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Using engineers to improve lives

By IVY SOON

ENGINEERS like to remind that they were the ones at the forefront of civilisation. It was engineers who built roads that enabled the military to conquer foreign lands, and constructed railroads that linked up people and markets. In more recent times, engineers in various fields have used scientific methods to solve problems and improve lives.

“There is no doubt that engineering and technology have been contributing to the betterment of the human condition particularly in the second half of the 20th century.

“However, only the rich in the developed world are enjoying all the benefits of science, engineering and technology advances. The poor everywhere, especially in developing countries, have largely been marginalised,” said World Federation of Engineering Organisations (WFEO) President Datuk Lee Yee Cheong who was the task force coordinator for science, technology and innovation for the United Nations’ Millennium Project

<p>Lee: ‘The Millennium Project focuses on simple targets’</p>	<p>The Millennium Project was commissioned by UN Secretary General Kofi Annan to advise him on helping developing nations achieve the Millennium Development Goals (MDG).</p> <p>The Millennium Development Goals (MDGs) are a set of specific targets set by world leaders at the United Nations Millennium General Assembly in 2000 to alleviate poverty and diseases by 2015.</p>
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A team of 265 of the world’s leading development experts put forth a package of specific cost-effective measures that together could cut extreme poverty in half and radically improve the lives of at least one billion people in poor developing countries by 2015.

Lee’s team recommended approaches for applying science, technology and innovation to achieving development goals.

“For least developed countries to lift themselves out of poverty and achieve MDGs, they need basic infrastructure such as roads, schools, water, sanitation, irrigation, clinics, telecommunications, energy etc,” said Lee.

More roads, ports and airports will be required to enable food, produce and products access to domestic and overseas markets. Energy and water supply need to be made accessible to remote areas.

“The Millennium Project also focuses on simple targets. It is not that there is no place for big projects, but the focus should be on appropriate technology. We need a mindset change. Small projects may not be attractive to national governments, donors and the local engineering community.

“But big projects may not suit developing countries without the capacity to maintain them. Therefore, we must look at serving community needs in developing countries to ensure that donor aid actually reaches the ground.”

For instance, using off-grid diesel generators, solar panels, or other appropriate technologies to provide access to electricity, water, sanitation, and the Internet for all hospitals, schools, and other social service institutions.

Lee stressed that nothing “high-tech or front-edged” is required to solve the water, energy, health, agriculture and biodiversity problems in the developing world as there is enough mature engineering and technology available.

“Engineers are trained to think front-edged, but we must begin to think about the community’s needs,” said Lee.

Developing countries, said Lee, should not be looking to the advanced first world models now, but rather at how they were when they got started 70 or 80 years ago. He pointed out that 30 years ago Malaysia faced similar problems that sub-Saharan Africa is grappling with today.

As WFEO president and Millennium Project task force leader, Lee has always encouraged developing nations to learn from Malaysia’s experiences; not only from our success but also our missteps. He often emphasised the importance of having a solid science and technology system such as a national academy, which through political backing, would be able to mobilise small and medium enterprises in a country.

Small and medium-size enterprises need to play leading roles in the development of new opportunities and the use of technology.

Governments need to lend their support by developing, applying and emphasising the important role of engineering, technology and small enterprise development in poverty reduction and sustainable social and economic development.

“In a vocational school for women in Kenya, a business incubator unit was set up to build up small business and nurture entrepreneur spirit among the students,” said Lee.

Meeting the MDGs in developing countries will ultimately depend on the availability of skilled manpower, especially engineers and technologists.

“Most developing countries are not churning out enough engineers and technicians to meet their needs. They are also spending scarce foreign currency to send their students for engineering courses in developed countries.

REBUILDING EFFORT: The vital role that engineers play in development was underscored by the disaster management and reconstruction efforts underway after the Asian tsunami in December. — APpic

“Then, there is the constant brain drain of engineers, usually the best and brightest, to the developed countries.

“To solve the shortage problem, we need to increase the mobility of engineers, so that their practical experiences can be transferred to other countries.

“Groupings such as Asean and Apec could discuss allowing engineers more mobility within the region, by recognising each other’s engineering qualifications, subject to international benchmarks,” said Lee, citing how engineers were mobilised to help in relief work in tsunami-hit areas.

The vital role that engineers play in development was underscored by the disaster management and reconstruction efforts underway after the Asian tsunami in December.

Engineering expertise were urgently needed to reconnect transportation links to enable aid to reach the people. They were also needed to establish clean water supply and set up sanitation facilities, restore communication links, and construct shelters.

Agencies such as RedR have been providing trained and experienced personnel to relief agencies during disasters.

“Engineers registered with RedR are trained to look after themselves and manage logistic

matters in disaster situations,” said Lee.

Two young Malaysian engineers were sent for RedR training in Australia, but Malaysia has yet to establish its own RedR chapter.

The next step for Malaysian engineers, urged Lee, is to be more proactive in community work.

Our engineers could start with community work locally, before offering their expertise in development work abroad. For instance, when a building collapses, engineers should be the first on the scene to access if it is safe for relief workers to go in.

“The time for engineers have come to contribute to development efforts,” said Lee.

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