. cause **over 70% of global deaths annually.**
 - ⊖ **Based on current projections,** there will be a rise in overall deaths to 92 million (2050) from 61 million (2023).
- **India-related Findings**
 - ⊖ **NCDs in childhood:** Causes about 1.2–4.2 fewer years of completed education.
 - ⊖ **Higher out of pocket medical expenditure:** Primarily dominated by travel costs.
 - ⊖ **Life expectancy:** Lowest at the age of 15 among the lowest education groups due to higher death rates during 30–69 years from NCDs.

Major Recommendations to promote healthy longevity

- **Life-course approach to NCDs:** Prevention and Management of NCDs along with other policy reforms like labor markets, social protection and long-term care.
- **Leveraging fiscal tools:** **Raising taxes on products** that damage people's health like tobacco, etc.

About NCDs

- They are **chronic diseases**, which tend to be of **long duration** driven by forces that **include rapid unplanned urbanization, globalization of unhealthy lifestyles and population ageing.**
- In India, **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)**, as part of National Health Mission (NHM) focuses on NCD prevention.

Global Carbon Budget report, published by Global Carbon Project during U.N's COP 29 climate summit

At the current rate of emissions, it is **estimated a 50% chance that global average temperatures will exceed 1.5 degrees consistently in about six years**

- This year, possibly, will be the **first time the threshold of 1.5 degrees is crossed.**

The carbon budget: It's the amount of CO₂ emissions that will result in limiting global warming to a given level, in this case, the Paris accord's target of 1.5 degrees C over pre-industrial levels.

Key Findings:

- **Globally,** fossil-based CO₂ emissions are set to touch a record high of **37.4 billion tonnes this year.**
- **The largest contributions to global fossil CO₂ emissions** were **China (31%), the USA (13%), India (8%), and the European Union (7%),** in 2023.
 - ⊖ These **four regions account for 59%** of global fossil CO₂ emissions, while the **rest of the world** contributed **41%.**
- Global emissions from **land-use changes** like deforestation have **dropped 20% over ten years.**
 - ⊖ **Reforestation and new forests** offset about half of permanent deforestation emissions globally.
- The land and ocean CO₂ sinks combined took **around half of the total CO₂ emissions,** despite being negatively impacted by climate change.

Global Carbon Project (GCP)

- It was established in **2001.**
- Aim: to track the **trends in global carbon emissions and sinks** and act as a **key measure of progress towards the goals of the Paris Agreement.**
- It publishes global budgets for **three dominant greenhouse gases – carbon dioxide, methane, and nitrous oxide.**



Also in News



Subansiri River

2,000 MW Subansiri Lower Hydroelectric Project on river **Subansiri**, located at Arunachal Pradesh-Assam border, is set to be commissioned.

About Subansiri River (also known as Gold River)

- **Origin:** It's a **Trans- Himalayan River** originating from the **western part of the Mount Porom (5059 m)** in the **Tibetan Himalaya.**
 - ⊖ River enters India through Miri Hills in Arunachal Pradesh.
- It is the **Right Northern bank** and the **longest tributary of Brahmaputra.** It joins Brahmaputra at **Majauli island in Assam.**
 - ⊖ **Majuli is the largest River Island in Asia.**



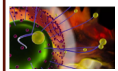
Thorium

Department of Atomic Energy plans to construct a 1 GeV particle accelerator to convert India's abundant thorium reserves into nuclear fuel.

- **High-energy proton accelerators (1 GeV)** are used to create neutrons for breeding uranium-233 from thorium.
 - ⊖ **U-233:** A fissile material that can be used in a nuclear reactor to produce electricity.

About Thorium

- On the basis of **per unit mass** of mined mineral, **thorium can generate more energy compared to natural uranium.**
- Thorium is **far more abundant in nature than uranium.**
- Thorium produces **less harmful waste compared to uranium.**
- **Monazite contains 10–12 percent thorium dioxide.**



Nano-transporters

Breakthrough on **Advancements in drug delivery inside cells** through Nano-transporters.

Breakthroughs:

- Nano-burflower shaped gold nanoparticles: Improve the efficiency of intracellular delivery and in treatment of cancer.
- **Hydrogels** created using **five amino acid protein fragments from SARS-CoV-1**.
 - ⊕ These hydrogels, which are gels without liquid content, are effective for drug delivery.

About Nano-transporters

- ⊕ Designed to **deliver active compounds** to a **specific target site** (cells or tissues) in a **controlled manner**..
- ⊕ **Significance:** Minimize the damage to the surrounding tissue & allow a lower dose of the drug to be used.



Long Range Land Attack Cruise Missile (LRLACM)

Defence Research and Development Organisation (DRDO) conducted the maiden flight-test of a LRLACM.

- Designed as a successor to the Nirbhay cruise missile.
- **Range: 1,000 km.**
- **Launch capability:** From both **mobile ground launchers** as well as **from ships**.

About LRLACM

- It enables **long-distance strikes** against **strategic targets** from stand-off distances.
- Can perform various manoeuvres while flying at various altitudes and speeds.



Central Industrial Security Force (CISF)

Home Ministry approves first all-woman battalion for CISF.

About CISF:

- CISF is an armed force of the Union established under an Act of Parliament, **Central Industrial Security Force Act, 1968**.
- CISF is the only force with a customized and dedicated fire wing.
- **Mandated to provide security to:**
 - ⊕ **The premises staff** along with the **security of property and establishments**.
 - ⊕ **The strategic establishment** including the **Department of Space, Department of Atomic Energy etc.**
 - ⊕ The protected persons classified as Z Plus, Z, X, Y.



Kutumb Prabodhan

Recently, Vice President emphasized the importance of 'Kutumb Prabodhan' in society.

About Kutumb Prabodhan

- **About:** It refers to **family (kutumb) enlightenment (prabodhan)** and is a **core principle of India's culture**.
- **Purpose:** Instill **sanskaras (values)** in younger generation through knowledge, sharing experiences, strengthening familial ties.
- **Aim:** Create a society based on **righteous and moral conduct** which is an embodiment of larger family (Vasudhaiva Kutumbkam).



National Financial Reporting Authority (NFRA)

Recently, NFRA recommended the revision of Standards on Auditing aligning it with the global Standard ISA 600

About NFRA

- **Constitution:** Constituted in 2018 under the **Section 132(1) of the Companies Act, 2013**.
- **Objectives:** Continuously improve the quality of all corporate financial reporting in India
- **Headquarters:** New Delhi
- **Functions:** Recommend accounting and auditing policies and standards; Monitor and enforce compliance; oversee service quality, etc.



India's Renewable Energy Sector

Union Ministry of New and Renewable Energy released latest data (October 2023-October 2024) on India's renewable energy sector.

Major Achievements

- **Total installed capacity:** Increased by **24.2 GW (13.5%)** reaching **203.18 GW** (October 2024)
- **Total non-fossil fuel capacity (Including nuclear):** Increased to **211.36 GW** (2024) from **186.46 GW** (2023).
- **Installed Solar capacity:** Increased to **92.12 GW** (2024) from **72.02 GW** (2023).
- **Installed Wind Capacity:** Increased to **47.72 GW** (2024) from **44.29 GW** (2023).
- **Large hydro projects and Nuclear power capacity:** Forms **46.93 GW** and **8.18 GW** of India's renewable energy.

Place in News



Russia (Capital: Moscow)

Russian Federation (Capital: Moscow)

Recently, the First Deputy Prime Minister of the **Russian Federation** paid a visit to India.

- He attended the 25th Session of the India-Russia Inter-Governmental Commission on Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC)

Political Features

- **Location:** Spans across Eastern Europe and Northern Asia.
 - ⊕ Largest country in the world by land area.
- **Bordering Countries:** **Norway, Finland, Estonia, Latvia, (Lithuania and Poland with the Russian exclave of Kaliningrad Oblast), Belarus, Ukraine, Georgia, and Azerbaijan** in the West; **Kazakhstan, China, Mongolia, and North Korea** in the south
- ⊕ **Maritime Boundaries:** **Arctic Ocean (North); Pacific Ocean (South)**

Geographical Features

- **Mountains:** **Ural** (boundary between Europe and Asia); **Elbrus** (highest peak).
- **Rivers:** **Dniپر, Volga; Ob, etc.**
- **Lake:** **Onega; Baikal** (largest Freshwater Lake in the world)
- **Strait:** **Bering** (Bordering Alaska, USA)
- **Bordering Seas:** **Baltic; Caspian; Okhotsk; Black, etc**

