

## Essay

# BIMSTEC and S&T Cooperation: A Long Way Ahead

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Ever since the enactment of 1978 "Buenos Aires Action Plan for Promoting and Implementing Technical Cooperation among Developing Countries (BAPA)", the idea of "technology cooperation" has featured prominently in various regional integration initiatives, especially in the global South.<sup>1</sup> Among others, the Buenos Aires Plan highlighted the significance of intra-regional trade and technological cooperation for creating regional value chains and innovation networks that fuel economic growth and prosperity. Furthermore, the transformation of production and consumption patterns world over coupled with the emergence of grand challenges like climate change has intensified the need for technology inflows within and between the regions.<sup>2</sup> Consequently, there has been substantial growth in technology transfers and exchanges among the late industrialising countries in Asia, Africa and Latin America.

The BIMSTEC sub-regional grouping is no exception in this regard. Since its inception in 1997, the BIMSTEC members identified 'technology' as one of the 'core' areas of cooperation along with the promotion of intra-regional trade and energy linkages.<sup>3</sup> Although the progress on BIMSTEC's key projects has been slow in the past, the group has recently witnessed a renewed interest among its members to foster greater connectivity and regional economic integration. India is seen as a key actor spearheading BIMSTEC's revival and there is growing realisation among the members that the enhanced regional trade, connectivity, and technological cooperation can lead to the creation of strong intra-industry linkages, value chains, as well as reduced tariffs and transportation costs, etc.<sup>4</sup>

In this backdrop, the essay examines the prospects for 'technology' cooperation among the BIMSTEC members from the lens of a south-south model of cooperation. In

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light of various recent initiatives to promote technology cooperation among BIMSTEC members, it discusses the role leading regional S&T powers like India and Thailand can

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play in stimulating knowledge-driven integration in the region. The essay mainly argues that the lack of government initiatives among the BIMSTEC countries acts as a binding constraint in the promotion of economic integration through regional technology cooperation, innovation, and investment. Such barriers can primarily be ascribed to two important institutional conditions namely the limited policy capacities, and weak S&T institutional linkages in the BIMSTEC region.<sup>5</sup>

### **South-South Model of Technology Cooperation**

In recent decades, the framework of South-South Cooperation (SSC) has emerged as an important template to govern technology transfer among the developing and emerging economies.<sup>6</sup> SSC is based on the premise that latecomer developing countries (LDCs), on account of "similar factor endowments", i.e., the amount of land, labour, capital, and entrepreneurship, etc., can mutually contribute to addressing the regional developmental needs. Technologies and knowledge pool available in these countries are more easily adaptable to the prevailing "geo-climatic conditions", "markets size", and "consumer needs" in the low-income settings prevailing in these countries.<sup>7</sup> Furthermore, the imperative for regional technical cooperation is further necessitated by the rising wave of protectionism in technology and intellectual property rights (IPR) markets, which has made the acquisition of advanced technologies a serious challenge for LDCs.<sup>8</sup>

The SCC model, in this context, offers an important alternative for stepping-up cooperation in more cost-effective technologies amongst LDCs. Several noteworthy examples of technology cooperation can be identified in the areas of environment-friendly agriculture, transport, energy, food, water technologies, etc. The distinctness of the South-South model lies in lowering the cost of technology transfer and ensuring fast adaptation and diffusion.<sup>9</sup> For instance, in the area of industrial technology, the scope of cooperation extends to not only bolstering scientific and technological exchanges, but also sharing technological know-how, joint R&D, and industrial application of higher technology. Similarly, in agriculture, which accounts for a major share of GDP in many LDCs, the SSC

initiatives cover sharing expertise on productivity enhancement to boost technical assistance in watershed management, and scientific research on developing seeds adaptable to the particular geo-climatic conditions.

In this context, various regional integration initiatives in South East Asia, Africa and Latin America have emerged as worthy templates to facilitate collaboration between different stakeholders such as governments, private sector entities, financial institutions, non-governmental organizations and research/educational institutions.<sup>i</sup> In 2018, a joint report by ASEAN Secretariat and the United Nation's Office South-South Cooperation (UNOSSC) mapped successful initiatives, and projects among the ASEAN member countries to certain achieve certain common goals.<sup>10</sup> In particular, it underlined the significance of science, technology, and innovation projects in various ASEAN action plans since 1971 as well as the role played by the Permanent Committee on Science and Technology (PCOST). The report serves as a useful reminder of benefits that the SSC model holds for pursuing intra-regional cooperation in modern as well as traditional technologies and, in turn, to respond to various socio-economic challenges in a cost-effective manner.

### **BIMSTEC: The Imperatives of Regional Cooperation**

The BIMSTEC group of countries constitute one of the least integrated regions in the world. The region exhibits highly uneven levels of economic and industrial development. For instance, countries like India, Sri Lanka, and Thailand have implemented industrial policies to build the domestic manufacturing base, promote heavy industries, and nurture innovations in wide-ranging technology sectors. On the contrary, countries like Nepal, Bangladesh, Bhutan, and Myanmar continue to grapple with industrialising their predominantly agrarian economies.

With fewer exceptions, the region exhibits highly uneven levels of innovation and technological capabilities. For example, the indicators of research and development (R&D) investment in the private sector, the availability of skilled personnel, and budgetary resources, etc., show wide variations. The resource problem is further compounded by inward-looking public S&T institutions; the underutilization of existing R&D facilities and the lack of economic and fiscal incentives resulting in a general lack of entrepreneurial culture. Traditionally, the BIMSTEC regional industries experienced limited access to cutting-edge global technologies. Consequently, the accumulation of technological capabilities has been

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<sup>i</sup> The last decade saw China emerging at the forefront of infrastructure financing to neighbouring countries in South Asia, for projects identified through bilateral negotiations and mutual agreements.

very limited in the BIMSTEC region.<sup>ii</sup> The BIMSTEC region has also fared poorly in attracting FDI, notwithstanding the vast size of the region and its markets, population density, and the stages of economic development.<sup>11</sup>

Several studies have noted that the development of small and medium-sized enterprises (SMEs) along with certain labour-intensive sectors like textiles, handicrafts, furniture making, etc., in the BIMSTEC region (with the exception of Thailand) have remained largely neglected.<sup>12</sup> With the exception of India and Thailand, other countries possess limited technological and innovative capabilities to face the challenges posed by economic globalisation and, in turn, affected the technological competitiveness in the textile and garment sectors, leading to a decline in profits. Further, the lack of cooperative spirit has hindered the BIMSTEC industries to forge regional value chains (RVCs), thereby deflating technological dynamism in the region. As a result, the participation in global value chains (GVCs) too has been severely limited.

As the global innovation is spearheading the fourth industrial revolution, there is a general consensus that industries in many BIMSTEC countries require a massive technological upgrade as many industries, including SMEs, continue to use outdated technologies and inefficient manufacturing techniques. They urgently need to adopt new-generation additive production techniques to enhance industrial efficiency. Also, in the agriculture sector, the need for climate-friendly crop varieties and the use of emerging biotechnologies to develop new genotypes has been underlined by several studies. Overall, the infusion of technology and skills require strong emphasis as the BIMSTEC countries aim to transition from factor-driven to technology/knowledge-driven economies. In this context, the regional initiatives to promote flows of foreign direct investment (FDI), technology transfers, sharing of development solutions and experts, and other forms of exchanges as envisaged under South-South cooperation model is an essential prerequisite.

### S&T Cooperation in BIMSTEC: The Story So Far

Since its inception in 1997, the BIMSTEC countries have been deliberating upon a number of initiatives to boost technological and institutional capabilities in the region. Three important developments can be highlighted in this context. First, during BIMSTEC's maiden Summit Meeting in 2004, the members vowed to expand the scope of S&T initiatives beyond traditional areas of agriculture, environment, and meteorology and explore newer areas of cooperation such as clean energy, ICT, food processing, agro-industries, and so

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ii The allocation of R&D budget as a percentage of GDP is very small in these countries. The R&D expenditure is mainly incurred by the government while private sector spends very little on innovation and technological upgradation.

on.<sup>13</sup> The members emphasised upon the use of ICTs through infrastructure development, and the optimal sharing of available resources to foster connectivity in the region.

Second, the longstanding proposal to set-up the regional Technology Transfer Facility (TTF) in Sri Lanka was finalised in 2016.<sup>14</sup> The TTF, in principle, seeks to intensify intra-BIMSTEC co-operation in S&T and to build linkages with the international community. The immediate focus of this initiative, however, is to expand the transfer of technological knowledge and skills among the micro, small, and medium-sized enterprises (MSMEs) in the Bay region. The 2<sup>nd</sup> BIMSTEC Summit Declaration, in 2008 talked about expanding the technology base of member states through collaborations and partnerships targeted towards MSMEs.<sup>15</sup> It also talked about the capacity building of human resources, technology transfer, information and knowledge sharing, and other energy-relevant issues among the members.

Third, the 2018 BIMSTEC Summit Meeting emphasised the idea of technology-driven “public goods” such as building connectivity through digital technologies and fostering rapid knowledge and information sharing within the industries and institutions.<sup>16</sup> It is also pertinent to note that the fourth BIMSTEC Summit decided to establish a Working Group (WG) to deal with information and communications technology-related matters with a view to providing greater access, more affordable and high-speed internet and mobile communications in the region.<sup>17</sup> Further, as the technologically advanced BIMSTEC countries are expected to engage in capacity building in smaller member countries through the transfer of technologies and know-how, a number of potential areas for intra-regional technology exchange have been identified. These include:

- Services such as finance, IT, construction and transport;
- Waste to energy; technology exchange in the field of biofuels;
- Production of papers, essential oils, timber, and non-timber forest products;
- Food packaging technologies;
- Participation in projects like Digital Thailand and Thailand 4.0;
- Thailand’s auto-component industry;

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<sup>iii</sup> In this regard, it is worth mentioning that India’s Ministry of Micro, Small and Medium Enterprises (MSMEs) is setting up Technology Centres and Vocational Training Centres in Myanmar and Sri Lanka.

<sup>iv</sup> To take this initiative forward, India offered to host a BIMSTEC Ministerial Conclave at the 2018 India Mobile Congress in October 2018.

- Aquaculture value chain including modern technology for fish harvesting and farming to post-farming cold-storage technologies;
- Textile value chains;
- Cosmetics, toiletries, electrical and electronic goods, light engineering products, pharmaceuticals, footwear and leather goods, and plastic products;
- Trade and investment in agro-based sub-sectors such as rubber, wooden furniture, jute, coconut coir, Ayurveda products, and value-added frozen fish;
- Transfer of energy technologies to build a climate-friendly energy system;
- Advance satellite and imaging network for disaster risk reduction (with India).<sup>16</sup>

### **The Prospects for Cooperation & India's Role**

Despite the enthusiasm and the benefit that intra-regional technology transfer offers for fast diffusion and adaptation, the probability of broader and deeper cooperation in the BIMSTEC region remains low. BIMSTEC's current institutional capacity in the domain of STI is extremely limited. More importantly, the role of "political will" is central to the explanation. Regional integration is a complex process and requires active participation from private as well as public actors to foster various levels of cooperation in the region.

One way in which this is done is through the creation of new institutions that would coordinate and facilitate cooperation. The other way is to create markets or a network of existing and new markets in the region. This, however, requires attracting firms and investors, by providing them with incentives such as the ease of doing business, flexible regulatory conditions, and lower tax burdens. It also requires continuous interaction between governments and investors, enabling the establishment of joint ventures, foreign firms, and public-private partnerships. The state guidance further reduces the risks and uncertainty in market behaviour, widening the scope of cooperation.

But in the case of BIMSTEC, the lack of governmental initiatives is starkly evident. The constraints arising from lack of trust, poor policy visions and declining national performances often prevent governments to cooperate. BIMSTEC as an institution does not seem to have an active programme to promote technology in the productive sectors of agriculture, manufacturing, and services. Also, the BIMSTEC's Technology Transfer/ Exchange Facility in Sri Lanka is yet to undertake any major programme to expand the technology base of Member States through collaborations and partnerships targeted towards MSMEs.

For instance, the BIMSTEC members made little progress in fostering the region-wide promotion of ICT infrastructure including the expansion of internet facilities at the grass-root level to facilitate the movement of skilled scientific and R&D personnel in the region. Filling this institutional gap is crucial for facilitating intra-regional trade and technology transfer among the BIMSTEC nations. Within BIMSTEC India enjoys an advantageous position and its role in the promotion of South-South technology transfer and cooperation is pivotal. The success of India's S&T and industrial enterprise in innovation-intensive sectors like pharmaceuticals, biotech, information technology, and telecom offers considerable value and learning to other members of the grouping. Similarly, the cutting-edge technologies accessed by Thailand through the skilful use of FDI can be further spread in the region to create new innovation capacities. The shared geography and cultural linkages, in this context, offer tremendous opportunity to exchange, assimilate, and adapt technologies developed within the region.

Besides high-technology sectors, India has also undertaken technology transfer in the areas of biomass conversion, drought-and flood-resistant seeds to Nepal. Additionally, India has been offering a range of scholarships to Nepalese students in the disciplines of engineering, agricultural sciences to create a competent human resource base. The transfer of know-how through skill development constitutes a unique example of technology transfer in the region.<sup>17</sup>

## Conclusion

In view of the uneven trajectory of S&T systems coupled with weak institutional structures, the BIMSTEC needs to focus on certain low-hanging fruits in the area of S&T cooperation. Although many policymakers have talked about the need to reinvigorate BIMSTEC through regional integration and increased co-operation, the pronouncement is yet to be backed by a robust technology vision that can propel BIMSTEC into higher levels of cooperation. Such a vision should include the development of its own research capabilities that can enable the members to become a knowledge-based economies. Promotion of both private sector R&D and building technological linkages between private enterprises and government research institutions is crucial in this regard. The South-South model of technology transfer offers immense potential to create new channels of technology cooperation and must be exploited fully. Clearly, New Delhi and BIMSTEC need to seek greater synergy in technology cooperation for regional development and prosperity.

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