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**DownToEarth**  
FORTNIGHTLY ON POLITICS OF DEVELOPMENT,  
ENVIRONMENT AND HEALTH

**Science  
Reporter**



**MK Yadav Sir**

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# India's new explosive is 2.01 times more lethal than TNT!

## Top facts about SEBEX 2 - among world's powerful non-nuclear explosives

**Context:** India has successfully developed and certified SEBEX 2, a new explosive that is 2.01 times more lethal than standard Trinitrotoluene (TNT).

### SEBEX 2

- **About:** SEBEX 2 ranks among the world's most potent non-nuclear explosives developed by economic Explosives Limited (EEL) under the Make in India initiative
- **High-Melting Explosive (HMX) Composition:** It utilizes a high-melting explosive (HMX) composition. This formulation significantly enhances the lethality of warheads, aerial bombs, artillery shells, and other munitions.
- **Enhanced Lethality:** Enhances the lethality of various munitions including warheads, bombs, and shells.
- **2.01 Times More Deadly Than TNT:** SEBEX 2 demonstrates 2.01 times more lethality compared to standard TNT.
- **Comparison with Indian Standards:** Significantly surpasses the conventional explosives used in India, like in the Brahmos warhead.
- **Global Comparison:** Outperforms most conventional warheads globally in terms of TNT equivalence.
- **Certified by:** Evaluated, tested, and certified under the Defence Export Promotion Scheme by the Indian Navy.
- **Complementary Technologies:**
  - **SITBEX 1:** Certified thermobaric explosive known for extended blast duration and intense heat, effective against bunkers and fortified positions.
  - **SIMEX 4:** Certified insensitive munition ensuring safety in storage, transport, and operation.
- **Global Significance and Export Potential:**
  - SEBEX 2, SITBEX 1, and SIMEX 4 signify significant strides in India's military technology, enhancing defense capabilities and fostering global collaborations.
  - SEBEX 2, a cutting-edge explosive technology, strengthens India's defense infrastructure, promising enhanced security and strategic advantages.
  - India's innovations in military explosives, exemplified by SEBEX 2, position the nation as a potential exporter of advanced defense technologies, contributing to global security solutions.

### Trinitrotoluene (TNT)

- **About:** It is an explosive organic compound.
- **Physical Features:** It is a yellow, crystalline solid that is stable under normal storage conditions, but can be initiated by heat, shock, or friction.
- **Uses:** TNT is used in a variety of applications, including military, industrial, and construction.

# Desert moss found with potential to thrive on Mars

**Context:** Scientists have identified a species of desert moss called 'Syntrichia caninervis' that could be a game-changer for future space exploration and colonisation efforts.

## Syntrichia caninervis

- **About:** It is one of the most abundant desert mosses globally.
- **Global Distribution:** Found extensively across dryland regions, including the Gurbantunggut and Tengger Deserts (China), Mojave Desert (USA), Pamir Mountains, Tibet, Middle East, Antarctica, and circumpolar regions.
- **Environmental Adaptations**
  - **Environmental Tolerance:** Exhibits remarkable tolerance to drought, cold, and radiation stress.
  - **Desiccation Tolerance:** Can recover within seconds after losing more than 98% of its water content.
  - **Freezing Tolerance:** Capable of withstanding ultra-low temperatures down to  $-196^{\circ}\text{C}$ .
  - **Radiation Resistance:** Shows exceptional resistance to gamma radiation, with a half-lethal dose estimated at 5,000 Gy.
- **Adaptation:** Uses tiny hairs (awns) on leaf ends to collect water, supplementing water collected by leaves themselves.



## Moss

- **Plant Classification:** Mosses are flowerless, spore-producing plants with spores formed in small capsules.
- **Global Distribution:** Found worldwide except in saltwater, commonly in moist, shady locations.
- **Habitat and Role:** Often carpet woodland and forest floors, contributing to nutrient release by breaking down substrata.
- **Ecological Role:** Aid in soil erosion control, provide surface cover, absorb water, and contribute to nutrient and water economy of vegetation.
- **Economic Importance:** Some species, like Sphagnum mosses, such as those forming peat, have significant economic value.

## Freddy's fury: WMO confirms cyclone Freddy's record 36-day lifespan

**Context:** The World Meteorological Organization (WMO) has confirmed that cyclone Freddy, holds the record for the longest-lived tropical cyclone on record.

### Cyclone Freddy

- **About:** It is originated off the northern coast of Australia and became a named storm on February 6, 2022.
- **Path and Distance:** It crossed the entire South Indian Ocean, traveling more than 8,000 kilometers, and affected Mauritius and La Réunion before making landfalls in Madagascar two weeks later and then Mozambique.
- **Rapid Intensification:** Freddy was the first tropical cyclone in the Southern Hemisphere to undergo six separate rounds of rapid intensification.
- **Accumulated Cyclone Energy (ACE):** It holds the record for all-time accumulated cyclone energy (ACE) for the Southern Hemisphere, measuring storm strength during its lifetime.
- **Fuel Source:** Freddy was fuelled by the warm ocean surface, consistently sourcing heat and moisture throughout its lifetime.
- **Longevity:** Very Intense Tropical Cyclone Freddy is the longest-lived tropical cyclone on record, surpassing Hurricane John's record of 31 days in 1994.

### Tropical Cyclone

- **About:** A tropical cyclone is a warm-core low pressure system that develops over tropical or subtropical waters and has an organised circulation.
- **Example:** These include hurricanes and typhoons. TCs produce high winds, large waves, extreme water levels and heavy rainfall.
- **Main Role:** It play an important role in maintaining the energy balance at the air-sea interface. TCs take heat energy from the ocean surface to fuel their development.
  - They also dissipate kinetic energy into the ocean through waves.

### World Meteorological Organization

- **About:** It is the specialized agency of the United Nations whose mandate covers weather, climate and water resources.
- **Established:** 1950
- **Headquarter:** Geneva, Switzerland

## Jaishankar to represent India in place of Modi at SCO summit in Kazakhstan

Ni. Putin, and Sharif are expected to attend; Modi's decision to skip Eurasian grouping meet could disappoint Central Asian countries as interactions with them have been cancelled twice in the past; meeting is expected to see discussions on multilateral cooperation in trade and fight against terror

Suhassini Halder  
NEW DELHI

External Affairs Minister S. Jaishankar reached Astana in Kazakhstan on Tuesday to lead the Indian delegation at the SCO Council of Heads of State in place of Prime Minister Narendra Modi on July 3 and 4, the Ministry of External Affairs has said.

Leaders of other countries in the Eurasian group, newly expanded to include Belarus this year, including Russian President Vladimir Putin, Pakistan PM Shehbaz Sharif and the Presidents of Uzbekistan, Kyrgyzstan and Tajikistan will be hosted by Kazakhstan President Kassym-Jomart Tokayev at the summit. Chinese President Xi Jinping landed in Astana for a state visit and bilateral meetings ahead of the SCO, while Iran's President may not be able to attend as the country is in the middle of elections.

Shortly after landing, Mr. Jaishankar met Kazakhstan Deputy Prime Minister and Foreign Minister Murat



External Affairs Minister S. Jaishankar with Kazakhstan Deputy Prime Minister Murat Nurtleu in Astana on Tuesday. Xijon/Liaison/Anadolu

### No topic off-limits: Russia

Press Trust of India  
MOSCOW

Given the "very trusting nature" of the relationship between Russian President Vladimir Putin and Prime Minister Narendra Modi, no topic is off-limits for the two leaders when they meet here soon, Kremlin spokesman Dmitry Peskov

said on Tuesday. The dates of Mr. Modi's visit to Moscow will be announced a bit later but preparations for it are already at their final stages, he said.

Describing Mr. Modi's visit as "very important", Mr. Peskov said the leaders will discuss regional and global security, trade and all other topics.

During the SCO Foreign Ministers meeting in May, MEA Secretary Economic Relations Dummur Ravi had promoted "maximising the utilisation of the Chabahar Port" as well as using the International North-South Transport Corridor (INSTC) connecting India to Central Asia and Russia via Iran, and the India-Middle East-Europe Economic Corridor (IMEC) that has been stalled due to the Israel-Gaza conflict.

Pakistan PM Mr. Sharif is expected to also offer Qasim port and Gwadar port for land-locked Central Asia's trade routes. India and Pakistan both became members of the SCO in 2007, and their leaders have often sparred at the high-level meetings over issues like terrorism and transit trade, including in Uzbekistan in 2022, and last year's SCO Foreign Minister's meeting in Goa.

The leaders are also expected to discuss developments in Afghanistan, given that nearly all SCO members are engaged closely with the Taliban regime in Kabul.

Heads of Government meet is due to be held in Pakistan later this year, and the next SCO Summit will be hosted by China in 2025, it remains to be seen whether Mr. Modi will attend future SCO events as well.

Astana Declaration

On Thursday, the SCO Council will adopt the Astana Declaration, which is expected to focus on strengthening ties between SCO countries on economic issues, connectivity, fighting terrorism and regional developments.

Given that the next SCO

Summit in July 2023 into a virtual format.

Mr. Jaishankar is expected to drop out of the summit in Kazakhstan will avoid awkward moments from sharing the stage with the Chinese President and Pakistan PM, given the tense ties with both countries. Mr. Modi is due to

meet the Russian President next week in Moscow for a bilateral visit.

However, the absence of Mr. Modi in Astana could disappoint the Central Asian leadership, given that his planned engagements with them have been cancelled twice in recent years, once when they were invited to India for the Republic Day in 2022 (the visit was cancelled due to the COVID-19 pandemic), and when India turned the SCO Summit in July 2023 into a virtual format.

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meet the Russian President next week in Moscow for a bilateral visit.

## SHANGHAI COOPERATION ORGANISATION

(Syllabus: GS Paper 2 – IR)

**Context:** India's External Affairs Minister will lead the Indian delegation at the Shanghai Cooperation Organisation (SCO) Council of Heads of State, representing the country in place of the Prime Minister.

### Shanghai Cooperation Organisation (SCO)

- **About:** It is a permanent intergovernmental international organisation of Eurasian Nations with a secretariat in Beijing.
- **Formation:** 15 June 2001 by the leaders of China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan.
- **Members:** China, India, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan, Iran and Uzbekistan.
  - Iran became a full member in 2023, under the Indian Presidency of the grouping.
  - Belarus is an observer state.
- **Headquarter:** Shanghai (China)
- **Focus of SCO:** Regional security, counter-terrorism, and economic cooperation among its member states. The organisation covers over 60% of the Eurasian landmass, 40% of the world population, and 30% of global GDP.
- **The main Functions of the SCO are to**
  - Strengthen relations among member states;
  - Promote cooperation in political affairs, economics and trade, scientific-technical, cultural, and educational spheres as well as in energy, transportation, tourism, and environmental protection;
  - Safeguard regional peace, security, and stability; and
  - Create a democratic, equitable international political and economic order.



### Milestones

– 1996

Foundation of the Shanghai Five, the SCO predecessor

– 1999

Foundation of the Bishkek Group to counter border criminality

– 2001

Uzbekistan joins SCO

– June 15, 2001

Shanghai Cooperation Organization Founding Declaration signed

– 2008

Iran submits official application for full-right SCO membership

# Centre set to revisit national power plan

Peak demand may hit 260 GW by Sept-Oct, 400 GW by 2031-32, says power secretary

ARUNIMA BHARADWAJ  
New Delhi, July 2

INDIA'S PEAK DEMAND for power is expected to touch 260 gigawatt (GW) during September or October, power secretary Pankaj Agarwal said on Tuesday, implying an unprecedented 20% surge in such demand in just two years.

The secretary indicated the steep hike in demand might require a unscheduled revision of the National Electricity Plan (NEP) 2022-27, notified in May last year. Such plans are usually revised every five years, with a detailed plan for first five years, and a perspective plan for the next five.

The power ministry, Agarwal said, is now working on the peak power demand projections to update these. "Very shortly we will be updating our National Electricity Plan," the official said.

"We are likely to touch 260 GW. We might witness another surge (in power demand) in September or October," Agarwal told reporters on the sidelines of a CII event. The government now expects the country's peak power demand to touch 400 GW by 2031-32 exceeding the projected 384 GW level.

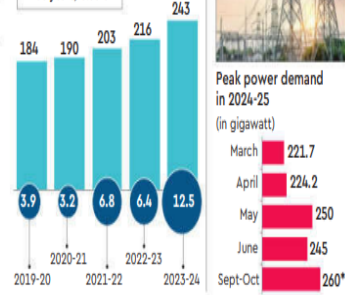
Peak demand reached 250 GW in May, breaching the last year's peak of 243 GW registered in September 2023.

With the upcoming new units of thermal plants getting commissioned, the government is confident

## FOCUS ON MEETING RISING DEMAND

Peak power demand in last 5 years  
in gigawatt ● % increase

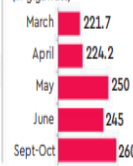
(Avg growth rate for five years) 6.56%



Source: Ministry of Power/CEA, Grid India



Peak power demand in 2024-25 (in gigawatt)



\*projected

of meeting this demand, he added. However, analysts caution that success of the plan to augment supplies will hinge on the how quickly new thermal power projects are commissioned, even while keeping the pace of capacity addition in renewable energy and putting in place RE storage infrastructure.

The country's power demand has risen over 9% in terms of megawatts and by almost 11% in terms of billion units in the first quarter of the current financial year against Q1 FY24, the secretary noted.

The peak power demand has been increasing very rapidly during the past few years owing to the growth in per capita consumption of the country. It has increased at an average of almost 7% in the last five years from 184 GW registered in 2019-20, as per data from the power ministry. In

FY24, the peak demand witnessed an increase of 12.5% at 243 GW compared to FY23.

"The peak demand of 250 GW which we met this year, is estimated to reach 384 GW by 2031-32. This may easily cross 400 GW considering the way in which demand has increased in some states in the past two years," Agarwal said. He estimates a total installed power capacity of 900 GW by 2031-32 to meet the projected demand, as outlined in the NEP.

Agarwal also highlighted that to meet the vision of 2031-32, the financial viability of discoms need to be improved along with integration of renewable energy. "We are still sitting on accumulated losses of more than ₹6.5 trillion as of March 2023," he said. "The annual losses and cash losses are at about ₹67,000 crore."

**Context:** India anticipates a peak power demand of 260 gigawatts in September or October, marking a remarkable 20% increase in just two years. The surge may prompt an unscheduled revision of the National Electricity Plan (NEP) 2022-27, according to the power secretary.

## National Electricity Plan (NEP)

- **About:** The NEP is a pivotal document guiding India's power sector development, formulated by the Central Electricity Authority (CEA).
- **Mandated by:** Electricity Act, 2003, is responsible for preparing and updating the NEP every five years.
- **Objectives of the NEP:** It evaluates the current and projected electricity demand in India.
  - The NEP identifies the required capacity additions to meet the projected demand over the next five years.
  - It aims to optimize the utilization of resources, including renewable energy sources, to meet the electricity demand efficiently.
- **Components of the NEP**
  - Review of the last five years (2017-22),
  - A detailed plan for the next five years (2022-27) and
  - The prospective plan for the next five years (2027-32).

## Key Highlights of the National Electricity Plan 2022-27

- **Coal Energy Thrust:** The plan outlines a need for new coal-based capacity, aiming for an addition ranging from 17 GW to nearly 28 GW by 2031-32.
- **Renewable Energy Thrust:** Emphasizes significant growth in renewable energy, with projections indicating a battery storage requirement of 51 GW to 84 GW by 2031-32, with a daily usage rate of 5 hours.
- **Battery Energy Storage Systems:** BESS, particularly those based on Lithium-ion technology, are increasingly cost-effective, positioning them as a preferred choice for grid balancing against load fluctuations and generation intermittency.
- **Hybrid Generation Models:** Integration of off-stream pumped storage projects with hybrid generation models enables effective solar energy shifting, storing excess solar generation in water-based energy storage or pump storage plants (PSP) for backup power.

## Abhaya mudra, Buddhist & Hindu cultural symbol conveying freedom from fear

ARJUN SENGUPTA  
NEW DELHI, JULY 2

IN HIS first speech at Lok Sabha, Rahul Gandhi on Monday invoked the *abhaya mudra*, the gesture of the raised open palm that is commonly understood as conveying reassurance and a freedom from fear. He portrayed the government as a regime based on fear, and stressed that the culture of fear is alien to the Hindu religion and Indian civilisation.

"The first idea in this image that we defend is the idea of confronting our fear and never being scared," Rahul said. The *abhaya mudra*, he said, was a common thread in the depictions of Lord Shiva, Guru Nanak, and Jesus Christ, and also figured in Islam, Buddhism, and Jainism.

### Mudras in Buddhism

In Sanskrit, the term *mudra* could mean a seal, mark, sign, or currency, but in the

Buddhist context, it refers to "hand and arm gestures made during the course of ritual practice or depicted in images of buddhas, bodhisattvas, tantric deities, and other Buddhist images" (Buswell and Lopez, *The Princeton Dictionary of Buddhism*, 2013).

Mudras are most commonly associated with visual depictions of the Buddha (or *Buddharupa*); different gestures convey different moods and meanings, signifying the subtle manifestations of the Buddha's states of realisation.

**EXPLAINED  
CULTURE**

For about 500 years after the Buddha, who lived in the 6th or 5th Century BCE, the person of the great teacher was not depicted in the form of an image or sculpture. At Sanchi, for instance, the Buddha is symbolised by a vacant throne or a footprint.

The earliest depictions of the Buddha in physical form date to roughly around the turn of the first millennium. Depictions started appearing in the Gandhara art from the northwestern edge of the Indian sub-

continent (present day Pakistan and Afghanistan), which drew on Hellenistic influences, and later in the art of the Gupta period, in the Gangetic plains.

In the earliest depictions of *Buddharupa*, four mudras can be found: the *abhaya mudra*, or "gesture of fearlessness"; the *bhramapasha mudra*, or "Earth-touching gesture"; the *dharma chakra mudra* or "gesture of the wheel of dharma"; and the *dhyana mudra*, or "gesture of meditation".

With the evolution of Mahayana (Greater Vehicle) and Vajrayana (Thunderbolt Vehicle) Buddhism, and the proliferation of Buddhist artwork outside India, hundreds of mudras entered Buddhist iconography.

In tantric Buddhist traditions, the mudras came to be associated with dynamic ritual hand movements, where they symbolised material offerings, enacted forms of worship, or signified relationships with visualised deities" (Buswell and Lopez).

### Gesture of fearlessness

The *abhaya mudra* is described by



Kushana-period Buddha sculpture, depicted with the *abhaya mudra*, currently preserved in Mathura museum. Wikimedia Commons

Buswell and Lopez as one "typically formed with the palm of the right hand facing outward at shoulder height and the fingers pointing up... Occasionally, the index, second, or third finger touches the thumb, with the remaining fingers extended upward".

In some cases, both hands may simultaneously be raised in this posture in a "double *abhaya mudra*".

In Buddhist tradition, the *abhaya mudra* is associated with the Buddha immediately after he obtained Enlightenment, "portraying a sense of the security, serenity, and compassion that derive from enlightenment" (Buswell and Lopez).

The "gesture of fearlessness [also] identifies the moment when Shakyamuni (the Buddha) tamed the mad elephant... Illustrating the Buddha's ability to grant fearlessness to his followers" (Buswell, *Encyclopedia of Buddhism*, 2004).

According to Buddhist legend, Devadatta, a cousin and a disciple of the Buddha, upon not being granted the special treatment he expected, plotted to harm the Enlightened One. He fed a wild elephant intoxicants and drove her on the Buddha's path. As the disciples scattered before the charging animal, the Buddha raised his hand in the *abhaya mudra* of love and kindness. The elephant is said to have calmed down immediately, gone down

on her knees, and bowed to the Buddha.

This is why the *abhaya mudra* is also seen as a "gesture of protection" or "gesture of granting refuge".

### In Hindu religion

Over time, the *abhaya mudra* appeared in depictions of Hindu deities, and the Buddha himself was absorbed into the Hindu pantheon as the ninth avatar of the Puranic god Vishnu.

"Hindus came to regard the Buddha as an avatar of Vishnu between AD 450 and the sixth century," the Indologist Wendy Doniger wrote in her classic *The Hindu: An Alternative History*. The first mention of the *Buddha avatar* came in the *Vishnu Purana* (400-500 CE).

As multiple traditions, practices, and cultural influences mingled in the great melting pot of the Hindu religion, manifestations were seen in art and visual depiction of gods. The *abhaya mudra* was seen in the depictions, most commonly of Lord Shiva, Lord Vishnu, and Lord Ganesha.

**Context:** In his inaugural address as Leader of the Opposition in Lok Sabha invoked the *abhaya mudra*, symbolizing reassurance and fearlessness, marking a significant gesture in parliamentary proceedings.

## Abhaya Mudra

- **About:** It is associated with the Buddha immediately after he obtained Enlightenment, "portraying a sense of the security, serenity, and compassion that derive from enlightenment" (Buswell and Lopez).
- **Symbol across South Asian Religions:** It is common in Hinduism, Buddhism, Jainism, and Sikhism, symbolizing fearlessness and protection.
- **Meaning of 'Abhaya':** 'Abhaya' in Sanskrit means fearlessness; the gesture signifies peace and protection, promoting courage and reducing fear and anxiety in yoga practices.
- **Prominence in Buddhism:** Most prominently featured in Buddhism, particularly in Thailand and Laos, associated with images of the walking Buddha.
- **Historical and Natural Gesture:** Described as a "natural gesture" used since pre-historic times to signify peace or friendship, reflecting goodwill and non-aggression.

## Advanced medium combat aircraft prototype expected to be ready by 2028-29

Dinakar Peri  
NEW DELHI

As the project for the design and development of the indigenous fifth generation fighter aircraft (FGFA), Advanced Medium Combat Aircraft (AMCA), makes progress, the Defence Ministry is working out a model for bringing in the private sector in a big way, which is important for timely execution of the project, according to official sources. The first prototype is expected to be ready by 2028-29.

"The design of the AMCA is ready. The prototype is expected to roll out by 2028-29 and the production is expected to begin from 2032-33. The target is to have it ready for induction in 2034, a decade from project sanction," an official source said. In

preparation to have the manufacturing and deliveries on track, there is significant private industry involvement that is being envisaged. "We have to decide a model for private sector involvement. A model is expected to be worked out in the next six months," an official source said.

The Defence Ministry has already issued an Expression of Interest (EoI) to the industry and three responses were received. The target is to have the AMCA ready for induction by 2034.

The AMCA project is particularly critical as it is India's only FGFA that is planned for induction at a time when a series of such FGFA development projects are making progress worldwide. China, which has made great progress in

the development and deployment of FGFA, has recently deployed its twin-engine J20 FGFA in Tibet bordering India.

### CCS clearance

The AMCA project got sanction from the Cabinet Committee on Security (CCS) in March. It is envisaged as a 25-tonne twin-engine stealth aircraft with internal weapons bay and diverterless supersonic intake which has been developed in India for the first time.

It is intended to have an internal carriage of 1,500 kg of payload and 5,500 kg of external payload with 6,500 kg of internal fuel. Hindustan Aeronautics Limited (HAL), which is the production agency for the project, has already initiated manufacturing activities.

**Context:** The Defence Ministry is advancing the project for the indigenous fifth-generation fighter aircraft, Advanced Medium Combat Aircraft (AMCA), and is developing a model to significantly involve the private sector to ensure timely execution.

### Advanced Medium Combat Aircraft (AMCA)

- **About:** The AMCA is designed to be a fifth-generation, medium-weight, multi-role, and twin-engine aircraft.
- **Stealth and Configuration:** Envisaged as a 25-tonne twin-engine stealth aircraft, it features an internal weapons bay and diverterless supersonic intake, a first-time achievement in India.
- **Payload and Fuel Capacity:** Intended to carry 1,500 kg of internal payload, 5,500 kg of external payload, and boast a substantial 6,500 kg of internal fuel.
- **Government Funding and Production:** In 2009, the Central government allocated ₹90 crore for a feasibility study, with an additional ₹447 crore sanctioned later. Production is underway by Hindustan Aeronautics Limited.
- **The first prototype is expected by:** 2028-29.
- **Two Phases of AMCA:** Mk1 with the General Electric F414 engine and a Mk2 with a more powerful engine.
- **Features of AMCA**
- **Stealth Capabilities:** Equipped with advanced stealth features to evade enemy radar detection, surpassing the size of existing Indian Air Force fighters.
- **Fuel and Weapons Configuration:** Equipped with a concealed 6.5-tonne internal fuel tank and an internal weapons bay for a variety of weapons, including indigenous ones.
- **Engine Specifications:** The AMCA Mk1 variant will use the US-built GE414 engine, while the more advanced Mk2 will feature a 110kN engine developed indigenously by DRDO's Gas Turbine Research Establishment.
- **Advanced Airflow Control:** Features like a diverterless supersonic inlet and a serpentine air intake duct contribute to controlling air flow into the engines and shielding them from radar emissions.

## INDIAN ARMY CONTINGENT DEPARTS FOR INDIA- THAILAND JOINT MILITARY EXERCISE MAITREE

**Context:** The Indian Army contingent departed yesterday for the 13th edition of India- Thailand joint military Exercise MAITREE.

### Exercise MAITREE

- **About:** It is conducted annually between India and Thailand, alternating between the two countries since 2006.
- **Training Focus:** Company-level joint exercises in insurgency & counter-terrorism across jungle and urban environments.
- **Objective:** The primary aim is to enhance military cooperation between India and Thailand, particularly in executing joint counter-insurgency and terrorist operations.
- **Participants:** The Indian Army contingent comprises personnel from the LADAKH SCOUTS battalion and other arms and services, totaling 76 personnel.
  - The Royal Thailand Army contingent includes 76 personnel from the 1st Battalion, 14 Infantry Regiment of 4 Division.
- **Practices:** Creation of Joint Operation Centre, Intelligence & Surveillance setup, Drone operations, Heliborne operations, Cordon and Search, Room Intervention, Demolition drills.
- **Benefits**
  - Exercise MAITREE enables both sides to exchange tactics, techniques, and procedures for conducting joint military operations.
  - The exercise fosters inter-operability, camaraderie, and mutual understanding between soldiers of India and Thailand.

# UNESCO warns 90% of Earth's land could be degraded by 2050

**Context:** The United Nations Educational, Scientific and Cultural Organization (UNESCO) issued a stark warning, stating that a staggering **90% of the planet's land surface could be degraded by 2050.**

## UNESCO International Conference

- **Organized by:** UNESCO and the Kingdom of Morocco's National Agency for the Development of Oasis and Argan Zones (ANDZOA)
- **Participants:** 30 Countries
- **Objective:** The conference's goal was to have discussions that would lead to an action plan for achieving goals such as improved soil protection and rehabilitation.

## Key Highlights of Conference

- **Call for Global Priority:** UNESCO is calling on the international community to make soil protection a priority.
- **Alarming Soil Degradation:** According to the World Atlas of Desertification, 75 per cent of soils are already degraded, directly affecting 3.2 billion people. If the current trend continues, this may increase to 90 per cent by 2050.
- **Education and Training:** The conference also focused on increasing the commitment of young people and communities through education and training programmes.
- **World Soil Health Index:** UNESCO has pledged to support member states by establishing a 'world soil health index' with international partners.
  - The index will help standardise measures for analysing and comparing soil quality across different regions and ecosystems.
- **Trend Identification:** Bringing soil data together on a common platform will help identify trends in soil degradation or improvement, and highlight the most vulnerable areas.
- **Soil Management Evaluation:** The practice aims to improve the evaluation of the effectiveness of soil management practices.
- **Pilot Programme:** UNESCO will launch a pilot programme for long-term soil and landscape management in ten natural sites supported by its Biosphere Reserves Programme.
  - The initiative will help assess the management methods used on these sites and ensure that best practices are developed and implemented globally.

## Global trade turned positive in first quarter of CY24: UNCTAD

**G**lobal trade trends turned positive in the first quarter of 2024 (January-March) after contracting in 2023. According to the latest update from UN Trade and Development (UNCTAD) released on Tuesday, the value of trade in goods and services increased sequentially by about 1% and 1.5%, respectively.

"This surge, fuelled by positive trade dynamics for the US and developing countries, particularly large Asian developing economies, is expected to add approximately \$250 billion to goods trade and \$100 billion to services trade in the first half of 2024 compared to the second half of 2023," it said. While global gross domestic product (GDP) growth forecasts remain around 3% for 2024, the short-term trade outlook is cautiously optimistic, UNCTAD said. If positive trends persist, international trade in 2024 could reach almost \$32 trillion, though it is unlikely to surpass the record levels seen in 2022, it added.

According to UNCTAD, global trade saw a 3% annual contraction, amounting to \$1 trillion, compared to the record high of \$32 trillion in 2022. **RHIK KUNDU**



If positive trends persist, international trade in 2024 could reach almost \$32 trillion, UNCTAD said. **AFP**

**Context:** Global trade rebounded in the first quarter of 2024 after a contraction in 2023, with the UN Trade and Development (UNCTAD) reporting a sequential increase of about 1% in goods and 1.5% in services.

### United Nations Conference on Trade and Development (UNCTAD)

- **About:** UNCTAD is a permanent intergovernmental body established by the United Nations General Assembly.
- **Objective:** Its objective is to assist developing countries, especially the least developed countries, and countries with economies in transition, to integrate beneficially into the global economy.
- **Focus:** on four main areas: trade and development, investment and enterprise, technology and innovation, and macroeconomics and development policies.
- **Founded in:** 1964.
- **Headquarter:** Located in Geneva, Switzerland.

### Key Highlights of Global Trade Update

- **Positive Trade Surge Expected:** The UNCTAD forecasts a substantial increase in global goods and services trade for the first half of 2024, driven by favorable trade dynamics, particularly in large Asian developing economies.
- **Global Economic Outlook:** Despite a stable global GDP growth projection of around 3% for 2024, the short-term outlook for international trade remains cautiously optimistic, with potential trade volume nearing \$32 trillion.
- **Geopolitical Concerns Impacting Trade:** Geopolitical events such as Houthi attacks in the Red Sea, the Russia-Ukraine conflict, US-China trade tensions, and EU regulatory measures have significantly influenced global trade performance in 2024.
- **Sectoral Performance**
  - **Goods and Services Trade:** Services sector resilient with an 8% increase; goods trade saw a 5% decline compared to 2022.
  - **Sector-Specific Growth:** Green energy and AI-related products showed robust growth trends.
- **Export-Import Dynamics:** Varied performance among major economies; notable improvements in exports for China, India, and the US; contrasting declines for Japan and South Africa.

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