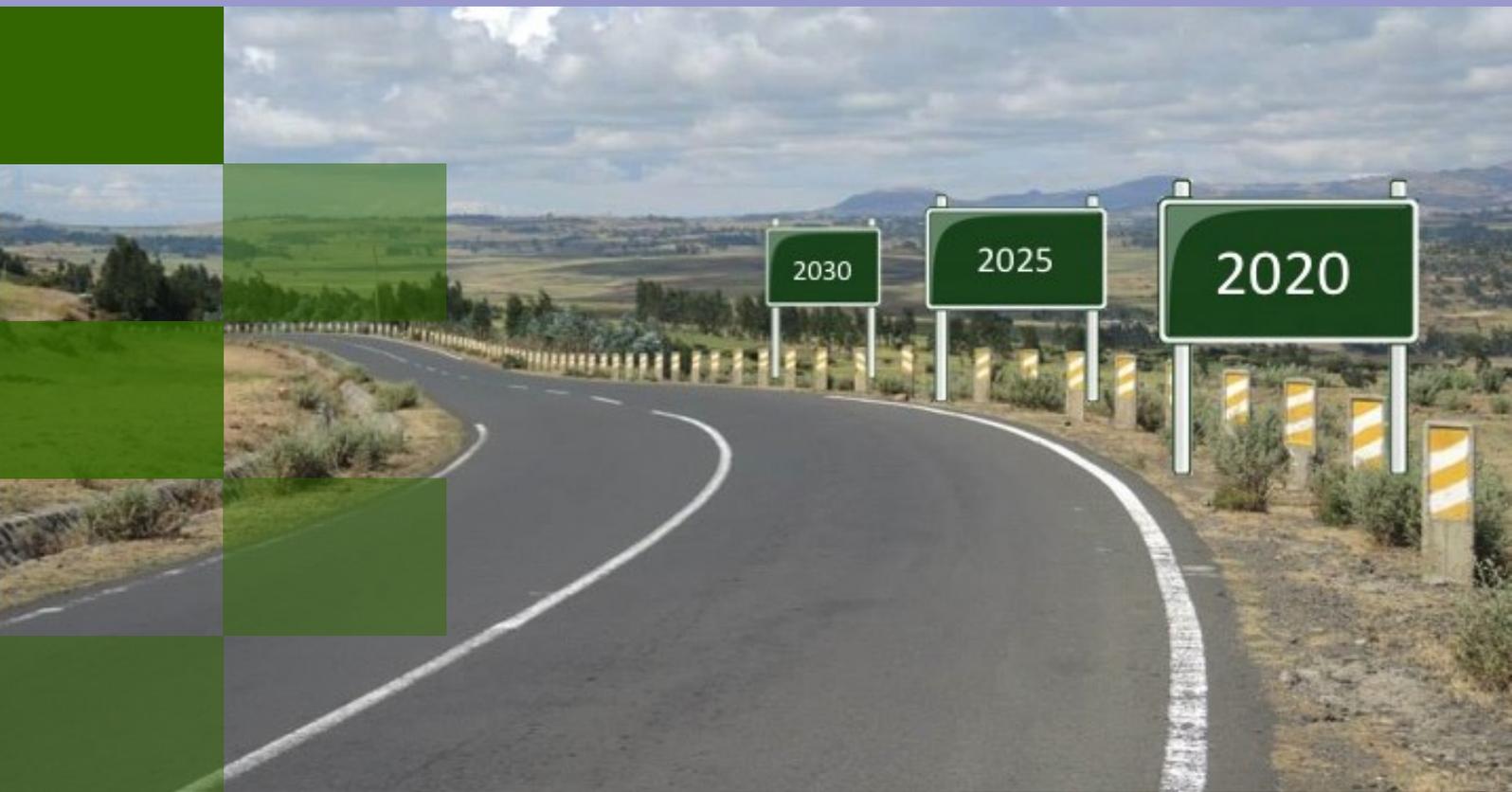


Trends. Threats. Projections

# India and East Asia: Will S&T bring them closer?

Sandip Kumar Mishra



February 2016



International Strategic and Security Studies Programme  
National Institute of Advanced Studies (NIAS)

Indian Institute of Science Campus, Bengaluru - 560 012, India

# India and East Asia: Will S&T bring them closer?

Sandip Kumar Mishra

India has been getting increasingly connected to the East Asia in recent years. It began with the adaptation of Look East Policy by India in the early 1990s, which has both broadened as well as deepened with its new version of 'Act East'. A vibrant India, with a confident agenda for domestic economic growth and development along with vision for a stable regional architecture, has been reckoned positively by the countries of the region. These countries are thus looking forward eagerly to connect India also with their own plans and vision for the future.

India is now seen as land opportunities because of its liberal pluralistic values, democratic political order, open market economy, big market, and huge source of natural and human resources. The economic and military capacities of India is based on its spectacular performance in the field of science and technology and thus Japan, South Korea and even China have been looking forward to forge cooperative partnership with India for the future.

There are several political contests among the countries of the region, which could be source of instability and frictions. India, therefore, has to carefully avoid them because they may possibly derail the process of economic and social development in the region and also adversely affect India. India must have to bring economic cooperation and exchanges with these countries at the centre-stage and bring in 'new agenda' items, which would make cooperation possible among these countries and also with India.

The new agenda could consist of issues like green growth, use of space technology for agriculture and other safe navigation purposes, joint research on agricultural technology to enhance yield and nutrition, joint research to make IT and related technologies more widespread and enhancing human development. India and East Asia may connect to each other by further enhancing their cooperation in disaster management, eradication of diseases, working on climate change, and several such agenda items, which are common concerns of all these countries. It would be most viable strategy to shift the focus in these countries from political rivalries to cooperation in the field of science and technology.

India has been engaged with the East Asian countries, especially Japan and South Korea in these future-oriented areas for some time bilaterally. The process must be further strengthened and hastened along with bringing multilateralism also in the process. A positive, constructive and inclusive agenda shared by these countries and India would be able to subside the political animosities among these countries and India along with these countries needs to work for it.

The economic and military capacities of India is based on its spectacular performance in the field of science and technology and thus Japan, South Korea and even China have been looking forward to forge cooperative partnership with India for the future

## India & Japan

Bilateral cooperation between India and Japan in the field of science and technology was initiated in mid-1980s. In the age of knowledge economy both the countries seek to provide 'innovative and affordable solutions for societal challenges' through their cooperation and commitment in science and technology. During the visit of the Japanese Prime Minister Shinzo Abe to India from 11 to 13 December 2015, India and Japan agreed to enhance the cooperation in the field of science and technology along with their cooperation in spectrum of other areas. Broadly, both the countries expressed their willingness to enhance the cooperation to a higher level in the fields of infrastructure, manufacturing and high technology, advance transportation

systems, civil nuclear energy, solar power generation, space technology, biotechnology, rare earths and advanced materials.

India and Japan agreed to transfer defence equipment and technology and also explore possibilities of future joint projects in this area such as US-2 amphibian aircraft. India and Japan signed MoC on introduction of Japan's High Speed Railways (HSR) technologies to Mumbai-Ahmedabad route. India's Research Designs and Standards Organisation (RDSO) and Japan's Railway Technical Research Institute (JRTRI) have agreed to cooperate in the areas of safety in train operations, advance techniques of maintenance, and use of environmental friendly technologies. India has recognized that cooperation with Japan in the field of science and technology would be very critical in the process of realization of India's future plans such as 'make in India', 'digital India', 'skill India', 'clean India' and 'smart city'. Japan and India, thus, have been working to strengthen their 'institutionalized science and technology cooperation'.

India and Japan are now geared up to work more closely in the fields of marine science and technology, earth sciences, climate research and marine biology... (and also) in areas such as biomedical devices and diagnostics tools through joint projects.

On 2 November 2015, Indian Minister of Science and Technology and Earth Sciences Harsh Vardhan visited Tokyo and reiterated that both countries are making 'concerted efforts to step-up the science and technology cooperation agenda.' India's Department of Biotechnology (DBT) and Japan's National Institute of Advanced Industrial Science and Technology (AIST) had successfully been working on projects of common interests and both the countries have decided to further enhance their cooperation in the fields of Internet of Things, Artificial Intelligence and Big Data Analysis by establishing joint laboratories through connecting India's Department of Science and Technology (DST) and Japan's Japan Science and Technology Agency (JST).

In 2015, DST of India also committed a funding of Rs. 19 crores over the next five years to launch the next phase of the Indian beam line for initiating studies on advanced materials with focus on energy research. The DST and Japan Society for the Promotion of Science (JSPS) have launched reciprocal fellowships for doctoral and post-doctoral candidates of both the countries to work in the laboratories of each other. India and Japan are now geared up to work more closely in the fields of marine science and technology, earth sciences, climate research and marine biology. Furthermore, both the countries are also looking forward to work in the areas such as biomedical devices and diagnostics tools through joint projects. There are possibilities for pharmaceutical companies of both the countries to collaborate in producing generic medicines.

### India & South Korea

Similarly, India and South Korea have also gradually been moving forward in their cooperation in the field of science and technology. In 1999, the first important step in this direction was the launch of Korean satellite KITSAT-3 (Uri Byul) by the Indian Polar Satellite Launch Vehicle PSLV-C2 from Shriharikota. Then on gradually but consistently lots cooperation between the two countries in the field have taken place. In 2010, Indo-Korea Science and Technology Centre (IKST) was established at the Indian Institute of Science, Bangalore by the Korea Institute of Science and Technology (KIST). In 2012, India and South Korea created a joint fund for research and collaboration with equal partnership of both the countries. The National Chemical Laboratory (NCL) has a MoU with Gwangju Institute of Science and Technology (GIST) to work in areas of organic materials, phonic polymers and hybrid materials. In last few years there have been several such MoUs between institutes and universities of India and South Korea.

During the Indian Prime Minister Narendra Modi's visit to South Korea in May 2015, possibilities of mutual cooperation between the two countries were further explored for 'enabling cities with updated technologies including smart grids for building of smart cities'. In another two areas steel and ship-building, India and South Korea could generate strong mutuality and the issue was raised during the Indian PM's visit. More specifically, India has been interested in construction of LNG carriers and South Korea may help in the process. India and South Korea have also decided to set up a joint working group in the field of electronics hardware manufactur-

ing. India was also keen about South Korea's 'green economy initiative' and sought to work together to have innovative technologies and policies to improve urban water and air quality and to protect natural resources.

India and South Korea have many ongoing cooperation in the forms of joint R&D projects in the fields of renewable energy, material science, robotics, engineering sciences and health sciences. In future both of them are resolved to broaden it in the new areas such as cleantech, robotics & automation and electronics system design and manufacturing. The Indian Space research Organisation (ISRO) and the Korea Aerospace Research Institute (KARI) has agreement to conduct joint research in the areas such as lunar exploration, satellite navigation and space sciences. Specifically, in the area of space research both the countries have shown keen interests in mutual cooperation. Both countries have also been looking forward in the field of electric power development and new energy industries and a MoU between India's Ministry of Power and South Korea's Ministry of Trade, Industry and Energy has been signed in this regard.

India and South Korea's cooperation in the field of science and technology have got substantial boost from 2013 when both countries launched annual Science and Technology Steering Committee meetings. Its third meeting happened in Seoul in November 2015 and India's strength in basic and fundamental research was underlined to be complimentary to the South Korea's core competence in application and technology development. Both countries stressed that they can together achieve 'inclusive and cost-effective solutions' of many existing and upcoming challenges. India's Ministry of Science and Technology and South Korea's Ministry of Science, ICT and Future Planning pledged \$10 million over a period of five years to support the collaborative activities.

### India & China

Although an agreement for cooperation in the field of science and technology was signed between India and China in 1988, relatively, it has been quite limited and thus, the possibilities of it must be explored beyond political limitations. There have been six meetings of India-China Joint Committee on the S&T till date and several priority areas have been identified but these meetings have been very irregular and less substantial. Fortunately, India and China have been talking about these possibilities through multilateral platforms such as BRICS. From 2013, both the countries have been participating in the BRICS Ministerial Meetings on Science, Technology and Innovations (STI) annually. In October 2015, India participated in the third meeting held in Moscow and India was assigned to lead joint R&D in the field of geospatial technologies and its applications and China was given leadership in the new research on energy and energy efficiency.

### The Road Ahead

India needs to provide further momentum to its cooperation in the field of science and technology with the East Asian countries in the future, as it would have significant positive implications for economic growth, social development and political stability in the region as well as in India. The bilateral mechanisms to cooperate with these countries must be sustained and further strengthened but along with it multilateral arrangements should also be explored to provide a seamless progress in the area. It could also be suggested that apart from ongoing model of cooperation in science and technology, one or two iconic/big/comprehensive joint projects could be initiated which would have important positive and comprehensive drag along with their huge spillovers.

India and East Asia's cooperation in the field of science and technology has capacity to transform the face of political relations and also more importantly, make an important contribution in the realization of 21st century being the Asia's century. The road ahead is not that difficult, it is just less travelled. If a futuristic vision for the region is adopted by the leaders of these countries, it would sooner become a reality than it is expected.

Dr Sandip Mishra teaches at the  
Department of East Asian Studies,  
University of Delhi.

Views expressed are author's own.

