

MOST developed nations prioritise research and development (R&D) from an early stage.

In 2024, China's funding for R&D reached 3.6 trillion yuan. The result? DeepSeek recently exploded onto the global stage, making such a significant impact that Nvidia lost US\$600bil in its market capitalisation in a single day.

The importance of R&D has been widely discussed. For the uninitiated, it may sound trite, but in reality, R&D fuels innovation.

There is true economic value in R&D, not to mention its role in job creation.

A study on federal R&D investment in the US economy showed that if the country increased its R&D spending by 1% by 2030, it would support 3.4 million jobs and add US\$301bil in labour income.

Being strong in R&D is not just about technical expertise; it requires the ability to think critically, discern, create novel solutions, and innovate across multiple domains.

This raises the question: where does Malaysia stand?

This is particularly pertinent this year, as we assume the role of Asean chair. What opportunities lie ahead for us to shape policies and strengthen breakthrough-driven partnerships?

A target has been set – 2.5% of gross domestic product (GDP) on R&D by 2025.

It is about time Malaysia reduces its dependency on importing and leveraging the ingenuity of other countries. I do not deny there are valuable advancements out there, but is there really nothing that can emerge from our own network of people and capabilities?

There is this country that once shared some similarities with us during its development stage:

# R&D the road to the future



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South Korea.

Both countries were primarily agrarian economies transitioning towards industrialisation. In the late 1970s, South Korea's R&D intensity was around 0.61% of its GDP. Yet, by 2020, Malaysia had only reached 0.95%.

I am enthralled by how quickly Korean culture has permeated the rest of the world. They did not just enter the global stage—they took it by storm, glamourised it with K-Beauty, set it to a K-Pop beat, and left everyone binge-watching K-Dramas till dawn.

■ Herbs and plants in Malaysia can be explored for potential benefits.

■ We have the potential; we only need to harness it.

■ R&D must become a mindset, one that questions how we can advance

Korea has also provided stiff competition in the food department. Suddenly, there were restaurants selling everything from K-BBQ to kimchi, ramyeon overtook Maggi as the comfort food of choice, and tteokbokki started setting mouths on fire instead of our beloved assam pedas.

We all love a good, spicy Korean dish, but Korea's rapid global ascent has been remarkable to witness!

Let's consider this for a moment: what makes Malaysia unique? According to WWF Malaysia, the country's land surface was once entirely forest; today, about 54% remains covered in forest.

What if we combined the resources growing in our backyard with R&D to create oils, elixirs, medicines, and treatments for illnesses?

The National Library of Medicine notes that Tongkat Ali (*Eurycoma longifolia*) offers potential health benefits, including bone health support and stress reduction.

Misai Kucing (*Orthosiphon stamineus*) exhibits anti-inflammatory, hepatoprotective, gastroprotective, antihypertensive, and anti-diabetic properties, making it "an attractive subject for further experimental and clinical investigations."

My point is, there are countless

unknown herbs and plants in Malaysia that have yet to be fully explored for their potential benefits.

For instance, everyone knows that berries are rich in antioxidants. But could a local fruit possess similar qualities?

I remember when coconut oil went from being a simple cooking ingredient for banana fritters to a miracle cure in the West. One day, it was just another item in our kitchens; the next, it was being added to kale chips, skincare products, and touted as a remedy for gut health. The global market embraced it, claimed it as their own, and showcased its versatile and medicinal properties.

For us, it was just a common item. What if we had taken the first step and used R&D to develop the very oils and capsules that are now lining retail store shelves worldwide?

There is so much more we can achieve. Imagine the kind of healthy, disease-free society we could foster if we effectively harnessed the potential of our unique flora and fauna ecosystem.

This is why I believe the greatest inventors, scientists, and leaders did not achieve greatness by following familiar patterns—they questioned, explored, and dared to be different.

It pains me to say this as a die-hard R&D practitioner and advocate—Malaysia lags behind in this space and has acknowledged the need to catch up with global peers.

In the Global Innovation Index, Malaysia ranked 33rd globally last year, yet data shows we are trailing behind peers like Singapore and South Korea.

This will not happen overnight; it must be nurtured and cultivated, starting in schools. A major obstacle to innovation is the tendency to stick to what is familiar, and this is something we must overcome. Schools and universities should move beyond being mere institutions of learning and become hubs of cutting-edge R&D where students, faculty, and industry collaborate to develop real-world solutions.

Now, with artificial intelligence (AI), big data, and various emerging technologies, nothing is impossible.

Rather than moving through life on autopilot, we must challenge assumptions, explore alternative viewpoints, and apply interdisciplinary thinking to problem-solving.

We have the potential; we only need to harness it. Every day, new talent emerges, yet they are graduating and moving abroad because opportunities are lacking here. This should not be the case.

For a true intellectual revolution, R&D must be more than just that mysterious lab tucked away in a company or university, where people in white coats look busy.

It must become a mindset—one that questions how we can advance the study of genomics by analysing plants with anti-cancer properties.

If we embed research-driven curiosity into education and supercharge it with AI and data, this generation could solve problems we do not even know exist yet.

The future belongs to the curious, the explorers, and the ones who make it happen!

