

Executive Summary

"Innovative entrepreneurs, with their new products, new processes, new markets, and novel approaches to putting inventions to effective use, are key to an economy's long-term growth"

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With technological transformations continuing at a rapid pace, and the emergence of a globalised market-place, all countries are under pressure to become more innovative. Emerging economies, in particular, have been able to 'leapfrog' through stages of development by embracing and fostering innovation. For Sri Lanka too, adopting existing technologies and best practices, while of course gradually developing new ones, is now a critical policy priority in order for the economy to move up the value chain and the country to move up the development ladder.

This is envisaged in the country's current development paradigm as well. The Sri Lanka: Emerging Wonder of Asia document states that, "Sri Lanka's successful integration with the global economy and its sustained success in international competition will depend increasingly on effective combinations of science, technology and innovation" (p.126).

Yet, much needs to be done. A country's high-tech exports are a significant measure of a country's ability to innovate and commercialize scientific findings effectively. In Sri Lanka, the share of high-tech exports out of the total manufactured exports was just 2.2 per cent in 2001 and has fallen further to 1 per cent by 2010. While Sri Lanka recorded an average 1.8 per cent of high-tech exports share each year in the last decade, Korea recorded 75 per cent, Thailand 27 per cent, and Singapore and Malaysia over 50 per cent.

This is a direct symptom of Sri Lanka's weak innovation inputs - for example, a very low level of national R&D investment as a proportion of GDP, a key determinant of innovation in a country. As a percentage of GDP, Sri Lanka's Gross Expenditure on R&D (GERD) was just 0.21 per cent in 2004, 0.17 per cent in 2006, and 0.11 per cent in 2008. Meanwhile, the expenditure on R&D by the private sector, out of total R&D expenditure, is remarkably low. Unlike in most developed countries where much of the R&D expenditure is by the private sector - over 65 per cent in most cases - in Sri Lanka it is a mere 18 per cent. The bulk of R&D expenditure in Sri Lanka is by the state sector (57 per cent). This has strong implications on the rate of commercialization of science and technology research.

Yet, innovation is distinct from just research and it doesn't autonomously result from it. The nexus of industry-research collaborations, appropriate financing options, and support for commercialization are vital drivers to move research to innovation. Unlike in most developed and emerging economies, universities and research labs in Sri Lanka have not substantially established linkages with industry. Very few noteworthy examples of industry-research linkages exist in Sri Lanka today. The most prominent one is the Sri Lanka Nanotechnology Centre (SLINTEC) - a first-of-its-kind initiative that brings together leading private sector firms with leading Sri Lankan

nanotechnology scientists. In its first full year of operations alone, SLINTEC was able to secure 5 international patents on nanotechnology products, including carbon nanotubes, nano fertiliser and nano rubber.

Meanwhile, building a qualified pool of individuals geared towards S&T and R&D will be critical to Sri Lanka's innovation ambitions. Education - especially science education at all levels - is important not only for increasing general science and technology literacy, but also to build up a critical mass of scientists, researchers and engineers. Yet, very few students are engaged in science and engineering courses at Sri Lankan universities. Compared to a distinct knowledge-led economy like Singapore, where the majority enrolment is in engineering sciences of nearly 30 per cent, in Sri Lanka the majority enrolment is in Arts of over 30 per cent. This is a direct reflection of the fact that only 10 per cent of all secondary schools in the country have the facilities to teach science stream at the A/L (Grades 12-13). This naturally restricts the number of students who are able to gain admission to science and engineering programmes in university. Eventually, this leads to the low numbers of qualified-professionals - Sri Lanka records only 237 researchers per million people, well below the developing country average of 374.

In conclusion, fostering a forward-looking innovation system, that supports knowledge-interaction among various parties, and commercialization, is critical, if Sri Lanka is to achieve faster growth. Sri Lanka's weak performance on innovation is a symptom of the low priority given to S&T and R&D investment over the past several years. This may be largely attributed to the distraction of fighting a war. In post-war Sri Lanka, reversing this will be a critical determinant of our competitiveness.

Innovations come from the entrepreneurs who make them happen and ultimately depend on a society's responsiveness and ability to transform research into higher exports, into things that add value to people's lives and to the economy. Encouraging these entrepreneurs with appropriate policy support for "techno-entrepreneurship" is important, for example, by setting a conducive business environment, better access to finance through venture capital, incentivizing commercialization of inventions, etc.

For successful innovation policy to kick-in, it will need the firm backing of top leaders, to lend credibility to the vision and facilitate the adoption of key measures for removing bureaucratic hurdles. It is time that Sri Lanka set up a powerful 'National Innovation Council' chaired by H.E. the President or Prime Minister which can drive the innovation policy agenda at a national, strategic-level.