

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

Bil	Berita	Media	Capaian Berita Penuh
1.	<u>Penduduk rayu henti terus import sisa plastik [METROTV]</u>	Harian Metro	Klik pada tajuk berita
2.	<u>No illegal plastic recycling factories in Sabah: DoE</u>	Daily Express	Klik pada tajuk berita
3.	<u>KDEBWM ambil tindakan segera</u>	Sinar Harian	Klik pada tajuk berita
4.	<u>Gempa bumi kali kedua landa Rantau Sumba</u>	Kosmo	Klik pada tajuk berita
5.	<u>Gempa bumi sederhana landa Rantau Sumba, Indonesia</u>	Sinar Harian	Klik pada tajuk berita
6.	<u>Moderate earthquake hits Sumba Region in Indonesia</u>	Astro Awani	Klik pada tajuk berita
7.	<u>Ramalan cuaca bertambah baik mulai esok</u>	Dayak Daily	Klik pada tajuk berita
8.	<u>Advancing science with humanity in mind</u>	New Straits Times	Rujuk lampiran 1

TEMPATAN

Bil	Berita	Media	Capaian Berita Penuh
9.	<u>Illegal rubbish dumping ruins soil on private land</u>	The Star	Rujuk lampiran 2



10.	<u>'Tidak guna kuasa nuklear jika tak selamat'</u>	Berita Harian	Rujuk lampiran 3
11.	<u>SESB union backs Sabah govt's takeover move</u>	The Star	Rujuk lampiran 4
12.	<u>Kurang kesedaran</u>	Harian Metro	Rujuk lampiran 5
13.	<u>Eat Plants, Save The Planet</u>	New Straits Times	Rujuk lampiran 6
14.	<u>Analisis terokai khasiat ketum</u>	Utusan Malaysia	Rujuk lampiran 7
15.	<u>Keasyikan Pancuran Meteor Artifisial</u>	Kosmo	Rujuk lampiran 8
16.	<u>In China, unhappiness tracks poor air quality</u>	The Borneo Post	Klik pada tajuk berita
17.	<u>12 gempa susulan gegarkan wilayah Sumba Barat</u>	Astro Awani	Klik pada tajuk berita
18.	<u>Firma Jerman sumbang sistem automasi kepada 4 IPT</u>	Berita Harian	Klik pada tajuk berita
19.	<u>Malaysia to have fastest internet in Southeast Asia by 2022: Wan Azizah</u>	The Sun Daily	Klik pada tajuk berita
20.	<u>The shared vision of all religions</u>	The Sun Daily	Klik pada tajuk berita
21.	<u>Earth Hour 2019: Penang Connects to Earth, Clean Water and Clean Air</u>	www.wwf.org.my	Klik pada tajuk berita
22.	<u>Never mind climate change, Davos prefers private jets</u>	The Sun Daily	Klik pada tajuk berita



ANTARABANGSA

Bil	Berita	Media	Capaian Berita Penuh
23.	<u>Gempa bumi gegar Indonesia</u>	Kosmo	Rujuk lampiran 9
24.	<u>Saintis sangkal teori kewujudan Planet Nibiru</u>	Kosmo	Rujuk lampiran 10
25.	<u>Bangkok diselubungi jerebu teruk, peraturan ketat asap kenderaan dijangka diperkenalkan</u>	Bernamea.com	Klik pada tajuk berita
26.	<u>China's top steelmaking city issues level 2 smog alert</u>	The Star	Klik pada tajuk berita
27.	<u>South Korea's Moon calls for early warning system with China to fight dirty air</u>	The Star	Klik pada tajuk berita
28.	<u>Bangkok akan perkenal peraturan pelepasan asap kenderaan lebih ketat</u>	The Malaysian Insight	Klik pada tajuk berita
29.	<u>Jerebu Bangkok semakin buruk</u>	Sinar Harian	Klik pada tajuk berita
30.	<u>Three Singapore firms to invest \$100m in Southeast Asian renewables projects</u>	www.msn.com	Klik pada tajuk berita
31.	<u>Antarctica's krill shift south as icy waters warm</u>	Malaymail	Klik pada tajuk berita
32.	<u>The Daily Digest: When Healthcare is Harming the Planet</u>	Investor.com	Klik pada tajuk berita
33.	<u>Apple predicts more climate change disasters could increase iPhone demand</u>	Business Insider Malaysia	Klik pada tajuk berita
34.	<u>In China, unhappiness tracks poor air quality</u>	The Borneo Post	Klik pada tajuk berita



35.	<u>Unhappiness linked to poor air quality in China</u>	The Star	Rujuk lampiran 11
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LAMPIRAN 1 NEW STRAITS TIMES (HIGHER ED /DISCOURSE): MUKA SURAT 50 TARIKH: 23 JANUARI 2019 (RABU)

Advancing science with humanity in mind

BY ROZANA SANI
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AT the inaugural Asean Emerging Researchers Conference in Sunway University last month, Tunku Besar Seri Menanti Tunku Ali Redhaudin Tuanku Muhriz said science should not serve scientists alone, but humanity as a whole. Therefore, he said the emphasis of research should be on finding solutions to issues faced by the community, and helping those facing the toughest challenges within the community – solutions that are accessible, affordable and culturally acceptable.

The conference aims to create a platform for Asean scientists and its diaspora to promote research excellence in the region. Its objectives are to enhance interdisciplinary knowledge-sharing and to identify emerging areas that Asean researchers can champion to address local needs and global challenges.

It was endorsed by Asean, the Malaysian Education Ministry, the Malaysian Energy, Science, Technology, Environment and Climate Change Ministry, and, the Thai National Science, Technology and Development Agency.

It was supported by the Academy of Sciences Malaysia, Oxford and Cambridge Society Malaysia, Malaysia Research University Network, Nanyang Technology University Singapore and International Network for Government Science Advice Asia.

Addressing some 300 researchers, Tunku Ali Redhaudin, a Cambridge University graduate, highlighted the region's future as it continued to be shaped by science, technology and innovation.

The socio-economic transformation of our nations has been achieved through the growth of critical technologies that provide for basic needs and improve our quality of life.

In coming years, as we go through the Fourth Industrial Revolution, the changes will only continue to be good, with the development of artificial intelligence, big data analytics and machine learning making our lives better.

But the world ahead is not without its challenges. Environmental, economic and social risks are ever increasing. Worryingly, the gap between the have and have-nots is widening.

The population is also aging, with a smaller percentage of working individuals looking after a larger retired population.

Automation also means jobs will be lost, or at least evolve, and people will need a new set of skills. In addition, social media may allow us to stay connected, but does it also mean that we are giving up our freedoms and privacy?

No doubt you would have read about the initiatives to rank people based on their social behaviour. And finally, if we are not able to save ourselves from environmental destruction, then is there any point to all these development anyway?" he said in the opening speech.

In her address, University of Cambridge's Wolfson College president Professor Jane Clarke said today's research environment is multidisciplinary and international in nature.

Without international cooperation, without interdisciplinary expertise, researchers have nothing much to learn or gain.



Tunku Ali Redhaudin Tuanku Muhriz (first row, seventh from left) with attendees and speakers of the Asean Emerging Researchers Conference at Sunway University. PIC BY NUR ADIBAH AHMAD IZAM



Professor Datin Paduka Dr Khatijah Yusoff (left) fielding a question during a forum.

"It is vital to have mobility for researchers as it is important to have diversity in a research project. It is important to have a research environment where people have different skills and can look at problems in very different ways," she said.

Clarke also emphasised that "research is a leap into the unknown and basic research is an investment".

She said if societies want to develop something, investments must be made in fundamental research.

Out of basic research, comes new technology, comes new ideas. Many start-up founders are young scientists – PhD students and post-doctorate scholars who have an idea from their fundamental research. They then develop their ideas to change the world," she said.

World Academy of Sciences vice-president Professor Datin Paduka Dr Khatijah Yusoff concurred with Clarke.

"Fundamental research is very difficult. But it is important because that is where we get our designs, our patents and so forth. Nevertheless, translational research, which is taking your research to be used by the community and industry, is also important.

"We need the right objectives and goals to carry out our research, which I think should allow

for a little bit of freedom.

"Now, in Malaysia, if I get a research grant, I have to be accountable and persistently produce statements of expenditure at every stage throughout my project.

"Whereas for Professor Clarke, she may be allowed to do whatever she wants, and in five years' time, she produces something novel.

"We need to take big bold steps like that. We need to take risks. Without the risks, we are just going to produce low-hanging fruits, just like simple supplements and not real drugs."

Khatijah also expressed concern over current restrictions, like the cutback on postgraduate scholarships, which may affect the momentum of research and development.

"I've had students, particularly Malaysians, who have registered to pursue a PhD under my supervision, but they have to defer their studies because they aren't able to support themselves without a scholarship.

"So, if this happens to me, it also happens to all scientists in Malaysia. And I think if only we can have that little bit of money, if you can pay the students, that will help them a lot in getting their degrees. And it is so important that we build our capacity in talents," said Khatijah.

Finance Ministry National Budget Office director Johan Mahmood Merican said with limited resources given to universities by the government, the key is to look at how the country can sustain its competitiveness by building on existing knowledge to evolve into the next stage of research and development.

"It is not that we are looking for something that we have no idea about to work on. It is like the analogy of monkeys jumping trees.

The idea is that there are some adjacent industries that we can excel in based on the expertise we have, like the oil and gas industry and engineering, where there's groundwork done.

"We want to replicate some of the early success we have and create new sub-industries driven by Malaysian companies," he said.



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JOHAN MAHMOOD MERICAN
Finance Ministry National Budget Office director

LAMPIRAN 2
 THE STAR (NEWS): MUKA SURAT 4
 TARIKH: 23 JANUARI 2019 (RABU)

Illegal rubbish dumping ruins soil on private land

By JAROD LIM
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ILLEGAL rubbish dumping on a vacant land in Taman Taynton View, Kuala Lumpur, has caused environmental damage at the site.

To make things worse, the site in Jalan 31/119 next to Taynton Harmoni condominium is in close proximity to two schools, SMK Seri Mutiara and SJK(C) Imbi.

Adjacent neighbourhoods have had to bear the brunt and about 100 landowners have struggled to resolve the illegal rubbish dumping issue for the past 10 years.

Residents obtained individual land titles meant for the construction of 145 bungalows but could not proceed with the plans because of this problem.

Some of them bought the land from a private developer 40 years ago.

The landowners tried to hoard the site to block the entrance, but the contractors hired to do it were threatened by the operators manning the site.

Kuala Lumpur City Hall (DBKL) raided the site and put up plastic strips to cordon off the area last December.

Cheras MP Tan Kok Wai's special assistant Janice Choo, who was there during the raid, said DBKL



Soil erosion has taken place over the years on a private land in Taman Taynton View.

informed her that the illegal dumping had stopped a few months ago.

"The raid was conducted by DBKL Enforcement Department, Health and Environment Department as well as Alam Flora officers following complaints from Taynton Harmoni Residents Association.

"The officers warned the occu-

pants to move out.

"The enforcement officers even wanted to tow away the lorry that was parked there, but the operator moved it during the raid," she said.

Choo said Tan had engaged the residents with the previous Cheras OCPD but have yet to meet the new OCPD Asst Comm Mohamed Mokhsin Mohamed Zon.

"We need to check with DBKL on the progress at the site," she said.

During a site visit by *StarMetro* and 10 landowners, a makeshift shack was found at the site, as well as a lorry and toilet.

Someone had occupied the area and there was running water in a big pail with unwashed clothes inside.

The kerb along Jalan 31/119 at the entrance to the site was cemented to enable lorries to enter.

A landowner named Seik said until today, the operator had yet to move out.

"We suspect the operator is stealing water, how else will they get water supply?" he said.

Landowner Mak Yue Nin said the site used to be a valley but was now piled high with rubbish.

"There was a different entrance near the Taynton Harmoni condominium, but it was moved further from the main road.

"We hope the occupants move out so work can start," said Mak, adding that the occupants were making money from the land by charging lorries that dump rubbish there.

Kumar Subramaniam, whose father bought a parcel of land there in the 1990s, said the environmental impact was a concern.

"This is a piece of freehold prime

estate close to Kuala Lumpur city centre but because of these illegal activities, it is now ruined," he said.

In 2015, *StarMetro* reported that Solid Waste Corporation (SWCorp) identified the area as an illegal dumping site during a raid.

Those who were caught dumping rubbish in undesignated sites can be prosecuted under Section 71(2) of the Solid Waste and Public Cleansing Management Act 2007 (Act 672) that carried a minimum fine of RM10,000 and a maximum of RM100,000 or a jail term of six months to five years.

Due to each land having individual titles, landowners are bound to ensure that no illegal dumping activities takes place on their premises.

In 2017, the landowners were told to clear up the land or risk being fined RM50,000 under Section 70A of the Street, Drainage and Building Act 1974.

Landowner Angie Ng, 56, said about 70 police reports were lodged but the situation has not improved.

"We are in talks with a few public listed developers to form a joint venture with the owners to build up the area.

"If we were to build anything, a soil test has to be done because of erosion," she said.



LAMPIRAN 3
BERITA HARIAN (DASAR & PENTADBIRAN): MUKA SURAT 4
TARIKH: 23 JANUARI 2019 (RABU)

'Tidak guna kuasa nuklear jika tak selamat'

Malaysia tidak akan beralih menggunakan nuklear sebagai sumber tenaga selagi tiada penemuan sains dan teknologi yang benar-benar membebaskannya daripada ancaman radioaktif.

Perdana Menteri, Tun Dr Mahathir Mohamad, berkata setakat ini belum ada kepakaran yang benar-benar selamat merawat bahan dan sisa buangan nuklear.

"Bahan buangan yang terhasil daripada nuklear dan loji tenaganya amat bahaya serta sukar menghapuskannya.

"Selagi tiada penemuan sains yang selamat untuk nuklear, kita menyatakan tidak untuk guna tenaga nuklear," katanya ketika sesi dialog bersama warga Malaysia yang tinggal di Austria dan Republik Slovakia, di sini, petang kelmarin.

Lebih 100 diaspora Malaysia menghadiri pertemuan itu sempena lawatan kerja tiga hari Perdana Menteri ke Austria.

Dr Mahathir berkata, Malaysia pernah menjual amang kepada syarikat Jepun bagi mengeluarkan televisyen warna daripada bahan radioaktif yang terhasil daripadanya.

"Tapi sekarang (pengeluaran) TV (sudah) bertukar kepada teknologi LED dan Jepun tidak memerlukan lagi amang.

"Namun bahan itu berbahaya dan kita agak lama berbeza pendapat dengan syarikat itu sehingga kita memperuntukkan kawasan seluas satu batu persegi untuk tanam sisa buangannya," katanya.



LAMPIRAN 4
THE STAR (NATION): MUKA SURAT 10
TARIKH: 23 JANUARI 2019 (RABU)

SESB union backs Sabah govt's takeover move

KOTA KINABALU: Sabah Electricity Sdn Bhd (SESB) employees union supports the move to have the state government take over the management of SESB.

Union president Azhar M.Y Ahmad said all union members as well as SESB employees were happy about the move.

"We hope what has been discussed between the union and Chief Minister Datuk Seri Mohd Shafie Apdal, including the workers' welfare, will be fulfilled," he said in a statement here yesterday.

He said during previous meetings with Shafie and other stakeholders, the issue of workers' welfare as well as the welfare of retirees were discussed.

Azhar hoped there would be no breaking of promises on the state government's part now that the utility company is set to come under the management of the state government.

The federal government recently agreed to return SESB to Sabah.

Last month, Energy, Science Technology, Environment and Climate Change Minister Yeo Bee Yin announced that the federal government had agreed in principle to return the ailing SESB to Sabah, 34 years after the state government ceded its powers over the energy company.

Yeo was quoted as saying that the transition for the takeover would take about two years.

She said two committees that would look at financial and technical aspects would be set up to identify the problems within SESB before the company is returned to Sabah.

Shafie was earlier quoted as saying that a special task force comprising state and federal representatives would be set up immediately to speed up the return of the loss-making utility company from major shareholder Tenaga Nasional Bhd (TNB).

LAMPIRAN 5 HARIAN METRO (SETEMPAT): MUKA SURAT 12 TARIKH: 23 JANUARI 2019 (RABU)



PENYANGKUT baju antara barangan yang menggunakan plastik kitar semula di sebuah kilang di Padang Meha.



PEKERJA mengasingkan barang kitar semula sebelum diproses di sebuah kilang di Padang Meha.

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Padang Serai

Ketiadaan sistem yang menyeluruh di negara ini dalam kutipan sisa buangan plastik menyebabkan bahan berkenaan menjadi lambakan sampah membebankan negara.

Seorang pengusaha sebuah kilang kitar semula plastik sah di sini, yang hanya mahu dikenali sebagai Yeoh berkata, kesedaran untuk kitar semula terutama bahan buangan plastik di negara ini masih rendah.

"Apa yang berlaku di sini masyarakat lebih senang

“Jika dijual kepada peniaga barang lusuh sekali pun tidak begitu mendapatkan hasil yang dikehendaki”
Yeoh

membuang saja botol plastik minuman mereka daripada menyimpan untuk dikitar semula.

"Jika dijual kepada peniaga barang lusuh sekali pun tidak begitu mendapatkan hasil yang dikehendaki dan ini menyebabkan proses kutipan sisa buangan plastik untuk dikitar semula tidak dapat dilakukan secara menyeluruh.

Kurang kesedaran

■ Tiada sistem kutipan sisa buangan plastik bebaskan negara

"Walhal, plastik adalah bahan yang mudah untuk dikitar semula berbanding kertas kerana kos dan sumber menjimatkan," katanya kepada Harian Metro ketika ditemui di kilangnya di Kawasan Perindustrian Padang Meha, di sini, semalam.

Katanya, keadaan ini berbeza di negara Barat seperti Amerika Syarikat (AS) dan

United Kingdom (UK) apabila kerajaan mereka menganugerahkan insentif kepada masyarakat mereka dalam memastikan kawalan bahan sisa plastik.

"Di negara maju seperti AS dan UK, kerajaan mereka begitu mengawal sisa buangan kitar semula seperti plastik ini. Mereka akan memberikan insentif seperti

rebat untuk pembelian seterusnya apabila rakyatnya mengumpul sisa kitar semula plastik ini," katanya.

Sebagai contoh, katanya, di negara berkenaan jika seseorang individu itu membeli sebotol air mineral berharga RM2 maka dia layak untuk mendapat rebat RMI saja untuk pembelian seterusnya atas kesedaran mengumpul

dan menyimpan semula botol plastik air mineral itu.

"Segala ini akan direkodkan menerusi kad rebat yang dipunyai mereka. "Saya difahamkan di Kedah dan Perlis sudah dimulakan inisiatif ini menerusi kad rebat namun ia tidak menyeluruh dan tidak dilaksanakan secara meluas dan berterusan," katanya.

Imej pengusaha terjejas teruk



KHALID menunjukkan bahan mentah yang terhasil daripada proses kitar semula bahan sisa industri yang diimport dari luar negara.

Ipoh: Imej semua pengusaha kitar semula yang mempunyai Permit Import (AP) dan mengusahakan industri itu di negara ini dengan telus terjejas teruk angkara sege-lintir pihak yang dipercayai cuba mengambil kesempatan untuk mengimport sampah ke negara ini.

Bhd, Khalid Abd Rahman turut menegaskan, pengusaha bahan kitar semula yang tulen tidak mengambil sampah sebaliknya hanya mengimport sisa industri. Khalid berkata, sampah terkandas di dalam ratusan kontena di Pelabuhan Pulau Pinang seperti dilaporkan Metro Ahad, baru-baru ini adalah sampah yang dilabelkan sebagai *human consumer* atau daripada

penggunaan manusia yang tidak akan dibeli oleh pengusaha kitar semula di negara ini. Katanya, sindiket berkenaan sebenarnya tersilap langkah apabila menyangkakan dapat menjual barangan itu kepada pengusaha kitar semula di negara ini dan terpaksa membiarkannya di dalam kontena apabila sampah berkenaan tiada pembeli.

Pelabuhan Klang: Sejak lebih 30 tahun lalu amalan pelupusan sampah di Jerman tidak lagi menggunakan tapak pelupusan terbuka sebaliknya negara maju itu menggunakan kaedah insinerator.

Wartawan majalah ekonomi WirtschaftsWoche diterbitkan di Jerman, Jacqueline Goebel berkata, kebanyakan rakyat negaranya kurang mengetahui sisa plastik dihasilkan mereka dieksport ke negara lain termasuk Malaysia.

Bellau yang berada di Malaysia atas arahan ketua pengarangnya ditemui ketika mengikuti kumpulan alam sekitar, Greenpeace

Masalah lebih teruk daripada jangkaan



SISA plastik yang diproses ketika tinjauan di Teluk Mengkuang, Teluk Panglima Garang.

meninjau kilang dan tapak pelupusan haram sisa plastik import sekitar Kuala Langat, Telok Panglima Garang dan sekitar Pelabuhan Klang, di sini.

Jerman adalah negara penyumbang eksport sisa plastik di negara ini selain Hong

Kong, Singapura, Amerika Syarikat (AS), Jepun, Korea, United Kingdom (UK), Australia, Sepanyol, China, Indonesia, Thailand dan Vietnam.

"Saya minta maaf dengan apa yang berlaku di negara anda. Masalah ini lebih teruk daripada apa yang saya sangkakan.

"Industri plastik di Jerman sangat baik, kami kitar semula lebih 50 peratus sisa selain mengeksport ke negara lain. Saya dapat lihat pemrosesan kitar semula di sini berbeza apa diamalkan di Eropah dengan pematuhan undang-undang alam sekitar yang ketat," katanya.



“Saya minta maaf dengan apa yang berlaku di negara anda Jacqueline Goebel”

LAMPIRAN 6
NEW STRAITS TIMES (OPINION): MUKA SURAT 15
TARIKH: 23 JANUARI 2019 (RABU)



THARANGA YAKUPITTIYAGE

FOOD SECURITY

EAT PLANTS, SAVE THE PLANET

Food wastage is posing a threat to future populations

WHILE the modern agricultural system has helped stave off famines and feed the world's seven billion residents, the way we eat and produce food is posing a threat to future populations' food security.

With an expected increase in population to 10 billion in 2050, ensuring food security is more important than ever. However, current food production is among the largest sources of environmental degradation across the world.

If such production and consumption patterns continue, we will soon exceed our planetary boundaries such climate change and land use needed to survive and thrive.

"It was quite dramatic to see how much those planetary boundaries would be exceeded if we don't do anything," said Marco Springmann, one of the authors of a report examining the impact of the food system on the environment.

"The food system puts pressure on land management, in particular deforestation. If you knock down too many forests, you basically really mess up the regulating system of the ecosystem because forests store carbon dioxide but they also are habitats for wild species and biodiversity reservoirs," he added.

Over 40 per cent of the world's land has been converted or set aside for agriculture alone. This has resulted in the loss of more than half of the world's forests.

The United Nations Convention to Combat Desertification notes that commercial agriculture is a key driver, especially the production of beef, soy beans, and palm oil.

This can be seen in the Amazon where trees have been cut down and land converted to make way for agricultural activities such as cattle ranching and soy cultivation, much of which is used as animal feed rather than for human consumption.

The intensive use of fertilisers has further diminished land productivity, leading to degradation and even desertification.



Plant-based diets have gained popularity.

Moreover, such actions have contributed significantly to greenhouse gas emissions (GHG).

According to the Options for Keeping the Food System Within Environmental Limits Report, published in the *Nature* journal, the food system emitted over five billion tonnes of carbon dioxide in 2010 alone.

The study also estimates that the environmental effects of the food system could increase by 50 to 90 per cent without any targeted measures, beyond the "safe operating space for humanity."

Springmann pointed to three ambitious measures that are necessary in order to stay within environmental limits, including technological improvements which can increase sustainable food production and thus decrease the demand for more cropland.

Another measure seems to be even more daunting: shifting to a plant-based diet.

"If you go even more plant-based that would be even better for greenhouse gas emissions, and also it is more well-balanced and better for your health... the estimates are such that we would reduce the pressure on land use if we changed our diets," Springmann said.

The *Nature* report found that dietary changes towards healthier diets could help reduce GHG emissions and other environmental impacts by almost 30 per cent.

A new report from the EAT-Lancet Commission also highlighted the need for dietary changes for environmental sustainability and public health.

"The food we eat and how we produce it determines the health of people and the planet, and we are currently getting this seriously wrong," says one of the commission authors, Tim Lang.

"We need a significant overhaul, changing the global food system on a scale not seen before in ways appropriate to each country's circumstances.

"While this is uncharted policy territory and these problems are not easily fixed, this goal is within reach... the scientific targets we have devised for a healthy, sustainable diet are an important foundation which will underpin and drive this change," he added.

While plant-based diets have gained popularity in the region, seen through the success of the Beyond Meat and Impossible Burger companies, Springmann noted that information alone may not be enough to promote dietary changes.

He suggested changing the prices of food products to include health and environmental impacts.

Beef, for example, would need to cost 40 per cent more on average due to its contribution to GHG emissions.

This provides governments with potential revenue to invest in other areas such as the subsidisation of healthier products.

In addition to dietary changes, the EAT-Lancet Commission states that zero loss biodiversity, net zero expansion of agricultural land into natural ecosystems, and improvements in fertiliser and water use efficient are needed.

"The transformation that this commission calls for is not superficial or simple, and requires a focus on complex systems, incentives, and regulations, with communities and governments at multiple levels having a part to play in redefining how we eat," said *The Lancet's* editor-in-chief Richard Horton.

"Our connection with nature holds the answer, and if we can eat in a way that works for our planet as well as our bodies, the natural balance of the planet's resources will be restored. The very nature that is disappearing holds the key to human and planetary survival," he added. **IPS**

With an expected increase in population to 10 billion in 2050, ensuring food security is more important than ever.

LAMPIRAN 7 UTUSAN MALAYSIA (MEGA SAINS): MUKA SURAT 24 TARIKH: 23 JANUARI 2019 (RABU)

Analisis terokai khasiat ketum

KERJA-KERJA penyelidikan bagi meneroka khasiat ketum dimulakan dengan pengecaman spesies tumbuhan berkenaan yang betul. Daun ketum segar dikeringkan terlebih dahulu. Kemudian daun kering dikisar untuk menjadi serbuk sebelum dicampurkan ke dalam air jenis osmosi balikan.

Campuran tersebut dididihkan selama beberapa jam sebelum ditapis dan air rebusan tersebut dinamakan sebagai ekstrak air daun ketum.

Langkah seterusnya adalah rawatan pelarut organik pada ekstrak air tersebut yang menghasilkan dua fraksi ekstrak yang dilabel sebagai SF1 dan SF2. Setelah dianalisis secara spektrofotometrim didapati SF1 mengandungi komposisi kimia jenis metabolik sekunder dan diberi nama A dan B.

SF2 pula mengandungi komposisi kimia yang dikategorikan sebagai sebatian-sebatian pemakanan makromolekul X dan Y.

Analisis kualitatif juga mendapati bahawa kehadiran kumpulan sebatian alkaloid (termasuk *mitragynine* dan terbitannya) dalam ekstrak air daun ketum boleh diabaikan.

Berdasarkan kepada komposisi dan jenis sebatian kimia di dalam SF1, kajian seterusnya dijalankan terhadap fraksi ekstrak tersebut dengan menilai keupayaannya menurunkan paras gula dalam darah tikus yang diaruhkan penyakit diabetes.

Fraksi ekstrak SF2 pula yang kaya dengan sebatian makanan berterapeutik sesuai digunakan dalam kajian berkaitan peningkatan prestasi dan tenaga. Hasil daripada penyelidikan



SEMASA masih berkhidmat dengan FRIM, Abdul Rashid Ahmad terlibat dengan kerja-kerja menganalisis kimia tumbuhan herba dan pengekstrakan.

ekstrak air daun ketum tersebut menunjukkan bahawa fraksi ekstrak SF1 pada dos efektif sangat berpotensi untuk menurunkan paras gula dalam darah tikus yang diaruhkan penyakit diabetes ke paras normal hanya dalam tempoh sebulan.

Didapati juga bahawa berat badan tikus yang diaruhkan diabetes juga meningkat secara normal.

Lebih menarik, keputusan ujian ALT (*alanine aminotransferase*) menunjukkan organ hati masih berkeadaan normal berbanding kumpulan-kumpulan kawalan walaupun telah dirawat dengan fraksi ekstrak SF1 pada tempoh masa yang panjang.

Fraksi ekstrak SF2 yang tinggi dengan komposisi sebatian pemakanan didapati berupaya meningkatkan stamina tikus-tikus dari segi tempoh masa rengangan yang lebih lama berbanding kumpulan-kumpulan kawalan.

Ujian renang paksa (*forced swim test*) berlangsung selama dua minggu dan memberikan hasil kajian yang konsisten.

Lebih menarik lagi, hasil ujikaji ketoksikan akut berdasarkan *OECD Test Guidelines 420* dan subkronik berdasarkan *OECD Test Guidelines 407*, mendapati kedua-dua fraksi ekstrak SF1 dan SF2 tidak menunjukkan sebarang kesan ketoksikan terhadap sistem tubuh badan



TENGGU ZULPURI SHAH RAJA PUJI (tengah) tertarik dengan produk yang dihasilkan FRIM selepas merasmikan MAPS Ke-15 di Kepong, baru-baru ini.

tikus-tikus yang masing-masing diuji selama 14 hari dan 28 hari. Ini menunjukkan ekstrak air ketum adalah selamat pada dos yang digunakan.

Berdasarkan dapatan sebelum ini, fraksi ekstrak SF1 adalah tinggi dengan kandungan kumpulan sebatian jenis metabolik sekunder A dan B.

Kajian penyelidikan yang terdahulu telah banyak melaporkan bahawa sebatian metabolik sekunder A daripada tumbuh-tumbuhan ubatan berupaya mempertingkatkan sistem imun di samping mempunyai aktiviti antioksidan serta berupaya mengawal kesan ketagihan dadah opioid.

Sebatian metabolik sekunder B juga dilaporkan mempunyai aktiviti antioksidan dan peningkatan sistem imun.

Sehubungan itu, pada masa akan datang kumpulan penyelidik FRIM menyasarkan menjalankan beberapa siri penyelidikan yang berkaitan dengan kesan ekstrak air daun ketum ke atas simptom alergi, resdung (sinusitis), meningkatkan sistem imun, mengurangkan dan merawat

masalah ketagihan dadah opioid dan nikotin, malah sebagai ubat penghilang kesakitan dalam rawatan kanser.

Sementara itu, bekas kakitangan FRIM yang pernah terlibat dengan kerja-kerja menganalisis kimia tumbuhan herba dan menjalankan kerja-kerja pengekstrakan pengasingan komponen kimia, **Abdull Rashid Ahmad** berkata, semua tumbuhan mengandungi bahan kimia yang berkhasiat dan memberi faedah kepada manusia jika digunakan sebaiknya. "Begitu juga ketum atau *Mitragyna speciosa*.

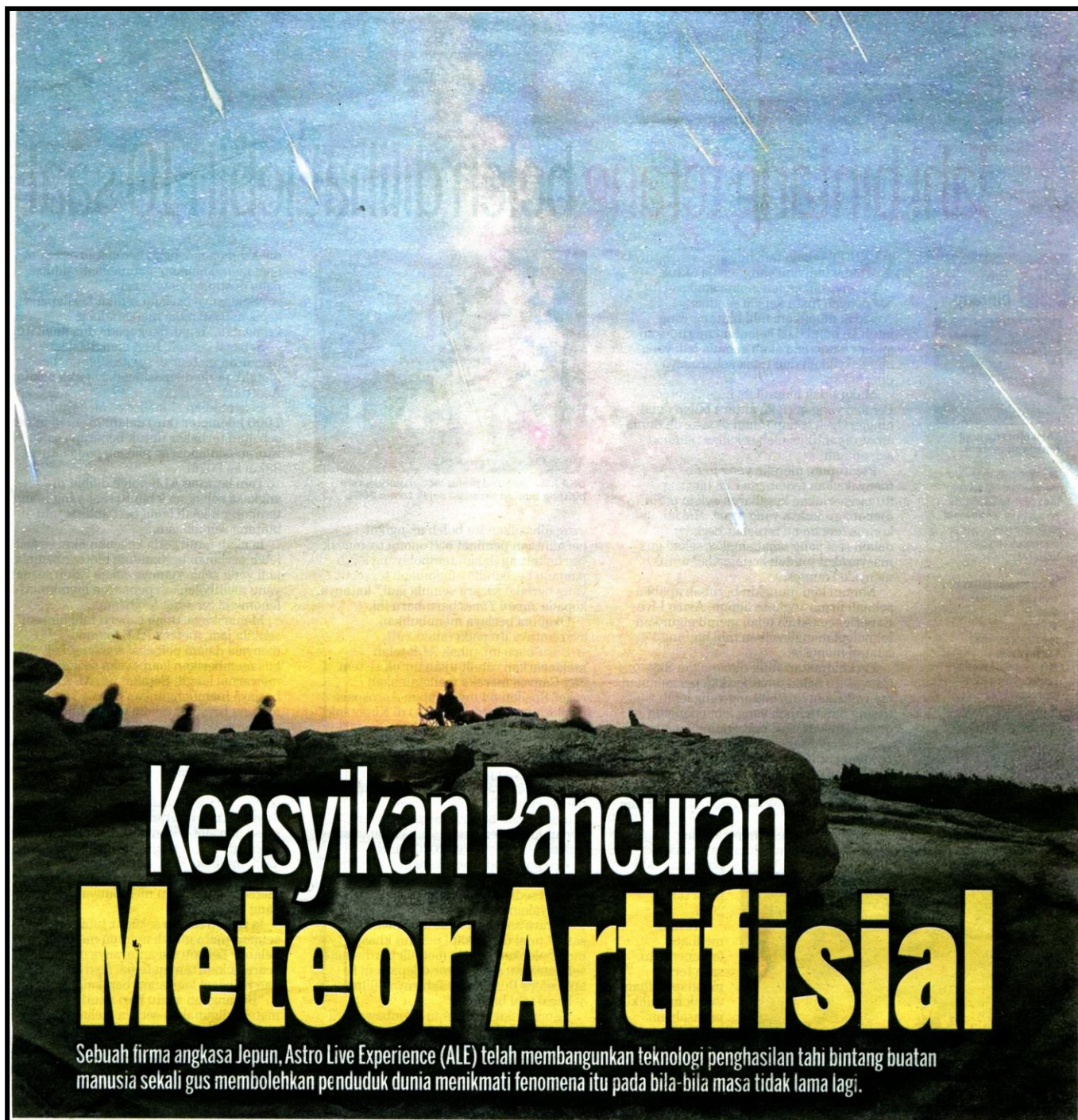
"Malah ganja atau *Cannabis sativa* mengandungi bahan-bahan yang berfaedah untuk kesihatan manusia," ujarnya lagi.

Menurut beliau, Jerman dan Amerika Syarikat tidak mengharankan penggunaan herba-herba yang dinyatakan itu, tetapi dengan cara yang lebih teratur dan terkawal.

"Agak malang di negara kita herba ini disalahgunakan dengan cara yang tidak teratur dan terkawal menyebabkan kesan negatif. Ia mesti dikawal oleh pihak berkuasa," katanya.



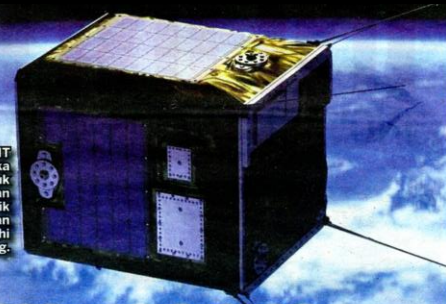
LAMPIRAN 8
KOSMO (INFINITI): MUKA SURAT 25 & 26
TARIKH: 23 JANUARI 2019 (RABU)



LAMPIRAN 8 (SAMB.) KOSMO (INFINITI): MUKA SURAT 25 & 26 TARIKH: 23 JANUARI 2019 (RABU)



PANCURAN tahi bintang buatan manusia boleh disaksikan di mana-mana tempat di dunia berdasarkan permintaan.



SATELIT mini direka khas untuk melepaskan bebola metalik yang akan menjadi tahi bintang.

Tahi bintang terang boleh dilihat lebih 10 saat

INFO Tahi bintang



TAHI bintang juga dipanggil meteor.

- Batu meteor yang menghentam permukaan bumi boleh berbahaya jika bersaiz besar seperti komet
- Disebut meteor setelah menembusi atmosfera Bumi tetapi belum mencapai permukaan
- Ia merupakan asteroid kecil yang memasuki atmosfera bumi
- Geseran udara menyebabkan meteor menjadi panas
- Ia memancarkan cahaya yang boleh dilihat dari permukaan Bumi
- Lazimnya, fenomena tahi bintang tidak sampai 10 saat

SEBUT sahaja tahi bintang, semestinya ramai individu yang teruja untuk menyaksikan fenomena angkasa itu dengan mata kepala sendiri.

Tidak dinafikan, tahi bintang yang jatuh ke bumi dari kejauhan merupakan antara fenomena alam semula jadi yang mengasyikkan dan tidak seharusnya dilepaskan.

Maka tidak hairanlah, hujan meteor Persied yang berlaku antara bulan Julai hingga Ogos setiap tahun di seluruh dunia amat dinantikan oleh sekalian peminat astronomi.

Begitupun, mereka yang ingin menyaksikan fenomena tahi bintang itu memerlukan kesabaran selain perlu menunggu waktu yang tepat. Hal ini kerana fenomena tersebut berlaku dalam sesi yang amat singkat sekali gus masyarakat mudah ketinggalan untuk menyaksikannya.

Namun kini mungkin berubah apabila sebuah firma angkasa Jepun, Astro Live Experience (ALE) telah membangunkan teknologi menghasilkan tahi bintang buatan manusia.

Perkhidmatan yang dinamakan Sky Canvas itu bakal memberikan pengalaman menyaksikan tahi bintang yang lebih terang dan tempoh yang lebih panjang pada satu-satu sesi berbanding fenomena yang berlaku secara semula jadi.

Menurut Ketua Pegawai Eksekutif ALE Co., Lena Okajima, projek itu telah difikirkannya sejak menuntut di University Tokyo dalam subjek astronomi hampir dua dekad lalu.

"Konsep itu mula muncul dalam fikiran saya ketika menyaksikan fenomena pancuran tahi bintang Leonid pada tahun 2001.

"Teruja melihat fenomena itu, saya terus mendapat ilham untuk memiliki perusahaan sendiri dengan menghasilkan tahi bintang buatan pada suatu hari nanti.

"Tahi bintang



OKAJIMA komited mahu menghasilkan tahi bintang buatan manusia sejak tahun 2001.

yang dihasilkan itu boleh mengikut permintaan peminat astronomi termasuk warna terang dalam tempoh yang lebih panjang berbanding fenomena tersebut yang berlaku secara semula jadi," katanya kepada *Japan Times* baru-baru ini.

Okajima berjaya menubuhkan syarikatnya itu pada tahun 2011.

Baru-baru ini, pihak ALE telah melancarkan satelit ujian untuk sistem Sky Canvas mereka menggunakan roket Epsilon #4 milik Japan Aerospace Exploration Agency (JAXA) di Kimotsuki, Jepun.

Bebola metalik

Sekiranya ujian itu berjaya, perkhidmatan Sky Canvas akan mula beroperasi seawal tahun depan dan kemungkinan besar akan mewarnai pertunjukan semasa acara pembukaan Sukan Olimpik Tokyo 2020 nanti.

Biarpun model perniagaan ALE tampak mudah namun, ia memerlukan ketepatan dan persediaan yang amat rapi bagi menjangkakan misi tersebut.

Secara asasnya, ALE melancarkan satelit mini dilengkapi peranti khas membolehkan bebola metalik berdiameter sebesar satu sentimeter dilepaskan ke atmosfera Bumi yang akhirnya dilihat sebagai tahi bintang.

Sebuah satelit mampu membawa kira-kira 400 pelet dengan melepaskan antara lima hingga 20 butir bebola untuk satu-satu acara pertunjukan tahi bintang Sky Canvas.

"Posisi satelit, termasuk kelajuan dan sudut titik perlepasan bebolanya perlu

dilaksanakan dengan ketepatan eskترم bagi membolehkan fenomena itu dilihat pada destinasi yang tepat.

"Sekiranya berlaku sedikit kesilapan kecil, ia pasti akan mengundang kegagalan," tegas ibu kepada dua anak itu.

Sebagai contoh, bagi menghasilkan pancuran meteor di sekitar Jepun, bebola metalik perlu dilepaskan dari jarak sekitar Australia.

Ia kemudian akan bergerak sejauh 7,000 kilometer (km) dalam masa 15 minit sebelum terbakar untuk beberapa saat ekoran pemancaran plasma pada altitud 60km ke 80km.

Tahi bintang ALE boleh dilihat di angkasa sehingga lebih 10 saat yang mana tempoh itu lebih lama berbanding tahi bintang semula jadi.

Ia akan jatuh pada kelajuan 8km sesaat, lebih perlahan berbanding meteor semula jadi yang kebiasaannya selaju 72km sesaat yang membolehkan penonton menikmati fenomena tersebut lebih lama.

Menariknya, tidak seperti tahi bintang semula jadi, meteor ALE mampu menyala dalam pelbagai warna sekali gus memberikan keupayaan seakan-akan mewarnai langit. Setakat ini, ALE telah berjaya membangunkan bebola yang mampu bersinar dalam warna hijau, biru dan oren.

Secara teorinya ALE berkeupayaan untuk menghasilkan tahi bintang di seluruh destinasi.

Individu yang berminat perlu membuat tempahan menerusi sistem online dengan memberikan butiran perincian seperti masa dan slot lokasi untuk sesuatu acara.

Pengarah Strategi Global ALE, Rie Yamamoto berkata, Sky Canvas yang mempertaruhkan perkhidmatan pancuran meteor artifisial itu mempunyai potensi yang cukup besar.

Ia bukan sahaja sekadar hiburan semata-mata malah mampu menarik pelabur berpotensi antaranya operator acara sukan, taman tema, festival keraian dan pelbagai lagi acara berskala besar.

"Bayangkan suatu hari nanti, meteor digunakan secara meluas bagi menggantikan pertunjukan bunga api peringkat antarabangsa, lamaran perkahwinan mahupun tarikh peristiwa memorial penting, ini pastinya suatu pencapaian yang memberangsangkan," ujarnya.

TAHI bintang berpotensi menggantikan bunga api pada masa depan.



LAMPIRAN 9
KOSMO (DUNIA): MUKA SURAT 43
TARIKH: 23 JANUARI 2019 (RABU)

Gempa bumi gegar Indonesia

JAKARTA - Satu gempa bumi kuat bermagnitud 6.4 menggegarkan Pulau Sumba di Indonesia semalam tetapi tiada amaran tsunami dikeluarkan dan tiada kerosakan dilaporkan.

Gempa itu menyusuli dua gegaran pesisir pantai di kawasan sama yang melanda terlebih dahulu termasuk satu gegaran bermagnitud 6.1.

Gempa terbaharu itu berlaku sekitar 85 kilometer ke selatan bandar Kahale, demikian menurut Pusat Kajian Geologi Amerika Syarikat.

"Gempa itu tidak menunjukkan potensi ancaman tsunami," kata jurucakap Badan Nasional Pengurusan Bencana Indonesia, Hary Tirto Djatmiko.

Rakyat Indonesia masih terkejut akibat tsunami yang berlaku pada hujung Disember 2018 selepas gunung berapi Anak Krakatau meletus di Selat Sunda dalam bencana yang mengorbankan lebih dari 400 orang. - AFP

LAMPIRAN 10 KOSMO (DUNIA): MUKA SURAT 41 TARIKH: 23 JANUARI 2019 (RABU)

Saintis sangkal teori kewujudan Planet Nibiru

CAMBRIDGE, Britain – Teori kewujudan planet misteri di hujung sistem suria yang melangkaui kedudukan planet kelapan, Neptune disangkal oleh saintis Universiti Cambridge di sini baru-baru ini.

Digelar Planet Nibiru, Planet 9 atau Planet X, teori kewujudan planet misteri itu bermula pada tahun 1995 bagi menjelaskan fenomena tarikan dan tolakan graviti yang kuat terhadap objek-objek di Kuiper Belt iaitu zon angkasa lepas selepas Planet Neptune.

Antara teori yang dilontarkan di media sosial termasuk kedatangan Planet Nibiru akan menyebabkan kemusnahan Bumi apabila orbit planet misteri itu melintas berhampiran bumi setiap 3,600 tahun.

"Teori planet itu memang menarik tetapi jika benar ia wujud, kita masih gagal mengesannya setakat ini. Mungkin punca tarikan graviti itu cuma barisan objek-objek beku yang kecil," kata pelajar doktor falsafah (PhD) Jabatan Matematik Gunaan Dan Teori Fizik Cambridge, Antranik Sefilian.

Penyelidik universiti tersebut mendakwa mungkin wujud satu susunan objek-objek dalam bentuk cakera merentasi Kuiper Belt itu sendiri yang 10 kali ganda lebih berat daripada Bumi. – Agensi



AGENSI
ILUSTRASI artis menggambarkan bentuk Planet Nibiru.

LAMPIRAN 11
THE STAR (WORLD): MUKA SURAT 25
TARIKH: 23 JANUARI 2019 (RABU)

Unhappiness linked to poor air quality in China

PARIS: Eye-watering, throat-scratching air pollution is a major driver of big city blues in China, according to a study published that matched social network chatter with fine-particle pollution levels.

"The take-away is simple," lead author Siqi Zheng, an associate professor at MIT and director of the University's China Future City Lab, said on Monday.

"Higher levels of air pollution lower people's happiness in the world's most populous country."

Dirty air is not the only blight on life in urban China, which is also plagued by soaring housing prices, worries over food safety and poor public services.

But health-wreaking pollution – especially microscopic bits from coal-fired power plants and factories that settle in the lungs – is a long-standing gripe of the country's burgeoning middle class.

More than a million premature deaths every year in China can be chalked up to air pollution, the World Health Organization and other research groups have concluded.

A toxic cocktail of small and larger particulate matter, nitrogen dioxide (NO2), sulphur dioxide (SO2) and ozone (O3) is likewise linked to poor cognitive performance, labour productivity and educational outcomes.

On polluted days, people are also more likely to engage in impulsive and risky behaviour they may later regret, observational studies have shown.

Awareness of the problem and its consequences is very high among



Urban dismay: Pedestrians crossing a road as buildings stand shrouded in haze in Beijing. — Bloomberg

China's city dwellers, a fact not lost on the government.

After an embarrassing episode in 2012 when daily pollution levels published on Twitter by the US embassy in Beijing were consistently higher than official figures for the city, China's leaders declared war on smog-clogged air.

They set up hundreds of monitoring stations throughout the country, and introduced more stringent standards, especially for small particles less than 2.5 microns (PM2.5) in diameter.

The average human hair is 60 to 90 microns in width.

According to the new rules, the

density of these dangerous microscopic particles should not exceed 35 microgrammes per cubic metre (35mcg/m3) for any 24-hour period.

WHO Air Quality Guidelines are even stricter, setting the limit at 25mcg/m3.

In China's most heavily polluted cities – including Beijing and Tianjin, home to more than 35 million – particle density is often two, three and even four times higher than either standard.

To gauge how urban air pollution affected day-to-day mood, Zheng and colleagues used machine-learning algorithms to comb through more than 200 million messages

from 144 cities posted in 2014 on Weibo, China's largest microblogging site.

As of mid-2018, Weibo, similar to Twitter, had 455 million active users.

The researchers devised an "expressed happiness index" based on key words and context, and then stacked it up against fluctuating PM2.5 pollution levels.

"We found a significant negative correlation" – when one went up, the other went down – "between pollution and happiness levels", Zheng said.

"Women were more sensitive to higher pollution levels than men."

Average daily PM2.5 concentration was 55mcg/m3 across all 144 cities – more than double the WHO limit – and several times higher in many.

More than half of China's population – nearly 700 million people – now lives in urban areas.

Intriguingly, the link was strongest in the cleanest and dirtiest cities examined.

People very worried about health and air quality tend to move to cleaner cities, the study suggested, while those in the dirtiest urban areas were more aware of damage to their health.

"Our index has the potential to become a tool for the government to understand common citizens' daily concerns," Zheng said.

The Chinese government, in fact, has long monitored posts and conversations on social networks to track public opinion.

Since 2013, PM2.5 particle pollution has dropped on average about 40%, according to one recent study, but ground-level ozone pollution continues to climb.

A Chinese environment ministry official said on Monday that PM2.5 density rose 9.2% year-on-year between Oct 1 and Jan 19 in the Beijing-Tianjin-Hebei area, according to the Xinhua news agency.

China wants to slash PM2.5 density by three per cent year-on-year between Oct 1, 2018 and March 31, 2019 in the region, said the official, Liu Bingjiang.

Cities that miss air quality targets will be penalised with "accountability measures", which have yet to be determined, he said. — AFP