

LAMPIRAN 1
SINAR HARIAN (SENTRAL): MUKA SURAT 22
TARIKH: 27 JULAI 2018 (JUMAAT)

Wong Tuck ketua jawatankuasa kaji Lynas

KUANTAN - Ahli Parlimen Bentong, Wong Tuck dicadang mengetuai satu jawatankuasa khas yang akan mengkaji projek Lynas secara menyeluruh.

Wong Tuck dalam pada itu bersedia melakukan kajian termasuk melihat semula kelulusan yang diberikan bagi memastikan syarikat berkenaan mengikut prosedur yang antarabangsa.

Beliau turut mempersoalkan kesesuaian lokasi kilang itu dan jarak yang ditetapkan dari perkampungan.

"Semua itu kena kaji semula. Mesti ikut undang-undang dan standard antarabangsa," katanya kepada Sinar Harian, semalam.



Menurutnya, jawatankuasa itu juga bersedia melakukan audit.

Sementara itu, mengulas mengenai Jawatankuasa khas mengkaji semula projek Lynas yang dicadangkan Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yee Bee Yin itu, beliau berkata, ia akan ditubuhkan dalam waktu terdekat.

Selepas dicadangkan mengetuai jawatankuasa itu, kita akan beri tumpuan kepada isu Lynas."

- Wong Tuck

"Adakah ia mengancam alam sekitar dan ikut prosedur yang betul? Barulah tindakan akan diambil. Kalau ada perkara yang tidak betul kita ambil tindakan," katanya.

"Selepas dicadangkan mengetuai jawatankuasa itu, kita akan beri tumpuan kepada isu ini selain bauksit yang diperkatakan di negeri ini," katanya.

Kerajaan Kedah arah Jabatan Alam Sekitar negeri ambil tindakan tegas

Kilang kitar plastik diarah tutup

Oleh Zaid Mohd. Noor
dan Othman Yahaya

SUNGAI PETANI – Kerajaan negeri mengarahkan Jabatan Alam Sekitar (JAS) dan pihak berkuasa tempatan di negeri ini mengambil tindakan menutup kilang mengitar semula sisa barang plastik yang dikesan beroperasi tanpa lesen dan melanggar Prosedur Operasi Standard (SOP).

Pengerusi Jawatankuasa Hal Ehwal Masyarakat Cina dan Siam, Sumber Tenaga Manusia dan Alam Sekitar negeri, Ooi Tze Min berkata, tindakan tegas itu perlu diambil untuk mengelakkan aktiviti kilang terbabit yang dibimbangi boleh menyebabkan pencemaran udara dan air.

Menurutnya, berdasarkan maklumat daripada JAS negeri, terdapat sebanyak 40 kilang mengitar semula barang plastik

yang beroperasi di Kedah.

Katanya, sebanyak 30 kilang berkenaan beroperasi di Sungai Petani dan selebihnya menjalankan operasi di Kulim dan Alor Setar.

“JAS dan pihak berkuasa telah mengeluarkan notis amaran terhadap beberapa kilang terbabit semalam (kelmarin) selepas dikesan melanggar SOP yang ditetapkan,” katanya ketika dihubungi *Kosmo!* di sini semalam.

Kosmo! pada 25 Julai lalu melaporkan Kementerian Perumahan dan Kerajaan Tempatan menghentikan pengeluaran permit import (AP) sisa plastik kepada 114 syarikat dan kilang di seluruh negara bagi tempoh tiga bulan berkuat kuasa pada Selasa lalu.

Menterinya, Zuraida Kamaruddin berkata, tindakan itu diambil susulan laporan komprehensif *Kosmo!* mengenai

KERATAN
Kosmo! 25
Julai 2018.

**Permit import sisa plastik
dibekukan serta-merta**

**Selangor diancam
pencemaran kilang plastik**

Kilang-kilang yang beroperasi di Selangor diancam pencemaran kerana mengeluarkan sisa plastik yang tidak sepatutnya dibuang ke alam sekitar.

KERATAN *Kosmo!* 23 Julai 2018.

pencemaran serius di Kuala Langat, Selangor yang dikatakan berpunca daripada kilang memproses plastik import dari seluruh dunia sejak dua tahun lalu.

Tze Min berkata, tindakan lebih tegas turut akan diambil seperti menutup kilang mengitar semula barang plastik yang didapati masih berdegil dan tidak mematuhi undang-undang.

Bagaimanapun, beliau tidak mendedahkan jumlah kilang yang menerima notis amaran.



SEBAHAGIAN daripada sisa plastik yang terdapat di sebuah kilang mengitar semula bahan itu di kawasan PKNK, Taman Ria Jaya, Sungai Petani semalam.

Sementara itu, tinjauan *Kosmo!* di kawasan perindustrian Perbadanan Kemajuan Negeri Kedah (PKNK), Taman Ria Jaya di sini semalam mendapati terdapat sebuah kilang mengitar semula barang plastik yang didakwa mengeluarkan bau seperti bahan kimia.

Seorang peniaga kedai makan di kawasan perindustrian itu yang enggan mendedahkan

identitinya berkata, bau itu pada kebiasaannya dikesan pada waktu petang.

Katanya, kilang tersebut yang dipercayai menggunakan bahan kitar semula dari luar negara dan mula beroperasi pada awal tahun ini.

“Saya bimbang bau bahan kimia itu boleh menjejaskan kesihatan saya dan pelanggan,” katanya.



TZE MIN

LAMPIRAN 3
UTUSAN MALAYSIA (UTUSAN BIZ): MUKA SURAT 16
TARIKH: 27 JULAI 2018 (JUMAAT)



Oleh **ZUNAIDAH ZAINON**
ekonomi@utusan.com.my

■ **KUALA LUMPUR 26 JULAI**

KETUA-KETUA Pegawai Eksekutif (CEO) di bawah syarikat-syarikat pegangan Khazanah Nasional Berhad (Khazanah) tidak perlu tergesa-gesa meletak jawatan hanya disebabkan kesemua ahli lembaga pengarah institusi pelaburan strategik itu meletakkan jawatan.

Pensyarah Kanan Putra Business School, Dr. Ahmed Razman Abdul Latiff berkata, ini kerana kesemua CEO itu dilantik berdasarkan kelayakan profesionalisme dan pengalaman masing-masing yang secara dasarnya tidak terlibat dalam mana-mana agenda politik.

Katanya, jika kerajaan mahu merombak pentadbiran sesebuah organisasi, tumpuan harus diberikan kepada ahli lembaga pengarah dan bukannya terhadap lantikan profesional seperti CEO memandangkan lantikan politik biasanya diletakkan di peringkat lembaga pengarah syarikat milik kerajaan (GLC) bagi memudahkan sebarang arahan dikeluarkan daripada kerajaan.



AHMED RAZMAN ABDUL LATIFF

“Dalam konteks Khazanah ini, Tan Sri Azman Mokhtar sendiri memegang jawatan sebagai Pengerah Urusan ketika zaman Tun Abdullah Ahmad Badawi menjadi Perdana Menteri tetapi apabila Datuk Seri Najib Tun Razak mengambil alih jawatan, beliau tidak menukar siapa peneraju Khazanah.

“Malah, kita juga tahu ahli lembaga pengarah Khazanah juga terdiri daripada mereka yang mempunyai pengalaman dan pengetahuan dalam bidang masing-masing. Dengan membenarkan kesemua mereka meletakkan jawatan serentak akan menyebabkan tiada kesinambungan



M. MANOKARAN

kepada dasar-dasar dan hala tuju pelaburan Khazanah pada masa hadapan,” katanya kepada *Utusan Malaysia* di sini hari ini.

Hari ini, Khazanah mengesahkan semua sembilan ahli lembaga pengarah termasuk Azman meletakkan jawatan bagi memudahkan cara peralihan yang lancar dan teratur oleh kerajaan baharu. Turut berada dalam senarai tersebut termasuklah Datuk Seri Nazir Abdul Razak, yang juga Pengerusi CIMB Group.

Portfolio pelaburan Khazanah sangat meluas merangkumi sektor pendidikan, tenaga, kesihatan, pelancongan, infrastruktur dan pembinaan, kreatif, inovasi

Dengan membenarkan kesemua mereka meletakkan jawatan serentak akan menyebabkan tiada kesinambungan kepada dasar-dasar dan hala tuju pelaburan Khazanah pada masa hadapan.”

AHMED RAZMAN ABDUL LATIFF
Pensyarah Kanan Putra Business School

dan teknologi, agromakanan dan pengangkutan serta logistik.

Ketika Bursa Malaysia ditutup 5 petang ini, saham syarikat-syarikat berkaitan Khazanah ditutup bercampur-campur yang menyaksikan Axiata Berhad susut 17 sen kepada RM4.27, Malaysia Airport Holdings Berhad (MAHB) susut tujuh sen kepada RM9.030 dan Telekom Malaysia Berhad susut dua sen kepada RM3.85.

Bagi **Tenaga Nasional Berhad** pula, meningkat 22 sen kepada

RM15.10, IHH Healthcare Bhd. meningkat tiga sen kepada RM6 dan Astro Malaysia Holdings Bhd. kekal tidak berubah pada RM1.81.

Menurut beberapa penganalisis ekonomi, Tan Sri Nor Mohamed Yakcop yang merupakan Timbalan Pengerusi Khazanah sebelum meletakkan jawatan tersebut pada 30 September 2017 akan kembali menerajui ahli lembaga pengarah tersebut sekiranya pelantikan baharu dibuat.

Sementara itu, Ketua Penganalisis Ekonomi Alliance Bank, M. Manokaran berkata, keputusan sembilan ahli lembaga pengarah Khazanah itu meletakkan jawatan akan menimbulkan ‘kejutan sementara’ kerana belum ada kepastian daripada kerajaan.

“Tetapi pastinya tumpuan kini tertumpu kepada siapa yang akan mengisi kedudukan lembaga pengarah baharu ini, adakah ia sama bagus atau sebaliknya.

“Namun keadaan kini sangat tidak menentu kerana kita tidak tahu apa yang akan berlaku, apatah lagi kerajaan tidak memberi sebarang kata putus berhubung keputusan mereka meletakkan jawatan ini,” katanya.

Graft may be behind Chinese dumping of plastic waste

By Syed Jaymal Zahiid
and A. Ruban
mmnews@mmail.com.my

KUALA LUMPUR — High-level corruption involving multiple government agencies is suspected in the illegal operation of Chinese plastic recycling companies in Selangor. The companies had until recently been able to bypass regulations to operate despite posing a threat to the environment.

Selangor officials disclosed this week a check on 35 such firms led to the discovery that just three were licensed.

Industry sources told *Malay Mail* they suspected the operators of the illegal plants bribed Malaysian officials at both federal and state levels to turn a blind eye to their operations, at the expense of the country's environmental and waste management laws.

"The major problem about plastic recycling is not so much coming from local companies, but mostly from illegal Chinese recycling plants that set up shop here," a source with an experienced plastic recycling company said.

"The question is, how were they allowed to set up shops here? Corruption? Most likely," said the source who requested anonymity because of the sensitivity of the allegations.

The issue was first brought to public attention following foreign media reports about Malaysia topping the list of destination for plastic waste exports from the United Kingdom this year.

The reports, citing the latest audit by public spending watchdog National Audit Office (NAO), showed a fifth of some 250,000 tonnes of plastic — used as product packaging — were exported by the UK to Malaysia in the first quarter alone.

China had been the single biggest market for UK's exports of recyclable packaging material, but the republic in January banned imports of various waste materials over pollution fears.

The ban forced Chinese plastic recycling companies to look to Malaysia as a potential base for relocation, firstly because shipping wastes from China to Malaysia would have been easier and cheaper due to their geographical locations.

But crucially, many of the Chinese plastic recycling operators also felt they could



Piles of plastic waste found in an illegal recycling factory in Jenjarom, Selangor, on Tuesday by Department of Environment officers. — Picture by Ahmad Zamzahuri

manipulate Malaysia's "loose regulation".

Malaysia has stringent waste management laws. Recycling companies must meet strict environmental safety standards to obtain approved permits and licences to operate, and are subject to approval from multiple federal, state and local government agencies.

Operating licence

Operators must observe waste management regulations in line with recommendations from the Solid Waste Management and Public Cleansing Corporation (SWCorp).

The Department of Environment is tasked with ensuring companies comply with regulations.

APs are issued by the Housing and Local Government Ministry if the plants pass the evaluation, which will then allow local authorities to issue an operating licence for the premises.

Most plastic recycling companies are required to import segregated or homogeneous and clean plastic waste, which are then rendered into plastic resins to be sold as raw material for reuse.

The recycling companies must also show proof imported plastic waste is not scheduled or unsegregated waste.

However, segregated waste contains large amounts of plastics that can be potentially recycled and sold, and this has driven many Chinese-based recycling firms to import these indiscriminately.

Distilling and recycling scheduled waste produces higher amount of debris. The excess debris, often highly contaminated, are then either surreptitiously dumped into local landfills or incinerated in open holes dug near them, one industry source said.

"What they do is they hire private contractors or trucks and just dump all the excess waste in our landfills or just dig a hole

and burn it to hide them," the source said.

The existence of the illegal recycling plants and companies itself has raised serious questions about the lapse in oversight.

Attempts to obtain the DoE's and the Housing and Local Government Ministry's comments were unsuccessful at the time of writing.

Water, Land and Natural Resources Minister and Kuala Langat MP Xavier Jayakumar said he believed the crux of the plastic waste recycling issue was lax enforcement made possible by potential corruption by the previous administration.

The problem also affected several states, he said, noting that illegal plastic recycling plants were found in Kedah, Johor and possibly Penang. The PKR leader said he has since ordered an investigation.

"I have brought this up with the Cabinet and I have instructed my ministry to come out with list of APs given to whom and so APs to import plastic waste from coming into the country can be stopped.

"This needs to be stopped, period."

Serious pollution

On Wednesday, Housing and Local Government Minister Zuraida Kamarudin announced that it revoked the APs for 114 recycling companies and factories nationwide, banning the importation of the HS Code 3915 plastic waste for three months effective yesterday.

Zuraida said the move followed newspaper reports on the serious pollution in Jayakumar's constituency, Kuala Langat, purportedly caused by these illegal plastic recycling factories.

Just hours before she made the announcement, Selangor authorities ordered three plastic factories in Kuala Langat to close because of pollution and revealed in a media briefing that only three of the 35 plants inspected were found to be licensed.

State executive councillor in charge of local authorities Ng Sze Han claimed many of the plants were granted APs by the Barisan Nasional government, implying corruption.

Ng also made a damning revelation about a purported attempt by representatives from the plants to bribe him at a meeting held the night before the raids were conducted. He said he would lodge a formal complaint with the Malaysian Anti-Corruption Commission.

LAMPIRAN 5
MALAY MAIL (TOP NEWS): MUKA SURAT 7
TARIKH: 27 JULAI 2018 (JUMAAT)

Longest lunar eclipse over Malaysia

KUALA LUMPUR — After midnight today, Malaysians will witness the longest total lunar eclipse of this century over the country's skyline.

The celestial phenomenon is expected to be visible between 1.14am and 7.28am tomorrow, a statement by the National Space Agency read.

"The total eclipse phase, beginning around 3.30am, will last for about an hour and 42 minutes and 57 seconds, making it the longest total lunar eclipse of the 21st century," the statement read.

The long duration of this eclipse is partly due to the fact the moon will make a near-central passage through Earth's umbra — the darkest, most central part of the shadow.

It further read that barring unfavourable weather conditions, the eclipse will be most visible to Malaysians on the west.

Besides Malaysia, nations in Africa, Europe, Australia, other Asian nations and those in South America would also be able to witness the eclipse.

Meanwhile Nasa has debunked social media claims that Mars will appear as big as the moon during the eclipse.

It said Mars will most likely appear as a very bright star and viewers will not need any protective eye gear.

The National Observatory in Langkawi, Kedah will be holding several activities on the night before the historic eclipse.

Sky gazers further away won't be missing out as the observatory will also stream the eclipse "live" over Angkasa TV (Youtube/Facebook).

SUSTAINABLE AGRICULTURE

PUTTING AN END TO WORLD HUNGER

There is an urgency to invest in safe and quality agriculture products to feed the more than eight-billion world population in 2025, writes **CARMEN ARROYO**

SIGNIFICANTLY more investment is needed to lift hundreds of millions of rural poor out of poverty and make agriculture environmentally sustainable, according to Rob Vos, director of the markets, trade and institutions division at the International Food Policy Research Institute (IFPRI).

With a growing world population on the rise, and governments are looking for private alliances to alleviate these issues.

At the 2018 High-Level Political Forum on Sustainable Development at the United Nations headquarters in New York, recently, IFPRI organised a side event called "Investing for Reshaping Food Systems".

Speakers included Claudia Sadoff, director general for the International Water Management Institute; Nichola Dyer, from the Global Agriculture and Food Security Programme at the World Bank; Gerda Verburg, coordinator at the Scaling Up Nutrition Movement; and Chantal-Line Carpentier, chief at the UN Conference on Trade and Development.

They all emphasised the urgency of investing in sustainable agriculture, defined by the Barilla Centre for Food and Nutrition as "the efficient production of safe, healthy, and high-quality agricultural products, in a way that is environmentally, economically, and socially sustainable".

While the world population will reach over eight billion people in 2025, the amount of cultivable land will remain the same. Decimated by pesticides, non-sus-

tainable agricultural techniques, and water waste, healthy nutrients will become harder to access for the growing population. This issue, along with food waste (20 per cent of every food purchase is wasted), is a major concern for Verburg, who highlighted the need to rethink food systems and stop blaming agriculture.

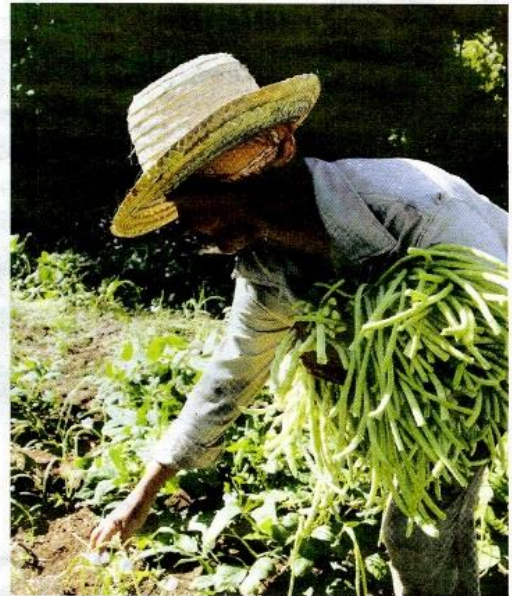
The relationship between the private sector and agriculture isn't new. On the contrary, many farmers, especially the poorest, are members of the private sector.

"The majority of poor and hungry people are small-scale farmers. They are in fact members of the private sector, albeit the weakest. And some corporate investments in agriculture can hurt them," said John Coonrod, executive vice-president at the Hunger Project.

The weakness of poor farmers and the growth of low-nutrition crops have been, until now, some of the deterrents of efficient agriculture.

"The world has over-invested in low-nutrition staple crops, driving up the relative price of nutrition rich-foods. Empty calories is the food system of the poor. To overcome malnutrition, we need to increase the dietary diversity of the poor to include many more fruits and vegetables, which means increasing their local production and reducing their price to local consumers," Coonrod explained.

How can private investment develop sustainable agriculture? Vos said that a first priority should be to provide incentives for investments beyond farms "in



The weakness of poor farmers and the growth of low-nutrition crops have been, until now, some of the deterrents of efficient agriculture. PIC COURTESY OF IPS

infrastructure like roads, electricity and cold transportation and agri-food processing".

"This will help provide better and more stable market conditions for farmers, create lots of new jobs, and limit the risks of investing in agriculture itself," he said.

He added the second priority is "to provide incentives for investing in sustainable practices and crop diversification, including towards fruits and vegetables".

What about governments?

Brian Bogart, senior regional programme adviser for South Africa to the UN World Food Programme, said member states "have a responsibility to lead such efforts by developing effective partnerships with the private sector and fostering an enabling environment for investment".

"With shrinking public investment in agriculture the question is how public-private partnerships can unlock opportunities for private investment to complement public resources and capacity to generate improved food security, particularly for the most vulnerable populations," he added.

Some countries are already doing this. The Barilla Centre for

Food and Nutrition's Food Index on sustainable agriculture, which ranks 25 countries according to 58 indicators, reveals that Germany and Canada are among the states that rank highest with regard to sustainable agriculture.

However, responsibility does not lie solely with the state, but also with civil society. Coonrod, from the Hunger Project, explained what his organisation does in this regard: "We promote good nutrition through education, promoting better local farming methods, increasing local food processing and, in indigenous communities of Latin America, we've opposed junk food and helped communities reclaim their nutritious traditional foods."

Finally, Vos highlighted the importance of research in reducing hunger.

"We undertake research to better understand the causes underlying the deficiencies in the present food systems and test out the effectiveness of interventions that aim to overcome these shortcomings. We know far too little on what is driving food system change, not just in agriculture, but in all stages of the food chain, from farm to fork." IPS

While the world population will reach over eight billion people in 2025, the amount of cultivable land will remain the same. Decimated by pesticides, non-sustainable agricultural techniques, and water waste, healthy nutrients will become harder to access for the growing population.

LAMPIRAN 7
THE SUN: MUKA SURAT 8
TARIKH: 27 JULAI 2018 (JUMAAT)

Liquid water lake discovered on Mars

WASHINGTON: A massive underground lake has been detected for the first time on Mars, raising hopes that more water – and maybe even life – exists there, astronomers said on Wednesday.

Located under a layer of Martian ice, the lake is about 20km wide, said the report in the US journal *Science*.

It is the largest body of liquid water ever found on the Red Planet.

"Water is there. We have no more doubt," co-author Enrico Flamini, the Italian space agency's Mars Express mission manager, told a press conference.

Mars is now cold, barren and dry but it used to be warm and wet.

It was home to plenty of liquid water and lakes at least 3.6 billion years ago.

Scientists are eager to find signs of contemporary water, because such discoveries are key to unlocking the mystery of whether life ever formed on

Mars in its ancient past, and whether it might persist today.

"This is a stunning result that suggests water on Mars is not a temporary trickle like previous discoveries but a persistent body of water that provides the conditions for life for extended periods of time," said Alan Duffy, an associate professor at Swinburne University in Australia, who was not involved in the study.

Being able to access water sources could also help humans survive on a future crewed mission to Earth's neighbouring planet, with Nasa aiming to send explorers in the 2030s.

This particular lake, however, would be neither swimmable nor drinkable, and it lies almost 1.6km beneath the icy surface in a harsh and frigid environment.

Whether microbial forms of life could lie within is a matter of debate.

Some experts are sceptical of the

possibility since the lake is so cold and briny, mixed with a heavy dose of dissolved Martian salts and minerals.

The temperature is likely below the freezing point of pure water, but the lake can remain liquid due to the presence of magnesium, calcium and sodium.

"This is a discovery of extraordinary significance, and is bound to heighten speculation about the presence of living organisms (on Mars)," said Australian Astronomical Observatory's Fred Watson, who was not involved in the research.

"Caution needs to be exercised, however, as the concentration of salts needed to keep the water liquid could be fatal for any microbial life similar to Earth's," added Watson.

The discovery was made using a radar instrument on board the European Space Agency's Mars Express orbiter, which was launched in 2003. – AFP

LAMPIRAN 8
UTUSAN MALAYSIA (LUAR NEGARA): MUKA SURAT 14
TARIKH: 27 JULAI 2018 (JUMAAT)



LAKARAN imej menunjukkan Kapal Angkasa Mars Express memasuki kutub selatan Marikh dan isyarat radar kelihatan di sebelah kiri. - AP

AS hantar manusia pertama ke Marikh 2030?

TAMPA 26 Julai - Amerika Syarikat (AS) bercadang untuk menghantar manusia pertama ke Marikh menjelang 2030 walaupun wujud kebimbangan daripada pakar angkasa lepas serta ahli Parlimen berhubung perancangan yang lemah serta kekurangan dana bakal menangguhkan projek berkenaan.

Presiden AS, Donald Trump telah menyatakan hasratnya untuk menghantar angkasawan AS ke Bulan buat kali pertama sejak misi Apollo pada 1960-an dan 1970-an, sekali gus menyediakan laluan ke Bulan bagi menguji teknologi dan kapal angkasa lepas yang akan membawa manusia ke Marikh.

Pada 2009, sebuah panel pakar bebas dikenali sebagai Suruhanjaya Augustine memberi amaran sumber Pentadbiran Angkasa dan Aeronautik Negara (NASA) sedia ada tidak sepadan dengan matlamatnya yang begitu tinggi.

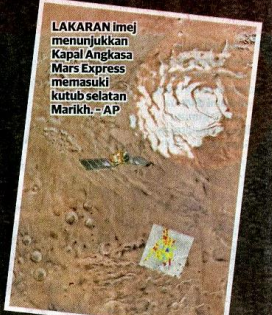
Walaupun NASA memperoleh belanjawan tahunan kira-kira AS\$18 bilion (RM73 bilion), namun memerlukan tambahan AS\$3 bilion (RM12.1 bilion) sekiranya mahu projek ke Marikh itu terlaksana.

Baru-baru ini, para pegawai NASA menyatakan mereka berusaha untuk menjalankan program angkasa lepas yang menelan belanja lebih rendah.

Sementara itu, menurut ahli Parti Demokrat dari Florida, Nelson, sekiranya NASA terus membelanjakan bajet yang diperuntukkan, maka impian untuk menghantar manusia ke Marikh pada 2030 terpaksa dilupakan.

"Mungkin mengambil masa sehingga 2050. Saya tidak fikir kita mahu menunggu selama itu," ujarnya.

Tahun lalu, rang undang-undang kuasa NASA yang dibentangkan di Kongres mewajibkan NASA menjelaskan dan menyerahkan pelan tindakan ke Marikh kepada Kongres. - AFP



LAKARAN imej menunjukkan Kapal Angkasa Mars Express memasuki kutub selatan Marikh. - AP

Fenomena bulan berdarah

➔ Gerhana penuh satu jam, 42 minit dan 57 saat

London

Fenomena 'bulan berdarah' akan dapat dilihat di kebanyakan tempat di seluruh dunia, malam ini hingga awal esok, apabila bulan memasuki bayangan bumi untuk gerhana bulan paling lama pada kurun ke-21.

Gerhana penuh akan berlangsung selama satu jam, 42 minit dan 57 saat, dengan gerhana separa berlaku sebelum serta selepasnya bererti bulan berada dalam bayangan umbra bumi selama tiga jam 54 minit, kata NASA (Pentadbiran Angkasa Lepas dan Aeronautik Kebangsaan).

Gerhana kali ini dapat dilihat dari Eropah, Afrika dan Timur Tengah antara waktu matahari terbenam hingga tengah malam pada 27 Julai selain antara tengah malam hingga matahari terbit pada 28 Julai di sebahagian besar Asia serta Australia.

"Ia digelar bulan berdarah kerana cahaya dari matahari melalui atmosfera bumi sebelum men-

genai bulan, manakala atmosfera mengubah warnanya merah, sama seperti terjadi kepada matahari apabila terbenam," kata profesor astronomi di Universiti Cambridge, Andrew Fabian.

Apabila bulan memasuki bayangan bumi berbentuk kon, ia berubah daripada dicahaya matahari menjadi gelap. Bagaimanapun, sedikit cahaya masih sampai ke bulan kerana dibiaskan atmosfera bumi.

Bumi berkilau

"Jika kamu berdiri di atas bulan ketika gerhana ini, kamu dapat melihat matahari dan bumi menghalang serta menutup matahari. "Lingkaran bumi akan berkilau kerana cahaya dibiaskan atmosfera bumi," katanya.

Pada hari sama, planet Marikh paling terang apabila bergerak lebih hampir dengan bumi bererti pemerhati mungkin dapat dilihat sesuatu seperti bintang berwarna oren kemerahan, yang sebenarnya 'planet merah' berkenaan.

Apabila ditanya sama ada gerhana berkenaan mungkin satu petanda buruk, Fabian sekadar ketawa. "Sudah pasti tidak. Astrologi bukan bidang kami," katanya.

Gerhana bulan kali ini juga tidak dapat dilihat dari Greenland, Amerika Syarikat dan Kanada. Gerhana bulan seterusnya dengan tempoh sepanjang itu akan dapat dilihat semula pada 2123. AGENSI/REUTERS

Info

10 bandar posisi terbaik melihat gerhana

- ➔ **Kaherah**, Mesir (9.30 mlm/Jumaat)
- ➔ **Dubai**, Emiriah Arab Bersatu (11.30 mlm/Jumaat)
- ➔ **Perth**, Australia (3.30 pagi/Sabtu)
- ➔ **Limassol**, Cyprus (10.30 mlm/Jumaat)
- ➔ **Bangkok**, Thailand (2.30 pagi/Sabtu)
- ➔ **New Delhi**, India (1 pagi/Sabtu)
- ➔ **Bucharest**, Romania (10 mlm/Jumaat)
- ➔ **Moscow**, Russia (10.30 mlm/Jumaat)
- ➔ **Nairobi**, Kenya (10.30 mlm/Jumaat)
- ➔ **Santorini**, Greece (10.30 mlm/Jumaat)

GERHANA BULAN PALING LAMA ABAD INI

Gerhana bulan malam ini, termasuk fasa separuh gerhana, akan berlangsung lebih tiga jam, namun fasa gerhana penuh merangkumi satu jam 43 minit - gerhana bulan penuh paling lama dalam abad ke-21. Gerhana dapat dilihat di Australia, Asia, Afrika, Eropah dan Amerika Selatan.

GERHANA 27 JULAI



Kunci

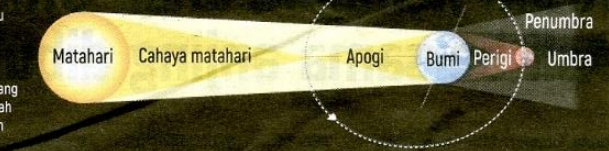


Gerhana penuh dari awal hingga akhir
Keseluruhan fasa gerhana separa dan penuh, terlepas sebahagian penumbra
Keseluruhan fasa penuh, sebahagian separa dan penumbra
Sebahagian fasa penuh, separa dan penumbra
Hanya separa dan penumbra
Sebahagian penumbra



BAGAIMANA GERHANA BULAN BERLAKU

Gerhana bulan - Berlaku apabila Bumi antara matahari dan bulan. Bayang-bayang Bumi menggelapkan bulan, yang mungkin kelihatan merah akibat cahaya dibiaskan atmosfera Bumi.



"Diagram tidak mengikut skala

KEJADIAN LUNAR SEJAK 2010



Super moon - Bulan penuh ketika di orbit paling hampir dengan Bumi.
Bulan biru - Bulan penuh kedua dalam sebulan.

Nota: Gerhana dicartakan adalah bagi gerhana bulan penuh.

Sumber: NASA

REUTERS

GRAFIK BH



RENCANA UTAMA

PEJALAN-PEJALAN kaki di Jepun kini sering menggunakan payung bagi menghindari sinar matahari.

Biarpun angka rasmi kematian akibat gelombang haba di Jepun hanya beberapa dozen, syarikat pengeluar ramalan cuaca dunia, AccuWeather menjangkakan jumlah kematian sebenar adalah ratusan dan meramalkan ia akan meningkat kepada ribuan.

CUACA panas didapati telah menjejaskan kerja-kerja pembaikan dan pembersihan selepas banjir di satu kawasan di Jepun.



GAMBAR menunjukkan suhu di Kumagaya, sebuah bandar di barat laut Tokyo yang sudah mencecah 41 darjah Celsius.

Suhu panas ekstrem cecah 41 darjah Celsius

BAGAI sudah jatuh ditimpa tangga. Sewaktu ratusan nyawa terkorban akibat banjir buruk yang disifatkan salah satu bencana terdahsyat dalam sejarah negara Jepun dan 7,000 rakyatnya masih trauma di pusat-pusat pemindahan pertengahan bulan ini, mereka diancam pula malapetaka yang lain.

Ketika para sukarelawan baru hendak mula menaksir kemusnahan bandar akibat banjir dan 250,000 mangsa banjir masih terperangkap di dalam rumah-rumah yang kotor tanpa bekalan air, derita ditambah dengan fenomena gelombang haba berbahaya yang menyebabkan suhu paling panas di negara itu sejak lima tahun lalu.

"Saya risaukan anak-anak, mereka boleh mengalami strok haba," kata seorang mangsa banjir di sebuah pusat pemindahan di Hiroshima, Yoko Kitamura, 38, kepada *The Times of Japan*.

Kitamura dan empat orang anaknya terselamat daripada air bah ganas dan berjaya mendapatkan perlindungan di pusat pemindahan. Banjir akibat hujan yang turun empat kali ganda berbanding kebiasaan dari hujung Jun hingga



KEMATIAN akibat gelombang haba membimbangkan di Jepun apabila 44 orang dilaporkan mati setakat Isnin lalu.

pertengahan Julai itu telah menyebabkan 225 orang terbunuh, dua juta penduduk dipindahkan dan 13 orang hilang di 15 wilayah Jepun.

Musim panas pada tahun ini, Jepun berdepan cuaca yang dramatik dan luar biasa. Suhu bandar raya Tokyo kini dilaporkan pada paras 38 darjah Celsius dengan kawasan berhampirannya, Kumagaya meningkat sehingga 41.1 darjah Celsius, suhu tertinggi yang pernah direkodkan di Jepun. Agensi Meteorologi Jepun berkata, suhu itu 12 darjah lebih panas daripada suhu kebiasaan pada musim panas di negara matahari terbit itu.

Suhu 41.1 darjah Celsius di Kumagaya itu melepasi rekod sebelum ini yang dicatatkan pada tahun 2013 iaitu 41 darjah Celsius di Shimanto.

Bandar Kyoto pula dilaporkan mengalami suhu 38 darjah Celsius selama tujuh hari berturut-turut, suhu panas berpanjangan paling lama dialami kawasan itu sejak kurun ke-19.

Guardian melaporkan, kepanasan suhu 39 darjah Celsius di Jepun boleh dirasakan seperti suhu 43 darjah Celsius dengan mengambil kira faktor lain

seperti kelembapan.

CNN melaporkan, berdasarkan *Kyodo News*, sehingga Isnin lalu, seramai 44 orang telah dilaporkan mati akibat gelombang haba dengan Sabtu minggu lalu sahaja 11 orang dilaporkan mati dalam sehari.

Sesuaikan diri

Lebih 12,000 orang pula dimasukkan ke hospital kerana mengalami strok haba atau berkaitan dengannya.

Kebanyakan mereka yang meninggal dunia ialah warga emas termasuk dua pasang suami isteri berusia 70 tahun di Tokyo

dan Osaka. Sebelum ini, dilaporkan seorang murid lelaki berusia enam tahun dari Aichi maut kerana strok haba sewaktu melakukan aktiviti luar darjah.

Jabatan Bomba Tokyo berkata, sebanyak 3,091 buah ambulans telah menghantar pesakit di bandar raya itu pada Sabtu lalu, ia merupakan khidmat ambulans terbanyak sehari sejak operasi perubatan kecemasan dimulakan jabatan itu sejak 1936.

Pihak berkuasa meramalkan suhu ekstrem iaitu melebihi 35 darjah Celsius berlaku di kebanyakan kawasan di pulau utama Honshu, Shikoku dan Kyushu. Hanya Hokkaido yang terselamat daripada ancaman gelombang haba.

Sinonim sebagai negara yang beriklim sejuk dan bersuhu rendah, rakyat Jepun sukar untuk menyesuaikan diri dengan perubahan cuaca seperti itu.

"Saya tak pernah melalui musim panas sepanas ini. Sekarang baru Julai, saya tidak tahu apa yang akan berlaku pada Ogos nanti," kata seorang kerani di Tokyo, Tomoko Takemoto.

Seorang lelaki pekerja profesional teknologi maklumat, Atsuhiko Takahashi

Impak perubahan iklim dunia

GELOMBANG haba yang melanda Jepun pada masa ini berkemungkinan disebabkan sistem tekanan tinggi yang tertumpu di negara tersebut yang berlaku dalam jangka masa lama.

Pakar klimatologi dan oseanografi yang juga Pengerusi Pusat Sains Bumi dan Alam Sekitar Universiti Kebangsaan Malaysia (UKM), Prof. Dr. Fredolin Tangang berkata, fenomena itu mencetuskan *blocking* atau penghadangan.

“Apakah yang menyebabkan sistem tekanan tinggi yang boleh bertahan lama daripada

biasa dan mencetuskan *blocking* ini? Terdapat kajian menunjukkan ia berkemungkinan berkaitan perubahan iklim dunia yang merubah mekanisme pergerakan sistem tekanan tinggi dan rendah,” katanya ketika dihubungi *Kosmo!*.

Menurutnya fenomena gelombang haba juga berlaku di beberapa kawasan lain di dunia misalnya Britain di Eropah. Fredolin berkata, apabila berlaku penghadangan, ia akan meningkatkan pancaran sinar matahari menembusi permukaan



FREDOLIN

bumi di kawasan terbabit.

“Sistem tekanan tinggi yang mendominasi rantau di Jepun pada masa yang lama meningkatkan insolasi pancaran sinar matahari, meningkatkan haba dan suhu, menghalang perolakan dan seterusnya berlaku gelombang haba,” katanya.

Menyentuh mengenai keseriusan masalah kepanasan atau *heat stress*, Fredolin berkata, ia bergantung kepada dua faktor iaitu suhu dan kelembapan.

“Apabila suhu tinggi di sesebuah

negara yang berkelembapan tinggi seperti Jepun, kepanasan itu dirasakan lebih memeritkan. Jika sesebuah negara itu bersuhu tinggi dan memang berada di kawasan beriklim panas seperti di negara-negara Arab yang adakalanya boleh mencecah 50 darjah Celsius, kesan kepanasan mungkin tidak seteruk yang dirasakan oleh mereka di kawasan yang sinonim dengan cuaca sejuk.

“Mungkin itu sebabnya banyak kejadian kematian terjadi di Jepun berkait gelombang haba. Saya juga baru pulang dari Britain dan saya dapati panasnya lebih panas berbanding Malaysia,” ujarnya.