The future of research programmes in Malaysia is looking rosy, as offshore universities are also beginning to get into the groove.

Higher Education Department director-general Professor Datuk Radin Umar Radin Sohadi says foreign universities with campuses in Malaysia had lately begun embarking on their research programmes. "Nottingham Malaysia and Monash Malaysia have started," he notes.

The addition of these players in a field already containing the country's four main research universities (University of Malaya, Universiti Sains Malaysia, Universiti Putra Malaysia and Universiti Kebangsaan Malaysia) as well as government-linked company universities belonging to Petronas and Tenaga Nasional Bhd, among others, has raised hope and optimism in academia.

"Everybody is on the mainstream in nurturing the academic and research culture," says Radin Umar. "All universities have research programmes in their respective niche areas, apart from fundamental research that cuts across disciplines. We created research universities to ensure this. Their Key Performance Indicators (KPIs) are very steep. They are benchmarked against world-class universities and we know that all the four are strong fundamentally."

The KPIs include the quality and quantity of researchers and their output, postgraduate output and quality, innovations, networking, and linkages and facilities.

Research is organised along three lines, namely multi-disciplinary or institutional research addressing national interests, specific industry-based disciplines such as biotechnology and nanotechnology, and fundamental research.

However, Radin Umar says the government's RM200 million allocation for fundamental research, allocated under the Ninth Malaysia Plan, is not enough compared to the developed world.

"The world benchmark for research allocation is more than two per cent of a country's Gross National Product and we hardly have 0.64 per cent," says Radin Umar.

"However, it's an improvement on previous years and shows the government's commitment. Perhaps by 2020 it will reach the proper figures. We need the critical mass (in terms of researchers, scientists and engineers) and the culture, which needs to be built over time."

The aim, Radin Umar says, is to achieve the developed world ratio of 50 researchers, scientists and engineers (RSE) per 10,000 members of the workforce by 2020.

Currently, we only have fewer than half the hoped for numbers: a paltry 23 RSE per 10,000 workers.

"We need the critical mass to transform our economy from a production economy to a knowledge economy. Once we have it, the industry will pick up faster."