KEMENTERIAN TENAGA, SAINS, TEKNOLOGI, ALAM SEKITAR DAN PERUBAHAN IKLIM

Bil	Berita	Media	Capaian Berita Penuh
24 DISEMBER 2018 (ISNIN)			
1.	**Softpads UPM diuji di ISS** Turut hadir, Presiden Pengimejan Diagnostik Nuklear (PDN), Prof Datin Dr Rozi Mahmud dan wakil daripada Agensi Angkasa Negara (ANGKASA).	Harian Metro	Rujuk lampiran 1
2.	**Malaysian must embrace precautionary principle** Malaysia's COP24 delegation was led by Yeo Bee Yin, our energy, science, technology, environment and climate change minister.	New Straits Times	Rujuk lampiran 2
22 DISEMBER 2018 (SABTU)			
3.	**Consumers, ready to be shocked** The Energy Commission had recently given its approval for Tenaga Nasional Bhd (TNB) to continue implementing the Imbalance Cost Pass-Through (ICPT) mechanism.	New Straits Times	Rujuk lampiran 3
4.	**Climate change: Malaysia is in search of green financing** Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin, who is leading the delegation, is determined that Malaysia and other developing countries stand up for climate change justice.	Star2.com	Klik pada tajuk berita

5.	**22 sungai di Johor berada di kelas empat** Terdapat 22 sungai di Johor berada di kelas empat mengikut rekod Jabatan Alam Sekitar (JAS) negeri sehingga September lepas.	Sinar Harian	Klik pada tajuk berita
6.	**Ini 51 sungai tercemar di Malaysia...** Jabatan Alam Sekitar (JAS) mendedahkan senarai 51 sungai tercemar berdasarkan Laporan Kualiti Alam Sekeliling 2017.	Astro Awani	Klik pada tajuk berita
7.	**Sukarnya hendak pulihkan sungai 'rosak'!** Ketua Pengarah Jabatan Alam Sekitar (JAS), Datuk Dr. Ahmad Kamarulnajuib Che Ibrahim berkata, banyak faktor yang menyumbang kepada pencemaran sungai.	Astro Awani	Klik pada tajuk berita

TEMPATAN

Bil	Berita	Media	Capaian Berita Penuh
24 DISEMBER 2018 (ISNIN)			
8.	**Ekonomi 2019 lebih mencabar** Selain itu, arus perubahan teknologi yang dibawa oleh Revolusi Industri 4.0 dijangka memberi kesan yang signifikan kepada pasaran buruh terutama bagi pekerja berkemahiran rendah.	Utusan Malaysia	Klik pada tajuk berita
9.	**PM urges private sector to employ MAF veterans** “I am confident the new generation of veterans can become part of the skilled	The Borneo Post	Klik pada tajuk berita

	workforce in various fields such as automotive and contribute to the fourth industrial revolution (IR 4.0)," he said.		
10.	**SME sector robust amid growth of IR4.0** Malaysian small and medium enterprises (SMEs) remained robust in 2018 as the sector braced for the adoption of Industrial Revolution 4.0 (IR4.0), with strong and encouraging support from the government.	The Borneo Post	Klik pada tajuk berita
11.	**Teknologi hijau negeri & organisasi** Isu perubahan iklim dan pemanasan global kini menjadi agenda utama negara-negara di seluruh dunia dan merupakan cabaran penting yang perlu diatasi oleh komuniti antarabangsa.	Sinar Harian	Rujuk lampiran 4
23 DISEMBER 2018 (AHAD)			
12.	**Polis masih tunggu keputusan bedah siasat kedua** Polis masih menunggu keputusan bedah siasat kali kedua Ketua Pegawai Eksekutif (CEO) Cradle Fund Sdn. Bhd. (Cradle Fund), Allahyarham Nazrin Hassan.	Utusan Malaysia	Klik pada tajuk berita
13.	**Cradle CEO's death remains shrouded in mystery** The mysterious death of the former Cradle Fund Sdn Bhd chief executive officer Nazrin Hassan on June 14 this year has yet to be solved, and has led to various speculations.	The Star	Klik pada tajuk berita
14.	**Remote Sarawak road breaking up due to erosion** The current wet spell in parts of Sarawak is starting to cause structural damage to rural	The Star	Rujuk lampiran 5

	roads in state.		
15.	**We should be an example** According to the latest report on climate change, tropical South-East Asia is projected to experience the largest impacts on economics growth if global warming exceeds 1.5C. This is why Malaysia should set ambitious targets and take unprecedented actions in battling the planet's worst problem.	Sunday Star	Rujuk lampiran 6
16.	**'Global warming mirrors Earth's largest extinction event'** More than two-thirds of life on earth died off some 252 million years ago, in the largest mass extinction event in Earth's history.	Sunday Star	Rujuk lampiran 7
17.	**Gunung Kinabalu merekah, tak stabil** Struktur Gunung Kinabalu kini merekah dan tidak stabil selepas dilanda lebih 1,000 gegaran sejak digoncang gempa bumi kuat magnitud 5.9 pada 2015, mencetus pelbagai gangguan kepada kawasan sekitar, khususnya daerah Kota Belut.	Berita Harian	Rujuk lampiran 8
18.	**Ancaman tanah runtuh jejas aktiviti pendakian** Runtuhan berterusan di Gunung Kinabalu sejak tiga tahun lalu menyebabkan struktur serta muka bumi gunung itu berubah lebuh curam, sekali gus menyebabkan pendakian lebih mencabar dan berisiko.	Berita Harian	Rujuk lampiran 9
19.	**Sistem pendidikan negara perlu segera diubah** "Jika kita lihat ketika ini terlalu banyak subjek dan tiada tumpuan sedangkan industri baru itu lebih terjurus ke arah Sains, Teknologi,	Berita Harian	Klik pada tajuk berita

	Kejuruteraan dan Matematik (STEM). Justeru, kurikulum baru yang bakal dirangka perlu mempunyai tumpuan khusus.		
20.	**Panasonic Malaysia unjur pertumbuhan sehingga lima peratus tahun depan** "Syarikat sentiasa mengamalkan konsep kehidupan lebih baik dan justeru penekanan terhadap produk ini akan diberikan membabitkan aspek ventilasi, peranti kecekapan tenaga dan sokongan persekitaran kecerdasan buatan (AI)," katanya.	Berita Harian	Klik pada tajuk berita
21.	**Swasta perlu bantu jaga kebajikan veteran tentera - Dr Mahathir** Beliau yakin, veteran tentera generasi baharu mampu menjadi sebahagian tenaga kerja mahir dalam pelbagai bidang seperti automasi, sekali gus menyumbang kepada Revolusi Industri 4.0.	Berita Harian	Klik pada tajuk berita
22.	**PM seeks private sector's help with MAF veterans' re-employment** "I am confident the new generation veterans can become part of the skilled workforce in various fields such as automotive and thus contributing to the fourth industrial revolution (IR 4.0)," he said.	Malay Mail	Klik pada tajuk berita
23.	**Penang allocates RM1.33m to 21 mission schools** "Penang has a policy of no food wastage and no single-use of plastic. Let us also take this opportunity to reach out to the needy ones as it is always better to give than to receive," he added.	The Sun Daily	Klik pada tajuk berita

24.	**MyBF buka peluang lanjut pengajian** Bagaimanapun, hasrat meneruskan pelajaran ke menara gading akhirnya tercapai apabila menerima tawaran Dermasiswa My Brighter Future (MyBF) yang diperkenalkan Tenaga Nasional Berhad (TNB) melalui Yayasan Tenaga Nasional (YTN).	Berita Harian	Klik pada tajuk berita dan rujuk lampiran 10
22 DISEMBER 2018 (SABTU)			
25.	**Taking on floods with a gotong-royong spirit** THE monsoon rain and ensuing floods have become part and parcel of everyday life of Malaysians. Cars brought to a standstill during traffic as they find themselves submerged in flood waters.	New Straits Times	Klik pada tajuk berita dan rujuk lampiran 11
26.	**Manfaatkan penggunaan aplikasi myTNB** Tenaga Nasional Berhad (TNB) Melaka meminta pengguna meter pintar di negeri ini agar memanfaatkan aplikasi mudah alih myTNB bagi memudahkan mereka membuat semakan penggunaan bil elektrik semasa.	Utusan Malaysia	Klik pada tajuk berita
27.	**Malaysia kecam Parlimen Perancis ketepikan minyak sawit** “Tindakan mereka yang mengetepikan penggunaan dan pengimportan minyak kelapa sawit sebagai sebahagian daripada campuran tenaga boleh diperbaharui yang diluluskan itu boleh menjejaskan hubungan perdagangan dua hala kita,” katanya dalam satu kenyataan hari ini.	Sinar Harian	Klik pada tajuk berita
28.	**Teresa Kok bidas Perancis tolak**	Astro Awani	Klik pada tajuk berita

	penggunaan minyak sawit Perancis pada Rabu mengundi untuk menghentikan insentif cukai terhadap penambahan minyak sawit dalam biodiesel menjelang 2020 dan menganggap diesel hasil dari minyak sawit sebagai bukan teknologi hijau.		
29.	**Bil elektrik dijangka naik tahun depan** Pengguna dijangka bakal berdepan kenaikan bil elektrik berikutan Dana Industri Elektrik (EIF), yang digunakan untuk menyerap kenaikan kos dalm bentuk surcaj, habis tahun depan.	Berita Harian	Rujuk lampiran 12

ANTARABANGSA

Bil	Berita	Media	Capaian Berita Penuh
24 DISEMBER 2018 (ISNIN)			
30.	**Letusan dalam kerak bumi** Letusan kepingan benua di bawah dasar laut ekoran letupan gunung berapi Anak Krakatau disifatkan sebagai factor utama terhasilnya gelombang tsunami yang membadai sekitar pantai di Selat Sunda, Indonesia malam kelmarin.	Kosmo!	Rujuk lampiran 13
31.	**Anak Krakatau semakin 'marah'** Gunung berapi yang mencetuskan tsunami di Indonesia lewat kelmarin muncul dari laut di sekitar gunung legenda, Krakatau 90 tahun lalu dan berada di bawah senarai pengawasan letusan sejak sedekad lalu.	Kosmo!	Rujuk lampiran 14

32.	**Volcano Tsunami kills 222 in Indonesia** Hundreds more injured after wave triggered by volcano slams into beaches around Sunda Strait.	New Straits Times	Rujuk lampiran 15
33.	**Angry 'Child of Krakatoa' rumbles on** The volcano that triggered a deadly tsunami in Indonesia on Saturday emerged from the sea around the legendary Krakatoa 90 years ago and has been on a high-level eruption watchlist for the past decade.	New Straits Times	Rujuk lampiran 16
34.	**Deadly tsunami hits Indonesia again** A tsunami killed at least 222 people and injured hundreds on the Indonesian islands of Java and Sumatra following an underwater landside believed caused by the erupting Anak Krakatau volcano, officials and media have announced.	The Star	Rujuk lampiran 17
23 DISEMBER 2018 (AHAD)			
35.	**Shenzhen, China's reform pioneer, leads tech revolution** Today Shenzhen is again at the heart of a new policy aimed at turning China into a hi-tech innovator and shed its reputation as an assembly line for foreign companies or — worse — an imitator.	Free Malaysia Today	Klik pada tajuk berita
36.	**AI With An Ethic: European Experts Release Draft Guidelines** By hook or by crook, Europe needs to differentiate itself, in its approach to artificial intelligence, from mighty competitors such as the U.S. and China.	Forbes	Klik pada tajuk berita

37.	**Tiada amaran awal kerana tiada alat pengesan tsunami berpunca gunung berapi** Badan Meteorologi, Klimatologi dan Geofisika (BMKG) Indonesia mengakui pihaknya tidak mempunyai sistem amaran awal mengenai tsunami yang berpunca dari gunung berapi di kawasan Selat Sunda.	Astro Awani	Klik pada tajuk berita
38.	**Gunung berapi Anak Krakatoa mungkin punca tsunami** Sekurang-kurangnya 20 orang dilaporkan maut manakala ratusan lain cedera susulan tsunami di Indonesia yang mungkin dicetuskan gunung berapi Anak Krakatoa.	Sinar Harian	Klik pada tajuk berita
39.	**Indonesia dilanda tsunami lagi** Menurut agensi terbabit, tsunami terbabit berpunca daripada gelinciran permukaan dasar laut selepas Gunung Berapi Anak Krakatau meletus.	Utusan Malaysia	Klik pada tajuk berita
40.	**Gulungan ombak 6 meter selepas letusan Gunung Anak Krakatau - Bupati Pandeglang** Tsunami di Selat Sunda yang melanda pesisiran pantai paling barat Pulau Jawa, iaitu di Banten, datang tanpa amaran awal diberikan, namun penduduk tempatan memberitahu mereka telah melihat tanda-tanda pada Gunung Anak Krakatau.	Astro Awani	Klik pada tajuk berita
41.	**Gegaran 'Anak Krakatoa' punca tsunami** Sekurang-kurangnya 20 maut manakala ratusan cedera dalam bencana tsunami di Indonesia yang berkemungkinan dicetuskan gunung berapi dikenali Anak Krakatoa,	Harian Metro	Klik pada tajuk berita

	menurut pegawai hari ini.		
42.	**<u>Dunia fizik hilang tokoh tersohor</u>** Isaac Newton dikenang kerana penjelasan dan jawapannya, tetapi Stephen Hawking dikenang dengan persoalan yang dikemukakannya," kata Stephen Throne ketika mengulas mengenai teman baiknya, Hawking pada majlis penghormatan yang berlangsung di gereja Westminster Abbey pada Jun lalu.	New Straits Times	Rujuk lampiran 18
43.	**<u>Kawah Korolev planet Marikh dilitupi ais tebal</u>** Satelit Mars Express kendalian Agensi Angkasa Eropah (ESA) yang mengorbit bahagian utara planet Marikh berjaya merakam keadaan terkini kawah Korolev yang mempunyai keluasan selebar 82 kilometer, kawah palimg besar di 'planet merah' tersebut.	Mingguan Malaysia	Rujuk lampiran 19

LAMPIRAN 1
HARIAN METRO (BESTARI): MUKA SURAT 46
TARIKH: 24 DISEMBER 2018 (ISNIN)

SOFPADS UPM DIUJI DI ISS

PROF Rozi (dua dari kanan) bersama Dr Noramaliza (dua dari kiri), Dr Fathinul Fikri (kiri) dan Dr Nizam (kanan) bergambar bersama selepas sidang media penyerahan sampel pengesan sinaran kepada JAXA di Fakulti Perubatan dan Sains Kemanusiaan UPM.

Alat pengesan sinaran menggunakan fiber optik pintar (SOFPADS) yang dihasilkan sekumpulan saintis Universiti Putra Malaysia (UPM) akan diuji di Stesen Angkasa Antarabangsa (ISS), tidak lama lagi.

Alat berkenaan dicipta sekumpulan penyelidik terdiri daripada Dr Noramaliza Mohd Noor dan Prof Madya Dr Fathinul Fikri Ahmad Saad dari Pusat Pengimejan Diagnostik Nuklear (PPDN) serta Pensyarah Fakulti Sains, Dr Nizam Tamchek.

Dr Noramaliza berkata, ketika ini sebanyak dua sampel SOFPADS dihasilkan yang dinamakan E-SOFPADS dan I-SOFPADS untuk menjalani ujian berkenaan sudah dihantar ke Agensi Penerokaan Angkasa Jepun (JAXA).

Beliau berkata, JAXA akan membawa sampel pengesan fiber optik pintar berkenaan ke Amerika Syarikat pada bulan ini sebelum dilancarkan ke ISS pada Februari depan.

"E-SOFPADS ini akan didedahkan kepada sinar radiasi di luar ISS sekitar modul KIBO milik Jepun menggunakan fasiliti Experiment Handrail Attachment Mechanism (ExHAM) selama 300 hari manakala I-SOFPADS akan didedahkan kepada sinar radiasi yang berada di dalam modul KIBO, ISS selama 360 hari.

"Selepas setahun, kedua-dua sampel pengesan akan dihantar semula ke bumi untuk dianalisis di PPDN dan Makmal Dosimetri, Fakulti Perubatan dan Sains Kesihatan di UPM," katanya ketika ditemui, baru-baru ini.

Turut hadir, Presiden Pengimejan Diagnostik Nuklear (PDN), Prof Datin Dr Rozi Mahmud dan wakil daripada Agensi Angkasa Negara (ANGKASA).

Sampel kajian yang bermula pada 2016 itu juga membabitkan penyelidikan bersama-sama pensyarah dari Fakulti Kejuruteraan UPM, Universiti Multimedia, Universiti Malaya (UM), Universiti Sunway dan ANGKASA.

Dr Noramaliza berkata, projek berkenaan ditaja UPM di bawah Geran Berimpak Tinggi itu juga menjadi langkah pertama untuk memerhati tindak balas fiber optik terhadap radiasi di dalam persekitaran mikro graviti dan juga potensi sebagai pengesan sinaran pasif untuk digunakan di angkasa lepas.

"Lazimnya pengesan sinaran pasif ini digunakan untuk memantau tahap radiasi yang diterima angkasawan yang bekerja di ISS," katanya.

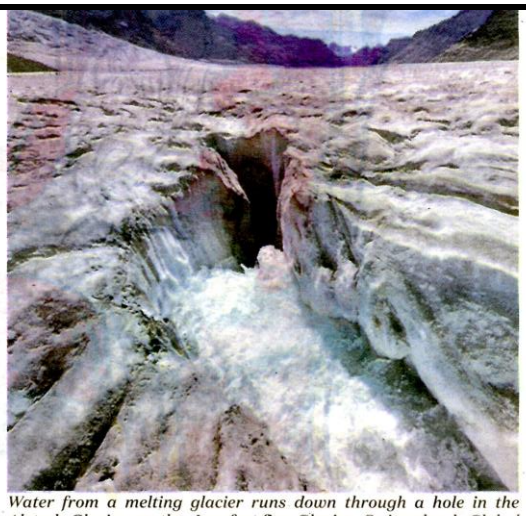
LAMPIRAN 2
NEW STRAITS TIMES (OPINION): MUKA SURAT 13
TARIKH: 24 DISEMBER 2018 (ISNIN)

ZAKRI ABDUL HAMID

CLIMATE CHANGE

MALAYSIANS MUST EMBRACE PRECAUTIONARY PRINCIPLE

We must push to limit global warming to a maximum of 1.5 degrees Celsius



Water from a melting glacier runs down through a hole in the Aletsch Glacier on the Jungfraufirn Glacier, Switzerland. Global warming is happening at a rapid pace and may exceed the 1.5°C REUTERS PIC

AFTER fractious negotiations this month in Katowice, Poland, 196 nations participating in the 24th Conference of Parties to the United Nations Framework Convention on Climate Change (COP24) agreed to adopt a global action plan to limit climate change.

The action plan, or the Katowice Rulebook, sets out a single system for countries to make emission cuts under national climate plans and how those plans can be regularly reported, measured, scrutinised and progressively ramped up.

The goal is to keep global warming below 2°C (compared with pre-industrial-age levels), a target set out in the Paris Agreement drawn up three years ago, and to aim for a maximum 1.5°C if possible.

The bolder 1.5°C target is a key threshold for avoiding catastrophic climate change, according to a recent Intergovernmental Panel on Climate Change (IPCC) scientific report, a central focus of COP24.

While the Paris Agreement provided a skeletal framework to help countries achieve this goal, the rulebook lays out how this can be done and aims to keep all countries honest in the process. The Katowice Rulebook, needed to put the Paris pact into practice, culminated three years of negotiations.

Said Laurence Tubiana, chief executive of the European Climate Foundation and key architect of the Paris Agreement, says: "Despite all the headwinds, the Paris Agreement has stayed on course at COP24, demonstrating the kind of resilience it has been designed for."

Indeed, the headwinds were strong. Midway through the Katowice event, for example, the process was almost derailed when the United States, Saudi Arabia, Russia and Kuwait objected to "welcoming" last October's IPCC report, which said the world is now completely off track, heading more towards 3°C this century rather than 1.5°C.

Keeping to the preferred target, it said, would require "rapid, far-reaching and unprecedented changes in all aspects of society", with CO2 emissions reduced by 45 per cent by 2030.

At the meeting, UN Secretary-General Antonio Guterres said that climate action was not just the right thing to do, it made social and economic sense – pointing to how action to cut emissions would curb air pollution deaths, generate trillions of dollars of economic activity, and create millions of jobs.

He also warned that "climate change is running faster than we are and we must catch up sooner rather than later, before it's too late. For many people, regions and even countries, this is already a matter of life and death".

Similarly, legendary United Kingdom naturalist Sir David Attenborough warned delegates that "our civilisations are going to collapse and much of nature will be wiped out to extinction if humanity doesn't take urgent action on climate change".

Malaysia's COP24 delegation was led by Yeo Bee Yin, our energy, science, technology, environment and climate change minister. She outlined the new government's initiatives to reduce fossil fuel uses by increasing the share of renewable energy (not including large hydros) for electricity generation from two per cent to 20 per cent, as well as plans to call for Malaysia to have an Energy Efficiency and Conservation Act by mid next year.

Malaysia aims to double public transport usage from 20 to 40 per cent by 2030. The minister stressed that all these were done with little help from the developed countries, although financial aid from the latter had always been promised to the developing countries. She, however, assured the gathering that Malaysia looked forward to international collaboration.

According to IPCC vice-chair Prof Joy Pereira of Universiti Kebangsaan Malaysia, as the average global temperature increases to 1.5°C above pre-industrial levels, our nation can expect many more expensive, productivity-limiting hot days compared to temperate (cooler) regions in Europe, North America, India and China.

Already well acquainted with the harm caused by floods and landslides, we can expect more heavy precipitation, especially in the north, with increasingly unconventional and unpredictable tropical cyclone tracks. Any shift in such tracks to the south would increase the country's flood hazard. Rice yields and nutritional value will drop, as will oil palm production.

As sea levels rise, much of the low-lying coasts in areas surrounding Southeast Asia (that is, Bangladesh) will be inundated, creating climate refugees. The scenarios worsen dramatically if warming is allowed to continue to 2°C.

Have we fully considered the humanitarian and security implications of such a situation? The cost of limiting global warming is high.

In 2009, the estimate for Malaysia to meet the Copenhagen pledge of 40 per cent carbon intensity reduction involved an estimated investment of up to five per cent of the gross domestic product (GDP).

However, the cost of adaptation to a 1.5°C warmer world, including disaster damage (strong winds, floods, landslides, etc), humanitarian aid and compensation to victims, and disruption of business and supply chains, could make five per cent of GDP look like a bargain.

The path forward is clear and we can't afford to fail. Malaysians must embrace the precautionary principle, push to limit global warming to a maximum of 1.5°C, and fully do our part to contribute.

The cost of limiting global warming is high.

The writer is former director of the United Nations University's Institute of Advanced Studies in Tokyo

LAMPIRAN 3
NEW STRAITS TIMES (BUSINESS): MUKA SURAT 17
TARIKH: 22 DISEMBER 2018 (SABTU)

CONSUMERS, READY TO BE SHOCKED

The Electricity Industry Fund, which helps absorb any cost increase, is running out of cash, say analysts

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HOUSEHOLDS are likely to face higher electricity bills as the Electricity Industry Fund (EIF), which is used to absorb the cost increase in the form of surcharge, may run out next year.

Analysts in the power sector contacted by NST Business said the funds were believed to have dwindled.

This is on top of another likely scenario in which enterprises, which will be impacted by the higher monthly surcharge of 2.55sen/kwh from March to June next year, may pass along the extra cost to end-consumers.

The new surcharge is higher than the current surcharge of 1.35sen/kwh.

The Energy Commission had recently given its approval for Tenaga Nasional Bhd (TNB) to continue implementing the Imbalance Cost Pass-Through (ICPT) mechanism.

Currently, domestic consumers are not directly affected as they are being subsidised by the EIF.

"The fund is running out, probably next year. This may affect domestic consumers," said two analysts familiar with the matter.

Another analyst said the manufacturing industry, which heavily utilises machines in their production, might have to pass on the higher costs to consumers.

However, Rakuten Trade head of research Kenny Yee said there were plans to liberalise the transmission of energy, which would be positive for the sector.

"This is a positive move as efficiency will improve. As a result, electricity prices may reduce," he added.

Imbalance cost between July and December this year was RM1.8 billion, which translated to 3.43sen/kwh.

However, MIDF Research said not all the imbalance cost would be passed through via ICPT in the first half of next year, given the cost and revenue adjustments for TNB.

Post-adjustments, the research firm said the imbalance cost that would be passed through amounted to RM948 million, translating to 2.15sen/kwh average monthly surcharge in the first six months of next year, higher than the 1.35sen/kwh currently paid.

"For January-February 2019, ICPT surcharge is maintained at 1.35sen/kwh, while from March to June ICPT surcharge will increase to 2.55sen/kwh. All in, this should work out to an average 2.15sen/kwh surcharge per month," it noted.

The Energy Commission recently gave its approval for Tenaga Nasional Bhd to continue implementing the Imbalance Cost Pass-Through (ICPT) mechanism. PIC BY MOHD RAFI MAMAT

LAMPIRAN 4
SINAR HARIAN (CETUSAN): MUKA SURAT 46
TARIKH: 24 DISEMBER 2018 (ISNIN)

Teknologi hijau negeri & organisasi

Wacana Hijau

Isu perubahan iklim dan pemanasan global kini menjadi agenda utama negara-negara di seluruh dunia dan merupakan cabaran penting yang perlu diatasi oleh komuniti antarabangsa.

Di sini, aplikasi teknologi hijau boleh memainkan peranan penting kerana ia dapat mengurangkan kadar pelepasan karbon yang menyumbang kepada pemanasan global.

Semasa Persidangan Perubahan Iklim Antarabangsa di Perancis (COP21) pada tahun 2015, kerajaan Malaysia telah memberi komitmen untuk mengurangkan sebanyak 45 peratus kadar intensiti pelepasan gas rumah kaca berbanding keluaran dalam negara kasar (KDNK) pada tahun 2030 berbanding pada tahun 2005.

Untuk mencapai matlamat tersebut, pelbagai inisiatif teknologi hijau perlu dilaksanakan dengan segera oleh semua pihak di Malaysia.

Antara inisiatif-inisiatif yang telah dilaksanakan oleh pihak kerajaan untuk meningkatkan penggunaan teknologi hijau di Malaysia ialah melalui skim pembiayaan teknologi hijau, program penarafan produk hijau dan projek bandar rendah karbon.

Selain itu, pihak kerajaan negeri juga telah mula melaksanakan pelbagai inisiatif seperti Selangor, dengan kerjasama Malaysian Green Technology Corporation (GreenTech Malaysia) telah membangunkan Pelan Tindakan Teknologi Hijau Selangor 2016-2018 yang menggariskan pelan tindakan untuk pembangunan ekonomi mampan.

Pelan ini memberi tumpuan kepada lima sektor utama iaitu tenaga, pengangkutan, bangunan, pengurusan sisa dan air.

Pelbagai program telah dirancang dan dilaksanakan di bawah pelan tindakan ini, termasuk penggunaan bas elektrik bagi program "bas percuma" di pihak berkuasa tempatan (PBT), pemasangan bumbung solar bagi projek perumahan SelangorKu, pengurusan sisa, kecekapan tenaga dalam bangunan dan sebagainya.

Sebanyak 8 daripada 12 PBT di Selangor sedang melaksanakan Low Carbon Cities Framework (LCCF), iaitu suatu rangka kerja yang digunakan sebagai panduan untuk melaksanakan tindakan mengurangkan karbon di bandar.

Kerajaan negeri Kedah pula dengan kerjasama GreenTech Malaysia telah menghasilkan Kedah State Government's Green Agenda di mana terdapat 14 pelan tindakan termasuk penggunaan kenderaan elektrik, pemasangan lampu LED di bangunan kerajaan negeri dan juga rancangan untuk penggunaan sekam padi untuk penjanaan tenaga.

Kesedaran mengenai kepentingan aplikasi teknologi hijau juga telah meningkat di organisasi-organisasi kerajaan dan swasta di Malaysia. Sebagai contoh, PLUS Malaysia Berhad telah membangunkan PLUS Green Roadmap yang menggariskan langkah-langkah untuk menjadikan PLUS sebuah organisasi yang efisien dan berdaya maju menjelang tahun 2022.

Roadmap ini berasaskan tiga prinsip utama iaitu penggunaan sumber yang efisien, mengurangkan pelepasan karbon dan mengamalkan gaya hidup yang sihat dan mampan.

Antara inisiatif hijau yang telah dilaksanakan oleh PLUS adalah sistem penuaian air hujan, sistem solar, lampu cekap tenaga dan pemasangan stesen pengecas kenderaan elektrik di Kawasan Rehat dan Rawat (R&R).

Manakala Lembaga Pelabuhan Johor (LPJ) juga merupakan organisasi yang aktif dalam aplikasi teknologi hijau. LPJ telah menggantikan lampu 'fluorescent' dengan lampu LED di bangunan dan memasang sistem solar sebagai salah satu langkah penjimatan elektrik dan menaik taraf bangunan daripada Penilaian Hijau Jabatan Kerja Raya (JKR) 3-bintang kepada 5-bintang.

Selain daripada menyokong dasar sedia ada iaitu Green Port Policy 2014-2022, inisiatif-inisiatif tersebut telah berjaya mengurangkan bil elektrik daripada 12% hingga 15% setiap bulan dan sebanyak 12.38 ton CO_2-equivalent (CO_2eq) dapat dielakkan.

Secara keseluruhan, aplikasi dan pembangunan teknologi hijau amat penting untuk pembangunan mampan "(sustainable development)" di mana pertumbuhan ekonomi berlaku tanpa menjejaskan kualiti hidup dan kualiti alam sekitar.

Teknologi hijau juga menyumbang kepada pengurangan penggunaan bahan api fosil dan meningkatkan penggunaan sumber tenaga yang bersih.

Pelbagai program hijau kini dijalankan di peringkat negeri dan organisasi sejajar dengan pelan tindakan dan sasaran yang telah digariskan dalam Pelan Induk Teknologi Hijau Negara 2018-2030 - Green Technology Masterplan (GTMP).

Adalah menjadi tanggungjawab kita semua untuk terus memastikan generasi kini dan yang akan datang dapat menikmati kualiti hidup yang baik.

** Ruangan ini dikelolakan oleh GreenTech Malaysia*

LAMPIRAN 5
THE STAR (NATION): MUKA SURAT 14
TARIKH: 23 DISEMBER 2018 (AHAD)

Remote Sarawak road breaking up due to erosion

MIRI: The current wet spell in parts of Sarawak is starting to cause structural damage to rural roads in the state.

The remote Belaga-Menjawah road in northern Sarawak – built by the Defence Ministry under the Jiwa Murni concept three years ago – is breaking apart due to hillslope erosion.

Parts of the road have collapsed into the ravine because of heavy rain.

The slope failure is a result of earth movements, which in turn cause huge chunks of earth to cave in.

Native rights activist cum lawyer Abun Sui, who is a Belaga resident, sounded the alarm on Saturday.

He said half of the two-lane road had already collapsed.

"If the rain continues, soon the whole road will cave in.

"The JKR (Public Works Department) needs to take remedial measures immediately.

"In fact, in June, there were already cracks appearing, and the local people had voiced their worries to the Belaga authorities," he told *The Star*.

The 60km road cost was about RM80mil.

Abun, who is Hulu Rejang PKR branch chief, said the road was supposed to be repaired last year.

"I hope the state government will initiate the repair now," he said.

The Belaga-Menjawah road is the only land link to the outside world for about 10,000 interior folk.

It connects the Menjawah sub-district to the Belaga township and onwards to Bakun and Bintulu.

Dicing with danger: Abun visiting the site of the eroding hillslope along the Belaga-Menjawah road in northern Sarawak.

LAMPIRAN 6
SUNDAY STAR (FOCUS): MUKA SURAT 23
TARIKH: 23 DISEMBER 2018 (AHAD)

We should be an example

According to the latest report on climate change, tropical South-East Asia is projected to experience the largest impacts on economic growth if global warming exceeds 1.5°C. This is why Malaysia should set ambitious targets and take unprecedented actions in battling the planet's worst problem.

By Dr JOY JACQUELINE PEREIRA
sunday@thestar.com.my

THE Katowice Climate Package – ie, the rule book on climate change that was agreed to earlier this month in Katowice, Poland – is disappointing in that it did not make a strong resounding call for enhanced ambition to limit global warming to 1.5°C.

The Intergovernmental Panel on Climate Change's (IPCC) special report on what will happen when the planet warms to 1.5°C above preindustrial levels has already indicated that climate change impacts are worse at 2°C above preindustrial levels, and that a number of impacts could be avoided by limiting global warming to 1.5°C compared to 2°C above preindustrial levels.

The latest United Nations Environment Programme emissions gap report indicates that holding warming below 1.5°C would require existing pledges to be "increased around fivefold". What is worse: global emissions are expected to grow by 2.7% in 2018, the highest growth in the past seven years, according to the Global Carbon Project.

The IPCC was formally invited by governments to produce the special report as part of the decision to adopt the Paris Agreement. It is most unfortunate that the United States, Saudi Arabia, Russia and Kuwait have refused to accept the report on the basis of its knowledge and scientific gaps.

The best available science was used to conclude that the world is already seeing the consequences of 1°C of global warming through more extreme weather, rising sea levels and diminishing Arctic sea ice, among other changes.

A number of climate change impacts could be avoided by limiting global warming to 1.5°C compared to 2°C, or more. Every extra bit of warming matters, especially since a warming of 1.5°C or higher increases the risk associated with long-lasting or irreversible changes, such as the loss of some ecosystems.

Climate alert: Tropical South-East Asia, including Malaysia, is projected to experience impacts such as heavy rains and higher risks of floods and flash-floods, among other impacts, if global warming exceeds 1.5°C.

The implications of climate change for Malaysia in a world that warms by 1.5°C has to be comprehensively studied. However, in the absence of such studies, the Malaysian government must use the best available information and take a precautionary approach.

Based on the IPCC special report, tropical South-East Asia, which includes Malaysia, is projected to experience the largest impacts on economic growth if global warming exceeds 1.5°C.

Other expected impacts include increase in the number of hot days and heavy rains, higher risks of floods, flash-floods and landslides, net reductions in yields and nutritional value of rice as well as populations that are both exposed and susceptible to poverty, particularly those dependent on agriculture and coastal livelihood.

As the sea-level rises, much of the low-lying coasts in areas of South-East and adjacent South Asia are expected to be affected, bringing new migration and security issues for the region.

Unlike China and India, Malaysia does not have the luxury of tracts of temperate land that could help the country to buffer or withstand the impacts of climate change, as warming proceeds to 1.5°C and then on to 2°C. Scientifically robust programmes should be initiated to document and report on the unavoidable damages of climate change and efforts to address them, including gaps in capacity.

Such a report should be provided every two years and then included as part of the global stocktake that will be conducted in 2023.

The Katowice Climate Package is a missed opportunity for Malaysia to show leadership and make a strong call to limit global warming to 1.5°C.

It is still not too late – we can still show strong leadership at the Climate Summit to be convened by the UN Secretary-General in September 2019.

All efforts should be deployed in bilateral and multilateral platforms to push for unprecedented and ambitious fresh pledges in 2020 from both developed and developing top-emitting countries.

Malaysia should also be an example and set ambitious targets and take unprecedented actions, including innovative mechanisms for removing fossil fuel subsidies and implementing a carbon tax without impacting low income groups. Singapore is introducing a carbon tax in 2019.

We should incentivise private financing and avail ourselves of resources available at the international level, including the Green Climate Fund, to enhance mitigation actions.

We have clever economists in the country whose talents have not been tapped to address the issue of climate change, we also have an Economic Affairs Ministry. The time has come for climate change to be viewed as an economic and development issue, to leap-frog the country into a high-income developed nation.

We should not be victims in a 1.5°C world.

Prof Dr Joy Jacqueline Pereira is the vice-chair of the Intergovernmental Panel on Climate Change's Working Group 2 on Impacts, Adaptation and Vulnerability; she is also a professor of Universiti Kebangsaan Malaysia's South-East Asia Disaster Prevention Research Initiative.

LAMPIRAN 7
SUNDAY STAR (FOCUS): MUKA SURAT 23
TARIKH: 23 DISEMBER 2018 (AHAD)

'Global warming mirrors Earth's largest extinction event'

MORE than two-thirds of life on earth died off some 252 million years ago, in the largest mass extinction event in Earth's history.

Researchers have long suspected that volcanic eruptions triggered "the Great Dying", as the end of the Permian geologic period is sometimes called, but exactly how so many creatures died has been something of a mystery.

Now scientists at the University of Washington (UW) and Stanford in the United States believe their models reveal how so many animals were killed, and they see frightening parallels in the path our planet is on today.

Models of the effects of volcanic greenhouse-gas releases showed the earth warming dramatically and oxygen disappearing from its oceans, leaving many marine animals unable to breathe, according to a study published on Thursday in the peer-reviewed journal *Science*.

By the time temperatures peaked, about 80% of the oceans' oxygen, on average, had been depleted. Most marine animals went extinct.

The researchers tested the model's results against fossil-record patterns from the time of the extinction and found they correlated closely. Although other factors, like ocean acidification, might have contributed to the Permian extinction, warming and oxygen loss account for the pattern of the dying, according to the research.

The 'Great Dying': *Dimetrodon gigas* and *Eryops megacephalus* from the early Permian period in North America. Creatures such as these would have been part of the era when volcanoes pumped greenhouse gases into the atmosphere – much as we are doing now. — Wikimedia Commons

By this century's end, if emissions continue at their current pace, humans will have warmed the ocean about 20% as much as during the extinction event, the researchers say. By 2300, that figure could be as high as 50%.

"The ultimate, driving change that led to the mass extinction is the same driving change that humans are doing today, which is injecting greenhouse gases into the atmosphere," said Justin Penn, a UW doctoral student in oceanography and the study's lead author.

Curtis Deutsch, a UW associate professor of oceanography and an author of the research, said if society continues to pump greenhouse gases into the atmosphere at our current rate, "we have no reason to think it wouldn't cause a similar type of extinction".

The earth 252 million years ago was a much different place. The continents as we know them today were still mostly one landmass, named Pangea, which looks like a chunky letter "C" on a map.

The climate, however, resembled Earth's now, and researchers believe animals would have adapted many traits, like metabolism, that are similar to creatures today. Nearly every part of the Permian Ocean, before the extinction, was filled with sea life.

"Less than 1% of the Permian Ocean was a dead zone – quite similar to today's ocean," Deutsch said.

It took a supercomputer more than six months to simulate all the changes the volcanic eruptions are suspected of causing during the Permian period. The computer models go into remarkable detail – simulating things like clouds, ocean currents and marine plant life – in describing what temperatures and conditions were like on Earth then.

To measure how rising temperatures and less oxygen would affect animal species of the Permian period, the researchers used 61 modern creatures – crustaceans, fish, shellfish, corals and sharks.

The researchers believe these animals would have similar temperature and oxygen sensitivities to Permian species because the animals adapted to live in similar climates.

In their model, the researchers were able to quantify the loss of habitat as species faced increasingly challenging ocean conditions. Surface-temperature rise and oxygen loss were more substantial in areas farther from the equator. Extinction rates also increased at higher latitudes.

Animals in the tropics were already accustomed to warmer temperatures and lower oxygen levels before the volcanic eruptions shifted the climate, according to the research. As the world warmed, they could move along with their habitat.

Marine creatures that favoured cold waters and high oxygen levels fared worse: They had nowhere to go.

In modern oceans, warming and oxygen loss have also been more pronounced near the poles, researchers said, drawing another analogue between the shift in climate some 252 million years ago and what's happening today.

"The study tells us what's at the end of the road if we let climate (change) keep going. The further we go, the more species we're likely to lose," Deutsch said.

"That's frightening. The loss of species is irreversible." — The Seattle Times/Tribune News Service

LAMPIRAN 8
BERITA HARIAN (EKSKLUSIF): MUKA SURAT 12
TARIKH: 23 DISEMBER 2018 (AHAD)

Gunung Kinabalu merekah, tak stabil

Struktur terjejas selepas dilanda lebih 1,000 gegaran sejak 2015

Oleh Ilah Hafiz Aziz dan Mohd Izham Unnip Abdullah
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Kota Kinabalu

Struktur Gunung Kinabalu kini merekah dan tidak stabil selepas dilanda lebih 1,000 gegaran sejak digoncang gempa bumi kuat magnitud 5.9 pada 2015, mencetus pelbagai gangguan kepada kawasan sekitar, khususnya daerah Kota Belud.

Kira-kira 1,500 hektar atau 15 kilometer persegi lereng Gunung Kinabalu dilapor runtuh akibat gempa berlarutan, menyebabkan tanah dan batuan di lapisan atas serta lereng gunung yang sedia terjejas, menjadi amat rapuh serta longgar, ibarat menunggu masa untuk runtuh.

Kesan gegaran berlarutan membawa runtuhan mengandungi sisa tanah, pasir dan batu, selain bongkah batu, mineral serta pokok kayu ke sungai serta jaringan anak sungai di kawasan sekitar, menyebabkan daerah Kota Belud dilanda lebih 100 banjir sejak tiga tahun lalu.

Sungai terjejas

Sungai Kadamaian paling teruk terjejas akibat runtuhan terbabit, diikuti lapan lagi sungai di sekitar Gunung Kinabalu, termasuk Sungai Penataran, Sungai Mesilou, Sungai Tohubang, Sungai Kilambun, Sungai Wariu dan Sungai Mentaki.

Pengarah Pusat Kajian Bencana Alam, Universiti Malaysia Sabah (UMS), Prof Dr Felix Tongku, mengakui Gunung Kinabalu, khususnya kawasan cerun sangat tidak stabil dengan sedikit gegaran susulan walaupun berskala kecil, berisiko menyebabkan runtuhan.

"Keadaan ini cukup membimbangkan kerana gempa bumi sentiasa berlaku walaupun majoritinya tidak dirasai masyarakat setempat, khususnya di Ranau dan Kota Belud. Ia menyebabkan kejadian runtuhan di Gunung Kinabalu tidak akan berhenti.

"Lereng gunung yang runtuh sangat luas. Tak boleh dibayangkan berapa jumlah sebenar keluasannya dan ia mungkin tidak boleh pulih dalam masa terdekat, sekali gus memberi kesan kepada kehidupan manusia di kawasan sekitar khususnya penduduk Kota Belud," katanya.

Gempa bumi pada 2015 menyebabkan 18 maut akibat dihempap runtuhan batu, iaitu empat malim gunung, dua pendaki tempatan, sembilan pendaki Singapura yang kebanyakannya murid sekolah serta masing-masing seorang pendaki China, Jepun serta Filipina.

Ditanya sejauh mana serius risiko runtuhan, Tongkul berkata, sesar atau patahan aktif di Gunung Kinabalu sentiasa bergerak hampir setiap hari antara 1 hingga 1.5 meter yang akan memberi kesan di kawasan cerun atau tanah tidak stabil sehingga berlaku tanah runtuh.

> Keadaan ini cukup membimbangkan kerana gempa bumi sentiasa berlaku walaupun majoritinya tidak dirasai masyarakat setempat"

Felix Tongku,
Pengarah Pusat Kajian Bencana Alam, Universiti Malaysia Sabah

> Beberapa lokasi di sepanjang laluan pendakian sejauh 8.5 kilometer terdedah kepada risiko jatuhan batuan"

Richard Soibi,
Bekas Pengerusi Persatuan Malim Gunung Kinabalu

Tanah, batu tak mencengkam

"Tanah dan batu yang tidak lagi mencengkam sejak kejadian 2015 yang diburukkan dengan gempa susulan hanya menunggu masa untuk jatuh ke kawasan lebih rendah khususnya Kota Belud. Bukan sahaja gempa kecil, hujan lebat di situ pun akan memberi kesan," katanya.

Sementara itu, Ketua Pengarah Jabatan Meteorologi Malaysia (MetMalaysia), Alui Bahari, berkata 905 gempa susulan direkodkan di sekitar Gunung Kinabalu, khususnya di Ranau sejak 2015 yang bermagnitud lemah ke sederhana, iaitu dari kurang 5.0 hingga 5.9.

BH difahamkan, satu gempa berskala sederhana iaitu magnitud 5.2 direkod dalam kejadian paling terbaru yang menggegarkan Gunung Kinabalu pada 8 Mac lalu dan boleh dirasai di beberapa kawasan termasuk di bandar raya ini.

Ia dipercayai disusuli sekurang-kurangnya enam gempa susulan pada magnitud 3.1 hingga 4.0 yang direkodkan di Ranau dalam tempoh beberapa hari selepas itu.

"Punca gempa bumi disebabkan pergerakan Garis Sesar Mensaban yang terletak berhampiran Gunung Kinabalu," kata Alui.

Gegaran demi gegaran diramal terus berlaku, terutama di sekitar Gunung Kinabalu, malah MetMalaysia mengesahkan banyak gegaran kecil bawah magnitud 2.0 dikesan, khususnya di Ranau, namun tidak direkodkan.

Sementara itu, United States Geological Survey (USGS) menyenaraikan lapan gempa bumi signifikan di Ranau bermula daripada magnitud 4.4 hingga 6.0 termasuk terbaru pada 8 Mac lalu, dalam tempoh tiga tahun sejak 5 Jun 2015.

Selain memberi kesan kepada struktur Gunung Kinabalu, sisa runtuhan akibat gempa sepanjang tiga tahun kebelakangan mengakibatkan kehidupan penduduk, sektor pertanian, perikanan dan pelancongan terjejas, selain mengubah keseimbangan alam khususnya aliran sungai.

Puncak gunung pada 2015

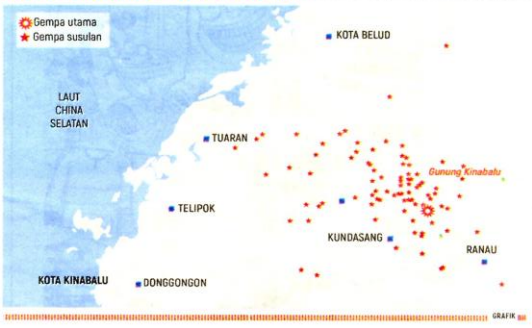
Keadaan terkini puncak gunung

Fakta nombor

1,500 HEKTAR
lereng Gunung Kinabalu dilapor runtuh akibat gempa berlarutan

18 MAUT
termasuk empat malim gunung, dua pendaki tempatan, sembilan pendaki Singapura pada gempa bumi 2015

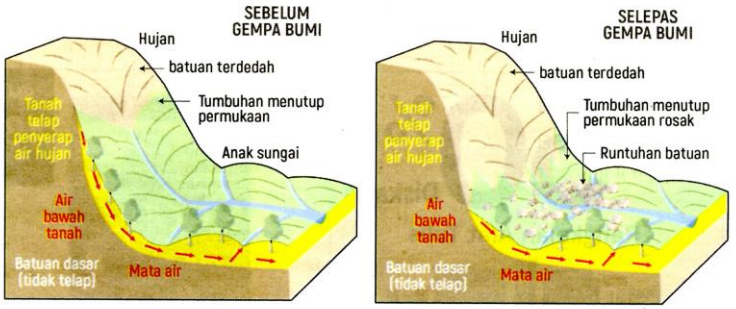
PUSAT GEMPA UTAMA DAN GEMPA SUSULAN



LAMPIRAN 9
BERITA HARIAN (EKSKLUSIF): MUKA SURAT 13
TARIKH: 23 DISEMBER 2018 (AHAD)

Antara laluan *yang digunakan untuk mendaki Gunung Kinabalu.*

KEADAAN GUNUNG KINABALU YANG MENGAKIBATKAN RUNTUHAN DENRIS KE KOTA BELUD



GRAFIK BH

Ancaman tanah runtuh jejas aktiviti pendakian

Ranau: Runtuhan berterusan di Gunung Kinabalu sejak tiga tahun lalu menyebabkan struktur serta muka bumi gunung itu berubah lebih curam, sekali gus menyebabkan pendakian lebih mencabar dan berisiko.

Cabaran laluan mendaki lebih curam tidak dapat dielak dan mesti ditempuhi ketika runtuhan baharu dikhuatiri boleh berlaku bila-bila masa kerana banyak struktur batuan kini longgar disebabkan gegaran susulan gempa bumi yang dilaporkan masih berterusan.

Bekas Pengerusi Persatuan Malim Gunung Kinabalu, Richard Soibi, berkata beberapa lokasi di sepanjang laluan pendakian sejauh 8.5 kilometer (km) terdedah kepada risiko jatuhan batuan, terutama jika berlaku gegaran besar di kawasan gunung.

Laluan asal tertimbus

"Dari Laban Rata ke *Rock Face* contohnya, pendaki perlu guna tangga sepanjang kira-kira 700 meter dan 300 meter selepas itu ada ancaman batuan jatuh. Laluan di kawasan puncak, dari Km 6.7 hingga Km 7 juga kawasan batuan jatuh jika gegaran kuat selain dua lokasi berhampiran Pondok Timpohon pada permulaan pendakian," katanya.

Beliau yang berpengalaman lebih 20 tahun mengiringi pendaki di Gunung Kinabalu, berkata laluan asal pendakian yang tertimbus akibat runtuhan batu, memaksa pembinaan laluan baharu di kawasan curam dan permatang bagi mengurangkan risiko kepada pendaki jika berlaku gempa.

"Di sepanjang laluan, ada papan tanda menasihatkan pendaki bergerak laju di lokasi yang dikenal pasti berisiko tinggi berlaku runtuhan batuan. Itulah antara cabaran terpaksa ditempuh pendaki Gunung Kinabalu ketika ini," katanya.

Pengerusi Persatuan Malim Gunung Kinabalu, Junaydie Sihan, mengakui gegaran kecil masih dapat dirasai di puncak gunung yang membimbangkan pendaki, namun malim sentiasa peka terhadap sebarang tanda bahaya yang boleh menjejaskan keselamatan pendaki.

Aktiviti pendakian kian aktif

Beliau berkata, pembukaan laluan baharu dikenali Ranau Trail sejak awal 2016 menyediakan pemandangan indah kepada pendaki dan ia sedikit sebanyak mengurangkan kesahan mengenai ancaman gempa bumi.

"Apabila melihat pemandangan dari atas gunung yang cantik, kita terlupa sekejap ancaman gegaran akibat gempa bumi. Ia sebenarnya memberi kebaikan supaya pendaki lebih yakin dan dapat meneruskan pendakian hingga ke puncak," katanya.

Selain Ranau Trail, satu lagi laluan baharu dikenali Kota Belud Trail turut dibina, namun laluannya lebih mencabar dan banyak menggunakan tali serta hanya digunakan sebagai laluan pilihan jika berlaku runtuhan di Ranau Trail.

Secara umum, Junaydie yang berpengalaman tujuh tahun sebagai malim gunung, berkata keyakinan pendaki kini pulih sepenuhnya berdasarkan jumlah tempahan diterima sepanjang tahun sejak pendakian dibenarkan semula.

Selain mengambil pelbagai langkah keselamatan di sepanjang laluan pendakian, Pasukan Mencari dan Menyelamat Gunung (MOSAR) turut ditubuh dengan kerjasama Jabatan Bomba dan Penyelamat Malaysia, menjadi pasukan pertama di negara ini bagi memantau keselamatan pendaki.

Laporan BH *pada 6 Jun 2015.*

LAMPIRAN 10
BERITA HARIAN (MASYARAKAT): MUKA SURAT 5
TARIKH: 23 DISEMBER 2018 (AHAD)

Tahun ini, saya sekali lagi mendapat tawaran ke UTHM sekali dengan surat pemberian dermasiswa TNB"

Heena Niesha Bella M Ravindran

Segala-galanya berubah apabila saya ditawarkan Dermasiswa MyBF walaupun tidak pernah memohon"

Ken Anak Abam

Saya bersyukur diberi peluang meneruskan pengajian dan dipilih menerima Dermasiswa TNB"

Muhammad Adib Afham Abdullah

Saya ingin capai impian sambung pelajaran peringkat doktor falsafah dan jadi pensyarah suatu hari nanti"

Nur Hanis Suraya Noorsharimi

Selepas dapat penjelasan daripada YTN, saya bersyukur dan ambil peluang ini bantu ibu bapa saya"

Leong Kay Yau

Info

Dermasiswa TNB

- **Sejak 1993,** TNB menerusi YTN belanja lebih RM1 bilion bantu pelajar melalui biasiswa dan pinjaman boleh ubah kepada 11,000 pelajar cemerlang.
- **Tahun ini,** TNB perkenalkan Dermasiswa My Brighter Future (Dermasiswa MyBF) bantu pelajar kurang berkemampuan
- **Taja** 1,000 penuntut bagi sesi kemasukan Semester 1, 2018/2019 IPTA di tujuh universiti awam

MyBF buka peluang lanjut pengajian

Penerima dermasiswa tidak terikat kontrak, tak perlu bayar balik

Oleh Nor Affizar Ibrahim
affizar@bh.com.my

Kuala Lumpur

"Bapa meninggal ketika saya berusia 12 tahun dan sejak itu, ibu yang membesarkan kami enam beradik. Apabila mendapat tawaran melanjutkan pelajaran ke Universiti Teknologi Tun Hussein Onn Malaysia (UTHM) tahun lalu, saya terpaksa melupakan tawaran itu kerana ibu tidak mampu menyediakan wang untuk menampung pengajian saya," kata Heena Niesha Bella M Ravindran.

Heena antara pelajar bijak yang mendapat keputusan cemerlang dalam peperiksaan, tetapi terpaksa melupakan cita-citanya untuk melanjutkan pelajaran ke peringkat lebih tinggi kerana kekangan kewangan keluarga.

Bagaimanapun, hasrat meneruskan pelajaran ke menara gading akhirnya tercapai apabila menerima tawaran Dermasiswa *My Brighter Future* (MyBF) yang diperkenalkan Tenaga Nasional Berhad (TNB) melalui Yayasan Tenaga Nasional (YTN). Heena kini pelajar Ijazah Sarjana Muda Kejuruteraan Awam dengan kepujian.

"Tahun ini, saya sekali lagi mendapat tawaran ke UTHM sekali dengan surat pemberian dermasiswa TNB. Tentu sahaja saya gembira mendapat peluang ini dan berharap mampu mencapai kejayaan demi membalas jasa dan pengorbanan ibu," katanya.

Kekangan kewangan keluarga juga antara masalah dihadapi Ken Anak Abam untuk menyambung pelajaran kerana ibu bapanya tidak bekerja.

"Segala-galanya berubah apabila saya ditawarkan Dermasiswa MyBF walaupun tidak pernah memohon. Saya akan buktikan kepada TNB apa yang mereka berikan kepada saya, akan saya kembalikan kepada mereka jika diberi peluang berkhidmat kelak," katanya.

Kegembiraan turut dirasai Muhammad Adib Afham Abdullah apabila mendapat tahu ditawarkan Dermasiswa MyBF. Jika tidak, dia perlu membuat pinjaman pelajaran untuk menampung kos pengajiannya.

"Saya bersyukur diberi peluang meneruskan pengajian dan dipilih menerima Dermasiswa TNB kerana ia membantu saya membiayai kos sara hidup dan belajar sepanjang pengajian," katanya.

Bagi anak sulung daripada tujuh beradik, Nur Hanis Suraya Noorsharimi, berazam untuk tidak sia-siakan peluang diberikan kerana sedar dirinya memikul tanggungjawab besar untuk menjadi contoh yang baik untuk adiknya.

"Saya ingin mencapai impian menyambung pelajaran ke peringkat doktor falsafah dan menjadi pensyarah suatu hari nanti," katanya.

Pelajar, Leong Kay Yau, berkata pada mulanya berasa sangsi melihat surat tawaran MyBF kerana tidak membuat permohonan sebelum ini.

"Selepas mendapat penjelasan daripada pihak YTN, saya bersyukur dan ingin mengambil peluang ini membantu ibu bapa saya di kampung. MyBF akan membantu sepanjang empat tahun pengajian," katanya.

Roslan Ab Rahman

Ringankan bebanan

Tidak dapat dinafikan, aset terpenting untuk mengubah nasib keluarga adalah pendidikan, namun faktor kemiskinan keluarga dan sukar mendapatkan pembiayaan pengajian sering kali menjadi kekangan untuk menuntut ilmu hingga ke puncak menara gading dan akhirnya cita-cita murni itu tidak kesampaian.

TNB melalui YTN, mula memperkenalkan bantuan biasiswa kepada pelajar sejak 1993 dan membelanjakan lebih RM1 bilion untuk 11,000 penerima sehingga kini.

Tahun ini buat julung kali, TNB memperkenalkan Dermasiswa MyBF khusus untuk membantu 1,000 pelajar mendaftar bagi kemasukan semester pertama 2018/2019 di tujuh universiti awam.

Shaari Md Nor

TNB bekerjasama dengan Kementerian Pendidikan Malaysia (KPM) untuk menyelaras dengan mengenal pasti calon layak daripada keluarga berpendapatan rendah.

KPM membuat padanan dengan pangkalan data e-Kasih yang dikendalikan Unit Pelaksanaan, Jabatan Perdana Menteri (JPM).

Pengarah YTN, Datuk Dr Shaari Md Nor, berkata Dermasiswa MyBF ini diberikan tanpa perlu melalui proses ketat seperti temu duga hingga ada sebilangan pelajar yang terkejut apabila menerima surat dermasiswa walaupun tidak membuat sebarang permohonan.

"Mereka ini terpilih daripada pangkalan data UPU dan keutamaan adalah kepada mereka yang mendaftar dengan e-Kasih. MyBF ini adalah satu-satunya penajaan dermasiswa dan tiada organisasi korporat lain yang memberi dermasiswa sebegini," katanya.

Dermasiswa luar biasa

Setiap penerima diberi RM10,000 setiap tahun meliputi yuran pengajian, penginapan, elaun sara hidup dan sebagainya sehingga tamat tempoh pengajian mereka.

Afandi Ahmad

Dermasiswa ini adalah tambahan kepada biasiswa dan pinjaman boleh ubah yang ditawarkan setiap tahun dengan nilai RM100 juta ketika ini.

Tahun hadapan, TNB merancang untuk menaja 4,000 penuntut lagi dan memperluaskan Dermasiswa MyBF kepada universiti awam lain.

Timbalan Naib Canselor, Hal Ehwal Pelajar & Alumni, Universiti Tun Hussein Onn Malaysia, Profesor Madya Dr Afandi Ahmad, berkata bantuan kewangan yang diberikan TNB ini sesuatu yang luar biasa kerana penerima tidak perlu membayar balik dan tidak terikat dengan kontrak.

"Saya harap pelajar yang menerima dermasiswa ini akan menyumbang kepada masyarakat apabila tamat pengajian nanti," katanya.

Sementara itu, Ketua Pegawai Korporat TNB, Datuk Wira Roslan Ab Rahman, berkata menerusi program *My Brighter Future* ini pelajar yang menerima tajaan boleh memberi tumpuan kepada pelajaran, mencapai kejayaan dan akhirnya berupaya membawa diri dan keluarga kepada kehidupan yang lebih baik.

LAMPIRAN 11
NEW STRAITS TIMES (OPINION): MUKA SURAT 14
TARIKH: 22 DISEMBER 2018 (SABTU)

HOLISTIC APPROACH

TAKING ON FLOODS WITH A GOTONG-ROYONG SPIRIT

There have been improvements in some states in flood management, but more needs to be done, writes **LEONG CHEE KHUAN**

Flash floods in Ampang last month caused a gridlock in Jalan Pandan Indah. Urban and suburban areas, such as Johor, Kuala Lumpur, Selangor and Penang, experience flash floods during the monsoon season. FILE PIC

THE monsoon rain and ensuing floods have become part and parcel of everyday life of Malaysians. Cars brought to a standstill during traffic as they find themselves submerged in flood waters. People scrambling to save their property and belongings from being damaged by the encroaching waters.

Amidst the frustration, everyone has a single thought in mind — "I can't wait for all this to be over." People no longer want to tolerate flooding as an annual hindrance. Malaysia has seen rapid industrialisation and urbanisation, and the increase in extreme weather events, like floods, have taken a toll on the economy and infrastructure.

The Belgium-based Centre for Research on the Epidemiology of Disasters (CRED) reported that Malaysia experienced 38 floods in the last two decades, which have affected more than 770,000 people, killed 148, and caused more than US$1.4 billion (RM5.84 billion) in damages.

These numbers do not include other smaller floods — if one follows the news today, it is easy to see that the occurrences are more frequent than before, and the damage far greater.

That said, we have yet to see the worst. A recent United Nations report warned that the global warming threshold of 1.5° Celsius could be breached as early as 2030, if warming trends continue. This will have dire consequences for many countries, especially low-lying areas that are vulnerable to sea level rise and severe floods from intense storms.

In recent years, the government has pumped billions of ringgit into flood mitigation initiatives, and one of the most notable projects is the Stormwater Management and Road Tunnel (Smart) in Kuala Lumpur.

There have been improvements in some states in flood management, but more needs to be done. While the government plays a crucial role in the country's flood management, we all have a part to play, too. We need to address this issue with a greater "gotong-royong" spirit — where businesses, organisations and citizens come together to tackle extreme weather events over the next decade.

Gotong-royong refers to the interconnectedness of a community that lives together — how they are deeply invested in one another's wellbeing, sharing not only joys, but also burdens. Malaysia presents a very unique challenge. The country experiences a range of urban, coastal and river flooding across its states, with each situation calling for specific approaches.

For example, urban and suburban areas such as Johor, Kuala Lumpur, Selangor and Penang experience flash floods during the monsoon season, while the East Coast states, particularly Kelantan and Terengganu, have serious flooding because of river overflow due to heavy rainfall.

Other challenges arise for each state, as well. For example, state governments have claimed that illegal land encroachment on river reserve land — illegal structures built along, or on river reserves — are obstructing the completion of flood mitigation projects.

Taking into consideration the nuances behind Malaysia's flood issues, the government can benefit by working with solution providers when it comes to flood management projects. Industry players can introduce innovative solutions, and bring unique expertise to the table.

It is easy to assume that we need large, infrastructural-scale thinking to cope with a problem as daunting as floods. But if everyone plays their part, the public can empower themselves to play an equally important role.

One key area is maintaining cleanliness and reducing litter in one's surroundings. Rubbish found in drains and rivers are one of the main reasons behind increased incidences of flooding in some states, greatly impacting those living in low-lying areas.

One can also actively take care of the cleanliness of rivers and drains (to prevent clogging) by participating in volunteer groups to clean up the local surroundings and raising awareness on the need to keep our rivers and drains clean.

Other ways include households installing rainwater-harvesting systems to collect and store rainwater. This not only acts as a preventive measure against flooding, but each house can use rainwater as an alternative water source, combating future water problems.

Looking ahead, climate change is expected to intensify, which would subsequently raise flood risks all around the world. We can expect the monsoon season to hit Malaysia with greater ferocity than ever before in the years to come.

To build our resilience against the next round of floods, consider a more holistic approach, through increased collaboration and resource-sharing between government agencies, the private sector and the public — in keeping with the "gotong royong" spirit.

In recent years, the government has pumped billions of ringgit into flood mitigation initiatives, and one of the most notable project is the Stormwater Management and Road Tunnel (Smart) in Kuala Lumpur.

The writer is area managing director for South Asia and general manager of a world leader in the manufacturing and supplying of pumps and pumping systems

LAMPIRAN 12
BERITA HARIAN (BISNES): MUKA SURAT 21
TARIKH: 22 DISEMBER 2018 (SABTU)

Bil elektrik dijangka naik tahun depan

EIF serap kenaikan kos habis 2019 bakal beri kesan pengguna domestik

Oleh Amir Hisyam Rasid
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Pengguna dijangka bakal berdepan kenaikan bil elektrik berikutan Dana Industri Elektrik (EIF), yang digunakan untuk menyerap kenaikan kos dalam bentuk surcaj, habis tahun depan.

Beberapa penganalisis dalam sektor tenaga, yang dihubungi oleh *Bisnes NSTP*, mempercayai bahawa dana itu telah berkurangan.

Senario ini juga dilihat memberi kesan kepada pengusaha yang akan menanggung surcaj bulanan elektrik lebih tinggi iaitu sebanyak 2.55 sen/Kwh pada tahun depan mulai Mac hingga Jun, yang mungkin menyebabkan kos tambahan kepada konsumer akhir.

Surcaj baru bagi separuh pertama tahun depan lebih tinggi berbanding surcaj semasa iaitu 1.35sen/Kwh memandangkan Suruhanjaya Tenaga meluluskan Tenaga Nasional Bhd (TNB) untuk meneruskan mekanisme Ketidakseimbangan Pelepasan Kos Bahan Api (ICPT).

Buat masa ini, pengguna domestik tidak terjejas secara langsung kerana mereka disubsidi oleh EIF.

"Dana itu akan kehabisan tidak lama lagi, kemungkinan pada tahun depan. Ini akan memberi kesan kepada pengguna domestik," kata dua penganalisis kepada Bisnes NSTP.

Seorang lagi penganalisis berkata, industri perkilangan yang banyak menggunakan mesin dalam pengeluaran mereka mungkin terpaksa menaikkan surcaj yang lebih tinggi kepada pengguna sekiranya peningkatan itu cukup besar.

Tingkat kecekapan

Ketua Penyelidikan Rakuten Trade, Kenny Yee berkata, bagaimanapun terdapat perancangan untuk meliberalisasikan penghantaran dan bekalan tenaga, yang akan memberi kesan positif bagi sektor itu.

"Langkah positif ini akan meningkatkan kecekapan. Hasilnya, kos elektrik akan berkurangan," katanya.

Kos tidak seimbang bagi tempoh antara Julai hingga Disember tahun ini dicatatkan sebanyak RM1.8 bilion kepada 3.43sen/Kwh.

Bagaimanapun, MIDF Research berkata, tidak semua kos ketidakseimbangan itu akan melalui mekanisme ICPT pada separuh pertama tahun depan, mengambil kira penyelarasan kos dan hasil oleh TNB.

Firma Penyelidikan itu berkata, selepas penyelarasan tidak seimbang yang membabitkan kos sehingga RM948 juta, iaitu kepada kadar surcaj 2.15sen/Kwh sebulan bagi enam bulan pertama tahun depan, lebih tinggi 1.35sen/Kwh berbanding sekarang.

"Untuk Januari hingga Februari 2019, surcaj ICPT kekal pada 1.35sen/Kwh, sementara bermula Mac hingga Jun, surcaj ICPT akan meningkat kepada 2.55sen/Kwh.

"Keseluruhannya, kadar surcaj haruslah pada kadar 2.15sen/Kwh sebulan," kata firma penyelidikan itu.

"Terdapat perancangan untuk meliberalisasikan penghantaran dan bekalan tenaga, yang akan memberi kesan positif bagi sektor itu"

Kenny Yee,
Ketua Penyelidikan Rakuten Trade

LAMPIRAN 13
KOSMO! (NEGARA): MUKA SURAT 3
TARIKH: 24 DISEMBER 2018 (ISNIN)

Faktor utama terhasil gelombang tsunami di Selat Sunda

Letusan dalam kerak bumi

Oleh RIDZAUDDIN ROSLAN

KUALA LUMPUR – Letusan kepingan benua di bawah dasar laut ekoran letupan gunung berapi Anak Krakatau disifatkan sebagai faktor utama terhasilnya gelombang tsunami yang membadai sekitar pantai di Selat Sunda, Indonesia malam kelmarin.

MOHAMAD ALI

Mantan Ketua Jabatan Geologi Universiti Malaya (UM), Prof. Madya Datuk Dr. Mohamad Ali Hasan berkata, letusan dalam kerak bumi itu menyebabkan air laut ditolak ke daratan berikutan tercetusnya gelombang ombak besar.

"Penolakan itu mungkin disebabkan oleh tenaga kuat yang terhasil susulan berlakunya letusan di bawah laut dan seterusnya membentuk gelombang tsunami untuk menolak lautan ke arah daratan.

"Selain itu, faktor air pasang besar juga dilihat menjadi pemangkin kepada peningkatan kekuatan gelombang, sekali gus menyebabkan peningkatan aliran air laut ke arah pantai serta daratan," katanya kepada *Kosmo!* ketika diminta mengulas laporan Badan Meteorologi Klimatologi dan Geofisika Indonesia (BMKG) yang menyifatkan kemungkinan kejadian ombak tsunami disebabkan oleh pergerakan tanah di bawah dasar laut dan fenomena air pasang.

Ketika ditanya mengenai kemungkinan Malaysia akan berdepan dengan kejadian tsunami, Mohamad Ali berkata, kita perlu bersyukur memandangkan kedudukan negara yang agak jauh dengan kawasan lilitan api.

"Bagaimanapun, kekerapan kejadian letupan gunung berapi di Indonesia sejak 20 tahun kebelakangan ini mungkin menyebabkan kawasan di sekitar perairan Malaysia turut merasai kesannya dengan lebih kerap," ujarnya.

ANGGOTA penyelamat mengangkat mayat salah seorang mangsa tsunami yang berjaya ditemui di Carita, Indonesia semalam.

LAMPIRAN 14
KOSMO! (DUNIA): MUKA SURAT 42
TARIKH: 24 DISEMBER 2018 (ISNIN)

Gunung berapi Indonesia aktif sejak Jun lepas, dipantau lebih sedekad

Anak Krakatau semakin 'marah'

JAKARTA – Gunung berapi yang mencetuskan tsunami di Indonesia lewat kelmarin muncul dari laut di sekitar gunung legenda, Krakatau 90 tahun lalu dan berada di bawah senarai pengawasan letusan sejak sedekad lalu.

Gunung berapi tersebut, Anak Krakatau aktif sejak Jun lalu dan sekali sekala menghamburkan abu tinggi ke udara, manakala pada Oktober lalu pula, sebuah bot pelancong hampir ditimpa bom lahar dari gunung berapi itu

Pakar-pakar berkata, Anak Krakatau muncul sekitar tahun 1927 di kawah Krakatau, sebuah pulau gunung berapi yang meletus pada tahun 1883.

Apabila gunung berapi Krakatau meletus pada 27 Ogos 1883, ia menghamburkan asap dan abu setinggi lebih 20 kilometer ke udara dalam siri letusan dahsyat yang boleh didengari hingga ke Australia dan Mauritius, pada jarak 4,500 kilometer.

Kawasan di sekitarnya menjadi gelap seperti malam selama dua hari dan lebih 36,000 orang terkorban dalam bencana alam itu.

Anak Krakatau muncul sebagai sebuah pulau kecil, manakala ketinggiannya kini mencapai sekitar 300 meter dari paras laut.

Sejak 'kelahirannya', Anak Krakatau berada dalam fasa 'letusan separa berterusan' dan semakin membesar selepas setiap letusan. Pakar-pakar gunung berapi berkata, letusan gunung berapi itu berlaku setiap dua hingga tiga tahun.

"Kebanyakan letusan itu adalah kecil pada skala letusan kuat gunung berapi, manakala terdapat juga letusan yang mencetuskan aliran lahar," kata ahli vulkanologi daripada Universiti Monash, Ray Cas.

Tiada manusia tinggal di pulau kecil itu tetapi puncak Anak Krakatau popular dalam kalangan pelancong dan merupakan kawasan kajian utama kepada ahli-ahli vulkanologi.

Pulau kecil yang menempatkan Anak Krakatau itu juga merupakan sebahagian daripada Taman Negara Ujung Kulon. – AFP

GAMBAR IHSAN BASARNAS

GAMBAR yang dirakam pada pertengahan tahun ini menunjukkan gunung berapi Anak Krakatau meletus.

LAMPIRAN 15
NEW STRAITS TIMES (WORLD): MUKA SURAT 62
TARIKH: 24 DISEMBER 2018 (ISNIN)

NO WARNING

VOLCANO TSUNAMI KILLS 222 IN INDONESIA

Hundreds more injured after wave triggered by volcano slams into beaches around Sunda Strait

CARITA

A VOLCANO-TRIGGERED tsunami has left at least 222 people dead and hundreds more injured after slamming without warning into beaches around Indonesia's Sunda Strait, officials said yesterday, voicing fears that the toll would rise further.

Hundreds of buildings were destroyed by the wave, which hit the coast of southern Sumatra and the western tip of Java about 9.30pm on Saturday after a volcano known as the "child" of Krakatoa erupted, national disaster agency spokesman Sutopo Purwo Nugroho said.

Dramatic video posted on social media showed a wall of water suddenly crashing into a concert by pop group Seventeen, hurling band members off the stage and then flooding into the audience.

In a tearful Instagram post, frontman Riefian Fajarsyah said the band's bassist and road manager had been killed and his wife was missing.

Search-and-rescue teams were scouring rubble for survivors, with 222 people confirmed dead, 843 people injured and 28 missing, Nugroho said.

Tsunamis triggered by volcanic eruptions are relatively rare, caused by the sudden displacement of water or "slope failure", according to the International Tsunami Information Centre.

Unlike those triggered by earthquakes, they give authorities no time to warn residents of the impending threat.

The destructive wave left a trail of uprooted trees and debris strewn across beaches. A tangled mess of corrugated steel roofing, timber and rubble was dragged inland at Carita beach, a popular spot for day-trippers on the west coast of Java.

Photographer Oystein Andersen described how he was caught up in the disaster while on the beach taking photos of Anak Krakatoa.

"I suddenly saw a big wave," he wrote on his Facebook page.

"I had to run, as the wave passed the beach and landed 15-20m inland. (The) next wave entered the hotel area where I was staying and downed cars on the road behind it."

Asep Perangkat said he was with his family when the wave surged through Carita, carving a swathe of destruction.

"Cars were dragged about 10m and so were containers," Perangkat said.

"Buildings on the edge of the beach were destroyed, trees and electric poles fell to the ground."

In Lampung province, on the other side of the strait, Lutfi Al Rasyid said he fled the beach in Kalianda city, fearing for his life.

"I could not start my motorbike so I left it and I ran. I just prayed and ran as far as I could," the 23-year-old said.

Kathy Mueller from the International Federation of Red Cross and Red Crescent Societies said the toll was likely to rise as the conditions on the ground became clearer.

People grieving at a health facility where the bodies of tsunami victims are collected, in Pandeglang, Banten province, yesterday.
AGENCY PIX

People carrying an injured person into an ambulance in Banten province yesterday.

A women crying as she reads a list of victims killed in a tsunami at Carita in Pandeglang, Banten province, yesterday.

LAMPIRAN 16
NEW STRAITS TIMES (WORLD): MUKA SURAT 63
TARIKH: 24 DISEMBER 2018 (ISNIN)

A man standing among ruins at Carita beach in Pandeglang, Banten province, yesterday.

"The situation, and the death toll, will remain fluid over the next days and even weeks," she said.

Teams of aid workers were helping to evacuate the injured and bring in clean water, tarpaulins and provide shelter, she added, saying the group was preparing for the possibility of diseases breaking out in the tsunami zone.

Anak Krakatoa, which forms a small island in the Sunda Strait between Java and Sumatra, emerged around 1928 in the crater left by Krakatoa, which erupted in 1883 and killing at least 36,000 people.

"The cause of the undersea landslide was due to volcanic activity of Anak Krakatoa, which coincided with a high tide due to the full moon," Nugroho said in Yogyakarta.

He also said the death toll would likely increase.

Authorities initially claimed the wave was not a tsunami, but instead a tidal surge and urged the public not to panic.

Nugroho later apologised for the mistake on Twitter, saying because there was no earthquake it had been difficult to ascertain the cause of the incident early on.

"If there is an initial error, we're sorry," he wrote.

The wave swamped parts of the coast around the Sunda Strait, leaving at least 164 people dead in the worst affected Pandeglang district on Java's western tip. Large numbers of casualties were recorded at two hotels in the area.

Eleven people died further north in Serang, while 48 were killed in South Lampung on Sumatra island.

"This number is predicted to increase because not all victims have been successfully evacuated, not all health centres have reported victims and not all locations have got complete data," Nugroho said.

Heavy equipment was being transported to badly hit areas to help search for victims and evacuation posts and public kitchens were being set up for evacuees, he added.

According to Indonesia's geological agency, Anak Krakatoa had been showing signs of heightened activity for days, spewing plumes of ash thousands of metres into the air.

The volcano erupted again just after 9pm on Saturday, the agency said.

Indonesia is one of the most disaster-prone nations on Earth due to its position straddling the so-called Pacific "Ring of Fire", where tectonic plates collide.

Most recently in the city of Palu on Sulawesi island, a quake and tsunami in September killed thousands of people. **AFP**

VOLCANO TSUNAMI HITS INDONESIA

Source: National disaster agency ©AFP

Angry 'Child of Krakatoa' rumbles on

JAKARTA: The volcano that triggered a deadly tsunami in Indonesia on Saturday emerged from the sea around the legendary Krakatoa 90 years ago and has been on a high-level eruption watchlist for the past decade.

Anak Krakatoa (the "Child of Krakatoa") has been particularly active since June, occasionally sending massive plumes of ash high into the sky and in October, a tour boat was nearly hit by lava bombs from the erupting volcano.

Experts say Anak Krakatoa emerged around 1928 in the caldera of Krakatoa, a volcanic island that violently erupted in 1883.

With subsequent lava flows, it grew from a submarine setting to become a small volcanic island, with the cone now standing at an altitude of around 300m above sea level.

Since its birth, Anak Krakatoa has been in a "state of semi-continuous eruptive activity", growing bigger as it experiences eruptions every two to three years, volcanology professor Ray Cas from Monash University in Australia said.

"Most of the eruptions are relatively small on the scale of explosive eruptions... and there's also eruptions that produce lava flows," he added.

Cas said the latest event appeared to be "a relatively small explosive eruption" but could then have triggered or coincided with a submarine event like a landslide or earthquake, causing the deadly tsunami.

No one lives on the island, but the peak is popular with tourists and is a major study area for volcanologists.

The island is part of the Ujung Kulon National Park, "demonstrating on-going evolution of geological processes", since the Krakatoa eruption, United Nations Educational, Scientific and Cultural Organisation says on its World Heritage site listing for the area.

When Krakatoa erupted on Aug 27, 1883, it shot a column of ash more than 20km into the air in a series of powerful explosions that were heard in Australia and up to 4,500km away near Mauritius.

The massive cloud of ash plunged the area into darkness for two days. The dust gave rise to spectacular sunsets and sunrises around the world the following year and disrupted weather patterns for years.

The tsunami triggered by the eruption killed more than 36,000+ people in one of the world's worst natural disasters.

Indonesia's proximity to the junction of three continental plates, which jostle under immense pressure, makes it particularly vulnerable to earthquakes and eruptions.

The archipelago nation has nearly 130 active volcanoes, forming part of the Pacific "Ring of Fire", an arc of intense seismic activity that stretches from quake-prone Japan through Southeast Asia and across the Pacific basin. **AFP**

A long exposure photo showing lava erupting from Mount Anak Krakatoa volcano as seen from Rakata Island in Lampung province.

LAMPIRAN 17
THE STAR (WORLD): MUKA SURAT 18
TARIKH: 24 DISEMBER 2018 (ISNIN)

Wrath of nature: Residents inspecting damaged buildings in the town of Carita in Banten province, Java, after the area was hit by the tsunami. — AFP

Deadly tsunami hits Indonesia again

Hundreds dead and scores missing after eruption causes underwater landslide

PANDEGLANG: A tsunami killed at least 222 people and injured hundreds on the Indonesian islands of Java and Sumatra following an underwater landslide believed caused by the erupting Anak Krakatau volcano, officials and media have announced.

Hundreds of homes and other buildings were "heavily damaged" when the tsunami struck, almost without warning, along the rim of the Sunda Strait late on Saturday, spokesman for the disaster mitigation agency Sutopo Purwo Nugroho said yesterday.

Thousands of residents were forced to evacuate to higher ground.

By 4pm yesterday, the disaster agency had raised the death toll to 222 from 168, with 843 injured and 28 missing.

TV images showed the moment when the tsunami hit the beach and residential areas in Pandeglang on Java island, dragging with it victims, debris, and large chunks of wood and metal.

Coastal residents reported not seeing or feeling any warning signs, such as receding water or an earthquake, before waves of 2m-3m washed ashore, according to media.

Authorities said a warning siren went off in some areas.

The timing of the tsunami, over the Christmas holiday season, evoked memories of the Indian Ocean tsunami triggered by an earthquake on Dec 26 in 2004, which killed 226,000 people in 13 countries, including more than 120,000 in Indonesia.

All that is left: A woman carrying a sarong that she managed to salvage after her house was damaged by the tsunami. — AP

Aystein Lund Andersen, a Norwegian holidaymaker, was in Anyer town with his family when the tsunami struck.

"I had to run as the wave passed the beach and landed 15-20m inland. The next wave entered the hotel area where I was staying and downed cars on the road behind it," he said on Facebook.

"Managed to evacuate with my family to higher ground through forest paths and villages, where we are taken care of by the locals."

Authorities warned residents and tourists in coastal areas around the Sunda Strait to stay away from beaches and a high-tide warning remained in place through Christmas day.

"Those who have evacuated, please do not return yet," said Rahmat Triyono, an official at the Meteorology, Climatology and Geophysics Agency (BMKG).

President Joko Widodo, who is running for re-election in April, said on Twitter that he had "ordered all relevant government agencies to immediately take emergency response steps, find victims and care for the injured".

Vice-President Jusuf Kalla said the death toll would "likely increase".

The tsunami was the latest in a series of tragedies that have struck Indonesia this year.

Successive earthquakes flattened parts of the tourist island of Lombok and a double quake-and-tsunami killed thousands on Sulawesi island.

Nearly 200 people died when a Lion Air passenger plane crashed into the Java Sea in October.

Rescue workers and ambulances were finding it difficult to reach affected areas because some roads were blocked by debris from damaged houses, overturned cars and fallen trees.

The western coast of Banten province in Java was the worst-hit area, Nugroho said.

He said at least 35 people were reported dead in Lampung in southern Sumatra.

The waves washed away an outdoor stage where a local rock band was performing in Tanjung Lesung in Banten province, a popular tourist getaway not far from the capital, Jakarta, killing at least one musician. Others were missing.

About 250 employees of the state utility company PLN had gathered in Tanjung Lesung for an end-of-year event, said company spokesman I Made Suprateka.

At least seven people were killed, and 89 were missing, he said.

Dramatic TV footage showed the moment when the tsunami hit a concert at the event and washed away the stage where the band, Seventeen, was performing.

One member died and several others are missing.

Police officers rescued a young boy who was trapped in a car buried under fallen trees and rubble, according to a video of his rescue posted on Twitter by the Indonesian National Police, who did not give any information as to the boy's identity.

Officials are trying to determine the exact cause of the disaster.

Anak Krakatau, an active volcano roughly halfway between Java and Sumatra, has been spewing ash and lava for months. It erupted again just after 9pm on Saturday and the tsunami struck at around 9.30pm, according to BMKG.

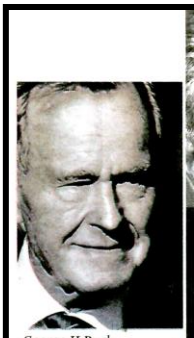
The tsunami was caused by "an undersea landslide resulting from volcanic activity on Anak Krakatau" and was exacerbated by abnormally high tide because of the full moon, Nugroho said.

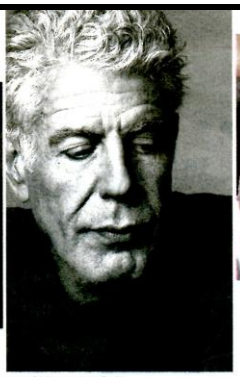
Ben van der Pluijm, an earthquake geologist and a professor in the University of Michigan, said the tsunami could have been caused by a "partial collapse" of Anak Krakatau.

"Instability of the slope of an active volcano can create a rock slide that moves a large volume of water, creating local tsunami waves that can be very powerful. This is like suddenly dropping a bag of sand in a tub filled with water," he said. — Reuters

Watch the video
thestartv.com

LAMPIRAN 18
BERITA HARIAN (DUNIA): MUKA SURAT 40
TARIKH: 23 DISEMBER 2018 (AHAD)


George H Bush


Anthony Bourdain


Stan Lee

PEMERGIAN SELEBRITI SEPANJANG 2018

Dunia fizik hilang tokoh tersohor

Teori lohong hitam warisan Stephen Hawking kepada bidang sains

London

"Isaac Newton dikenang kerana penjelasan dan jawapannya, tetapi Stephen Hawking dikenang dengan persoalan yang dikemukakannya," kata pemenang Hadiah Nobel (Fizik), Prof Kip Stephen Thorne ketika mengulas mengenai teman baiknya, Hawking pada majlis penghormatan yang berlangsung di gereja Westminster Abbey pada Jun lalu.

Hawking, 76, ahli fizik terkemuka dunia kelahiran Cambridge, England itu meninggal dunia pada 14 Mac lalu, selepas mengubah persepsi dunia mengenai alam semesta, lohong hitam dan ruang waktu.

Antara selebriti tersohor lain yang meninggal sepanjang tahun ini adalah chef popular dan penulis, Anthony Bourdain (55 tahun), bekas Presiden Amerika Syarikat, George H Bush (94), pengasas komik Marvel, Stan Lee (94), bekas bintang Hollywood, Burt Reynolds (82), Aretha Franklin (76) dan senator AS, John McCain (81).

Bakal dikenang sebagai saintis paling tersohor pada zamannya, Hawking juga disifatkan sebagai seorang pengarang prolifik, berikutan pelbagai hasil penulisannya mengenai asal usul dan pengembangan alam semesta.

Semuanya berpunca daripada keinginannya untuk memberi penjelasan yang baik dan lengkap kepada pembaca yang tidak mempunyai latar saintifik.

Malah, buku tulisannya, *A Brief History of Time* yang diterbitkan pada 1988 berjaya dijual melebihi 10 juta unit di seluruh dunia, selain sudah diterjemahkan ke dalam 35 bahasa.


Stephen Hawking

Buku lain tulisan Hawking yang mendapat jualan terbaik, termasuk *The Universe in a Nutshell* dan *A Briefer History of Time*.

Wahlberg gagal

Thorne pada majlis penghormatan itu juga berkata, selama 40 tahun ahli fizik di seluruh dunia mencari jawapan kepada soalan yang diutarakan oleh Hawking.

"Mungkin sumbangan atau warisan yang ditinggalkan oleh Stephen Hawking bukanlah hasil penemuannya yang luar biasa, tetapi kesan hasil kerjanya terhadap masa depan teori dalam bidang fizik," kata Thorne.

Mayat mendiang Hawking disemadikan di Westminster Abbey di tengah-tengah pusara dua tokoh terkemuka dalam bidang sains, Isaac Newton (1727) dan Charles Darwin (1882). **AGENSI**

LAMPIRAN 19
MINGGUAN MALAYSIA (LUAR NEGARA): MUKA SURAT 72
TARIKH: 23 DISEMBER 2018 (AHAD)

Kawah Korolev planet Marikh dilitupi ais tebal

PARIS 22 DIS. – Satelit Mars Express kendalian Agensi Angkasa Eropah (ESA) yang mengorbit bahagian utara planet Marikh berjaya merakam keadaan terkini kawah Korolev yang mempunyai keluasan selebar 82 kilometer, kawah paling besar di 'planet merah' tersebut.

Portal *Daily Mail* melaporkan, bertambah menarik, imej yang dihantar ke Bumi menunjukkan kawah tersebut dilitupi ais.

Menurut ESA, ais di kawah berkenaan dikatakan setebal 1.8 kilometer.

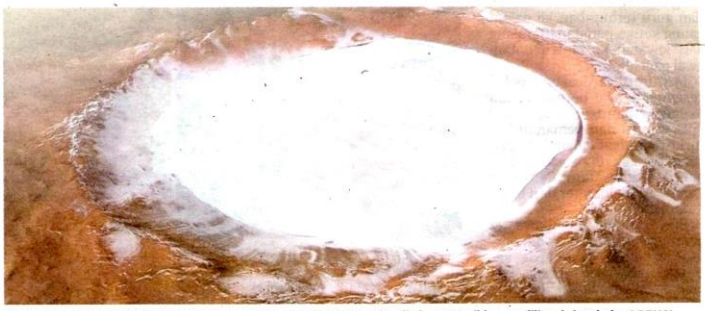
Kawah berkenaan dinamakan sempena nama jurutera roket dan pereka kapal angkasa, Sergei Korolev, arkitek program angkasa Kesatuan Soviet.

Korolev memulakan tugas pada misi pertama ke Bulan, Marikh dan Zuhrah selain program Sputnik yang merupakan satelit pertama dilancarkan ke orbit di angkasa.

Gambar-gambar di kawah Korolev dirakam oleh satelit Mars Express menggunakan kamera stereo beresolusi tinggi.

Misi Mars Express adalah usaha pertama ESA ke planet lain dan dilancarkan pada 2 Jun 2003.

ESA juga menunjukkan minat terhadap penerokaan seterusnya termasuk menentukan kehidupan di Marikh.



GAMBAR menerusi satelit Mars Express merakamkan kawah Korolev di planet Marikh yang dilitupi ais tebal.– AGENSI