Today's Prelims Topics

Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation

Context
Recently PM Modi visited Thailand to attend the **6th BIMSTEC Summit.**

About BIMSTEC
● BIMSTEC is a multilateral regional organisation to accelerate shared growth and cooperation among countries in the Bay of Bengal region.
● **Origin and Membership:**
  ○ Founded as BIST-EC (Bangladesh, India, Sri Lanka and Thailand Economic Cooperation) in June **1997** with the **Bangkok Declaration.**
  ○ **Current Strength** - 7 (After addition of Myanmar (1997) & Nepal, Bhutan (2004).
● **The charter of BIMSTEC came into effect recently in (May, 2024),** 27 years after the grouping was first envisioned in Bangkok, Thailand.
  ○ The document gives the organisation a legal personality,
  ○ Establishes a mechanism for admitting new members and observers,
  ○ Enables negotiations and agreements with countries and other regional and international groupings.
● **Current Chair - Thailand** (Chairmanship rotates among countries alphabetically)
● **Working Mechanism**:
  ○ **Summits**: Held every **two** years.
  ○ **Ministerial Meetings:** Foreign and Commerce Ministers meet annually to decide on trade and economic affairs.

Source:
● **Indian Express - BIMSTEC Summit**

Under Sea Cables

Context

India is expanding its internet infrastructure with new undersea cable systems. The latest addition is Airtel's 2Africa Pearls system, adding 100 terabits per second of capacity to India's international bandwidth.

What are Under sea cables/Submarine cables ?

● Submarine cables are fiber-optic cables that run along the ocean floor, carrying data between continents.

● They are the backbone of the global internet, responsible for the majority of international communications, including video calls, email and webpages.

● **Significance of Under Sea Cables:** 90% of data, 80% of world trade and $10 trillion in financial transactions depend on these cables.

● **Major cable landing hubs:**
  ○ Mumbai and Chennai are the two key locations for subsea cable landings.
  ○ **Versova, Mumbai**, alone hosts **95% of India's subsea cables** within a **6-km stretch**.
  ○ **17 international subsea cables** land in the country.

INTERNATIONAL ADVISORY BODY FOR SUBMARINE CABLE RESILIENCE

A partnership between ITU and the International Cable Protection Committee (ICPC) to improve the resilience of submarine cables.

The body is made up of 40 members from around the world, including ministers, heads of regulatory authorities and senior telecommunications experts.

India's telecom secretary is also part of the body

Under Sea Cables vs Satellite Internet

Component	Under Sea Cables	Satellite Internet
● **Latency**	Offer Ultra low Latency (milliseconds)	Higher latency (especially for high-orbit satellites)
● **Reliability**	Longer Lifespans (~25 years)	Exposed to space weather conditions **(space debris, solar storms etc.)**
● **Cost Considerations**	Cheap and stable bandwidth per user	Higher costs per user (especially for high-speed data transmission)

Source:
● **The Hindu - Undersea Cables**

Seaweed: A Nutritional Powerhouse from the Ocean

Context

India's seaweed farming sector is projected to expand to Rs 3,277 crore over the next decade. Currently it is valued at Rs 200 crore.

About Seaweeds

- Seaweeds are marine algae found in coastal environments, including intertidal zones and shallow waters.
- They are classified into three main groups: **green (Chlorophyta), red (Rhodophyta) and brown (Phaeophyta) algae.**
- Seaweeds serve as a crucial food source for various marine animals, including Herbivorous Fish, Sea urchins, crabs, snails, Manatees etc.
- **Benefits of Seaweeds:**
  - **Carbon Sequestration:** Seaweeds absorb CO_2 from the atmosphere, contributing to climate change mitigation. They help to lower ocean surface CO_2 levels.
  - **Habitat Creation:** Seaweed beds provide essential habitats for various marine species, enhancing biodiversity
  - **Culinary Uses:** Seaweeds are consumed directly as food (e.g. nori, kombu)
  - **Pharmaceuticals and Cosmetics:** Extracts from seaweeds are used in many products for their thickening and gelling properties.
  - **Biofuels:** Seaweeds can be processed into biofuels, offering a sustainable alternative to fossil fuels without requiring arable land or freshwater.
  - **Animal Feed:** Incorporating seaweed into livestock feed can reduce methane emissions from ruminants, contributing to more sustainable farming practices.

Facts
- Seaweed is found along the entire Indian coast and in the Andaman and Nicobar Islands and Lakshadweep.
- There are around **844 species of seaweed in Indian waters.** India has the highest number of seaweed taxa compared to other countries bordering the Indian Ocean.
- **Tamil Nadu** produces the highest amount of seaweed.
- The Indian government is promoting seaweed cultivation as part of the **Pradhan Mantri Matsya Sampada Yojana.**
- **Seaweed Mission launched in 2021** is a program by the **Technology Information, Forecasting and Assessment Council (TIFAC)** to commercialise seaweed farming and processing in India.
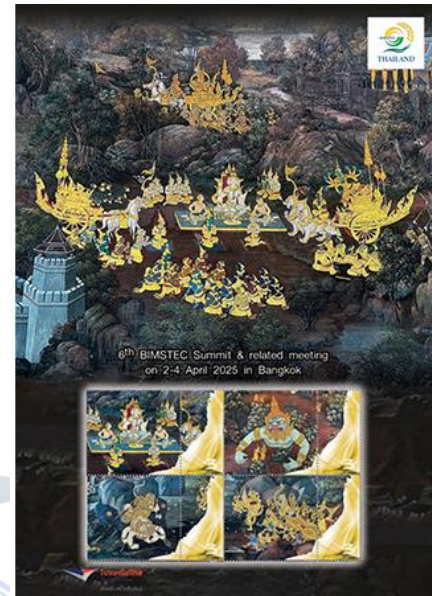

Source:
- **PIB - Seaweeds**

News in short

Ramakien Murals

- Thailand has issued a special stamp based on 18th-century Ramayan mural paintings during Prime Minister Narendra Modi's recent visit.

About Ramakien Murals
- **Ramakien Murals** are an iconic artistic representation of Thailand's national epic, the **Ramakien**, which is derived from the Indian **Ramayana**.
- They depict the legendary battle between **Raam & Ravana (Totsakan)**.
- The murals are **located at the Temple of the Emerald Buddha (Wat Phra Kaew)** within the **Grand Palace, Bangkok, Thailand**.
- They are considered **one of the most extensive mural paintings in the world**, covering the **inner walls of the cloister surrounding the temple**.
- The murals were originally painted **during the reign of King Rama I (1782-1809)**, when the **Grand Palace** was constructed.

Source:
- **NDTV - Ramakien Murals**

Kannadippaya - GI Tag

- Kannadippaya (Mirror Mat), a unique tribal handicraft from Kerala, has received the Geographical Indication (GI) tag.
- It is **the first tribal handicraft product from Kerala** to receive the GI tag.
- It is made from the **soft inner layers of reed bamboo**.
- **Unique Properties of Kannadippaya:**
  - Acts as a **natural insulator**:
    - Keeps warm in winter.
    - Provides a cooling effect in summer.
  - **Eco-friendly and sustainable**, aligning with global demand for natural products.

Source:
- **The Hindu - Kannadippaya**

Restricted Island in Andaman

- Recently a US national was arrested in the Andaman and Nicobar Islands for allegedly entering the prohibited tribal reserve area of **North Sentinel Island.**
- **North Sentinel Island** is a **highly restricted area**, and **entry is prohibited** under Indian law to protect the tribe from **external threats and diseases**.

○ **Sentinelese** are designated as a **Particularly Vulnerable Tribal Group (PVTG)**.

Andaman and Nicobar Islands (Protection of Aboriginal Tribes) Regulation, 1956 (ANPATR)

- This law prohibits **unauthorized entry, photography, videography, and interaction** with indigenous tribes.
- **Amended in 2012**, it **strictly bans tourism and unapproved visits** to areas inhabited by Particularly Vulnerable Tribal Groups (**PVTGs**) like the **Sentinelese, Jarawas, Onges, and Shompens**.
- Violators can face **imprisonment of up to 3 years** and **fines up to ₹10,000**.
- **Other Restricted Islands in Andaman & Nicobar:** Jarawa Reserve, Strait Island, Shompen Reserve, Dugong Creek etc.

Source:
- **The Hindu - Restricted Island in Andaman**

Bharat Small Modular Reactor (BSMR)

- India has **completed the concept design** of **Bharat Small Modular Reactor (BSMR-200 MWe)**.
- It is jointly developed by Bhabha Atomic Research Centre (BARC) and Nuclear Power Corporation of India Limited (NPCIL).
- **Technical Specifications:**
  - **Type:** Pressurized Water Reactor (PWR).
  - **Power output:** 200 MWe.
  - **Fuel:** Slightly enriched uranium.
- It aims to deploy indigenously designed small modular reactors for energy-intensive industries and remote locations.

Source:
- **PIB - BSMR**

Tariffs on Remote and Uninhabited Islands

- Recently US President Donald Trump imposed tariffs on remote and uninhabited territories, including **Australia's Heard and McDonald Islands.**
- Majority of these islands have no known exports to U.S.A.

About Uninhabited Island targeted
- **Heard and McDonald Islands:**
  - It is located 4,100 km southwest of Perth, Australia.
  - It is covered in **glaciers** and mostly **barren**.
  - It has no recorded human activity for **nearly a decade**.
- **Cocos (Keeling) Islands:** It is also an uninhabited Australian territory.
- **Norfolk Island:** Only 2,000 residents live here but the tariff applied here (29%) is more than mainland Australia (10%).

Source:
- **Indian Express - US Tariffs**

Editorial Summary

Bangladesh events, a reflection of South Asia's minorities

Context
Violence targeting Hindus in Bangladesh (August 2024), have sparked concerns about the safety and status of religious minorities in the country.

Comparative Decline of Religious Minority Rights in South Asia
● Earlier, **Indian Muslims** were perceived to be better off compared to minorities in **Pakistan and Bangladesh**.
● However, current **political trends** in all three countries suggest a **continued erosion of minority rights**.
● The trajectory points towards a **regional decline** rather than isolated national issues.

Partition's Lingering Legacy
● **Partition of British India in 1947** was intended to resolve the **Hindu-Muslim minority issue**, but it left behind a **complex legacy**.
● Rather than solving the minority issue, Partition has become a **central, enduring political issue** in South Asia.
● It also produced **new socio-political identities**:
   ○ **Mohajirs** in Pakistan (Muslim migrants from India).
   ○ **Bangladeshi refugees** in India (especially post-1971).
● The **Kashmir conflict** is another ongoing consequence of Partition.
● Partition also complicated the position of **non-Hindu, non-Muslim minorities** like **Sikhs and Christians**, increasing their vulnerability.

Post-Partition Political Proposals and Responses
● Political leaders in early independent India — Syama Prasad Mookerjee and B.C. Roy — debated **population exchange** as a solution.
● **Sardar Patel** proposed **military occupation of Khulna and Jessore** in East Pakistan to resettle Hindu migrants.
● The **Nehru-Liaquat Ali Pact (1950)** was signed to address:
   ○ The rising **refugee crisis**.
   ○ **Protection of minorities** on both sides.
   ○ **Prevention of war** between India and Pakistan.
● The pact led to the **resignations of K.C. Neogy and Mookerjee**, who saw it as insufficient.

Evolution of Regional Geopolitics
● Over time, the **Nehru-Liaquat Pact** failed to safeguard even **Muslim majority rights in East Pakistan**, especially **Bengali Muslims**.
● This neglect helped fuel the **1971 Bangladesh Liberation War**, leading to the **creation of Bangladesh**.
● The **two-nation theory** thus ironically resulted in the emergence of **three nations**: India, Pakistan, and Bangladesh.

India-Bangladesh Relations: Current Challenges
● Despite India's crucial role in **liberating Bangladesh**, relations are no longer based on gratitude.
● The **status of Hindus in Bangladesh** has become a contentious issue in bilateral relations.
● Key debates include:

- ○ Whether violence is **politically motivated** or represents a **systematic targeting** of Hindus.
    - ○ Critics argue India's foreign policy has become overly **personalized around Sheikh Hasina's family**, neglecting **broader democratic engagement**.
- There is **no ideological consensus** within Bangladeshi society on secularism, making **minority safety precarious**.

Need for Regional Recalibration and New Approaches
- The fate of minorities in **India, Pakistan, and Bangladesh is deeply interlinked**.
- A **new political vocabulary** and **regional institutions** are necessary to ensure minority rights.
- Lessons from the **limited success of the Nehru-Liaquat Pact** remain relevant.
- The idea that people with a **shared past** can build a **shared future** is still possible.

Challenges to Secularism and the Rise of Majoritarianism
- True protection of minority rights is most secure within a **secular democracy**.
- There is an urgent need for **fresh initiatives** in all three countries **to revive secular values and minority protections**.
- The current political climate often sees:
    - ○ **Indian Hindus** voicing concern for **Hindus in Bangladesh**.
    - ○ **Pakistani Muslims** advocating only for **Muslims in India**.
- This trend fosters **religious solidarity** over **universal minority rights**, thereby legitimizing **majoritarian ideologies** across borders and deepening **communal divides**.

Conclusion
- The **minority issue in South Asia**, rooted in Partition and shaped by decades of political decisions, remains a **central challenge** for the region's peace and stability.
- Addressing it requires **transcending religious identities**, fostering **cross-border democratic engagement**, and **strengthening secular institutions**.
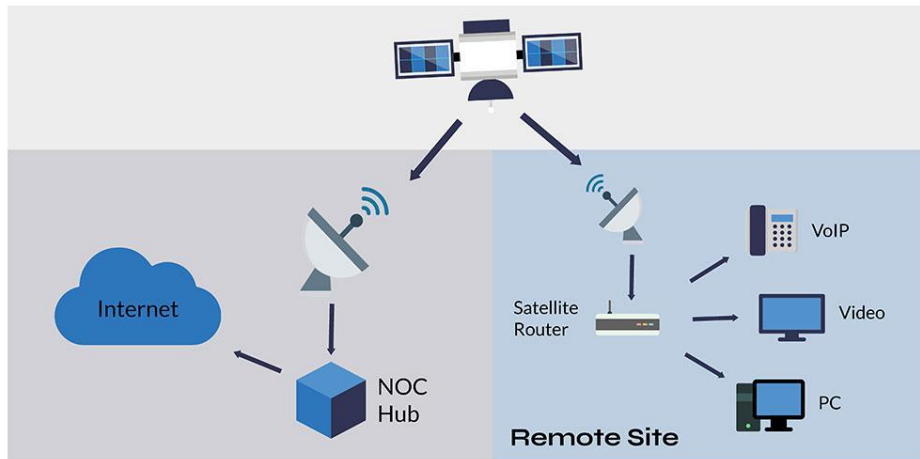
Source: [The Hindu: Bangladesh events, a reflection of South Asia's minorities](#)

The Other Space Race– The Geopolitics of Satellite Net

Context
SpaceX partnered with Airtel and Jio to expand Starlink services across India.

What is Meant By Satellite Internet?

- It is a type of internet connection that **uses satellites to provide broadband service**.
- It **does not** require cables, fibre or phone lines.
- **How Does Satellite Internet Work?**
  - **User Device to Satellite:** The **user's device** sends signals to a **satellite** in space.
  - **Satellite to Ground Station:** The **satellite transmits the signal** to a **ground station**, which is connected to the Internet.
  - **Data Retrieval and Transmission:** The ground station **retrieves requested data** and sends it back via the satellite to the **user's dish**.

- **Starlink:** SpaceX's satellite network.
- **GuoWang Constellation: China's state-run** satellite network.
- **Project Kuiper:** Amazon's satellite internet initiative, still in early phases.
- **OneWeb**: A subsidiary of the **French group Eutelsat** providing broadband satellite Internet.

Key Terms
- **Latency**: The time it takes for data to be sent and received is known as latency (typically measured in milliseconds (ms)).
  - Satellite internet provides higher latency compared to cable and fiber internet.

What are the Advantages of the Partnership Between SpaceX and Indian Telecom Companies?
- **Rural and Remote Connectivity:** Brings high-speed internet to regions without fiber optics or cellular towers.
  - **E.g.,** India is the **world's second-largest Internet market**, yet 670 million people (out of 1.4 billion) lack Internet access (as per a 2024 GSMA report).
  - Enhances digital access for remote schools, health centers, and local governance.
- **Economic Growth & Inclusion:** Enables rural entrepreneurship, online services, e-commerce, and financial inclusion.
  - Potential job creation in installation, servicing, and support sectors.
- **Technological Leap:** Gives India access to cutting-edge LEO satellite tech.
  - Can serve as a bridge while ISRO and others scale indigenous alternatives.

- **Enhanced Response During Emergencies:** Satellite internet can provide backup during natural disasters or emergencies where ground networks fail.
  - **E.g.,** It provides crucial internet connectivity to war-torn Ukraine and its military.
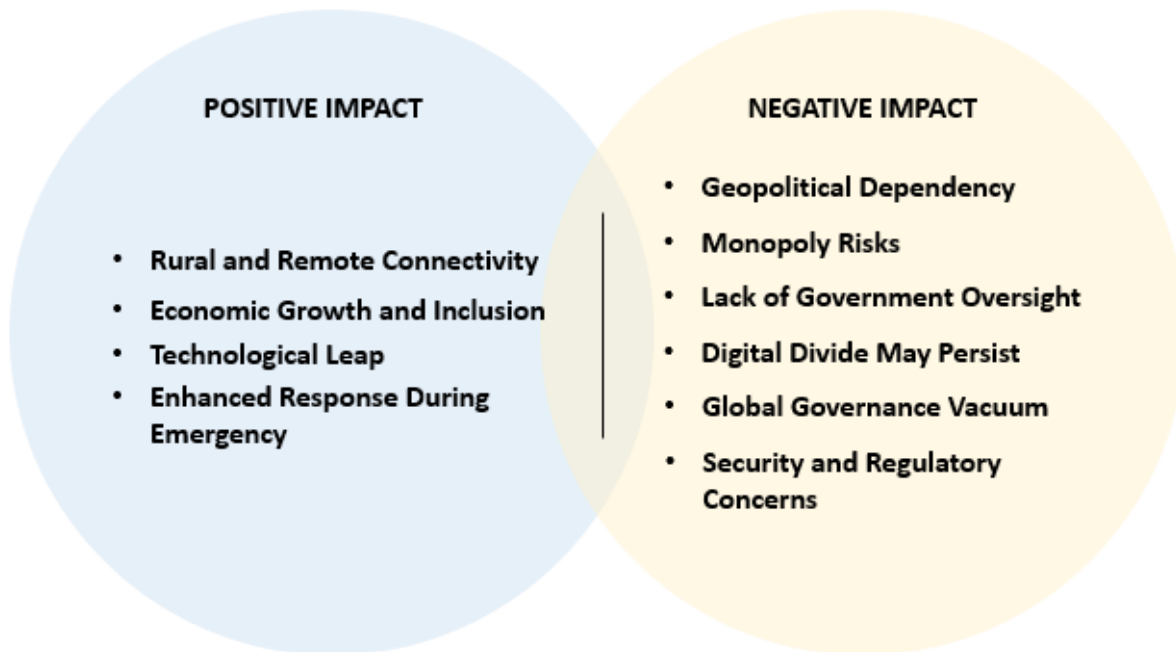
Challenges Associated with Satellite Internet Partnerships

- **Geopolitical Dependency:** Starlink is a **U.S.-based company**, which creates concerns over **sovereignty** and **strategic control**.
  - Critical infrastructure being controlled by a foreign private player raises alarms in case of **conflicts** or **political tensions** (e.g. Ukraine war incident).

> - US negotiators told Ukraine US could shut off Starlink if minerals deal not reached

- **Monopolistic Market Structure: SpaceX has ~7,000 satellites**, giving it a **first-mover advantage** and dominance in the **Low Earth Orbit (LEO)** satellite internet market.
  - Lack of competition (e.g. OneWeb, Project Kuiper) may lead to **pricing power**, **dependency**, and reduced **consumer choice**.
- **Digital Divide May Exist:** If **pricing remains high**, rural and low-income populations may not benefit, leading to a **"digital divide in orbit."**
  - Without **government subsidies** or tiered pricing, universal access will remain a distant dream.
- **Strategic Exclusion of Public Sector: BSNL**, India's state-owned telecom with rural reach, is not part of the partnership.
  - This reduces **public oversight** and **direct control** over the tech.
- **Regulatory and Security Concerns:** Issues related to **data sovereignty**, **technology transfer**, and **local data storage** need strict enforcement.
  - **Cybersecurity** vulnerabilities increase with external tech dependencies.
- **Global Governance Vacuum:** Issues like **orbital debris**, **space traffic**, and **spectrum management** lack robust **international regulations**, increasing the risk of a **"tragedy of the orbital commons."**

> The "Tragedy of the Orbital Commons" is a space-age version of the classic problem "Tragedy of the Commons" — where individuals, **acting in their own self-interest, overuse and degrade a shared public resource**, leading to long-term harm for everyone.

POSITIVE IMPACT

- Rural and Remote Connectivity
- Economic Growth and Inclusion
- Technological Leap
- Enhanced Response During Emergency

NEGATIVE IMPACT

- Geopolitical Dependency
- Monopoly Risks
- Lack of Government Oversight
- Digital Divide May Persist
- Global Governance Vacuum
- Security and Regulatory Concerns

Way Forward

- **Strengthen Indigenous Capabilities: ISRO** and **private Indian space startups** should be encouraged to build a **homegrown satellite constellation** for true **Digital Sovereignty**.
- **Public-Private Partnerships (PPP):** Include **BSNL** and other public sector units to balance **strategic oversight** with **private efficiency**.
- **Enforce Strategic Conditions:** Mandate **local data storage**, **tech transfer**, and **regulatory compliance** to ensure **national interests** are protected.
- **Promote Competitive Environment:** Create a **level playing field** for new entrants like **OneWeb India**, **Tata-Telesat**, etc., to avoid a **Starlink monopoly**.
- **Affordable Access Models:** Design **tiered pricing**, **rural packages**, and promote **innovation at the bottom of the pyramid** to ensure inclusivity.
- **Push for International Frameworks:** Lead global efforts for **satellite internet governance**, **orbital debris management**, and **fair spectrum allocation** under platforms like **UN COPUOS**.

Source: The Hindu: The other space race — the geopolitics of satellite net