

Science, Technology & Innovation

Science, Technology, and Innovation, powered by digital transformation, enable societies to overcome challenges, create opportunities, and build a sustainable tomorrow.

Research and innovation are major yardsticks of industrial catch-up, export competitiveness, and economic progress, especially for emerging markets and developing economies. From that perspective, the Science, Technology and Innovation (STI) vertical of BRICS assumes special importance. Through research, innovation, and technology development, BRICS seeks to build a collaborative ecosystem that supports sustainable and inclusive development. The STI cooperation encompasses scientific research, technology transfer, innovation systems, entrepreneurship, digital transformation, and emerging technologies. The STI Ministerial Track of BRICS anchors cooperation in this field among the member countries.

The existing BRICS initiatives in the STI sector are *BRICS Science, Technology and Innovation Cooperation*¹, *Innovation BRICS (iBRICS) Network*², *BRICS Innovation and Entrepreneurship Platform*³, *UNIDO–BRICS Technology Platform*⁴, *BRICS Research and Innovation Initiative*⁵, *BRICS Working Group on Research Infrastructure and Mega-Science*⁶, *Platform for Sharing Environmentally Sound Technologies*⁷, and *BRICS STI Steering Committee*⁸. These initiatives aim to strengthen cooperation among member states through joint research, capacity building, training programmes, mobility of researchers, and development of shared research infrastructure. In addition, these initiatives are instrumental for promoting technology transfer, innovation-led development, and collaboration among science parks, incubators, innovation clusters, universities, and research institutions (BRICS Brazil, 2015; BRICS India, 2016b; BRICS China, 2017a; BRICS Brazil, 2019b; BRICS Brazil, 2019c; BRICS India, 2021; BRICS Brazil, 2025)

¹ BRICS China (2017b)

² BRICS Brazil (2019a)

³ BRICS China (2017b)

⁴ BRICS India (2016a)

⁵ BRICS India (2016a)

⁶ BRICS India (2016a)

⁷ BRICS India (2016a)

⁸ BRICS Brazil (2019a)

BRICS cooperation in STI spans a wide range of sectors including climate change and natural disaster management, water resources and pollution treatment, renewable and sustainable energy, biotechnology and biomedicine, food security and sustainable agriculture, astronomy, geospatial technology and applications, material sciences and nanotechnology, photonics, Information and Communication Technologies (ICT), artificial intelligence, high-performance computing, and space sciences (BRICS Brazil, 2015; BRICS India, 2016b; BRICS Brazil, 2019c; BRICS India 2021). Further, BRICS countries have promoted innovation through institutional mechanisms such as the iBRICS Network, which connects technology parks, incubators, and innovation actors to strengthen entrepreneurship, commercialisation of research, and innovation ecosystems across member countries (BRICS China, 2017a).

STI cooperation also emphasises strengthening research and innovation capacities through coordinated multilateral projects, researcher exchanges, joint funding calls, and partnerships among academic, and scientific institutions. These efforts have contributed to the implementation of numerous collaborative research projects and engagement among research institutions across BRICS countries under the STI Framework Programme (BRICS Brazil, 2015; BRICS Brazil, 2019c; BRICS India, 2021). It further encourages policy coordination, sharing of best practices, promotion of technology-intensive industries, and development of sustainable technological solutions to common developmental challenges (BRICS India, 2016b; BRICS Brazil, 2019b; BRICS Brazil, 2025).

Financing for BRICS STI cooperation is primarily supported through coordinated funding mechanisms by national science and technology agencies of member countries, alongside collaboration with multilateral and international institutions.

As digitalisation, artificial intelligence, and data systems have become essential for sustainable development today, NDB is well positioned to support its member countries and clients in sharing and adapting these technologies through cooperation and capacity building (NDB, 2026). NDB's General Strategy for 2022–2026 calls for projects that are “technology integrated” across all key areas of operation, alongside a dedicated operational area for digital infrastructure (NDB, 2022). This means the Bank looks to embed, where appropriate, smart and innovative technologies across sectors to improve how assets are planned, operated and maintained.

In practice, many NDB financed projects already use smart and digital systems. Transport operations, for instance, apply intelligent platforms to manage traffic and safety; water supply and treatment projects use digital monitoring and control systems; and social sector investments are beginning to deploy advanced technologies to improve service quality. Looking ahead, NDB will intensify its efforts to promote the integration of technology and innovation in projects across sectors and member countries.

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