Science and Technology in China: Implications and Lessons for India, edited by Maharajakrishna Rasgotra, New Delhi: Sage Publications, 2013, pp. 280, INR 795

Gunjan Singh*

China is India's largest and most developed neighbour. Following the reform and opening-up policy adopted by the Chinese leadership in 1978, the country has developed at breath-taking speed. Today, the Chinese economy is the second largest in the world (in terms of Gross Domestic Product [GDP]), with a large amount of American treasury bonds in its possession. This economic growth has also extended to the Chinese military and security aspects. It could also be said that in terms of technology and manpower, China possesses an advanced military. There have also been unprecedented developments in its science and technology sector. China has invested both effort and money into technologies that has helped it gain a very prominent position in the global scenario.

In addition to this, India and China still have an unresolved border issue—very small incidents occurring at the border can lead to larger problems and clashes also. The more China develops and becomes stronger, the wearier India will become. Moreover, the Chinese have also started making serious inroads into the South Asian region, which India perceives to be its natural sphere of influence. In this context, the growing science and technology gap between India and China also becomes an important factor that needs to be analysed and studied. The book *Science and Technology in China: Implications and Lessons for India* sets out to undertake this very task.

* The reviewer is a Research Assistant with the IDSA, New Delhi.

ISSN 0976-1004 print

Journal of Defence Studies, Vol. 9, No. 1, January–March 2015, pp. 117–119

The volume is neatly divided into eight chapters covering different science and technology sectors, including Information Technology (IT), Nuclear Science, Aeronautics, Space Technology, and Industrial Technology. The authors of the various chapters discuss and debate the various aspects of these technologies, while drawing a comparison with respect to India and China. They also provide suggestions and recommendations for what can (and needs to) be done in order to reduce the existing, and increasing, gap. One important recommendation provided is that, 'if we [India] have to draw the full benefit of the demographic advantage that we are likely to have over China in the 2020s and beyond, by increasing the number of youngsters in the productive age-group and declining the dependency ratio, we need to revamp our educational system' (p. 13).

The chapter 'Organization and Structure of Science and Technology in China' by V.P. Kharbanda provides a detailed overview of the Chinese structure. He argues that, 'the main factors responsible for Chinese success are quick implementation of various initiatives by the government, supervision by the Party committees at the various levels of institutions and heavy decentralized approach with commitment and strong supervision' (p. 58). The chapter titled 'Space Technologies' by U.R. Rao provides a good comparison of the level of technological development in India and China in this sector. The author has covered almost all aspects in this respect. He also asserts that it is China's higher GDP that leads to the increasing gap between the two countries (p. 84). The author concludes by saying that, '[a] greater synergy must be established between our [Indian] defence establishments and civilian establishments of space and nuclear energy to ensure the full intellectual strength of our country is employed in planning and execution of our national strategy' (p. 86).

In the chapter 'Aeronautical Industry', Roddam Narasimhha argues that, 'they [China] are effectively exploiting their huge, attractive and partially open domestic market, first inviting foreign investment but currently demanding technology and planning for rapid acquisition and generation of knowhow' (p. 102). Additionally, in the chapter 'Chinese Nuclear Programme', the author R. Rajaraman states that today a large number of Chinese scientists are studying and working in the Western countries. Furthermore, these scientists are in close contact with their counterparts living in China. Also, the Chinese scientists appear to be better coordinated than the Indian scientists' group (pp. 118–19). One

interesting point made in the chapter 'IT in China' by N. Balakrishnan is that, 'China's cyber force, strangely, was developed initially through training in the US' (p. 130).

The chapter by Ashok Parthasarathi titled 'Science and Technology in the Industrial Development of China' gives a detailed analysis of the comparison between various technological developments in India and China. The author provides information on areas of steel, electrical power, wind power, solar power, telecom, renewable energy, and pharmaceuticals, among others. This is one of the most comprehensive chapters in the book and covers a wide range of issues. The author concludes by saying that China and India appear to be at par in most of the sectors; however, China seems to be way ahead of India in areas of solar power and telecom, and India is above China in the area of steel manufacturing.

In the last chapter of the book, 'The Growing Science and Technology Gap with China and How India Can Close It', Smita Purushottam argues that, 'China's better performance in science and technology (S&T) indicators is a result of specific economic and technology strategies it evolved' (p. 217). She goes on to provide a number of issues that India needs to work upon in order to reduce the gap with China, and asserts that there is an urgent need for India to look at the areas of concern and work towards mending them in order to be regarded as a key player in the global technological arena (p. 237).

This volume is a must read for scholars and students who want to understand the role of science and technology in China's overall power projection and development. The authors beautifully highlight the nuances related to this aspect in the two countries. However, the book lacks one chapter that could have summarized the various technologies and provided an overview of the current situation.