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**DAILY EDITORIAL
ANALYSIS**

TOPIC

**BRICS AND SCIENCE, TECHNOLOGY
& INNOVATION (STI)**

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BRICS AND SCIENCE, TECHNOLOGY & INNOVATION (STI)

Context

- **BRICS** has emerged as a key platform advocating a **multipolar world order** and reducing dependence on Western-led systems.
- In recent years, **Science, Technology, and Innovation (STI)** has become a crucial yet **underexplored pillar of BRICS** cooperation.

About BRICS

- BRICS, as a term originally coined by economist **Jim O'Neill in 2001**. It refers to a **group of five major emerging national economies: Brazil, Russia, India, China, and South Africa**.
- It was formalized **during the 1st meeting of BRIC Foreign Ministers** on the margins of **UNGA in New York in 2006**.
 - ◆ **South Africa was inducted in 2010** and from there on it has been referred to as **BRICS**.
 - ◆ Egypt, Ethiopia, Iran, Indonesia, Saudi Arabia, and the United Arab Emirates have joined BRICS as new full members.

New Development Bank

- Formerly referred to as the BRICS Development Bank, is a multilateral development bank established by the BRICS states.
- It aims to support public or private projects through loans, guarantees, equity participation and other financial instruments.

BRICS in the Global STI Landscape

- In an era of **geopolitical tensions, techno-nationalism, and export controls**, global scientific collaboration is increasingly fragmented.
- BRICS provides an **alternative collaborative platform** for:
 - ◆ Coordinating innovation strategies;
 - ◆ Promoting technology sharing;
 - ◆ Strengthening Global South cooperation;
- Institutions like the **New Development Bank (NDB)** support development finance and innovation ecosystems.
- Expansion to **BRICS+ (including UAE, Saudi Arabia, Egypt, Iran, etc.)** enhances its global relevance.

Evolution of STI Cooperation in BRICS

- **Institutional Development:**
 - ◆ **2011:** STI formally recognized in BRICS agenda;
 - ◆ **MoU in 2015:** Established STI as a **core strategic pillar**;
 - ◆ Creation of Structured Mechanisms: Ministerial meetings; and National nodal agencies (e.g., CSIR, DBT in India)
- **Action Plans & Frameworks: BRICS Action Plan for Innovation (2017–2020)** focuses on entrepreneurship, youth, women participation; Technology transfer and incubation networks.
 - ◆ Shift from **basic research to innovation & commercialization**.

Key Areas of Cooperation

- **Emerging Technologies:** Artificial Intelligence (AI); High-Performance Computing (HPC); ICT and Digital Technologies; and space cooperation (2021 agreement).
- **Societal Challenges:** Public health (COVID-19 response, vaccines); energy security; water and environment; and climate resilience;
- **Institutional Mechanisms:** BRICS Technology Transfer Centre (TTC); iBRICS innovation network; and BRICS Institute of Future Networks.

Recent Developments

- **AI Declaration (2025):** AI elevated to a **central governance issue**; focus on **inclusive, equitable, development-oriented AI**.
- **Expansion to BRICS+:** Broader collaboration across Global South;
- **India's 2026 Presidency Theme:** Resilience, Innovation, Cooperation, Sustainability.

Key Achievements

- Strengthened **scientific collaboration and research networks**;
- Progress in **ICT, AI, and space technologies**;
- Growing emphasis on **innovation-driven ecosystems**;
- Increased **Global South representation in STI governance**;

Related Challenges & Concerns

- **Weak Innovation Systems:** Low **GERD (Gross Expenditure on R&D)** in most members (except China);
 - ♦ Gap with advanced innovators like **South Korea**
- **Institutional Limitations:** No **permanent STI coordination body**; BRICS's rotational leadership limits long-term planning;
- **Uneven Participation:** New BRICS+ members show **limited engagement**; and they have differences in **scientific capacity and economic development**.
- **Limited Commercialization:** Weak translation of research into **market-ready technologies**.
- **Funding Constraints:** Limited scale of funding compared to EU programs; and high competition for resources.

Way Forward

- **Institutional Strengthening:** Need to establish a **permanent BRICS STI Secretariat**; and model after **EU Horizon Programme**.
- **Mega-Science Projects:** Joint long-term projects in space exploration, climate science, and biotechnology.
- **Enhancing Innovation Ecosystems:** Need to increase **GERD investment**; and strengthen **National Innovation Systems (NIS)**.
- **Inclusive BRICS+ Integration:** There is a need to promote '**paired collaborations**' between members; and capacity building in weaker economies.
- **Focus on STI Governance:** There is a need for research on ethical AI, digital sovereignty, tech regulation; and align positions in **global treaty negotiations**.

Conclusion

- BRICS has made notable progress in STI cooperation since 2015, evolving into a **strategic platform for innovation and development**.
 - ♦ However, to remain relevant and effective, it needs to **strengthen institutional mechanisms, scale funding, and deepen collaboration**.
- India, as the **2026 BRICS Chair**, has a unique opportunity to **drive reforms and position BRICS as a leader in global STI governance**, especially for the Global South.

Daily Mains Practice Question

[Q] Examine the role of BRICS in promoting science, technology, and innovation cooperation among member countries. Also discuss the key challenges and suggest measures to enhance its effectiveness in the context of BRICS+ expansion.

Source: TH

