

**KERATAN AKHBAR-AKHBAR TEMPATAN
TARIKH: 22 DISEMBER 2015 (SELASA)**

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KERATAN AKHBAR
HARIAN METRO (SETEMPAT) : MUKA SURAT 32
TARIKH: 22 DISEMBER 2015 (SELASA)

**LEMBAGA
EKSEKUTIF
UNESCO**

Malaysia dipilih menduduki kerusi lembaga eksekutif Pertubuhan Pendidikan, Sains dan Kebudayaan Bangsa-Bangsa Bersatu (UNESCO) bagi penggal 2015-2019 apabila mendapat jumlah undi tertinggi dalam kalangan negara Asia Pasifik yang diumumkan pada Mesyuarat Ke-12 Persidangan Agung Ke-38 UNESCO pada 11 November di Paris, Perancis.



Cybersecurity boleh tutup 'lubang'

Oleh **MAISARAH SHEIKH RAHIM**
pengarang@utusan.com.my

KUALA LUMPUR 21 Dis. - Cybersecurity Malaysia (Cybersecurity) mempunyai kepakaran untuk menutup 'lubang-lubang' yang wujud dalam sistem teknologi maklumat (IT) syarikat-syarikat yang digodam atau diserang pihak luar.

Ketua Pegawai Eksekutifnya, Dr. Amirudin Abdul Wahab berkata, sistem yang dinamakan Perkhidmatan Penilaian Kelemahan (VAS) dan Cyber DEF turut boleh mengenal pasti ancaman 'perisian jahat' atau malware pada rangkaian Internet di negara ini.

"Mana-mana syarikat kadang-kadang tidak ada kepakaran dalam bidang keselamatan siber. Mungkin mereka boleh menguruskan sistem IT di syarikat tetapi ada kelemahan dan kelompondan mungkin wujud yang memudahkan penggadam memasuki sistem dan memanfaatkan segala kelemahan itu.

"Pihak Cybersecurity boleh memulihkan sistem IT (analisis, padam dan melakukan forensik) dan mengenalpasti malware yang tidak dapat dikesan oleh perisian antivirus biasa dengan membuat audit keselamatan," katanya kepada *Utusan Malaysia* di sini hari ini.

Beliau diminta mengulas laporan khas *Mingguan Malaysia* semalam berhubung penipuan baharu sindiket penggadam Afrika yang menyerang sistem komputer syarikat-syarikat di negara ini sehingga mampu mengaut keuntungan RM45 juta hanya dalam tempoh enam bulan.

Penipuan dilakukan dengan cara menggadam e-mel untuk mencuri maklumat syarikat sebelum memintas urus niaga dalam talian yang berlaku dan keadaan itu kini berada pada tahap serius apabila ratusan ribu syarikat terdedah dengan ancaman tersebut.

Dalam pada itu, Amirudin berkata, syarikat-syarikat kerajaan dan swasta juga boleh memasang perlindungan kebocoran data (DLP) bagi melindungi serangan penggadam sekalipun daripada kakitangan dalaman syarikat itu sendiri yang berniat mencuri maklumat.

Katanya, pihaknya boleh membantu memberikan perkhidmatan bersifat proaktif, preventif dan responsif untuk perkara-perkara berkaitan keselamatan siber.

"Walau bagaimanapun, organisasi perlu mengamalkan dasar dan operasi yang menitikberatkan keselamatan siber seperti pelak-



Mana-mana syarikat kadang-kadang tidak ada kepakaran dalam bidang keselamatan siber. Mungkin mereka boleh menguruskan sistem IT di syarikat tetapi ada kelemahan dan kelompondan mungkin wujud yang memudahkan penggadam memasuki sistem dan memanfaatkan segala kelemahan itu."

AMIRUDIN ABDUL WAHAB
Ketua Pegawai Eksekutif
Cybersecurity Malaysia

sanaan amalan terbaik Pengurusan Sistem Keselamatan Maklumat (ISMS) 270001.

"Kakitangan mereka juga perlu didedahkan dengan ilmu dan kesedaran tentang keselamatan siber. Di Cybersecurity, kita ada melaksanakan program latihan luar biasa kepada kakitangan IT yang tidak boleh diperoleh di pengajian universiti kerana mereka perlukan orang yang berkelayakan untuk mengendalikan sistem ICT," katanya.

Menurut beliau, sekiranya berlaku sebarang insiden berkaitan keselamatan siber, orang ramai boleh melaporkan terus ke cyber999@cybersecurity.my atau talian 1300-882-999.

KERATAN AKHBAR
THE STAR (NEWS) : MUKA SURAT 05
TARIKH : 22 DISEMBER 2015 (SELASA)

Sirim to rebrand its research in 2016

By EMILY K.
emilyk@thestar.com.my

SHAH ALAM: Sirim's Research, Technology and Innovation Division will be undertaking more applied research and technology projects in effort to reposition their activities to meet the needs of small and medium-sized enterprises (SME) and the industry in 2016.

In line with its effort to rebrand the division to Sirim Industrial Research (SIR), technology adoption and adaptation will also be used to boost the commercialisation of technology and improve the productivity of SMEs through their SME Technology Penetration and Upgrading programme.

Sirim Bhd Research, Technology and Innovation Division vice-president Mohamad Jamil Sulaiman (pic) highlighted that a committee of experts has been established to ensure their research proposals meet the relevant demand-driven criteria and have high potential for commercialisation to secure funding.

"This committee consists of our internal experts and external experts from the academia and the industry who will review our research proposals before submission to the Ministry of Science, Technology and Innovation (Mosti) or other relevant agencies," Mohamad Jamil explained.

Besides being the premier quality and technology solutions provider in Malaysia and an agency under Mosti, Sirim is also the driver of technology research and innovation.

The division will continue to be committed towards the success of their three main flagship focus areas: Energy and Environment, Plant and Machinery and Medical Technology Flagship.

Energy and Environment Flagship

Sirim have conducted strategic research and developed innovative technologies that support national economic growth by finding ways



to mitigate climate change and maintaining a clean environment.

Their renewable energy and environmental protection services are accepted internationally and are divided into four priorities namely energy generation, energy storage, eco-product development and environment technology areas.

According to Mohamad Jamil, Malaysia's palm oil industry generates around 140 million tonnes of biomass annually, leading to the release of some 67 million cubic metres of methane into the atmosphere.

This is because much of this waste is effluent generated by palm oil mills and is left to decompose in open ponds.

To resolve this issue, Sirim launched the BioNG DSTIN project to capture, store and refine this methane so that it could be used as an alternative to natural gas in gas-fired power stations and NGV vehicles.

This project is the world's first natural gas plant derived from palm oil mill effluent (POME).

Besides that, Sirim has also launched several other successful projects such as SIMBIONTEA - Biogas to convert food waste to energy.

Plant and Machinery Flagship

Sirim also provides the technology and expertise in product design and modelling, digitising and



reverse engineering, rapid prototyping and tooling, foundry work, machine design, plant design and many more.

Much to their expertise, their industrial technologies and solutions for plants, machinery, automation, intelligent systems and radio frequency identification (RFID) can be applied to various industries such as agriculture, construction, manufacturing and line assembly.

By conducting researches related to engineering problems in the oil and gas industry and its development, it has contributed tremendously to the success of the PetroClamp project, Y-Tee project and components development.

These are services established to help reduce the cost of imported components which are more expensive.

Medical Technology Flagship

On another note, Sirim's medical technology researchers has innovated successful medical and healthcare solutions in three primary focus areas: drug delivery systems, implants/prostheses and medical equipments and devices.

By incorporating innovations of advanced technology, it has broad-

ened their multidisciplinary expertise in advanced materials, RFID, nanotechnology, biotechnology and bio-modelling.

As a result, Sirim's Advanced Materials Research Centre (AMREC) have successfully pioneered the making of synthetic bone or bone graft substitutes for surgical applications called GranuMaS.

Penetrated the local market in 2010 GranuLab (M) Sdn Bhd, the project uses a granular synthetic bone graft material made from Hydroxyapatite which makes it an excellent option for bone defect repairs due to its similar chemical composition to the human bone mineral.

Another success story includes its craniofacial biomodelling services which help surgeons fix broken skulls by designing customised titanium plates for every patient.

By providing surgeons with a three-dimensional (3D) imaging and rapid prototyping technologies that 'print' 3D models of patients' skulls from CT and MRI scans, surgeons can test titanium implants and make the most detailed revisions and corrections to them before the actual surgery takes place.

Micro-enterprises

Other than these flagship focus areas, the division also reach out to the lower income group by undertaking socio-economic projects and Mosti social innovation projects.

This include providing technology to improve community-based economic activities such as providing lighting at jetties and on fishermen's boats using solar energy, improved knives for rubber tappers, developing electro-plating method to make handicrafts and so on.

Moving Forward in 2016

With the success of 2015, Mohamad Jamil said the division will continue to be committed to the industry by expanding their engagement with the public.

"We're rebranding this division so

that potential business players will know and understand our industry so to empower the productivity and efficiency of SMEs.

With that, we will continue our collaboration with Fraunhofer Institute and work towards reaching to 170 companies in our 2016 Technology Audit," he said.

In December 2014, Sirim signed a memorandum of understanding (MoU) with Fraunhofer Institute, Germany to leverage on Fraunhofer's network of Institutes to increase technology uptake of SME with emphasis on joint research and technical services, exchange of personnel and information, strategic innovation studies, initialisation and implementation of R&D projects.

This is also in effort to support the development of regional enterprises as well as joint organisation of conferences, workshops and seminars.

"Besides collaborating with various research platforms to meet industry needs, we'll also improve our efficiency in providing technology and services as a total solution to the SME through our eight technology centres," Mohamad Jamil added.

Sirim is also looking forward to strengthening its prominence in technology research internationally through WAITRO (World Association of Industrial and Technological Research Organisations), GRA (Global Research Alliance) and other research institutes.

In appreciation to the endeavours by SME Corp in SME growth and development, Sirim also aims to increase SME growth and productivity.

Mohamad Jamil highlighted that a RM200mil budget is allocated as soft loan with the SME Bank, as announced in Budget 2016.

"SMEs should take this opportunity to accelerate their business growth and productivity and we look forward to further collaborations that will develop and become the catalyst for innovation and productivity in order to develop home grown products and services," Mohamad Jamil said.

KERATAN AKHBAR
KOSMO (NEGARA) : MUKA SURAT 16
TARIKH : 22 DISEMBER 2015 (SELASA)

Gegaran gempa bumi di kawasan pantai timur Sabah

KOTA KINABALU - Penduduk negeri ini terutama mereka yang tinggal di daerah-daerah pantai timur Sabah sekali lagi dikejutkan dengan gegaran kuat susulan kejadian gempa bumi yang berpusat di utara Tarakan, Indonesia awal pagi semalam.

Dalam kejadian pukul 2.47 pagi itu, gempa bumi dengan kekuatan 6.2 skala Richter itu mencetuskan gegaran kuat sehingga dirasai penduduk daerah Tawau yang hanya terletak kira-kira 96 kilometer dari pusat gempa.

Situasi itu turut menimbulkan suasana panik dalam kalangan penduduk menyebabkan mereka yang tinggal di bangunan tinggi seperti pangsapuri, kuarters dan hotel keluar menyelamatkan diri.

Seorang penduduk, Syamsudin Man, 43, berkata, dia bersama rakannya sedang berada di sebuah pangsapuri dan menonton televisyen sebelum dikejutkan dengan gegaran kuat.



SEBAHAGIAN penduduk keluar dari kediaman masing-masing selepas berlakunya gegaran di Tawau susulan kejadian gempa bumi yang berpusat di Tarakan Indonesia awal pagi semalam.

"Gegaran itu dapat dirasai beberapa saat dan pada mulanya saya tidak menyangka ia berpunca daripada gempa bumi yang berlaku.

"Selepas beberapa ketika, saya mula terdengar orang menjerit dan melihat orang ramai mula berkumpul di kawasan

letak kereta pangsapuri kami," katanya di sini semalam.

Sementara itu, Jabatan Bomba dan Penyelamat Malaysia (JBPM) menerima tujuh panggilan kecemasan susulan kejadian gempa bumi yang berlaku di Tarakan semalam.

Pegawai Perhubungan

Awam Jabatan Bomba dan Penyelamat Sabah, Mohd. Affendy K. Ramin berkata, pihaknya menerima tujuh panggilan kecemasan sejak pukul 2.51 pagi.

Difahamkan, kesan gegaran turut dirasai penduduk di daerah Kunak dan Lahad Datu.

Sementara itu, laman

INFO Gegaran di Sabah



1. Kejadian gempa bumi dengan kekuatan 6.2 skala Richter berlaku di utara Tarakan, Indonesia.

2. Penduduk di sekitar pantai timur Sabah turut merasai gegaran tersebut.

rasmi **Jabatan Meteorologi Malaysia** merekodkan tiga kejadian gempa bumi berlaku di Tarakan, Indonesia sejak awal pagi semalam. Kejadian pertama berlaku pada pukul 2.47 pagi dengan kekuatan 6.2 skala Richter yang mencetuskan gegaran sehingga ke pantai timur Sa-

bah. Gempa bumi susulan berlaku pada pukul 12.21 tengah hari dengan kekuatan 3.8 skala Richter diikuti gempa susulan dengan kekuatan 3.5 skala Richter pada pukul 6.55 petang. Menurut jabatan itu, tiada ancaman tsunami susulan daripada gempa bumi tersebut.

Penduduk Tawau gempar hadapi gegaran gempa bumi

TAWAU 21 Dis. - Gempa bumi kuat berukuran 6.2 pada skala Richter yang melanda Kalimantan, Indonesia pada pukul 2.47 pagi ini turut dirasakan di beberapa daerah di pantai timur Sabah termasuk Tawau, Kunak, Semporna dan Lahad Datu.

Jabatan Meteorologi Malaysia merekodkan pusat gempa itu terletak kira-kira 33 kilometer ke utara Tarakan dan 96 kilometer barat daya Tawau.

Ketua Balai Bomba dan Penyelamat Daerah Tawau, Mohd. Razali Awang Ahmad berkata, pihaknya telah menerima tujuh panggilan kecemasan berhubung kejadian tersebut.

Sementara itu, penduduk dan pengunjung yang berada di bandar Tawau serta kawasan sekitar panik hingga berlari keluar dari kediaman masing-masing bagi menyelamatkan diri ketika kejadian itu.

Gegaran yang dirasakan dalam lingkungan lima ke 10 saat itu dikatakan berlaku sekurang-kurangnya tiga kali.

Seorang ahli perniagaan, **Zaidi Harun**, 40, berkata, ketika kejadian, dia sedang tidur di sebuah hotel di



**MOHD. FIRDAUS
ZAINUDDIN**



ASWANDI BAJO

sini dan terkejut apabila bangunan enam tingkat itu bergoyang.

"Saya kemudian melihat ke luar dan terkejut apabila ramai orang berhimpun di bawah hotel," katanya kepada *Utusan Malaysia* di sini hari ini.

Bagi seorang kakitangan awam, **Nazrini Ahmad**, 27, pula, gegaran itu turut dirasakan di rumahnya yang terletak kira-kira 70 kilometer dari bandar Tawau.

Nazrini yang tinggal bersama keluarganya di Felda Umas-Umas dekat sini itu tidak menyangka gega-

ran kuat terbabit berpunca daripada gempa bumi di Kalimantan.

"Pada mulanya saya ingat saya bermimpi apabila rumah kami bergoyang. Namun, apabila terdengar jeritan ibu yang mengarahkan saya keluar, baharu saya sedar perkara ini adalah nyata," katanya.

Seorang kakitangan Majlis Perbandaran Tawau, **Mohd. Firdaus Zai-**

nuddin, 30, memberitahu, selepas kejadian, dia sukar melelapkan mata kerana bimbang gegaran lebih kuat akan berlaku.

"Ketika kejadian, saya bergegas keluar ke kawasan garaj untuk menyelamatkan diri," katanya yang menetap di Taman Mega Jaya, Batu Tiga, Jalan Apas.

Sementara itu, seorang kontraktor yang menetap di Tanjung Batu Laut dekat sini, **Aswandi Bajo**, 27, berkata, ketika kejadian, dia dan isteri bersama dua orang anak sedang tidur sebelum dikejutkan dengan gegaran kuat.



Hujan Lebat Luar Biasa Faktor Kes Tanah Runtuh

KUALA LUMPUR, 21 Dis (Bernama) -- Sebanyak 700 kes tanah runtuh dan kegagalan cerun dilaporkan sepanjang tahun ini yang majoritinya disebabkan oleh faktor hujan lebat luar biasa, Dewan Negara diberitahu hari ini.

Timbalan Menteri Kerja Raya Datuk Rosnah Abdul Rashid Shirlin berkata daripada jumlah itu, sebanyak 410 kes berlaku di koridor jalan persekutuan manakala bakinya 290 kes di jalan negeri.

Beliau berkata demikian ketika menjawab soalan asal Senator Datuk S. Vigneswaran berhubung tindakan pihak berkuasa dalam mengatasi masalah tanah runtuh.

Menjawab soalan tambahan anggota yang sama, Rosnah berkata Jabatan Kerja Raya (JKR), [Jabatan Meteorologi Malaysia \(METMalaysia\)](#) dan Jabatan Pengairan dan Saliran (JPS) bekerjasama untuk membangunkan sistem amaran awal tanah runtuh di kawasan cerun yang dikenal pasti berisiko tinggi.

"Objektif jalinan kerjasama ini ialah untuk mengkaji hubungan secara empirikal antara corak taburan hujan dan intensiti yang menyebabkan berlakunya kejadian tanah runtuh.

"Berdasarkan perancangan, keseluruhan sistem amaran awal tanah runtuh itu dijangka disiapkan pada tahun 2018," katanya.

Sehubungan itu, Rosnah turut menjelaskan langkah-langkah yang telah dan sedang dilaksanakan oleh kementerian bagi memantau kawasan-kawasan bercerun dan lereng-lereng berbukit di lebuh raya dan jalan-jalan persekutuan.

Antaranya ialah Sistem Pemantauan dan Amaran Awal secara tepat masa yang dipasang oleh syarikat konsesi lebuh raya utama serta menggunakan tolok hujan dan piezometer yang dipasang di cerun-cerun berisiko tinggi, katanya.

Selain itu, katanya, 'Pemetaan Cerun' dengan menggunakan teknologi LIDAR (Light Detection and Ranging) iaitu maklumat berkaitan inventori dan profil cerun-cerun akan dititikberatkan.

Rosnah turut menjelaskan bahawa kajian kejuruteraan geoteknikal dan kerja-kerja penyelenggaraan dijalankan secara berkala dan tetap untuk cerun-cerun berisiko tinggi dan menunjukkan tanda-tanda kegagalan cerun.

Katanya, berdasarkan Kajian Penghasilan Peta Bahaya dan Risiko Cerun yang telah dilaksanakan oleh JKR, terdapat 4,851 cerun di sepanjang jalan persekutuan dan lebuh raya yang dikategorikan sebagai berisiko tinggi di seluruh negara.

-- BERNAMA



Gempa Bumi Kuat Di Kalimantan, Turut Dirasai Di Pantai Timur Sabah



TAWAU, 21 Dis (Bernama) -- Gempa bumi kuat berukuran 6.2 pada skala Richter yang melanda Kalimantan, Indonesia pada 2.47 pagi ini turut dirasai di beberapa daerah di pantai timur Sabah termasuk Tawau, Kunak, Semporna dan Lahad Datu.

Menurut portal [Jabatan Meteorologi Malaysia](#), pusat gempa itu ialah 3.6 darjah utara dan 117.6 darjah timur, kira-kira 33km ke utara Tarakan dan 96km barat daya Tawau.

Ketua Jabatan Bomba dan Penyelamat Tawau Mohd Razali Ag Ahmad berkata pihaknya menerima maklumat kecemasan itu pada 2.51 pagi.

"Sebaik mendapat maklumat, anggota kami terus mengadakan pemantauan di sekitar bandar Tawau serta mendapat laporan mengenai keretakan bangunan (Projek Perumahan Rakyat Sri Apas) Batu 8, Jalan Apas," katanya dalam kenyataan di sini hari ini.

Katanya, setelah membuat pemeriksaan, anggota bomba mendapati tiada keretakan serius sebaliknya hanya tampalan semen terkupas sedikit pada satu daripada bahagian di bangunan itu.

"Gegaran kuat juga dirasai di kuarters bomba menyebabkan kami terpaksa membunyikan siren kecemasan dan membuat pengumuman supaya semua penghuni mengosongkan bangunan," katanya.

Seorang suri rumah yang enggan namanya disiarkan berkata ketika kejadian dia baru sahaja mahu melelapkan mata dan gegaran itu menakutkan mereka sekeluarga.

"Ketika berbaring kami merasa seolah-olah dalam perahu dihayun ombak. Barang-barang dalam bilik seperti almari baju serta baju yang tergantung semuanya bergoyang," katanya.

Pegawai Jabatan Hal Ehwal Agama Islam Negeri Sabah di Semporna, Nurdin Ajirul pula berkata dia terbangun ketika merasa rumahnya bergoyang.

"Saya ingat anak terlanggar pintu bilik. Saya juga hairan mengapa piring (pinggan) dalam almari berlaga antara satu sama lain dan berbunyi. Anak-anak saya ketakutan," katanya.

Sementara itu, Mukhtar Alwi yang sedang melawat anggota keluarganya di Sungai Pancang (Pulau Sebatik) Indonesia berkata masyarakat di kampung itu turut menyedari gempa berkenaan.

"Kami rasa seperti menaiki bot yang sedang mengharungi ombak di laut namun tiada rumah yang rosak akibat gempa itu (di sini)," katanya.

Pada 7 Jun 2013 gempa bumi sederhana berukuran 4.9 pada skala Richter yang berkedudukan 31 km di barat laut Tarakan dan 118 km barat daya Tawau berlaku pada 3.23 pagi.

-- BERNAMA



Tiada Jangkaan Gempa Bumi Susulan Di Sabah, Ekoran Gempa Kuat Di Kalimantan - Meteorologi



Datuk Che Gayah Ismail

Oleh Nik Nurfaqih Nik Wil

KUALA LUMPUR, 21 Dis (Bernama) -- Tiada jangkaan gempa bumi susulan di Sabah setakat ini, ekoran gempa bumi kuat berukuran 6.2 pada skala Richter yang melanda Kalimantan, Indonesia, awal pagi ini, kata [Jabatan Meteorologi Malaysia](#).

[Ketua Pengarahnya Datuk Che Gayah Ismail](#) berkata kebiasaannya 'gempa utama' sepertimana berlaku 2.47 pagi tadi, akan disusuli dengan gempa susulan yang lebih kecil.

"Namun, setakat ini berdasarkan maklumat terkini, kita belum merasai gegaran kedua.

"Ini mungkin disebabkan jarak kita dengan pusat gempa yang jauh," katanya ketika dihubungi Bernama Isnin.

Gempa yang berlaku di 3.6 darjah utara dan 117.6 darjah timur, kira-kira 33km ke utara Tarakan dan 96km barat daya Tawau itu turut dirasai di Tawau, Kunak, Semporna dan Lahad Datu, Sabah, pagi tadi.

Menurut laporan media, kuarters Jabatan Bomba dan Penyelamat Tawau terpaksa dikosongkan selepas gegaran kuat dirasai, selain ada bangunan di daerah berkenaan yang dilaporkan mengalami keretakan.

Che Gayah berkata gempa yang berlaku di permukaan darat itu juga tidak menimbulkan ancaman tsunami.

"Sistem yang kita guna pakai sekarang mampu mengesan gempa bumi dengan baik, jadi berdasarkan maklumat sekarang, boleh dikatakan keadaan di Sabah agak selamat daripada gempa bumi (susulan)," katanya.

Tambah beliau, sebarang maklumat lanjut akan dimaklumkan menerusi media.

-- BERNAMA



650 Pelajar Di Parlimen Setiawangsa Terima Bantuan Persekolahan

KUALA LUMPUR, 21 Dis (Bernama) -- Seramai 650 pelajar daripada keluarga kurang berkemampuan di kawasan Parlimen Setiawangsa menerima bantuan persekolahan sebagai persiapan untuk sesi persekolahan tahun depan.

Pelajar-pelajar dari 26 buah sekolah rendah dan menengah itu menerima bantuan berupa sebuah beg sekolah termasuk alat tulis serta wang tunai RM100 setiap seorang.

Anggota Parlimen Setiawangsa Datuk Ahmad Fauzi Zahari berkata sumbangan tersebut merupakan program tahunan di kawasan Parlimen itu bagi mengurangkan beban keluarga yang berpendapatan rendah.

"Untuk kali ini, bantuan itu disumbangkan oleh United Engineers Malaysia Bhd (UEM) dan [Technology Park Malaysia](#)," katanya pada majlis penyerahan bantuan tersebut di sini, Isnin.

Beliau juga mengharapkan agar lebih banyak syarikat korporat tampil bekerjasama dalam memberi bantuan untuk mereka yang memerlukan bagi sesi akan datang.

Sementara itu, ibu kepada seorang penerima Nur Zura Hashim, 38, berkata bantuan sebegini sangat membantu dan meringankan beban dalam membuat persiapan persekolahan anak-anaknya.

"Ini merupakan kali pertama dapat bantuan, saya rasa sangat lega bila anak saya terpilih untuk terima bantuan ini, sebabnya ada lima orang lagi anak saya yang masih bersekolah," katanya.

Turut berkongsi perasaan sama ialah R. Gunaseelan, 37, yang bersyukur kerana anaknya terpilih buat kali kedua untuk menerima bantuan ini.

Beliau yang merupakan pekerja kilang berkata pemberian sumbangan beg dan wang tunai itu sangat melegakan buat keluarganya dalam menyediakan keperluan sekolah anaknya.

-- BERNAMA

Rebooting Science in Muslim varsities

RIGHT VALUES: The dismal performance of OIC countries in the sciences reflects a dire need to transform their universities into bastions of meritocracy

MUSLIMS of the world contribute an extremely small share to its knowledge relative to their 1.6 billion in number.

This is reflected in the number of Nobel laureates in the sciences — only three — from the 57 countries with a Muslim majority population (the Organisation of Islamic Cooperation or OIC), in the number of books or patents, and in the number of universities from OIC countries in the top 400 of world rankings.

Other indicators include research spending, researchers per million people, the performance of pre-university students in science and math and global university rankings.

Overall, OIC countries invest less than 0.5 per cent of their gross domestic product on research and development, and only one country, Malaysia, spends more than one per cent. The world average, meanwhile, is 1.78 per cent, and most advanced countries spend 2.5 to 3 per cent.

In terms of pre-university preparation, standardised international tests such as the Trends in International Mathematics and Science Study and the Programme for International Student Assessment have shown students from Muslim-majority countries are well behind their peers worldwide.

What causes this state of affairs, and what are the potential remedies?

I recently had the honour to chair an international non-governmental and nonpartisan Task Force of experts organised by the Muslim World Science Initiative — a private non-partisan group of individuals.

Our review found that several countries have made good progress in terms of research and spending. But many issues — beyond the low

number of papers and citations — soon became evident, such as how universities of the Muslim world teach and disseminate science, what kind of scientists were being educated, what is being taught, and what knowledge/curriculum is promoted.

Among the important underlying themes and issues, four stand out:

Research production: Quantity, quality and content

Data on science production shows that 20 OIC countries have produced more papers in the last decade (2006-2015) than the previous one (1996-2005) and, among the more aggressive of these countries, at a rate greater than five comparable non-OIC countries.

Several OIC countries increased the number of papers published by factors of 7.7 (Qatar), 7.6 (Iran), 6.5 (Pakistan), and 5.8 (Malaysia and Iraq). A few countries have had very modest increases, but most improved their output by a factor of 2 to 3.

Quality is more important than quantity, though; this aspect we assessed through the citation-per-paper ratios. The data suggests that papers from Muslim countries are less frequently cited; furthermore, a recent list by the journal *Nature* of the 100 most cited papers had none with a lead author from the Muslim world.

Beyond becoming globally competitive, it is critical that scientific research in the Muslim world be relevant and responsive to society's intellectual and practical needs. This dual goal seems to be out of sight — and often out of consideration.

One approach at a growing number of countries in the Islamic world is to partner with — in fact, almost transplant campuses overnight — foreign universities, and through them, engage in cutting-edge research.

Universities in Saudi Arabia, the United Arab Emirates and Qatar are hosting such bold new experiments and may be achieving some success, though the jury is still out on their wider impacts and long-term sustainability. And these are extremely

expensive strategies, largely out of reach for a vast majority of OIC countries.

There is a correlation between large research spending increases made recently by some countries and an upsurge in research publications. Close international collaborations are also recommended to strengthen research programmes and raise their calibre.

Other shortcomings relate to an understanding of science and its social aspects. The Task Force noted with alarm that science and engineering curricula in the Muslim world are invariably so technically focused that graduates struggle to connect science and technology with the society and the world at large.

Broad liberal education in science

With few exceptions in most OIC countries, not only are students channelled into science or non-science streams (and thus careers) around the age of 14, but subsequent education is completely binary: science and technology students receive little general education — in the humanities, social science, languages and communication, for example — and vice versa.

This needs to be addressed. Today's scientists and engineers must be creative and innovative and able to work as part of multidisciplinary and multinational teams, and this is only possible if they receive a broad and liberal education. A broad knowledge is needed for flexible and nimble thinking to intelligently relate the theoretical and practical aspects of a given problem, and to benefit from ideas found in other fields.

Another area of particular weakness within science education in the Muslim world is the almost universal absence of philosophy and even the history of science, essential for enabling scientists to engage on critical societal questions in terms of ethics, religious issues, purpose and goals of research, etc.

Curricular and pedagogical developments

The Task Force also notes that science textbooks used at universities

of the Muslim world are most often imported and used as is from the West, with all the positives and negatives that this entails. Beyond the two vital issues of what must be taught and in what language (English/French vs local/native languages), the question of how science should be taught is also of critical importance.

With few exceptions, science curricula at universities of the Muslim world tend to be heavily loaded, with extensive "coverage" of topics, instead of aiming for a deeper understanding of how the sciences work and scientists think, and how to analyse problems.

Transforming our universities into meritocracies

In addition to knowledge production and scholarship, one of the main goals and *raison d'être* of universities worldwide is to develop within society a culture of inquiry, intellectual rigour and merit — characteristics of the Muslim "Golden Age" of science, about 1,250 to 750 years ago.

Needed is a culture in which learning is fostered and nurtured — the incubation of future scientists, thinkers and citizens. Transforming universities into bastions of meritocracy for the benefit of society will require some fundamental re-engineering: empowering them to do so, holding them accountable and measuring and rewarding success.

Quality and merit should be the primary goals driving decision-making in universities and should apply to administrative as well as curricular and research.

Our universities must hire good faculty staff, fund and support their development as scientists, thinkers, teachers, and communicators, and foster the right values for all to thrive in a complex and competitive world.

The writer is the chair of the recently-released Report of the Zakri Task Force on Science at Universities of the Muslim World, convened by the Muslim World Science Initiative, London and Islamabad

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ZAKRI ABDUL HAMID