MY SAY: R& D key to high-income and sustainable economy

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Now that the New Economic Model (NEM) is open for discussion, it is plain to see that the strengthening of R&D cannot be over-emphasised. For this to happen, a thorough review of R&D as a new imperative must take into consideration ways to create a new national talent base. This includes a more flexible and autonomous environment that is conducive to innovation and creativity, preferably backed by a strong research culture and funding at all levels of education.

In other words, this is the time to further invest in R&D and elevate the ratio of researchers to population to a more respectable level, beginning with the schools where the mindset is best nurtured. Without sufficient critical mass, it is hard to envisage a sustainable national talent base that could contribute to a new economy.

Reportedly, over the last decade, universities worldwide have been called upon to "engage with entrepreneurship" by setting up incubator laboratories and "technology transfer" offices. For example, in the late 1990s, there were only 150 people working in technology transfer in the UK, whereas now, there are at least 1,600, with universities hoping to commercialise their research to create economic impact. *The UK Lambert Review* of 2003 explicitly encouraged academics and business people to spend more time together and recommended a "smoother path between Britain's strong science base and its business community".

Recently, France invested about €11 billion (RM46.8 billion) in higher education while Germany pumped a total of €18 billion into promoting world-class research alongside university education. The US administration under President Barack Obama has ploughed an additional US$21 billion into federal science spending and announced a decade-long budget of US$42.6 billion (RM136.4 billion) for science, technology and energy.

In this regard, although Malaysia has invested much in education as a whole, its allocation for R&D is well below what is required to put it on a competitive position when most of its competitors in Asia have exceeded 2% to 2.5% of gross domestic product (GDP) for their R&D. This situation dampens creativity and innovation that often need a sustained funding mechanism, in particular those targeted at fundamental issues relative to applied ones.

One way of investing in R&D is to promote the growth of knowledge and innovation parks around the universities, something that is lacking in Malaysia. Said the US-based Association of University Research, recently: "Research and science parks create jobs of today and the jobs of the future through innovation." These parks provide the place for universities to work together with business and support technology start-up companies to grow and help maintain competitiveness in the 21st century.

In fact, in North America, it has been shown that such parks employ more than 300,000 people and every job in a science park generates an average of 2.57 jobs in the economy. Annually, these contribute more than US$31 billion to the North American economy.

Thus, despite the very advanced state of such parks in the US, a new Science Parks Research and Innovative New Technologies Act (SPRINT) has been introduced, which among other things, provide construction loan guarantees of up to 80% and maximum loans of US$50 million per project.

"Seed money provided to science parks today represents a wise investment in our future," said the US representative responsible for the Bill. In addition, the establishment of such parks will undoubtedly spur innovation and help create the kind of high-paying, high-technology jobs we need to be competitive on the global stage. This is because these parks will provide a place for top-notch scientists, university researchers and entrepreneurs to interact and cross-fertilise ideas to produce new innovations.

Adding to this is the resurgence of a "new" type of knowledge that thrives on trans-disciplinarity, not rigid silos of sub-specialisation and disciplines. This is in view of the "new" economy that is often referred to as "eco"-anomy or "sustainomics" and cannot be understood fully from a linear, unidimensional and homogenous perspective of conventional knowledge.

It entails both a new vision and style of learning that is practically absent in the development of a national talent base in Malaysia, from the schools right up to the post-schooling system of education, including higher education. This is where university parks can "force" the emergence of trans-disciplinarity as a self-transformative culture towards gaining new knowledge — the unity of knowledge and the creation of a sustainable future.

In other words, the entire education system needs to be revamped and liberalised to produce new talent based on a non-linear, multi-dimensional and heterogenous learning. It must address the totality of humanity and not merely one of its components — understood today as human capital to support the old mode of production and

employment.

For a long time, Malaysia's education system has suffered and failed institutionally to address this issue. It is time for us to lay new foundations that will expand our national talent base as mentioned in the NEM.

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