



National Dolphin Research Centre

[Source: DTE](#)

The [National Dolphin Research Centre \(NDRC\)](#) in Patna has faced inactivity months after its inauguration, underscoring significant challenges and initiatives in conserving the [Gangetic River Dolphin](#).

- Despite its establishment, the center remains non-operational due to a lack of necessary equipment and skilled personnel.
- **NDRC** was inaugurated in 2024 and dedicated to researching and conserving the Gangetic River dolphin.
 - It is located strategically near the [Ganga River](#) and aims to facilitate studies on dolphin behaviour, habitat, and conservation threats.
- **Initiatives for Gangetic Dolphin Conservation:**
 - [Project Dolphin](#)
 - **Conservation Action Plan for the Gangetic Dolphin:** It was prepared by the [National Ganga River Basin Authority](#), detailing specific actions for habitat protection, community involvement, and mitigation of human-dolphin conflicts.
 - The plan includes conducting surveys to assess dolphin populations and threats while promoting awareness among local communities.
 - **Protection Status:**
 - [IUCN: Endangered](#)
 - [Indian Wildlife \(Protection\) Act 1972: Schedule I](#)
 - [Convention on International Trade in Endangered Species \(CITES\): Appendix I](#)
 - [Convention on Migratory Species \(CMS\): Appendix I](#)

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GANGES RIVER DOLPHIN

(*Platanista gangetica gangetica*)

National aquatic animal of India

Facts

- Can only live in freshwater; prefer deep water
- Essentially blind; hunts by emitting ultrasonic sound
- Can't breathe in water; must surface every 30-120 seconds for air
- Also called 'susu' because of sound they make while breathing

Habitat & Distribution

- Distributed in Ganges and Brahmaputra River basins of India, Nepal and Bangladesh.
- Distribution range in India covers 7 states namely, Assam, Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, Jharkhand and West Bengal.

Protection Status

- IUCN Red List:** Endangered
- CITES:** Appendix I
- Wildlife Protection Act 1972:** Schedule I

Threats

- Habitat destruction
- Pollution
- Bycatch
- Climate Change
- Hunting

Conservation Efforts

- Project Dolphin (2021):** On Lines of project Tiger
- National Dolphin Research Centre (2021):** India's and Asia's First; in Patna University (Bihar)
- Dedicated Dolphin Sanctuary:**
 - Vikramshila sanctuary (Bihar) – 1991
 - Hastinapur sanctuary (UP) – Proposed



Read more: [India's First Dolphin Research Centre](#)

11th ADMM Meeting-Plus and Buddhism

For Prelims: [ASEAN Defence Ministers' Meeting-Plus](#), [Buddhist Principles](#), [Act East policy](#), [United Nations Convention on the Law of the Sea \(UNCLOS\), 1982](#), [ASEAN](#), [Global Commons](#), [High Seas](#), [Antarctica](#), [Outer Space](#), [Vinaya Pitaka](#), [Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation \(BIMSTEC\)](#), [India-Myanmar-Thailand Trilateral Highway Project](#), [Indian Ocean Rim Association \(IORA\)](#).

For Mains: India's Act East Policy, India and its neighbourhood- relations.

Source: [PIB](#)

Why in News?

Recently, India's Defence Minister addressed the **11th ASEAN Defence Ministers' Meeting-Plus (ADMM-Plus) forum** held in **Vientiane, Lao PDR**.

- He emphasised the role of **Buddhist principles** in resolving conflicts and celebrated a decade of India's **Act East policy (AEP)**.

What are the Key Highlights of the 11th ADMM Meeting-Plus?

- **Freedom of Navigation:** India highlighted the need for adherence to the **United Nations Convention on the Law of the Sea (UNCLOS), 1982** for freedom of navigation and overflight in the **Indo-Pacific region**.
 - India advocated for a **Code of Conduct** that protects the **rights and interests** of nations that remain consistent with **international law**.
- **International Order:** India called for greater adoption of **Buddhist principles** of peaceful coexistence in a world that is increasingly **polarised into blocks and camps**.
- **Advocacy for Dialogue:** India's approach to **border disputes, trade agreements**, and other challenges demonstrates its belief in **open communication** to foster trust, understanding, and cooperation.
- **Asian Century:** India described the **21st century as the "Asian Century,"** emphasising ASEAN's economic dynamism and its **vibrant trade, commerce, and cultural exchanges**.
- **Decade of the Act East Policy:** India Highlighted the success of **India's Act East Policy**, which has strengthened ties with **ASEAN and Indo-Pacific nations** over the past decade.
 - The Act East Policy was launched in **November 2014** at the **12th ASEAN-India Summit 2014** held in Myanmar capital **Naypyidaw**.
- **Climate Change and Defence:** India proposed the development of an **ADMM-Plus Defence Strategy on Climate Change** to tackle interlinked security and environmental challenges.
- **Global Commons:** India underscored the importance of safeguarding **Global Commons**, which include **shared natural resources** beyond national boundaries.
 - Global Commons include **High Seas, Atmosphere, Antarctica and Outer Space**.

Note:

India quoted **Rabindranath Tagore's 1927 remark** during his Southeast Asia visit: "**I saw India everywhere, yet I couldn't recognise it.**"

- The statement symbolises the **deep and widespread cultural & historical ties** between India and SouthEast Asia.

What is ADMM-Plus Forum?

- **About:** It is a multilateral defence cooperation framework that brings together the defence ministers of the **10 ASEAN** member states, **8 Plus countries (dialogue partners)**, and **Timor Leste**.
 - **ASEAN Members** include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam.
 - **8 Dialogue** partners include **India**, China, **Russia**, Japan, South Korea, Australia, New Zealand and the **US**.
- **Establishment:** The Inaugural ADMM-Plus was convened in **Ha Noi, Viet Nam, on 12th October 2010**.
 - Since **2017**, the ADMM-Plus **meets annually**, to allow enhanced dialogue and cooperation among **ASEAN and the Plus Countries**.
- **Focus Area:** The ADMM-Plus currently focuses on **seven areas** of practical cooperation, namely
 - Maritime security (MS)
 - Counter-terrorism (CT)
 - Humanitarian assistance and disaster management (HADR)
 - Peacekeeping operations (PKO)

- Military medicine (MM)
- Humanitarian mine action (HMA)
- Cyber security (CS)
- **Experts' Working Groups (EWGs):** EWGs have been established to facilitate cooperation in these areas.
 - The EWGs are each **co-chaired by one ASEAN Member State and one Plus Country**, operating in a **three-year cycle**.



ASEAN

Association of Southeast Asian Nations



■ 8 Dialogue Partners of ASEAN

Founded: By signing ASEAN Declaration (Bangkok Declaration) (1967)

Founding Members: Indonesia, Malaysia, Philippines, Singapore and Thailand

Secretariat: Indonesia, Jakarta

Chairmanship: Rotates annually

ASEAN Summit Meetings: Occur biannually

ASEAN Economy:

- Combined GDP: ~ USD 3.66 trillion (2022)
- Total Exports: USD 1.73 trillion (8.24% of global exports in 2021)
- Major Export Item: Monolithic Integrated Circuit, Palm Oil, Data Processing Equipment

ADMM+Meeting: Platform for ASEAN and its 8 Dialogue Partners (India, Australia, US, Japan, S. Korea, China, Russia and New Zealand)

- First Convened in: Hanoi, Vietnam (2010)



Spread of Buddhism to Southeast Asia

- **Cultural Crossroads:** Indian **traders, sailors, and monks** helped spread Buddhism to Southeast Asia, with ports like **Srivijaya (Sumatra, Indonesia) and Champa (Vietnam)** serving as key centres for learning and cultural exchange from the **7th to 13th centuries**.
- **Legitimacy of Rulers:** Southeast Asian rulers adopted Buddhism to strengthen their authority, aligning with figures like **Buddha or Hindu deities** to **legitimise their rule**.
 - The **Srivijaya Empire**, centered in **Sumatra**, was a key player in the spread of **Buddhism**.
- **Fusion of Hinduism and Buddhism:** In Southeast Asia, **Buddhism** often **blended** with local beliefs and **Hinduism**.
 - Buddhist and Hindu temples in Southeast Asia, like **Angkor Wat (Cambodia) and Borobudur (Indonesia)**, showcase this fusion.
- **Cultural Diffusion:** Buddhism influenced the local cultures of places like **Bali and Java**, seen in their **dance, rituals, and temple architecture**.

What is the Role of Buddhist Ideals in Conflict Resolution?

- **Buddhist Perspectives:** Three vital **Buddhist perspectives** that can help us resolve or minimise conflict.
 - Everyone is a **Buddha**, worthy of **utmost respect**.
 - Dialogue is the **most powerful** means of creating **understanding and respect** among people.
 - Our **inner transformation** is the key to changing the world (reducing the **poison of anger** which includes **greed (lobha), hatred (dvesha), and delusion (moha)**).
- **Adhikaraṇasamathadhamma:** Buddhist text [Vinaya Pitaka](#) outlines **adhikaraṇasamathadhammā**, principles for **resolving monks' conflicts**.
 - It provides detailed guidelines for monks on **confession, reconciliation, resolving disputes, and healing splits** in the Sangha.
 - It applies to anyone seeking reconciliation of differences, whether **personal or political**.
- **Middle Path (Madhyam Marg):** Advocating **balanced policies** that consider all stakeholders' needs, fostering **equitable solutions** while avoiding extremes.
- **Interdependence (Pratītyasamutpāda):** Promoting **mutual understanding and shared responsibility** among nations to address global issues like **climate change and resource conflicts**.
- **Karuna (Compassion):** Prioritising **humanitarian aid** and addressing the root causes of suffering in conflict zones, such as **poverty and inequality**.



BUDDHISM



Drishti IAS



ORIGIN

- 6th century BC, based on the teachings of Gautam Buddha

MAIN FEATURES

- Essence - Attainment of enlightenment (Nibbana)
- Supreme Deity - None

PRINCIPLES

- Avoid the extremes; follow Madhyam Marg (middle path)
- Individualistic component (everyone is responsible for their own happiness)
- 4 Noble Truths:
 - Dukkha (suffering)
 - Samudya (cause of suffering)
 - Nirodha (suffering could be ended)
 - Atthanga Magga (8-fold path to achieve this)
- 8-Fold Path:
 - Right - view, intention, speech, action, livelihood, mindfulness, effort and concentration

BUDDHISM REJECTS

- Authenticity of Vedas
- Concept of soul (atman) (unlike Jainism)

MAJOR BUDDHIST TEXTS

- Sutta Pitaka (main teachings of Buddha - Dhamma)
- Vinaya Pitaka (rules of conduct for monks/nuns)
- Abhidhamma Pitaka (philosophical analysis)
- Other imp texts - Divyavadana, Dipavamsa, Mahavamsa, Milind Panha

Budhha's teachings were rehearsed, authenticated & divided in 3 Pitakas at the 1st Buddhist Council

These teachings were written down c. 25 BC in Pali

4 BUDDHIST COUNCILS

Buddhist Council	Patron	Venue	Chairman	Year
First	Ajatashatru	Rajgriha	Mahakashyapa	483 BC
Second	Kalashoka	Vaishali	Sabbakami	383 BC
Third	Ashoka	Patliputra	Mogaliputra	250 BC
Fourth	Kanishka	Kundalban (Kashmir)	Vasumitra	72 AD

What is India's Act East Policy (AEP)?

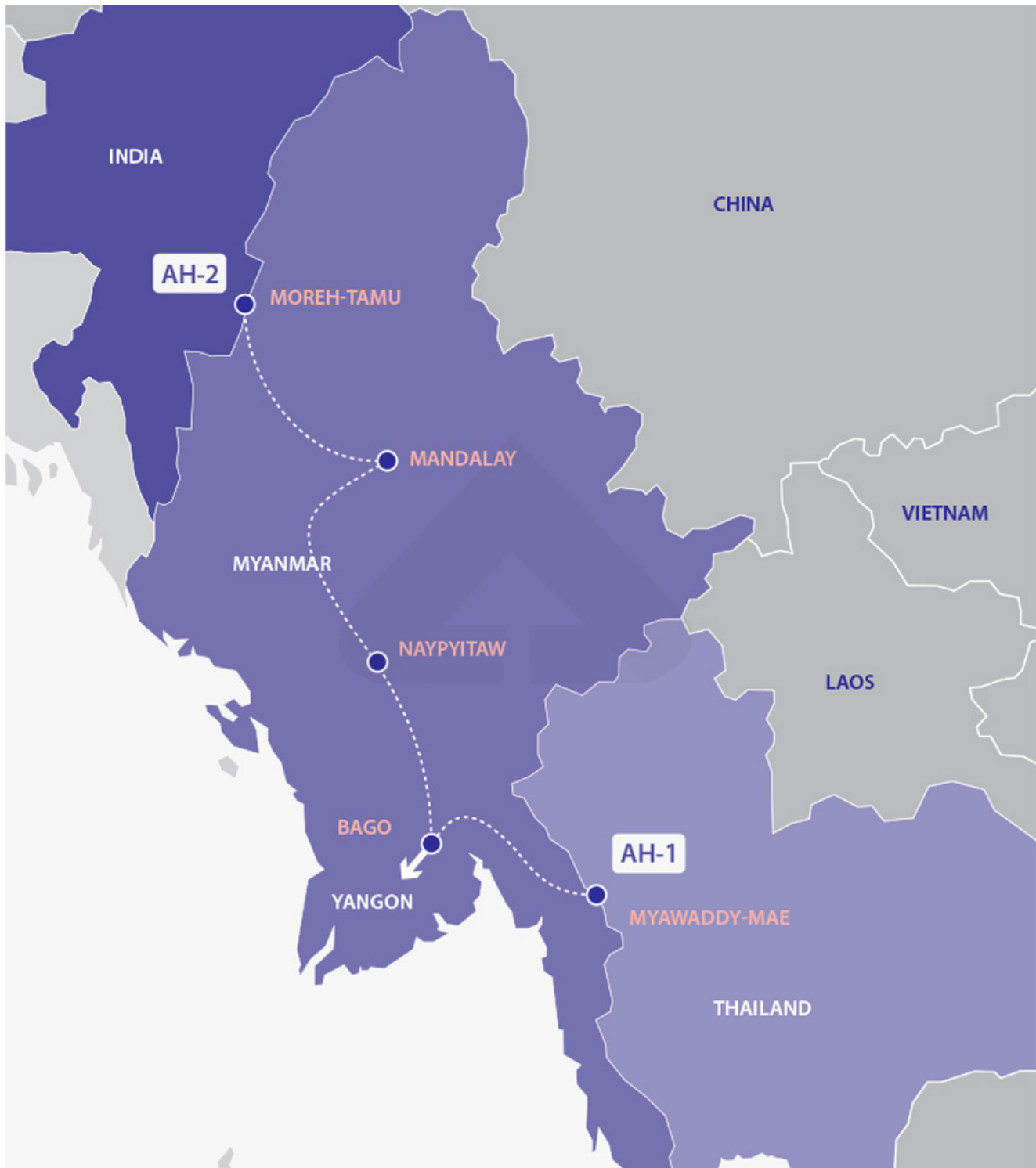
- About:** India's **AEP** is a strategic initiative aimed at strengthening India's engagement with the countries of **Southeast Asia, East Asia, and the broader Indo-Pacific region**.
 - It evolves from the **Look East Policy, 1992**, focusing on **proactive engagement** to boost economic growth, regional security, and cultural exchanges.
- Strategic Partnerships:** India has upgraded its relations to **strategic partnerships** with several key countries in the region, including **Indonesia, Vietnam, Malaysia, Japan, the Republic of Korea (ROK), Australia, and Singapore**.
- Regional Engagement:** India is actively involved in the ASEAN Regional Forum (ARF), [East Asia Summit \(EAS\)](#), the [Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation \(BIMSTEC\)](#), Asia Cooperation Dialogue (ACD), [Mekong Ganga Cooperation](#)

(MGC), and [Indian Ocean Rim Association \(IORA\)](#).

- **Infrastructure, and Connectivity:** Major infrastructure projects include the [Kaladan Multi-modal Transit Transport Project](#), [India-Myanmar-Thailand Trilateral Highway Project](#), [Rhi-Tiddim Road Project](#), and [Border Haats](#).
- **Security Cooperation:** There is a shared commitment between India and ASEAN to upholding **international maritime laws** and norms and promoting regional stability.
- **Northeast India:** Efforts focus on improving connectivity between **Northeast India and ASEAN** through trade, cultural exchanges, and infrastructure development.
 - **India-Myanmar-Thailand trilateral highway (Asian trilateral highway)** will connect **India (Moreh, Manipur) and Thailand (Mae Sot)** via Myanmar and is planned to be extended to **Cambodia, Laos, and Vietnam**.



India - Myanmar - Thailand Trilateral Highway



Graphic © Asia Briefing Ltd.

Conclusion

India's participation in the **11th ADMM-Plus** highlights its commitment to **regional peace, security, and cooperation**. Emphasising **Buddhist principles for conflict resolution**, the Act East Policy's success, and climate change defence strategies reflect India's broader vision for a **peaceful, integrated, and sustainable** Indo-Pacific region.

Drishti Mains Question:

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Consider the following countries: (2018)

1. Australia
2. Canada
3. China
4. India
5. Japan
6. USA

Which of the above are among the 'free-trade partners' of ASEAN?

- (a) 1, 2, 4 and 5
- (b) 3, 4, 5 and 6
- (c) 1, 3, 4 and 5
- (d) 2, 3, 4 and 6

Ans: (c)

Q. The term 'Regional Comprehensive Economic Partnership' often appears in the news in the context of the affairs of a group of countries known as(2016)

- (a) G20
- (b) ASEAN
- (c) SCO
- (d) SAARC

Ans: (b)

Mains

Q. Evaluate the economic and strategic dimensions of India's Look East Policy in the context of the post Cold War international scenario. (2016)

Bacteria to Solve Math Problems

Source: TH

The recent advancements in **synthetic biology**, particularly the **engineering of bacteria** to perform

mathematical computations at the **Saha Institute of Nuclear Physics in Kolkata**, represent a significant breakthrough in the field.

- Researchers have engineered ***Escherichia coli* bacteria** to act as **biological computers capable of solving mathematical problems**, such as determining whether a number is **prime or whether a letter is a vowel**.
 - This was achieved by introducing **genetic circuits** that can be activated by chemical inducers, allowing these bacteria to behave like **artificial neural networks (ANNs)**.
 - The team developed **bactoneurons**, engineered bacteria that function like **neurons** in a neural network.
 - These bactoneurons process **chemical inputs and produce fluorescent proteins** based on specific computations.
 - By converting **mathematical problems into binary code** represented by the presence or absence of chemical compounds, the bacteria could respond to queries with **fluorescent signals indicating "yes" or "no."**
- The **engineered bacteria were capable of** more than just simple tasks; they could also solve optimization problems, like calculating the number of pieces **a pie could be divided into with a given number of straight cuts**.
 - This capability suggests that bacterial computers can handle progressively more complex computational tasks, potentially leading to applications in various fields.

Read more: [Artificial Neural Network](#)

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