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A nation hungry for knowledge

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"WHEN Prime Minister Datuk Seri Dr Mahathir Mohamad announced the Look East policy, I think he was referring to South Korea," jokes South Korean nuclear engineer Professor Kun Mo Chung, during his address at the recent Organisation of the Islamic Conference on science and technology in Kuala Lumpur.

The remark may have been made in jest, but the fact remains that the policy adopted by Malaysia 21 years ago does take into account both Japan and South Korea.

The underlying thrust of the policy is to emulate the work ethics and culture of the Japanese and South Koreans that emphasise dedication, discipline, loyalty and diligence towards attaining national development.

Given South Korea's current status as the world's 11th largest economy, the republic is regarded as an international role model in all domains, especially education.

South Korea attained its current position through "long-range systematic planning, hard work and devoted leadership of the national government and industrial groups", says Chung, 64, a professor of physics and chairman of the Institute for Science, Technology and Society in Seoul.

At the Kuala Lumpur conference - jointly organised by the Academy of Sciences Malaysia; Ministry of Science, Technology and Environment Malaysia; OIC Standing Committee on Scientific and Technological Cooperation and Ministry of Foreign Affairs Malaysia - Chung offered fascinating insights into the South Korean experience in science and technology as well as technology development and commercialisation.

"Much of the republic's success," says Chung, "is owed to the military regime."

The military government recognised the vital role of science and technology during the four-year Korean War which began in 1950 and proceeded to invest more in the field.

At the time, South Korean indigenous science and technology capability was "almost non-existent", adds Chung.

The few foreign-trained scientists and engineers in South Korea then were a little wet behind the ears.

Undaunted, the military regime continued to lay the foundation for industrialisation and launched the first five-year economic development plan for South Korea in 1962.

It was aimed at building modern technological infrastructure from scratch; the first was the Korea Institute of Science and Technology (KIST) in Seoul.

Established with a grant from the United States, KIST was designed to be an industrial research institute modelled after the Battelle Memorial Institute in Columbus, Ohio.

The KIST building was equipped with modern research facilities which were on a par with those in the West.

Over the years, KIST has evolved into an exemplar research organisation.

In 1967, the Korean Ministry of Science and Technology (MOST) was formally established as a full-fledged Ministry.

MOST was and still is responsible for, among other things, formulating national science and technology policies and establishing new government-supported research institute.

Chung, who was appointed Minister of Science and Technology twice (in

1990 and 1994), deems the founding of the Korea Advanced Institute of Science and Technology (KAIST) in Daejeon as the Ministry's most important accomplishment so far.

Established in 1971, KAIST ushered in "a new era of South Korean educational system".

It spearheaded the introduction and development of modern graduate education in science and technology at a time when South Korean universities were mainly offering undergraduate programmes.

"KAIST showed the feasibility of high quality graduate education and its successful research programmes drew industrial support," adds Chung, who at age 32 was the first vice-president of KAIST.

Other institutions of higher learning in South Korea responded to the challenge by developing their own graduate schools and encouraging faculty members to undertake serious research and development.

With the wisdom of hindsight, Chung says, the formation of KAIST was a "prophetic move".

From a graduate school of applied science and engineering, KAIST today offers doctoral programmes in most areas.

More than 25,000 master's and PhD students have graduated from the institute and have filled many leadership positions in research and development in the country.

"Right now, we have 150 junior colleges and over 200 four-year universities; 60 of which have excellent graduate programmes," he adds. College enrolment has almost quadrupled since 1980.

The national zeal for education has played a crucial role in the drive for scientific development in South Korea.

After liberating itself from Japanese domination lasting 36 years, South Korea's first social concern was rebuilding schools and universities.

Some of the new universities were nicknamed "cow-bone" colleges because farmers sold their cows to send their children there.

Chung agrees that the thirst for knowledge and the desire for self-betterment are deeply rooted in Korean culture. The traditional caste system, for instance, is structured according to the degree of scholarly learning.

Inherent in South Korean society is its amazing ability to rebound from challenges. Every crisis is an opportunity for improvement.

South Korean society suffered politically and economically under 26 years of authoritarian rule. Still, South Koreans concede that all policies implemented by the undemocratic regime have been beneficial to the nation in the long run.

"Without strong leadership or social stability, the KIST and KAIST projects would not have been possible," says Chung.

Certainly, overcoming challenges has given South Koreans immeasurable confidence to face the future.

But South Koreans are not about to rest on their laurels.

On a suggestion that South Korea is an advanced country, Chung replies modestly: "We are not THAT advanced."

To Chung, there are many pressing challenges that are crying for immediate attention.

The diminishing interest among South Korean youths in pursuing careers in science and technology is one.

"College enrolments in science and technology are dropping. Even the best schools struggle to lure qualified students into science and technology undergraduate programmes," says Chung.

A bold policy to rekindle interest in science among youths and the public is badly needed, he adds.

He suggests "basic training in science and technology be made a

condition for any leadership position in a knowledge-based society".

But not at the expense of experiencing life, Chung quickly adds. As president of Hoseo University in Asan, an hour's drive from Seoul, Chung encourages his students to widen their horizons by taking a year off after graduating to travel abroad - particularly to less developed countries.

"After all, science and technology without life is meaningless," he adds.