

Malaysia's paths to excellence in science

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An Organisation of Islamic Cooperation report states Malaysia's economic and political stability, and its investment in education, will boost its rise in science, technology and innovation, writes **ZAKRI ABDUL HAMID**

PROFESSOR Ekmeleddin Ihsanoglu, secretary-general of the Organisation of Islamic Cooperation (OIC), once remarked that development in the Muslim world could be achieved only if member countries rededicate themselves to attaining excellence in science, technology and innovation (STI).

A recent initiative of the OIC is the Atlas of Islamic-World



panies are rare. As other 'cheaper' countries take over the low-cost manufacturing base, Malaysia is struggling to find a way out of its current middle-income trap through alternative sources of growth".

The report provided recommendations that, incidentally, coincide with measures being considered by the newly-established National Science and Research Council.

Science and Innovation, which attempts to document the key trends and trajectories in STI in member states and to provide recommendations on the way forward.

The Malaysia report, co-authored by Natalie Day, then with the Royal Society in the United Kingdom, and Amran Muhammad from Universiti Malaya, is the first completed study of 15 OIC countries surveyed. It listed several of Malaysia's strengths. A basic pillar is a coherent national vision.

The New Economic Model (NEM) and 10th Malaysia Plan unveiled by Prime Minister Datuk Seri Najib Razak are the latest in a long history of national development plans, starting with two Malaya Plans, nine Malaysia Plans, three Outline Perspective Plans and Vision 2020. Such strategies, the report noted, provided a clear framework for Malaysia.

Economic and political stability is another of the country's strengths. Malaysia has shown strong economic growth for most of the last decade. Despite recent electoral shocks, Malaysia still offers a stable political system compared with some of its neighbours. Such credentials make Malaysia an attractive country in which to invest, trade and collaborate.

Its high investment in people is also a plus. From the 1970s onwards, Malaysia invested heavily in education. In addition to a focus on the school system, a comprehensive transformation of higher education was undertaken to meet increased demand and to stimulate economic growth.

Consequently, the numbers of PhDs and researchers are now on the rise. While there are hiccups, overcoming hurdles to talent development is a

Local universities can have tie-ups with those from abroad.

top priority of the Najib administration. The recent establishment of Talent Corporation is a clear indication of this commitment.

The report also recognises Malaysia's global leadership, earlier on in the tin and rubber industries and more recently, palm oil, with growing expertise in halal-related sectors and in Islamic finance.

Such experiences could be stepping stones for the country to embark upon emerging areas such as biotechnology and nanotechnology. It noted that although Malaysia's presence as a global scientific player was some way off, the foundations and experience were now in place.

Another source of Malaysia's strengths is the emerging leaders within industry.

While technology transfer from multinationals to local businesses has been minimal, companies, such as Petronas, and other local talents have proven Malaysia's ability to foster entrepreneurial and high-value industries.

Research organisations like the Malaysian Palm Oil Board are also strong examples of industry working well with research communities to develop stronger economic sectors that can be applied in other areas.

Malaysia's rich biodiversity is yet to be exploited. Basic research still needs to be carried out in its forests, wetlands and coastal and marine waters to assess their potential for socio-economic development.

Nevertheless, Malaysia has its weaknesses. The report found the country to be excellent at developing strategies, yet weak in implementation.

Malaysia's excessive bureaucracy, coupled with poor mon-

itoring, ill-equipped or unprepared middle management and weak implementation strategies, mean that it often fails to deliver. The report also concluded that Malaysia had failed to convert education investment into skilled jobs.

As acknowledged even in NEM, Malaysia has thus far been unable to convert its significant investment in education into more highly skilled jobs for the country. Such shortfalls are a clear impediment to economic growth. The World Bank highlighted the issue of secondary education under-preparing students for tertiary education.

Meanwhile, industry and academics complain that students lack the entrepreneurial and innovative flair required for scientific discovery and high quality research.

The report argued that despite a growing recognition that autonomy was critical for nurturing a strong research base and higher education system, bureaucracy tended to stifle STI advances. This can inhibit innovation and creativity in the research community and retards prospects for collaboration and exchange domestically and abroad.

Echoing the sentiment expressed in NEM that Malaysia is falling fast into the middle-income trap, the report observed that decades of foreign direct investment had disappointingly resulted in little or no transfer to local businesses and the capacity among Malaysia's small- and medium-scale enterprises to become more dynamic and innovative appeared questionable.

It found that "genuine examples of innovative and entrepreneurial Malaysian com-

A major issue is the need to consolidate and streamline the research agenda and activities pursued by ministries and government agencies. Subsequently, there should be a mechanism for monitoring and implementation. The council is also exploring the prospect of stimulating the private sector to be more involved in research and development.

Science and mathematics education, need to be revitalised starting with attracting the best minds to be in the teaching profession. Consequently, there should be rewarding STI career paths that are on par with the likes of doctors and engineers.

More autonomy should be given to universities and competition should be fostered. The report suggests that universities be encouraged to link research and teaching, to inspire more enquiry-driven teaching mechanisms rather than rote-learning models.

Universities should also establish postdoctoral programmes to enable their young lecturers time to imbibe the research culture.

Too often, young PhD holders go straight to university positions where they are overloaded with teaching. The report also proposes more collaboration, networking and benchmarking between universities and foreign counterparts.

This international collaboration need not be confined to linkages with those in industrialised countries but may also be extended to Malaysia helping out other OIC countries develop their STI strategies.

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