



DAILY CURRENT AFFAIRS-

1. India–Indonesia Strategic Partnership: BrahMos, Critical Minerals & Sabang Port
2. BHEL–thyssenkrupp Partnership for Green Hydrogen
3. India–Australia Relations: Beyond the Three Cs
4. Mission Drishti and OptoSAR Technology
5. IIM Bangalore Campus in Indonesia

1. India–Indonesia Strategic Partnership: BrahMos, Critical Minerals & Sabang Port

Source: *The Hindu*

Subject: International Relations | Bilateral Relations

Why in News?

- During **Prime Minister Narendra Modi's visit to Jakarta**, India and Indonesia signed several strategic agreements covering **defence, critical minerals, maritime security, space cooperation, education and cultural heritage**.
- India will supply **two batteries of BrahMos supersonic cruise missiles** to Indonesia in a deal worth approximately **US\$200 million**.
- Indonesia also welcomed India's participation in the development of **Sabang Port**, while both countries expanded cooperation on **critical minerals and supply chain resilience**.
- Prime Minister Modi was conferred the **Bintang Adipurna**, Indonesia's highest civilian honour.

Key Outcomes of the Visit

- India and Indonesia expanded their **Comprehensive Strategic Partnership (CSP)** established in **2018**.
- Defence cooperation includes:
 - Export of **BrahMos supersonic cruise missiles**.
 - Cooperation on **air-to-air missile systems**.
 - Defence technology transfer and capacity building.
- Signed agreements on **critical minerals, rare earths**, and resilient supply chains to support clean energy and advanced manufacturing.

- Both countries agreed to strengthen cooperation in **maritime safety, maritime domain awareness, naval cooperation and freedom of navigation.**
- Indonesia welcomed India's interest in developing **Sabang Port**, enhancing connectivity with India's **Andaman & Nicobar Islands.**
- Other agreements include:
 - Establishment of an **IIM Bangalore campus** in Indonesia.
 - Cooperation in **space technology.**
 - Conservation of the **Prambanan Temple** and cultural heritage.

Strategic Significance

- **Sabang Port**, located at the entrance of the **Strait of Malacca**, is strategically important for securing one of the world's busiest maritime trade routes.
- The **Strait of Malacca** carries nearly one-third of global maritime trade and a substantial share of global energy shipments, making it vital for India's energy security and Indo-Pacific strategy.
- Indonesia possesses nearly **21% of the world's nickel reserves** and is an important supplier of **critical minerals and rare earths**, essential for **electric vehicles, batteries, semiconductors and renewable energy technologies.**
- The **BrahMos export** marks another milestone in India's growing defence exports under **Aatmanirbhar Bharat** and strengthens strategic partnerships in Southeast Asia.

INDIA-INDONESIA STRATEGIC PARTNERSHIP
DEFENCE • MINERALS • MARITIME • SPACE
PM MODI'S VISIT TO JAKARTA

- 1. DEFENCE COOPERATION**
 - India to supply **2 BATTERIES** of **BRAHMOS** supersonic cruise missiles (\$200 MILLION)
 - Cooperation on **AIR-TO-AIR MISSILE SYSTEMS**
 - MAJOR DEFENCE TECHNOLOGY TRANSFER**
- 2. CRITICAL MINERALS PARTNERSHIP**
 - Cooperation on **CRITICAL MINERALS & RARE EARTHS**
 - Strengthening **SUPPLY CHAIN RESILIENCE**
 - Ensuring secure, diversified & sustainable access
- 3. MARITIME SECURITY & CONNECTIVITY**
 - Enhanced cooperation on **MARITIME SAFETY & SECURITY**
 - Indonesia welcomes India's interest in **DEVELOPING SABANG PORT**
 - Strategically located at the **NORTHWESTERN ENTRANCE** to the **STRAIT OF MALACCA** Vital global maritime corridor
- 4. SPACE COOPERATION**
 - Strengthening collaboration in **SPACE TECHNOLOGY & APPLICATIONS**
 - Potential areas: **SATELLITES, LAUNCH SERVICES, EARTH OBSERVATION**
 - Supporting innovation & capacity building
- 5. HIGHEST CIVILIAN HONOR**
 - PM NARENDRA MODI** awarded the **BINTANG ADIPURNA** of the Republic of Indonesia
 - INDONESIA'S HIGHEST CIVILIAN HONOR**
- 6. SIGNIFICANCE**
 - Deepens **STRATEGIC TRUST**
 - Enhances **DEFENCE & SECURITY COOPERATION**
 - Secures **CRITICAL RESOURCES & TRADE ROUTES**
 - Stronger **INDO-PACIFIC PARTNERSHIP**

KEY TAKEAWAY India and Indonesia elevate ties across defence, resources, maritime and space, building a resilient and future-ready partnership.

- The agreements reinforce the shared commitment to a **Free, Open, Inclusive and Rules-Based Indo-Pacific**, respecting **international law, freedom of navigation**, and peaceful resolution of disputes.
- The visit strengthens India's **Act East Policy, Indo-Pacific Oceans Initiative (IPOI)** and engagement with **ASEAN**.

About India–Indonesia Relations

- The Diplomatic relations established in **1950**.
- Indonesia is India's **Comprehensive Strategic Partner (2018)** and a key member of **ASEAN**.
- Both countries cooperate through:
 - **East Asia Summit (EAS)**
 - **ASEAN-India**
 - **Indian Ocean Rim Association (IORA)**
 - **G20**
 - **Indian Ocean Naval Symposium (IONS)**
- Maritime cooperation is particularly important due to their proximity near the **Andaman Sea** and **Strait of Malacca**.

Defence cooperation has expanded through **bilateral naval exercises, coordinated patrols (CORPAT), logistics cooperation and defence industrial collaboration**

Challenges & Way Forward

- Fast-track implementation of defence and infrastructure agreements, particularly **Sabang Port**.
- Deepen cooperation in **critical mineral processing**, resilient supply chains and emerging technologies.
- Expand maritime cooperation to address **piracy, illegal fishing, maritime terrorism and disaster response**.

- Strengthen economic integration through trade, connectivity, education and digital partnerships.
- Continue coordinating on regional issues through **ASEAN**, **IORA** and the **Indo-Pacific** framework to promote regional stability.

UPSC Prelims MCQ

Q. With reference to India–Indonesia relations, consider the following statements:

1. Sabang Port is located near the entrance of the Strait of Malacca.
2. Indonesia possesses one of the world's largest reserves of nickel, a critical mineral.
3. BrahMos is a jointly developed supersonic cruise missile by India and Russia.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

UPSC Mains Question (15 Marks)

"India's growing strategic partnership with Indonesia reflects the convergence of defence, maritime security and critical mineral cooperation in the Indo-Pacific." Discuss the significance of recent India–Indonesia agreements for India's Act East Policy and Indo-Pacific strategy.

2.BHEL–thyssenkrupp Partnership for Green Hydrogen

Source: *The Hindu*

Subject: Science & Technology | Energy

Why in News?

- **Bharat Heavy Electricals Limited (BHEL)** has partnered with **thyssenkrupp nucera India**, the Indian subsidiary of Germany's thyssenkrupp nucera, for the **indigenisation and local manufacturing of alkaline electrolyser systems**.
- The partnership aims to strengthen India's **National Green Hydrogen Mission (NGHM)** by developing indigenous electrolyser manufacturing capabilities.

Key Developments

- It focuses on the **phased indigenisation** of alkaline electrolyser technology in India.
- It promotes **local manufacturing** of electrolyzers required for green hydrogen production.
- It aims to reduce **dependence on imported clean-energy technologies**.
- It strengthens the domestic **green hydrogen value chain** under **Atmanirbhar Bharat**.
- It supports India's transition towards a low-carbon economy through indigenous manufacturing.

Significance

- **Electrolysers** are the core technology used to produce **green hydrogen** by splitting water into hydrogen and oxygen using electricity generated from renewable energy.
- It enhances **energy security** by reducing dependence on imported fossil fuels and critical technologies.
- It lowers the long-term cost of green hydrogen through domestic manufacturing and economies of scale.
- It promotes **technology transfer, innovation, employment generation, and MSME participation** in the clean energy sector.
- It supports the decarbonisation of hard-to-abate sectors such as **steel, fertilisers, refineries, shipping, and heavy transport**.
- It contributes towards India's **Net Zero by 2070** commitment and climate goals.

National Green Hydrogen Mission (NGHM)

- **Launched:** January 2023
- **Nodal Ministry:** Ministry of New and Renewable Energy (MNRE)
- **Financial Outlay:** ₹19,744 crore

Objectives

- It aims to make India a global hub for **green hydrogen production, utilisation, and export**.
- It targets production of **at least 5 Million Metric Tonnes (MMT)** of green hydrogen annually by **2030**.
- It aims to add nearly **125 GW** of renewable energy capacity.

- It seeks to mobilise **over ₹8 lakh crore** in investments.
- It aims to create **over 6 lakh jobs**.
- It targets a reduction of nearly **50 MMT of greenhouse gas emissions annually**.
- It promotes domestic electrolyser manufacturing through the **Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme**.

Challenges

- It has a **high production cost** compared to conventional grey hydrogen.
- It depends heavily on **imported electrolyser technology and critical minerals**, limiting technological self-reliance.
- It requires **large-scale renewable energy capacity, storage facilities, and hydrogen transport infrastructure** for commercial deployment.
- It faces **technological and manufacturing gaps** in indigenous electrolyser development.
- It has **limited domestic demand** across sectors such as steel, fertilisers, refineries, and heavy mobility.

Way Forward

- It requires strengthening **indigenous R&D** and domestic manufacturing of electrolysers.
- It requires greater **collaboration between industry, academia, and global technology partners** for technology transfer.
- It requires expanding **domestic demand** through policy support for green steel, green ammonia, refineries, and the transport sector.
- It requires reducing **production costs** through economies of scale and affordable renewable energy.
- It requires developing a robust **green hydrogen ecosystem** comprising production, storage, transport, and refuelling infrastructure.

UPSC Prelims MCQ

Q. With reference to the National Green Hydrogen Mission, consider the following statements:

1. Green hydrogen is produced by electrolysis of water using electricity generated from renewable energy sources.

2. The National Green Hydrogen Mission aims to achieve at least **5 Million Metric Tonnes (MMT)** of green hydrogen production annually by 2030.
3. Electrolysers are used for storing hydrogen after its production.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

UPSC Mains Question (15 Marks)

"The National Green Hydrogen Mission is central to India's energy transition and industrial decarbonisation." Discuss the role of indigenous electrolyser manufacturing in achieving India's green hydrogen ambitions and long-term energy security.

3. India–Australia Relations: Beyond the Three Cs

Source: *The Hindu*

Subject: International Relations | Bilateral Relations

Why in News?

- India and Australia are expanding their **Comprehensive Strategic Partnership (CSP)** beyond the traditional **Three Cs—Cricket, Curry and Commonwealth** into a technology-driven, strategic and economic partnership.
- Both countries aim to achieve **US\$100 billion bilateral trade by 2030**, strengthen defence cooperation, expand clean energy collaboration and promote a **free, open and inclusive Indo-Pacific**.

Key Areas of Cooperation

- It has **elevated bilateral ties** through the **Comprehensive Strategic Partnership (2020)**, building upon the Strategic Partnership established in 2009.
- It has **strengthened trade relations** through the **Economic Cooperation and Trade Agreement (ECTA), 2022**, providing duty-free access for Indian exports and preferential access for Australian goods.

- It aims to increase bilateral trade to **US\$100 billion by 2030**, while cumulative two-way investments are approaching **US\$50 billion**.
- It has expanded defence cooperation through regular ministerial dialogues, **2+2 Ministerial Dialogue**, and joint military exercises such as **AUSINDEX**, **Malabar** and **Talisman Sabre**.
- It has deepened cooperation in critical and emerging technologies, including **Artificial Intelligence (AI)**, **cyber security**, **drones**, **quantum technologies**, **semiconductors** and **digital infrastructure**.
- It has strengthened energy partnership through the **India–Australia Renewable Energy Partnership (2024)** focusing on **solar energy**, **green hydrogen**, **critical minerals** and **uranium cooperation**.
- It has enhanced education and people-to-people ties, with over **1 lakh Indian students** studying in Australia and Australian universities establishing campuses in India.
- It has expanded multilateral cooperation through the **Quad**, **Indian Ocean Rim Association (IORA)**, **Supply Chain Resilience Initiative (SCRI)** and the **Australia–Canada–India Technology and Innovation Partnership**.



Significance

- It strengthens India's Indo-Pacific strategy by promoting a **free, open, inclusive and rules-based maritime order**.
- It diversifies India's supply chains through cooperation in **critical minerals, rare earths and advanced technologies**, reducing dependence on single-country sources.
- It enhances defence interoperability and maritime security across the Indian Ocean Region.
- It supports India's clean energy transition through collaboration in **green hydrogen**, **solar energy** and **civil nuclear cooperation**.

- **It promotes technology partnerships** in advanced computing, healthcare, defence, space and digital infrastructure.
- **It strengthens economic resilience** by expanding trade, investment and industrial collaboration.
- **It benefits from the Indian diaspora**, with over **10 lakh people of Indian origin** acting as a strong bridge between both countries.

Challenges

- **It has relatively low bilateral trade** despite strong complementarities between the two economies.
- **It requires early conclusion of the Comprehensive Economic Cooperation Agreement (CECA)** to unlock the full trade potential.
- **It faces logistical and geographical constraints** that increase transportation costs.
- **It requires greater private-sector participation** in technology, manufacturing and innovation partnerships.
- **It faces strategic uncertainties** arising from China's growing influence in the Indo-Pacific.

Way Forward

- **It requires early finalisation of CECA** to deepen economic integration.
- **It requires greater collaboration** in defence manufacturing, maritime security and critical technologies.
- **It requires expansion of cooperation** in critical minerals, green hydrogen, renewable energy and semiconductor supply chains.
- **It requires strengthening research and innovation partnerships** among universities, industries and startups.
- **It requires leveraging platforms such as the Quad, IORA and SCRI** to promote regional stability and resilient supply chains.
- **It requires deeper people-to-people engagement** through education, skill development and mobility partnerships.

UPSC Prelims MCQ

Q. With reference to India–Australia relations, consider the following statements:

1. The **Economic Cooperation and Trade Agreement (ECTA)** entered into force in 2022.
2. **AUSINDEX** is a bilateral naval exercise between India and Australia.
3. Both India and Australia are members of the **Quad**.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

UPSC Mains Question (15 Marks)

"India–Australia relations have evolved beyond traditional engagement into a comprehensive strategic partnership driven by trade, technology, defence and the Indo-Pacific." Discuss

4.Mission Drishti and OptoSAR Technology

Source: *The Hindu*

Subject: Science & Technology | Space Technology

Why in News?

- Bengaluru-based space startup **GalaxEye** lost contact with **Mission Drishti**, the **world's first OptoSAR satellite** and India's largest privately developed Earth Observation satellite.
- The satellite encountered an anomaly during the **Launch and Early Orbit Phase (LEOP)**, likely caused by a **geomagnetic solar storm**, leading to loss of communication.

Mission Drishti

- It was launched on **3 May 2026** aboard **SpaceX's Falcon 9** rocket from **Vandenberg, California**.

- It was the **world's first satellite** to integrate **Electro-Optical (EO)** and **Synthetic Aperture Radar (SAR)** sensors into a single operational platform.
- It was developed by **GalaxEye**, a Bengaluru-based private space startup.
- It aimed to provide **all-weather, day-and-night Earth observation** through fused EO and SAR imagery.
- It demonstrated India's growing capabilities in the **private space sector** despite the mission setback.

OptoSAR Technology

- **OptoSAR** combines **Electro-Optical (EO)** imaging and **Synthetic Aperture Radar (SAR)** on a single satellite platform.
- It provides **high-resolution imaging** irrespective of cloud cover, rainfall, smoke or darkness.
- It produces **synchronised and fused datasets**, reducing temporal gaps and improving analytical accuracy.
- It enhances applications in **disaster management, agriculture, border surveillance, urban planning, environmental monitoring and defence.**
- It supports **Artificial Intelligence (AI)** and geospatial analytics through high-quality integrated datasets.

GALAXEYE'S MISSION DRISHTI SATELLITE LOST AFTER SOLAR STORM

Bengaluru-based space start-up GalaxEye has lost contact with its Mission Drishti satellite, the world's first OptoSAR satellite and India's largest privately developed earth observation satellite.

GALAXEYE Bengaluru-based space start-up	MISSION DRISHTI World's first OptoSAR satellite and India's largest privately developed earth observation satellite	STATUS Lost contact with the satellite after an anomaly during early operations	LAUNCH DETAILS May 3, 2026 Aboard SpaceX Falcon 9 from Vandenberg Space Force Base, California, USA
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WHAT HAPPENED?

- Mission Drishti was successfully launched on May 3, 2026.
- During the Launch and Early Orbit Phase (LEOP), the satellite encountered an anomaly.
- The anomaly was caused by a geomagnetic solar storm.
- Communication became intermittent and was eventually lost.
- The likelihood of recovery is currently assessed as low.

ROOT CAUSE (INITIAL ANALYSIS)

Initial analysis indicates that radiation effects from the geomagnetic solar storm likely impacted a critical onboard system, leading to the anomaly and subsequent loss of contact.

ABOUT MISSION DRISHTI

Mission Drishti is a pioneering satellite that integrates both Electro-Optical (EO) and Synthetic Aperture Radar (SAR) sensors into a single platform.

Electro-Optical (EO)
High-resolution imagery in visible spectrum

Synthetic Aperture Radar (SAR)
All-weather, day-and-night imaging through clouds and darkness

Designed to deliver high-resolution, all-weather earth observation for a wide range of applications including defence, disaster management, agriculture and more.

KEY TAKEAWAYS

- The incident underscores the challenges and risks involved in space missions, especially during the critical early operational phase.
- Space weather events like geomagnetic solar storms pose a real threat to spacecraft electronics.
- Robust radiation-hardened systems, real-time space weather monitoring and anomaly management are crucial for mission assurance.
- The setback is a learning opportunity that will help the Indian private space sector build even more resilient and reliable future missions.

MISSION DRISHTI: A BOLD STEP FOR INDIAN PRIVATE SPACE

Every setback in space exploration is a step towards greater resilience and future success.
— Team GalaxEye

Mission Drishti represented a major milestone in India's private space journey and the advancement of indigenous capabilities in advanced earth observation technologies.
The journey continues.

Significance

- It marks a major technological innovation in **Earth Observation (EO)** satellites.
- It strengthens India's **commercial space ecosystem** and promotes indigenous space technology under **IN-SPaCe** and **Space Sector Reforms**.
- It expands dual-use capabilities for both **civilian and strategic applications**.
- It improves disaster response through **real-time, all-weather monitoring**.
- It demonstrates the increasing role of **private startups** in advancing India's space ambitions.

Challenges

- It remains vulnerable to **space weather events** such as geomagnetic solar storms and radiation exposure.
- It faces significant technical risks during the **Launch and Early Orbit Phase (LEOP)**.
- It requires highly reliable radiation-hardened onboard electronics and communication systems.
- It involves high development costs and complex integration of multiple advanced sensors.
- It requires continuous investment in testing, quality assurance and mission resilience.

Way Forward

- It requires strengthening **radiation protection** and fault-tolerant satellite systems.
- It requires expanding indigenous capabilities in advanced Earth Observation technologies.
- It requires greater investment in **private space startups**, research and innovation.
- It requires enhanced space weather forecasting and mission planning to minimise operational risks.

UPSC Prelims MCQ

Q. With reference to OptoSAR technology, consider the following statements:

1. It combines **Electro-Optical (EO)** imaging and **Synthetic Aperture Radar (SAR)** on a single satellite.
2. Synthetic Aperture Radar can capture images even during cloud cover and at night.
3. OptoSAR technology is useful for disaster management and border surveillance.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

UPSC Mains Question (15 Marks)

"Advanced Earth Observation technologies are transforming disaster management, strategic surveillance and resource governance." Discuss the significance of OptoSAR technology for India's space programme and geospatial capabilities.

5.IIM Bangalore Campus in Indonesia

Source: *The Hindu*

Subject: International Relations | Education

Why in News?

- During his visit to Indonesia, **Prime Minister Narendra Modi** announced the establishment of the **first international campus of IIM Bangalore (IIM-B)** at the **Singhasari Special Economic Zone (SEZ), Malang, East Java**.
- The initiative aims to strengthen **India–Indonesia educational cooperation** and serve students across the **ASEAN region**.

Key Highlights

- It will be the **first overseas campus of IIM Bangalore** and the **second international campus** of an Indian Institute of Management after **IIM Ahmedabad, Dubai**.
- It will be established through a **Memorandum of Understanding (MoU)** between **IIM Bangalore** and **PT Intellegensia Grahatama**, the managing entity of the **Singhasari SEZ**.
- It will introduce **Executive Education Programmes** in the first phase, followed by **full-fledged postgraduate management degree programmes**.
- It will focus on emerging areas such as **Artificial Intelligence (AI), Digital Transformation, Global Supply Chains, Climate & Sustainability, Healthcare Management, and Leadership**.
- It will serve as a regional management education hub for **Indonesia and ASEAN countries**.

Significance

- It strengthens the **India–Indonesia Comprehensive Strategic Partnership** through education and capacity building.

- It promotes the internationalisation of Indian higher education in line with the **National Education Policy (NEP) 2020**.
- It enhances India's **education diplomacy** and strengthens its soft power in the Indo-Pacific.
- It promotes academic collaboration, faculty exchange, joint research, innovation and entrepreneurship.
- It supports human resource development and skill enhancement across the ASEAN region.
- It positions India as a **global knowledge and education hub**.

National Education Policy (NEP) 2020

- It encourages **top Indian Higher Educational Institutions (HEIs)** to establish campuses abroad.
- It aims to make India a **global destination for quality education**.
- It promotes internationalisation through **academic collaborations, research partnerships and student mobility**.
- It encourages global recognition of Indian institutions and enhances India's educational soft power.

Challenges

- It requires maintaining the **academic quality and global reputation** of Indian institutions abroad.
- It faces regulatory and administrative challenges in foreign jurisdictions.
- It requires sustained financial investment and institutional support.
- It requires attracting international faculty and students in a competitive global education market.
- It requires aligning curricula with both Indian academic standards and local industry requirements.

Way Forward

- It requires expanding overseas campuses of premier Indian institutions under **NEP 2020**.
- It requires strengthening academic partnerships with ASEAN universities and industries.

- It requires promoting collaborative research in emerging technologies and sustainable development.
- It requires enhancing student and faculty mobility through scholarships and exchange programmes.
- It requires leveraging education as a key pillar of India's diplomacy and Indo-Pacific engagement.

UPSC Prelims MCQ

Q. With reference to the National Education Policy (NEP) 2020, consider the following statements:

1. It encourages top Indian Higher Educational Institutions to establish campuses abroad.
2. It aims to promote the internationalisation of Indian higher education.
3. It prohibits foreign universities from establishing campuses in India.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

UPSC Mains Question (15 Marks)

"The internationalisation of higher education has emerged as an important instrument of India's soft power and diplomatic outreach." Discuss with reference to the National Education Policy (NEP) 2020 and the establishment of overseas campuses by Indian institutions.

