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The 2014-2015 Fred Kan & Co. prize was awarded to Luk ting Yan's dissertation: Recycling and mandatory waste sorting in Hong Kong: issues and potentials, which was submitted for the M. Sc. (Environmental Management) degree, University of Hong Kong. This edition of UPELQ reviews key aspects of the dissertation.

The Editors

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TACKLING HONG KONG'S PERENNIAL WASTE DISPOSAL PROBLEMS

In recycling and mandatory waste sorting in Hong Kong

The author discusses Hong Kong's current system for disposing of municipal solid waste (MSW) and public perceptions of the system and its effectiveness. The dissertation focuses on recycling of waste and the extent to which the community may be willing to embrace and follow a wider, more robust recycling programme.

Whilst most people would have at least a vague realisation that Hong Kong is faced with serious near-term MSW disposal issues, the author reminds us at the outset of the extent of the local and world problem of dealing responsibly with MSW.

A substantial part of the dissertation reports on responses to questionnaires distributed publicly and to green groups. These, broadly speaking, do not engender confidence that a more comprehensive recycling programme would be widely accepted and utilised.

Waste problem and management hierarchy

Disposing of increasing volumes of MSW has become a major global environmental problem.

MSW comprises domestic and industrial solid waste plus waste from public institutions. In 2012 approximately 1.3 billion tonnes of MSW were generated globally. This figure is expected to triple by 2100.

Disposal of MSW has traditionally been by three methods: landfill, incineration and recycling. More recently, developed regions – such as Europe – have given increased focus to recycling waste, an important aspect of which is re-use of materials. It is predicted that, generally speaking, landfilling of waste will decline, which is due to changing attitudes of people to the "waste management hierarchy".

Since the late 1970s (which was about the beginning of greatly increased environmental awareness in Western countries), communities around the world gradually accepted the need to recycle and re-use materials more, and to dump them less, thereby achieving a reduction of MSW.

Benefits of recycling waste

Sustainable waste disposal means we must recycle (and re-use) increasing volumes of our MSW. In a small place like Hong Kong, it is obviously beneficial to devote our very limited land to more economically and environmentally (e.g. country parks) useful purposes, rather than landfills.

But there are also other direct environmental advantages to recycling as versus dumping waste, as illustrated by the author's following comments:

“In the environmental aspect, recycling can help reduce the amount of waste via saving the reusable materials. Natural resources can also be saved by recycling: for example, 1.13 tonnes of iron ore and 0.64 tonnes of coal are preserved by recycling 1 tonne of steel (DHEC, 2012). Recycling can also reduce the air pollution problem that may be due to the landfill gas emission from landfill and flue gas emission during incineration. The main components of landfill gas released to air are greenhouse gases: methane (CH₄) and carbon dioxide (CO₂) (EEC, 1997). The global warming potential of CH₄ is about 20 times greater than CO₂ for a period of 100-year (US EPA, 2014). Corrosive and toxic flue gases from the incinerator will not produce methane but still lead to the formation of hazardous air pollutants, including greenhouse gases such as CO₂ and nitrogen oxide (NO_x). Moreover, water and soil pollution problem may be caused by both landfill and incineration. Leachate from landfill is considered to be highly polluted and contained several compounds such as heavy metals, micro-organisms and organic compounds which may increase the risk of soil and groundwater contamination. Meanwhile, the discharge of effluent water from the incinerator to surface water will have negative impacts on animals and plants, particularly on aquatic species (European Commission, 2008).”

Recycling also provides direct economic returns, such as the sale of recycled raw materials, e.g. glass, plastic and metals, and enabling communities to avoid the costs of landfilling their waste.

Having compared the three main disposal methods: landfill, incineration and recycling, the author concludes: *“... recycling seems to be more preferable and sustainable methods when dealing with waste. It shows environmental benefits by minimising the waste and saving the natural resources. The private and external costs for recycling are lower than incineration and landfill. Also, it has comparatively low social impact when comparing to incineration and landfill. As there are many benefits of recycling over landfilling and incineration, this study is focusing on recycling.”*

Hong Kong's waste disposal problem

We should all be aware, from frequent media reports, that Hong Kong faces a huge environmental and logistical problem in dealing with the outrageous volumes of MSW we generate. The dissertation briefly describes the problem: *“... Hong Kong is now also facing a heavy waste load problem. Over 6 million tonnes of MSW are generated annually and this waste generation rate is growing faster than expected (GovHK, 2014). Hong Kong relies primarily on landfills to treat solid waste and more than half of the MSW were disposed of in landfills. By 2020, the three landfills will be completely full (HK EPD, 2014d). Landfilling is the last option in the waste management hierarchy and it is not a sustainable method. The current practice of handling waste in Hong Kong should be changed to a more sustainable way so as to address this looming waste problem, for instance, by increasing the proportion of waste recycling while minimising landfilling.”*

The author also notes:

“Waste separation is seen as an essential element of waste life cycle; many different places, such as Germany, Korea and Taiwan, have implemented mandatory waste sorting in order to improve the performance of waste recycling. Although there are few studies about the mandatory MSW sorting (Chang et al., 2013; Lu et al., 2006; Michaelis, 1995), there is lack of specific study about the potential of implementing mandatory waste sorting in Hong Kong. Therefore, one of the major focus areas of this study is to identify the feasibility of improving recycling performance by introducing mandatory waste sorting in Hong Kong.”

Current recycling and waste sorting programmes

Effective waste recovery begins with effective waste identification and sorting. In Hong Kong, this task is carried out by waste generators, dedicated/specialist organisations and individuals/scavengers. Recyclables are recovered and generally sold to commercial recyclers. The author notes:

“According to the EPD's most updated statistics on solid waste recycling in Hong Kong, there were 2.01 million tonnes (37%) of recyclable materials recovered for recycling while 3.48 million tonnes (63%) of MSW were disposed to landfill in 2013 (Figure 8) (HK EPD, 2015). Figure 9 shows that there is a decreasing trend on the MSW recycling rate since 2010 and this decreasing trend is expected in relation to the substantial fluctuations in the export of waste plastics. For those recovered recyclable materials, about 92.88% were exported out of Hong Kong for recycling and only 7.12% were recycled locally (HK EPD, 2015).”

There are four main reasons for Hong Kong's relatively low recycling rate:

- low economic value of recycled materials, combined with high recycling costs, e.g. cleaning or melting-down materials
- some waste is not easily recyclable; e.g. plastic bottles require large storage and transport space
- high land costs
- high labour costs.

Government involvement

The government's two main policy planks for improving waste disposal are:

- (a) implementing the MSW charging system to help achieve waste reduction objectives; and
- (b) expanding producer responsibility schemes (PRS) under which waste producers (e.g. manufacturers and importers) are made responsible for safely disposing of their products at the end of their life.

The author observes that plastic bags were the first product covered by PRS, and electrical and electronic equipment and glass bottles will probably soon be brought into the PRS.

The government has assisted in implementing rudimentary recycling schemes in various localities, mainly by operating the 3 coloured recycling bin scheme. It has also established a HK1 billion Recycling Fund.

The Programme on Source Separation of Domestic Waste, established recently by the Environmental Campaign Committee, has enjoyed moderate success in increasing recycling by participants and reducing their disposal of waste to landfill. The author notes: *“... this source separation programme has already covered over 80% of Hong Kong residents. When comparing to the data in 2005 (i.e. before establishing the domestic waste sorting programme), the waste recovery rate had largely increased in those participating estates. As the recycling rate had increased, the waste disposal rate of those participating estates had reduced by 10% (HK EPD, 2011a). Moreover, after the success of the source separation programme in domestic waste, this programme was expanded to commercial and industrial sector in 2007. There are recently 858 commercial and industrial buildings had signed up for the programme (Waste Reduction Website, 2014b). Besides increasing the quantity of recyclables through waste sorting programme, a Clean Recycling Campaign will be promoted by the government so as to increase the quality of recyclable materials (HKSAR, 2015). Better quality of recyclables can increase the recovery rate and also the corresponding market value.”*

Waste recycling overseas

The dissertation includes very useful and interesting comments on waste reduction/recycling initiatives adopted in several sample countries, mainly Germany, South Korea and Taiwan. We shall not attempt an overview of this section here; but in summary, it is clear that in each of these countries recycling/reduction of

waste is at a significantly higher level than in Hong Kong. For example, the simple but obvious (but not to our government) initiative of making separation of waste at source mandatory dramatically improved Taiwan's recycling rate. By 2011 Taiwan's total disposable waste had declined by 50.4% compared to 2001. By 2013 the recycling rate had reached 55.01%.

Taiwan also has a much more environmentally responsible approach to food waste disposal, which is a major specific waste problem for Hong Kong; approximately 70% of food waste is used as pig feed, and the other 30% is composted.

Survey responses

There were 180 responses from the public to the author's questionnaire, and three from green NGOs. The public questionnaires were distributed to selected age and education groups. Eight questionnaires went to the NGOs.

Considerable data are recorded in the dissertation from these responses, which provide an interesting and useful insight into community attitudes towards Hong Kong's waste disposal problems. Space does not allow for a full survey of this important section of the dissertation. However, we note that the majority of public respondents and all the NGOs accepted that initiatives, such as mandatory waste sorting and MSW disposal charges, should be implemented, by the government. It is also encouraging to note that 71.1% of respondents said they were willing to participate in a source separation and recycling programme. On the other hand, 86% of respondents said they "may not" take the trouble to prepare plastic bottles for recycling, e.g. remove caps and wash.

In conclusion, the author compared overall responses from the public and NGOs:

"When comparing the results of the questionnaires from the general public and the green groups, they have similar views on the following four statements:

- 1. Source separation is important in recycling Municipal Solid Waste
Public: 100% of the respondents were strongly agreed or agreed
Green groups: 100% of the respondents were strongly agreed*
- 2. The current waste separation and recycling performance in Hong Kong is good enough
Public: 89% of the respondents were strongly disagreed or disagreed
Green groups: 67% of respondents were strongly disagreed or disagreed*
- 3. The Government should have legislation or policy on mandatory waste sorting.
Public: 89% of the respondents were strongly agreed or agreed
Green groups: 100% of respondents were strongly agreed*
- 4. Mandatory waste sorting should implement before or together with the Waste Charging Scheme.
Public: 82% of the respondents were strongly agreed or agreed
Green groups: 100% of respondents were agreed"*

Conclusion and recommendations

The author recommended key government policies and legislation to improve our rate of recycling/reduction of MSW, namely:

- (1) Legislate for mandatory sorting of waste at source, as this is a fundamental to the sample countries' superior waste disposal schemes.
- (2) Require food waste to be separated from MSW, and then disposed of in a more environmentally responsible way, such as by composting.
- (3) Introduce realistic charges for waste disposal.
- (4) Enhance the number and designation of waste disposal/recycle bins to make this scheme more efficient than it currently is.
- (5) Increase the capacity and frequency of collection of recycle bins.
- (6) Improve public awareness of the need to dispose of MSW responsibly, especially by recycling as much waste as possible. This entails conducting education programmes covering waste disposal issues.
- (7) The government should cooperate more with green groups and recyclers to improve the entire recycling system.

The author's primary conclusion and recommendation were:

"... as MSW loads continue to increase rapidly and Hong Kong is also running out of landfill capacity, the existing recycling and sorting practices should be enhanced. Moreover, Hong Kong should focus more on waste recycling and should not over rely on landfill. The three overseas case studies had a relatively high recycling rate than Hong Kong. All of them have adopted mandatory waste sorting and people are required to separate waste into at least three categories which are recyclables, non-recyclables and food waste. According to the literature review, waste separation is proven to be one of the essential parts in recycling. However, the programme on source separation of waste in Hong Kong is still only on a voluntary basis."

We congratulate Luk Ting Yan for a very well researched and written dissertation on an extremely important environmental issue for Hong Kong: reducing and recycling our waste.

TOWN PLANNING

Projections of future population distribution

The Planning Department published a report titled "*Projections of Population Distribution 2015-2024*" on 17 December 2015. The report contains the latest population distribution projections for the period 2015-2024. The projections are based on the latest projected population figures released by the Census and Statistics Department in September 2015 and the most recent town planning data available.

According to the report, the population of the New Territories and Kowloon will increase by 456 600 and 132 400, reaching 4.24 million and 2.33 million respectively by 2024, while that of Hong Kong Island is expected to decrease to 1.19 million.

The Report also stated that by 2024 the population of the New Territories, Kowloon and Hong Kong Island will account for 55%, 30% and 17% of the total population of Hong Kong respectively.

[Planning Department, Press Release, 17/12/2015]

Construction of flats delayed

According to a survey conducted by the Department of Real Estate and Construction of the University of Hong Kong, nearly half of the residential projects approved by the Town Planning Board between 1990 and 2014 were never built. Researchers reached their conclusion based on information collected from several government departments, such as the Town Planning Board and the Land Registry.

The survey shows that there were approvals for 200,000 residential units between 1990 and 2014 but only 102,313 were built. A total of 355 comprehensive development area project application, involving 724 hectares, were filed with the Board during that period, but only 65 projects on 278 hectares were approved or undertaken.

Chan Kwong-wing, head of the HKU Department of Real Estate and Construction and a member of the research team, said the long delays in projects reaching fruition were caused by repeated applications by developers to alter plans.

According to Chan, it was usual for companies to change plans as “a zone is very large and to cope with the changing market conditions the developers are always resubmitting plans with minor design changes.” So he suggested that the current regulations be eased.

One change could be the Board introducing a classification system for minor alterations so approval could be given more quickly than if the entire plan is resubmitted.

[*The Standard*, 13/01/2016]

Community Engagement for “Planning and Engineering Study for Housing Sites in Yuen Long South Investigation”

The Planning Department and the Civil Engineering and Development Department launched the Stage 3 Community Engagement for the “*Planning and Engineering Study for Housing Sites in Yuen Long South Investigation*” on 19 January 2016 to collect public opinions on the draft “*Recommended Outline Development Plan*” (“RODP”). The Community Engagement will last for three months. The object of the Study is to assess and enhance the development potential of brown-field land in Yuen Long South for housing and infrastructure purposes.

Yuen Long South, which is located to the south of Yuen Long New Town, could be developed as a southern extension of the New Town and serve as a major source of housing supply. The Planning Department estimated that the development could accommodate a total of population of 85,000 and create about 10,800 employment opportunities.

The Community Engagement will include community forums, briefings and exhibitions.

[*Planning Department, Press Release*, 19/01/ 2016]

Waterfront plan lacks finance as developer withdraws

It is unclear how the refurbishment plan of the Tsim Sha Tsui Promenade will now be financed, following the withdrawal of New World Development’s offer to finance the plan.

The Leisure and Cultural Services Department (LCSD) last year signed an entrustment deal with New World Development, which agreed to finance renovation of the promenade and to operate the entire strip of waterfront open space in Tsim Sha Tsui East through a non-profit arm.

The upgrade plan would have brought in new food outlets, a film industry exhibition and performance hubs. But the plan has not been endorsed by the Harbour front Commission which has strong reservations as to the wisdom of adding structures to the waterfront.

The plan also faces two court challenges which were brought against the Town Planning Board’s approval of the rezoning plan last August. One of the judicial battles was mounted by a political party and the other by New World Development’s business rivals.

In November 2015, Kowloon Shangri-La Hotel and Murdoch Investments Inc, a subsidiary of Sino Group that manages the Tsim Sha Tsui Centre, filed an action for judicial review in a bid to overturn the plan.

In view of the fact that New World Development will no longer take part in the plan, the applicants said that the judicial challenges are no longer necessary.

[*China Daily*, 18/02/2016]

Conflicts over farmland

A lot of land in Hong Kong is of great ecological value but remains in the hands of individuals. There are a total of 77 country park enclaves in Hong Kong that were excluded as buffer areas from the boundaries of country parks. Most of these enclaves consist of agricultural land belonging to private parties. In the 2010-11 Policy Address, the government promised to incorporate 54 enclaves into country parks or put them into statutory town plans; the other 23 enclaves were already included. But the work to achieve this goal is not yet done.

In 2013, villagers in Sai Wan blocked the village’s only entrance to vent their anger at the government’s decision to include the whole Tai Long Sai Wan area in Sai Kung East Country Park. The protest prevented hikers and beach lovers from going to Tai Long Wan.

Professor Chu Lee-man, former chairman of the Country and Marine Parks Board, said the villagers believed the government was taking their land in the name of conservation. But he added that villagers’ rights to build village houses remain unaffected, even if their villages are incorporated in country parks.

The government is facing a dilemma between private property rights and conservation. It has come up with two schemes to overcome the dilemma. One is through a management agreement scheme to allow non-governmental organisations to work with landowners on conserving the land. The other is a public-private partnership scheme to give private parties a chance to develop areas under limited conditions to reduce harm to ecosystems.

[*China Daily*, 20/02/2016]

WEST KOWLOON CULTURAL DISTRICT

M + Museum exhibits political pictures

Three photos relating to the Tiananmen Square Incident are featured in an exhibition at the West Kowloon Cultural District's M+ Museum. Apart from the three photos, the museum also exhibits early works of mainland artist Ai Weiwei, whose artworks are usually subject to censorship by the mainland government.

The three photos, taken by Hong Kong born artist Liu Heung Shing, are of injured students, the hunger strike and a tank relating to the June 4th Incident. Dissident artist Ai will have an early installation-- *Still Life* of 4,000 stone axheads from the Stone Age to the Shang dynasty-- laid out on the floor of the museum.

The exhibition features 80 items from the collection of a Swiss collector, Uli Sigg, including paintings, sculptures, videos and installations that record China's changes from the late Cultural Revolution in 1974 until 2012. The government was slammed for having spent over HK\$170 million to buy 47 artworks from Sigg in 2012, despite his donating another 1,463 art pieces worth HK1.3 billion to the M+ museum.

Senior curator Pi Li said: "M+ is a cultural institution that is independent from political atmosphere. An artist is a free spirit; one can be like Ai Weiwei who uses art as a political protest, but there are also artists of other styles. Our work is just to show the public artwork with high quality and of important historical importance."

[*The Standard*, 23/02/2016]

Appointment of Consultation Panel members

The West Kowloon Cultural District Authority announced the re-appointment of 12 existing members and the appointment of 4 new members to the Consultation Panel for a term of one year, effective from 1 March 2016. Professor John Leong Chi-yan was re-appointed as Chairman of the Panel.

Chairman of the Board of the West Kowloon Cultural District Authority said, "I would like to extend my sincere welcome to all new members of the Consultation Panel who are experienced in areas including arts and culture, education, youth matters and the wider community. I look forward to their input and participation in enhancing the public's understanding of and the building of a sense of ownership towards the West Kowloon Cultural District project, particularly among our young people."

The Consultation Panel was established in accordance with section 20 of the *West Kowloon Cultural District Authority Ordinance* to gather public views on matters relevant to the functions of the Authority.

[*West Kowloon Cultural District Authority, Press Release*, 4/03/2016]

HONG KONG BRIEFING

Promotion of plastic recycling through community efforts and market forces

The Environmental Protection Department (EPD) and Yan Oi Tong (YOT) have mutually agreed to shift the work of the Plastic Resources Recycling Centre (PRRC) at the EcoPark in Tuen Mun to the community.

Funded by the Environment and Conservation Fund (ECF) and managed by YOT, the PRRC has been operating since 2010 to conduct public education and promote recycling through on-site demonstrations of turning waste plastics into reusable materials. In addition, the PRRC has been assisting the local community to establish a stable recycling network for waste plastics comprising over 900 collaboration partners with more than 1,000 collection points to alleviate the pressure on landfills.

To tie in with the strategy in deepening the promotion of recycling, the promotional role of the PRRC will be shared by other projects funded by the ECF, including the 19 Community Recycling Centres and the Community Green Stations to promote the concept of clean recycling in the community through market mechanisms. The spokesperson of the EPD encouraged the public to practise sorting of waste at source to avoid recyclables being mixed with non-recyclables to reduce the amount of waste being disposed of at landfills.

[*EPD Press Release*, 02/03/2016]

15th batch of applications approved under the Pilot Green Transport Fund

The Government set up the HK\$300 million Pilot Green Transport Fund in March 2011 to encourage the public transport sector to test green transport technologies. The Fund is open for applications from transport operators, who may try out different green products subject to a maximum subsidy of HK\$12 million in total.

The Steering Committee of the Fund announced its approval of the 15th batch of applications today are for the trial of two hybrid light goods vehicles, involving a total subsidy of about HK\$0.5 million.

The latest approval brings the total number of trials being conducted to 87 totalling about HK\$88 million of subsidy, involving the testing of electric taxis, electric light buses, electric buses, electric goods vehicles, hybrid goods vehicles, hybrid light buses, solar air-conditioning system, electric inverter air-conditioning systems for buses, adoption of a diesel-electric propulsion system and seawater scrubber in a ferry.

For those trials which have completed the two-year period, interim and final reports have been uploaded to the Fund's website for public information.

[*EPD Press Release*, 24/02/2016]

Pre-primary environmental education to promote "use less, waste less" practice

At today's achievement ceremony, the Secretary for the Environment concluded the Early Childhood Education Pilot School Campaign which aims to help disseminate the low carbon living message of "use less, waste less" to students and parents had ended successfully, involving more than 3000 participants from 53 nursery schools and kindergartens.

The Pilot Campaign is an environmental education and community action project supported by the Environment and Conservation Fund (ECF). The project aims to strengthen teachers' capabilities in developing school-based green curricula and raise the environmental awareness of pre-primary students.

In addition to an educational pack on waste reduction, the participating nursery schools and kindergartens were also provided with motion-sensing three-colour recycling bin tailored to children's height to assist teachers in conducting environmental education in schools. Further, the Child Education Centre for Teaching and Learning (CECTL) has provided training for about 120 teachers to ensure the effective use of the educational pack.

Building on the success of the Pilot Campaign, Mr Wong called for support for the upcoming Kids' Greenway project, which aimed to enhance understanding of the "reduce, reuse and recycle" concept of low carbon living.

[EPD Press Release, 29/01/2016]

South East New Territories Landfill for construction waste only

The EPD reminded the public that from 6 January 2016 the South East New Territories (SENT) Landfill at Tseung Kwan O will only receive construction waste, and vehicles delivering non-construction waste will not be allowed to enter the SENT Landfill. To ensure a smooth transition, the EPD reminded affected property owners to ensure their waste collection contractors have already made necessary arrangements.

The EPD advised non-construction waste, including domestic, commercial and industrial waste should be delivered to the EPD's refuse transfer stations (RTSs) or to the other two landfills at Ta Kwu Ling in North District and Nim Wan in Tuen Mun.

The EPD estimated upon the commencement of this arrangement, the daily waste intake at the SENT Landfill will be reduced to approximately 500 vehicular loads with diverted waste absorbed by the RTS network. The Food and Environmental Hygiene Department (FEHD) has rescheduled some of the waste collection service and delivery routing in Kowloon and the New Territories to spare more handling capacity at RTSs for the waste diverted.

To ensure that no environmental nuisance will be caused to nearby residents, the EPD has amended the Waste Disposal (Designated Waste Disposal Facilities) Regulation with effect from 1 April 2015 to require all refuse collection vehicles (RCVs) entering a landfill or an RTS to be equipped with a suitable metal tailgate cover and a waste water sump tank. A one-off subsidy was available to assist RCV owners in retrofitting their RCVs accordingly.

[EPD Press Release, 04/01/2016]

Further relief to proprietors affected by massive fish deaths

Since last December, there have been massive deaths of cultured fish related to the occurrence of red tides and harmful algae in the waters extending from Tolo Harbour to Long Harbour. Arrangements have been made for the affected proprietors at Yim Tin Tsai, Yim Tin Tsai (East), Yung Shue Au, Lo Fu Wat, Sham Wan, Tap Mun and Kau Lau Wan fish culture zones to apply for assistance from the Emergency Relief Fund (ERF).

A spokesperson for the Agriculture, Fisheries and Conservation Department (AFCD) announced further relief will be provided. With the consent of the ERF Committee, the AFCD will provide a special grant of up to \$7,260 in addition to the primary producer grants to eligible proprietors. To date, AFCD has approved 209 applications involving some \$1.37 million of primary producer grants.

[AFCD Press Release, 23/02/2016]

Implementation of the Strengthened Control of Exhaust Emissions

The Ombudsman reported its investigation into the Government's Implementation of Strengthened Control of Exhaust Emissions from Petrol and LPG Vehicles. The report concluded the coordination between the EPD and the Transport Department (TD) had been largely ineffective. The Clean Air Network (CAN) concurred and urged immediate evaluation of the shortcomings of the current collaboration.

Whilst EPD was not effective in coordinating the tasks at hand, the TD is also to blame for its inaction. For example, as early as 2002, the expert group formed by the EPD has supported the proposal of using remote sensing equipment and treadmills for monitoring of vehicles with excessive exhaust emissions. The TD did not follow up on the proposal in the past 14 years.

Further, roadside air pollution is the biggest public health crisis in Hong Kong, accountable for 2196 premature deaths and HK\$27.4 billion losses according to the Hedley Environmental Index. Since Nitrogen Dioxide from exhaust pipes is the key pollutant, CAN suggested treadmill tests to be included in the annual vehicle examination, thereby lowering the relevant medical costs. However, CAN believe no financial incentives should be provided to carry out the tests as the costs in keeping the vehicles in good condition should not be externalised by the transport sector.

[Clean Air Network, 29/01/2016]

Ivory trade must be shut down

Twenty-six years ago, the world called time on the international trade in elephant ivory, after it had halved African elephant populations within 15 years. Now governments in the US, China and Hong Kong are finally closing the remaining loophole that allowed domestic trade to continue and facilitated a second ivory crisis that has recently been claiming 33,000 elephants a year.

Hopefully, Japan, Thailand and other significant markets will soon follow suit and the elephants can recover. The positive news is that ivory prices have more than halved in China over the past 18 months that drop apparently starting before the domestic trade bans were announced. Ivory traders at the Hong Kong Trade Development Council's jewellery fair this month offered us ivory for US\$380 a kilogramme, down to 20 per cent of what it was.

In January, Chief Executive Leung Chun-ying announced in his annual policy address (1) a plan to phase out the local ivory trade. Amazingly, some traders in Hong Kong are calling for compensation (2) for not being able to continue to sell ivory. This would be totally wrong, if not immoral, given the pivotal role of these traders in stockpiling and bending the rules to create the ivory crisis in the first place. It would be like compensation people for knowingly selling stolen goods, because the law had caught up with them.

Instead of rewarding those who invested and speculated in extinction and whose abuse of regulations halved elephant populations, surely it is the families of the many rangers killed by poachers, or the child victims of civil wars financed by ivory – or the African nations that have lost millions in tourism revenue and spent millions fighting poaching – who should be compensated by the traders whose activities caused the problem? They won't be, of course, and that's why its morally offensive that the perpetrators of the elephant slaughter should even suggest that they be compensated.

Industries of all kinds fall into disfavor and become obsolete for moral, legal and economic reasons and almost none, if any, are compensated. Why should the 370 companies and individuals in Hong Kong that have had 26 years' notice to sell down their stocks get special treatment? When foot binding was banned, did we compensate foot binders? Were slave owners compensated when that abominable practice was abolished? Of course not.

Since the inception of the Convention on international Trade in Endangered Species of Wild Flora and Fauna (Cites), elephant ivory has been subject to some level of control. Thus, restricting the trade in ivory is not a new, unprecedented development. Traders in Hong Kong have had 26 years to sell off their stock – possibly the longest “going-out-of-business” sale in the history of the planet.

The fact that their reported (but unchecked) stocks stopped declining just when demand for ivory was peaking indicates they were topping them up with fresh ivory from poached elephants, knowing that the authorities were asleep at the wheel, indeed, they have been selling most of their stock to mainland Chinese, in full knowledge that it will be smuggled across the border. It is not uncommon for them to offer lops on how to do this.

Much of the so-called “legal” ivory, of which 670 tonnes was stockpiled in Hong Kong prior to the 1989 ban, was in fact from poached elephants. Between 1979 and 1989, half of Africa's elephants “disappeared” into the ivory trade, the global hub of which was right here in Hong Kong. This represents in excess of 600,000 elephants, or 1.2 million tusks. So the chances are that much, if not most, of the existing stockpile in Hong Kong was from poached elephants in the first place. Should we be compensating the traders who laundered this ivory?

Traders can still sell their stocks. They paid a lot less for them than they are charging today and they are welcome to retain their ivory after the ban – they just won't be able to sell it.

Give them six months' notice of the ban that has been coming for 26 years and be done with it. Let's consign the ivory trade to the rubbish bin of history where it truly belongs.

[SCMP, 24/03/2016]

(by Alex Hofford, a wildlife campaigner at WildAid)

ADVISORY COUNCIL ON THE ENVIRONMENT (ACE)

Summary of minutes of the 210th Meeting of the ACE held on 9 November 2015

At the meeting, the ACE discussed 2 main named items:

1. Update on the Implementation of Harbour Area Treatment Scheme Stage 2A (*ACE Paper 15/2015*); and
2. Implementation of the Recycling Fund (*ACE Paper 16/2015*)

Update on the Implementation of Harbour Area Treatment Scheme Stage 2A (ACE Paper 15/2015)

The paper reported on the progress of the Harbour Area Treatment Scheme (HATS) Stage 2A in further enhancing the collection and treatment of sewage thereby improving the water quality around the Victoria Harbour area.

Miss Amy Yuen of the Environmental Protection Department (EPD) briefed the members of the following key features of HATS Stage 2A:

- a. upgrading of eight preliminary treatment works (PTWs) for collection and preliminary treatment of sewage;
- b. construction of a network of deep tunnels to collect and convey sewages to the Stonecutters Island Sewage Treatment Works (SCISTW) for treatment; and
- c. expansion of SCISTW to increase its treatment capacity.

Members asked about the operation of the PTWs and sought clarification on whether the capacity of HATS Stage 2A had taken into account the population forecast. Miss Yuen advised the preliminarily treated sewage collected by the PTWs had been progressively diverted to SCISTW via deep tunnels for centralized treatment before discharge. Mr Zorro Yuen of the Drainage Services Department (DSD) supplemented the PTWs would help remove large solids and grits while SCISTW would provide the primary treatment and disinfection processes. As to the capacity, Miss Yuen explained the population forecast for year 2030 was 5.23 million. The capability of HATS Stage 2A was so designed with some buffers, which would be more than sufficient to handle the flows arising from the latest estimate for 2041.

A member asked if the Government had a contingency plan for SCISTW in case of operational failure. Mr Yuen replied that SCISTW was equipped with a dual electricity supply system and adequate standby facilities, and had not experienced any breakdown since its commissioning in 2001. Dr Samuel Chui of the EPD added the parallel operation at SCISTW with built-in backup channels had catered for emergency situations. A member suggested the Government should present a schematic flow diagram to illustrate the backup capabilities of SCISTW.

Members enquired whether there was any benchmarking to illustrate the water quality trend, and feasibility of setting a target level for different pollutant components. Miss Yuen replied the Government had a territory-wide water quality monitoring programme with a total of 76 water sampling stations. Water quality objectives (WQOs) had been set for the Victoria Harbour, and a compliance rate of 70-80% had been achieved after the completion of HATS Stage 1 in 2001, although there were no specific target levels set. A member followed by asking whether the Government would consider commissioning a university to conduct bio-monitoring of water quality. Miss Yuen replied the Government would look into the feasibility of this arrangement.

A member raised concern whether water samples of major beaches were periodically sent for analysis as certain sub-types of *E. coli* could cause fatal illness. Miss Yuen informed all public beaches had attained the standard *E. coli* level of 180 counts/100mL since 2010. Dr Chui supplemented the said *E. coli* level suggested that less than 10 out of 1 000 swimmers might experience minor swimming-associated symptoms such as skin and gastrointestinal illness. He added water samples were not sent to laboratories for analysis of specific sub-types of *E. coli* as *E. coli* itself was used as an indicative organism for demonstrating the levels of pathogens and risk of illnesses.

Members asked for a target date when the public could have the Harbour Race or wind surfing in the Victoria Harbour and the Kai Tak Development Area since no effluent would be discharged into the Victoria Harbour by the end 2015. Miss Yuen replied Harbour Race had been held in the eastern waters of Hong Kong after the implementation of HATS Stage 1 and expected the water quality of the Victoria Harbour to improve upon full operation of HATS Stage 2A. Miss Yuen reported the *E. coli* level near the typhoon shelter in the Kai Tak Development Area was close to 610 counts/100mL, as opposed to the 180 counts/100mL standard for gazetted beaches.

A member enquired about the odour issue of SCISTW which had been a great concern in the local community. Mr Yuen advised the odour control measures would be enhanced under HATS Stage 2A whereby the odour sources such as sedimentation tanks would be properly covered or housed with provision of independent deodorization facilities to treat the foul gas before discharging into the atmosphere.

Lastly, members enquired about the implementation of HATS Stage 2B should HATS Stage 2A not result in significant improvement of the water quality. Miss Yuen replied the EPD would collect further information for a more comprehensive review since the flow turning process under HATS Stage 2A commenced only in September 2015. A member enquired into the long debate over the efficiency of chemically-enhanced primary treatment (CEPT) adopted in HATS Stage 2A as compared to biological treatment proposed in HATS Stage 2B. Miss Yuen advised although biological treatment may result in higher efficiency in reduction of suspended solids and Biochemical Oxygen Demand, members should consider the estimated capital costs and annual operating costs of HATS Stage 2B ranging from \$22 to \$30 billion and \$1.2 to \$1.8 billion respectively. Some members persisted biological treatment had become more effective at lower costs in view of the recent technological advancement. Dr Chui replied they would continue to review the treatment technology, taking into account the cost factors as well as land requirement for setting up the biological treatment facilities.

Implementation of the Recycling Fund (ACE Paper 16/2015)

The paper sought to introduce the launch of the Recycling Fund to support the sustainable development of the recycling industry thereby reducing the burden on landfills.

Mr H M Wong of the EPD and Mr Kenny Wong of the Recycling Fund briefed members on the background of the Recycling Fund followed by its scope and operation.

A member opined the Government should emphasise waste reduction followed by reuse and recycle, and the Recycling Fund had not addressed the major difficulties faced by the trade including the lack of demand for recycled products, shortage of manpower and high land costs. Mr Wong advised various promotional activities had been undertaken to raise public awareness on waste reduction. In terms of difficulties, Mr Wong suggested recyclers could use the Recycling Fund to provide staff training for better marketing of their recycled products, invest in better technology and equipment to reduce the operating costs, and advised tenancies at affordable costs had been provided in the EcoPark in Tuen Mun and the Public Cargo Working Areas.

Members raised concern that the Recycling Fund might encourage the generation of more recyclable wastes instead of waste reduction. Mr Wong advised that the Government was planning to introduce a producer responsibility scheme on glass beverage bottles. He stressed different policies had been introduced to enhance the sustainability of the recycling industry.

A member asked about the number of applications and opined the Recycling Fund should not be available to recyclers who recycled imported materials or engaged in exporting activities only. Mr Wong replied 3 applications had been received, and confirmed projects for processing of imported materials would not be considered. Nevertheless, Mr Wong advised since over 90% of the recyclables in Hong Kong were exported after treatment currently, those recyclers would also be eligible to apply for the Recycling Fund.

A member sought clarification on the rationale of not accepting a proposed project that had been funded by other Government schemes, and whether information on different funds and schemes were available to facilitate selection by the applicants. Mr Wong advised that as a fundamental principle of use of public funds, projects in receipt of alternative funding would not be double-funded, and that R&D projects were outside the scope of the Recycling Fund. Should a project be eligible to other public funds, the Hong Kong Productivity Council (HKPC) would explain the differences to the applicants.

Summary of minutes of the 211th Meeting of the ACE held on 7 December 2015

At the meeting, the ACE discussed 1 main named item:

1. Plans on (i) Marine Park Proposal; (ii) Marine Ecology Conservation Plan and Marine Ecology Enhancement Fund; and (iii) Fisheries Management Plan and Fisheries Enhancement Fund in relation to the third runway project (ACE Paper 17/2015)

Plans on (i) Marine Park Proposal; (ii) Marine Ecology Conservation Plan and Marine Ecology Enhancement Fund; and (iii) Fisheries Management Plan and Fisheries Enhancement Fund in relation to the third runway project (ACE Paper 17/2015)

The paper sought ACE's comments on the Marine Park Proposal (MPP), the Marine Ecology Conservation Plan (MECP), the Marine Ecology Enhancement Fund (MEEF), the Fisheries Management Plan (FMP) and the Fisheries Enhancement Fund (FEF) under the Environmental Permit (EP) for the "Expansion of the Hong Kong International Airport into a Three-Runway System (3RS)" project.

Mr Kevin Poole of the Airport Authority Hong Kong (AAHK) brief members of the MPP which was principally devised to mitigate the impacts on Chinese White Dolphins (CWDs) in the vicinity.

Members opined the respective roles of the Agriculture, Fisheries and Conservation Department (AFCD) and AAHK should be made clear to avoid duplication of efforts, and stressed the importance of public engagement especially the green groups. Mr Peter Lee of the AAHK reported a liaison group involving AAHK and AFCD would be set up to facilitate direct and on-going liaison. Mr Patrick Lai of the AFCD added a draft map of the MPP would be made available for public inspection for 60 days, to be followed by an objection hearing.

Members were concerned the final detailed study report due by 2018 might substantially deviate from the MPP. Mr Poole replied the MPP was a high-level document, while the final detailed study report would be a long and extensive process. He confirmed the AAHK would update the ACE before drawing up the final detailed study report.

A member raised the number of CWDs in the vicinity had declined significantly since the 2010s, and suggested to include SMART (i.e. specific, measurable, attainable, realistic and time-bound) goals and management targets to protect the CWDs. Dr Jasmine Ng of the Environmental Resources Management (ERM) agreed the MPP aims to protect and conserve the marine environment, and setting of SMART goals would be considered.

Mr Craig Reid of ERM introduced the objectives and themes of the Marine Ecology Enhancement Fund (MEEF) and the Fisheries Enhancement Fund (FEF).

A member opined the respective remits of the MEEF and FEF had not been clearly defined, and that the MEEF should focus on generating fisheries resources for CWDs while the FEF should focus on the sustainable management of fisheries resources in general. Mr Lee explained the current proposal was the outcome of the engagement process with the fisheries sector. A member reverted while he agreed that one of the goals was to support the fisheries sector, the other goal for sustaining and enhancing fisheries resources was equally important, and the FEF should not be perceived solely as a compensation plan for the fishermen groups.

Members opined the concept of sustainable fisheries management should be incorporated as the FEF could be used to facilitate fishing activities for larger catches thus over-fishing, and requested for a more balanced composition of the FEF Management Committee by including members from the academia and relevant experts to bring in balanced views and broader scope of expertise since at present the fishermen's associations seemed to be over-represented that the public might perceive the Committee would work towards the interest of the fishermen groups only. Mr Lee advised they had included fisheries experts with professional knowledge on fisheries resources in the Committee. A member commented fisheries experts were not equivalent to academics or representatives

from green groups. Mr Lee replied the fisheries experts were those with experience in fisheries resources. Mr Poole added while the AAHK would try to include members with different backgrounds, they were obliged to consult the fisheries sector in accordance with the EP requirement.

CLIMATE CHANGE

China to ratify Paris climate deal

Beijing is likely to ratify by the end of this year an international climate deal reached in Paris last December that obliges countries to strive to attain their national emission reduction targets, according to Li Junfeng, the head of the organisation compiling the nation's climate policy. The ratification by China is expected to encourage others to sign and help the agreement take effect at an early date.

[SCMP, 01/04/2016]

France

COP21 deal offers 'flame of hope', says UN official

After two weeks of lengthy negotiations in December 2015, nations attending the Paris Climate Summit (COP21) finally reached agreement in addressing the problem of global warming. The Paris agreement, in which 195 countries are committed to limiting the global temperature increase to 2C by 2100, has set a new standard for dealing with complex global problems, said the UN climate change official.

The UN climate change official said climate change is an excellent example of how the world is moving to a completely new social contract from the last century. The new social contract that underpins the 21st century will reflect that it has at least five rather different ways of dealing with challenges and very different ways of delivering solutions.

More than 80 countries committed in their climate plans in Paris to expand their use of solar and wind power to reduce greenhouse gas emissions. These countries now look for finance and the assistance of technology from the developed world.

Unlike other world forums, COP21 involved governments, business leaders and campaign groups. Foreign policy experts regarded the Paris summit as a new model for diplomacy, and commentators praised the French hosts for their skilful guidance in making it successful, said the UN official.

The agreement abandoned the idea of a traditional international treaty with clear rules and fixed obligations. Instead, it relies on countries coming forward with plans for cutting greenhouse gas emissions and then, at a certain point in time, reviewing those plans to make even deeper cuts.

A former US Department of State official and president of the New America Foundation said the agreement itself is not law but it is a bold move towards public problem-solving on a global scale and that it is the only approach which may work.

However, a number of critics of the Paris agreement dismissed the agreement as a 'fraud'. And a Democratic presidential contender said the deal went 'nowhere near far enough'. On the other hand, the UN official said the 31-page agreement had exceeded her expectations. She claimed that the text is drafted with clarity, and that the agreement encouraged governments to work with each other to get common ideas.

[The Guardian, 17/01/2016]

Australia

Climate change and the CSIRO

A decision was reached by the Commonwealth Scientific and Industrial Research Organisation ("CSIRO") to shut down its climate research due to 'finite resources' (i.e. lack of funds) as announced by CSIRO's chief executive.

This decision raised eyebrows from interested parties around the world, because to obliterate one of the world's leading climate research hubs to justify the "efficient use of resources", just when the world needs it most, does not make much sense.

No one denies that resources for CSIRO are limited (especially when CSIRO suffered a \$115 million funding cut in the 2014 federal budget and was required to absorb a national ICT research agency, NICTA, which was de-funded by the communication minister). But the choices made by CSIRO's leaders to branch out in new directions have rightly raised eyebrows of the science research institute's global partners and colleagues.

The reason given for cutting jobs in climate monitoring and modelling was that the question of whether the climate is changing 'has been answered', and so CSIRO should look to the next question of 'what we do about it'. But has the question of proving climate change really been answered?

Without new knowledge, there cannot be any new ideas to translate into broader economic or social returns. An approach to neglect basic research will inevitably fail to achieve its objective in applied research. CSIRO's past success in applied research has always been grounded on basic research, such as the invention of WiFi. Without CSIRO's basic research into black holes, the world would not have WiFi.

CSIRO's close relationship with Boeing arose from its research into nanoparticles – extremely small chemicals or objects that may be more conductive, reactive or stronger than larger particles of the same substance. CSIRO's involvement in developing many of those more advanced applications is based on its basic research. That is why Boeing has cultivated its relationship with CSIRO.

CSIRO's chief executive is also proposing cutbacks in Data61 and the Land and Water and Manufacturing Divisions – areas of science that are essential to creating and sustaining the jobs of the future.

A focus on applied research and commercialisation, while ignoring basic research and asking scientists to "find solutions for the climate we will be living with" without also continuing their inquiry into just what that climate will be, would seem to be a mission impossible.

[The Sydney Morning Herald, 12/02/2016]

New Zealand

TPP to impact efforts to reducing emissions

The COP21 climate negotiation in Paris ended with an achievable but unprecedented goal to keep global warming “well below” 2C and to limit warming to 1.5C. The significant development carries with it the implication that we will soon move to a net zero carbon economy by 2050. In fact, the COP21 agreement has been described by the *Lancet* medical journal as the “greatest global health opportunity of the 21st century”. Bold policy changes and planning are required to implement the goal – especially for the intrinsically high carbon regions.

COP21 is a mission, a revolution that turns trillions of dollars’ worth of fossil fuel reserve to “stranded assets”. A transition of this scale cannot simply be achieved by changing current policy at the margins, nor can or should we assume a miraculous new technological fix to solve the issue.

“Business as usual” is not an option: a quick and revolutionary structural change on a mass scale in policy is needed. But, these kind of major policy changes required for the revolution are precisely what modern global corporations truly want to prevent.

Corporations may achieve their ends by signing investment agreements with countries and states. The gist of these agreements is clearly stated in the introductory text of the Trans-Pacific Partnership (“TPP”): “to establish a predictable legal and commercial framework for trade and investment ...” These agreements allow corporations to carry on ‘business as usual’, whilst very little weight is given to considerations like climate change, health and human rights.

Climate change is not mentioned once in the 6000 pages of legal text. On the other hand, whole chapters are devoted to minimising “technical barriers to trade” and ensuring “regulatory coherence”, including the incorporation of rules which would allow foreign corporations to prevent the New Zealand government from progressing towards its zero carbon goal.

Investors, such as fossil fuel corporations, will be given broad powers to directly sue governments in off-shore tribunals for unfavourable changes in policy under investor-state dispute settlement provisions. The notion behind awarding these powers to fossil fuel corporations is the antithesis to the common goal in COP21.

Their threat is real: in Germany, an energy company initiated a claim for US\$1.5 billion damages for changes made to coal-fired power plant standards as a ‘violation of their right to fair and equitable treatment’. Similarly, in Canada, a US oil and gas firm brought a US\$120 million case for a moratorium on hydraulic fracturing under a major river, based on the claim that it violated their ‘legitimate expectation of a stable business and legal environment’.

The government assured its people that there would be safeguards against these provisions in the Trans-Pacific Partnership Agreement (“TPPA”) but the final text shows little protection, at best. Ratification of it would therefore likely to trigger the investor-state dispute settlement enforcement mechanism should New Zealand get serious about reducing its emissions.

The NZ climate change ambassador dismissed the idea that the TPPA would obstruct future action on climate change but this view is at odds with the European Union Parliament, which recently proposed a ‘carve out’ in a similar investment agreement –so as to deny investors an avenue to sue governments for drafting policies to reduce carbon emissions.

In effect, the COP21 agreement’s legal status must be interpreted in parallel with other international agreements that are expressly designed to lock the steering wheel on reforms. If the New Zealand government chooses to ratify agreements with strong enforcement mechanisms, such as the TPPA, this could trump other weakly binding agreements such as the COP21 agreement.

[*The New Zealand Herald*, 31/12/2015]

United States

Court blocks effort to slow climate change

An extraordinary decision was handed down by the Supreme Court on 9 February 2016, blocking the Obama administration’s effort to combat global warming by regulating emissions from power plants.

The decision raised serious questions concerning America’s ability to deliver on Mr. Obama’s pledge in Paris in December to sharply reduce carbon emissions and willingness to take a leadership role on the issue.

Whilst the 5-to-4 vote decision was not a ruling on the merits of the case, the regulation was halted before a federal appeals court could rule on it, and that has the effect of delaying implementation of the regulation. It sent a threatening signal that Mr. Obama’s initiative, known as the “Clean Power Plan”, could ultimately be overturned.

The “Clean Power Plan” was announced by the Environmental Protection Agency last August. It requires states to make major cuts in greenhouse gas emissions from their electricity producers over the next few years. Those electricity producers mainly use older coal-fired power plants and cutting them is the backbone of the President’s larger goal of reducing greenhouse gas emissions overall by at least 26 percent below 2005 levels by 2025.

“Clean Power Plan” is grounded on the *Clean Air Act*, which gives the federal government broad authority to regulate a range of pollutants, including carbon emissions from power plants. Whilst the Plan sets out aggressive state-by-state goals, its drafting gives the states the time and flexibility to meet them. The states may convert to cleaner-burning natural gas, build renewable-energy sources, like wind and solar, or trade ‘emission quota’ with neighbouring regions.

Whilst generally a clear majority of Americans (including many Republicans) agree that global warming is or will soon be a serious threat, and that a flexible and generous time frame had been given for compliance; 27 states had proceeded to sue to stop what they call a “power grab” by the federal government and Mr. Obama’s “war on coal”. Many of these states depend heavily on coal-fired plants for electricity and many are run by Republican governors.

Last month, instead of agreeing to block the “Cleaner Power Plan” from taking effect, a unanimous decision of the federal appeals court in Washington, D.C., sided with the administration and set an expedited briefing schedule in order to resolve the case well before any significant action is required from the states. Normally, the Supreme Court allows this process to play out, but this time frame was too short to upset that longstanding practice.

The Chief Justice often complains that the court is unfairly viewed as just another political branch. But critics have claimed that its actions speak louder than words.

[*New York Times*, 11/12/2016]

Canada

DiCaprio's Oscar speech on climate change

The 41 year old DiCaprio, after six Oscar nominations, finally took home the Oscar for Best Actor for the film *The Revenant* at the 2016 Oscars ceremony. His surprising speech is as follows:

"Climate change is real, it is happening right now. It is the most urgent threat facing our entire species, and we need to work collectively together and stop procrastinating. We need to support leaders around the world who do not speak for the big polluters, but who speak for all of humanity, for the indigenous people of the world, for the billions and billions of underprivileged people out there who would be most affected by this. For our children's children, and for those people out there whose voices have been drowned out by the politics of greed."

DiCaprio shared with us his experience of a sudden change in temperature and loss of snow in the production of *The Revenant* in southern Alberta as evidence of global warming. Despite DiCaprio's belief, the phenomenon that occurred was widely believed to be 'Chinook Winds' – a weather phenomenon that occurs when warm air is forced downwards at the point where mountains meet prairies. This phenomenon is common in southern Alberta and often brings sudden phases of summer-like conditions during winter. Nonetheless, it is not a direct effect of climate change.

Whilst some environmentalists worry that the ardent actor's use of common Chinook Winds as case in point for global warming damages credibility, others are pleased and fascinated by his passion for the environment and concern about global warming.

[CBC News, 01/03/2016]

REGIONAL & INTERNATIONAL

CHINA

Northern China to face 'worst smog of the year'

Beijing issued its second ever air quality "red alert", being the highest in the four-tier system, for smog on 17 December 2015. Schools were closed and half of all private cars were ordered to be off the road for a total of three consecutive days. It had been Beijing's third period of prolonged heavy pollution in less than a month.

The smog began affecting the city on 18 December 2015 and the level of pollution reached severe levels in the afternoon as the pollution was brought closer to the city by southerly winds. Disruption was caused to residents and local business due to the red alert.

Notwithstanding the alerts, air pollution in Beijing has improved significantly compared to previous years, but the yearly average is still about seven times the WHO's recommended safe level.

For a period of about three days leading up to the red alert, parts of northern China were engulfed by smog. Visibility in Beijing in neighbouring regions were down to about less than 1 km and in some places concentrations of P<2.5 particles exceeded 500 micrograms per cubic metre.

[SCMP, 18/12/2015]

Safety is the top priority for China's nuclear power development

China has implemented a programme to triple nuclear power generation by 2020. China currently has 27 nuclear reactors and a further 25 under construction. Recently the government made it clear in its first white paper on nuclear energy that above all else must come safety and security. The paper also contains details on policies and measures to boost emergency readiness and how to strengthen security. Proving the point, construction of two reactors in Guangdong has been halted over safety concerns.

Learning from overseas accidents, such as at Fukushima in Japan in 2011, Chernobyl in Ukraine in 1986, and at Three Mile Island in the US in 1979, China has so far been able to ensure that its reactors have a good safety record. Incidents of radiation leakage ranked low on the internationally recognised nuclear-events scale, but there is always room for improvement. Apart from gaps in transparency, communication and education, nuclear waste disposal is also a problem the world has yet to find a suitable solution for.

Apart from its ambition at home, China has demonstrated to others its technological competency by signing a contract to build the first Chinese plant in Britain and constructing two reactors to supplement Iran's nuclear programme. However, all that ambition will depend on implementing and maintaining the highest possible safety standards, which is recognised by the white paper.

[SCMP, 12/02/2016]

Pollution clampdown in Hebei

State Council inspectors completed their one-month investigation of the Hebei's environmental problems on 4 February 2016, resulting in at least 119 officials and company owners being penalised for polluting offences. Company owners were arrested, whilst some officials were warned and punished for dereliction of duty, reported the *Hebei Daily*. Findings will be reported to the central authorities and the most serious violations will be handled by the courts. Lesser offences will affect the performance appraisals of local officials.

Hebei is home to seven of the ten most polluted cities on the mainland: Baoding, Xingtai, Hengshui, and Tangshan being the worst. In this region, problems like overcapacity in heavy industries, such as steel production, and officials' failing to tackle polluters, were prevalent.

In this one-month inspection programme, a team consisting of 40 inspectors led by two deputy ministers for the environment and disciplinary officials, visited villages to collect evidence of violation of emission rules. The programme was modelled on the anti-corruption campaign and pressured local officials into taking pollution problems seriously. In order to ensure that they were not duped by short-term measures adopted solely for their visit, the team carried out the programme undercover. Whilst the inspectors were of equal or lower ranking than the Hebei officials being investigated, the inspectors were given special authority to carry out the investigations.

Hebei accounts for one fourth of China's steel input, and nearly one ninth of the global output, according to provincial governor Zhang Qingwei. The inspectors also made detailed inquiries into the approval processes behind some of the steel plants, as in the past few years Hebei officials have gained a reputation for approving steel plants without evaluating their environmental impact.

The province plans to reduce iron and steel production by 60 million tonnes between 2013 and 2017, but some have criticised this objective as being unfeasible.

[SCMP, 05/02/2016]

JAPAN

Japan slaughters pregnant whales

Japanese whalers have shipped home 333 dead whales – including about 200 pregnant cows – prompting Australia to declare anew it is considering legal action over the slaughter. The whalers, who claim their annual whale hunt is for “scientific research”, admitted some of the harpooned minke whales had been expecting twins. Japan's institute for Cetacean Research said the prevalence of pregnant whales indicated the health of the population. Japan defied a ruling by the International Court to stop whaling, resuming its hunt over summer in the face of international condemnation. The Court had ruled Japan's whale hunt illegal in a case brought by Australia, but Tokyo announced new guidelines in November to justify killing more than 4000 whales in the next 12 years, and has since withdrawn from the Court's jurisdiction. Foreign Affairs Minister, Julie Bishop, said Australia would continue to push for Japan to comply with its international obligations and the principles set out in the judgment. Asked about the prospect of further legal action, she said the government was “considering all avenues to achieve compliance with the court's decision”.

[Sydney Morning Herald, 30/03/2016]

ASIA

Air pollution kills millions in Asia

According to research announced on 12 February 2016 at the American Association for the Advancement of Science conference in the US capital: each year, more than 5.5 million people in the world die due to air pollution. The numbers will increase unless more aggressive measures against pollution are adopted.

The Global Burden of Disease study, carried out by the Institute for Health Metrics, reveals that air pollution is the fourth highest risk factor for death globally (behind high blood pressure, diet and smoking) and by far the leading environmental risk factor for disease.

China (1.6 million deaths in 2013) and India (1.4 million deaths in 2013) together account for 55 per cent of yearly global deaths from air pollution.

Coal burning is the biggest contributor to poor air quality. Pollution from coal burning alone was found to have caused 366,000 deaths in China in 2013, said a PHD student at the School of Environment at Tsinghua University in Beijing, China. Based on her projections, she predicted that air pollution will cause anywhere from 990,000 to 1.3 million premature deaths in China in 2030 unless more aggressive strategies are taken to reduce air pollution.

On the governmental level, cleaner technology has been implemented for automobiles and power plants in order to reduce the amount of particulates they discharge. But these measures are countered by the country's advancement in other economic activities. In India, the main cause of air pollution is burning wood, dung and biomass for cooking and heating.

An air quality guideline published by the World Health Organisation (“WHO”) allows for a maximum of 25 micrograms of particulates per cubic metre. Researchers revealed that in February 2016, Beijing and New Delhi typically had daily levels at or above 300 micrograms per cubic metre, that is, 1,200 per cent higher than the WHO guidelines.

It is unfortunate that as of today, more than 85 per cent of the global population lives in areas where the WHO air quality guideline is exceeded.

[SCMP, 14/02/2016]

WORLD

‘Severe’ water scarcity strikes more than half of the world's population

Alarming new research has found that 4 billion people in the world, including close to 2 billion in India and China, live in conditions of extreme water scarcity for at least a month during the year.

A new study was conducted by two researchers of the University of Twente in the Netherlands using a high resolution global model to examine and compare the availability of “blue water” (consumable freshwater) and the human demand for it. The study reveals that 4 billion people are currently living in areas that would experience severe water scarcity for at least part of the year, which is significantly greater than past findings (totals of about 1.7 to 3.1 billion).

The study claims that whilst blue water demand is on the rise due to increasing global pollution and agricultural expansion, there is enough total global water for all needs, but not in every place where it is needed and when it is needed.

Areas with high water pollution or engaging in intensive irrigated agriculture experienced severe water supply problems, say the researchers. In some parts of the world, including the Ganges and Limpopo river basins, blue water consumption and its availability are countercyclical, meaning that water consumption is at its highest when water availability is lowest.

The leading source of human water demand is agriculture, followed by businesses. In the study, conditions of severe water scarcity were determined to exist in an area when there was twice as much water demand as there was availability.

Where there is a water scarcity, it does not mean that people will stop drinking water. Residents often end up withdrawing more water than is sustainable from rivers, lakes or groundwater systems, thereby severely draining these residual resources.

In those situations, relative wealth or poverty is important, as rich societies can buy their food and water from elsewhere, whilst poor ones cannot.

The study concludes that meeting humanity's increasing demand for blue water and protecting ecosystems at the same time will be one of the most difficult and important challenge of this century.

[SCMP, 14/02/2016]

UNITED KINGDOM

London drivers urged to turn off engines

London drivers were encouraged by volunteers and electronic signs to turn off their engines in traffic jams, as part of an anti-pollution programme announced by the Mayor of London on 11 February 2016.

Campaigners however, accused the mayor of failing to take hard measures to address the problem of air pollution, as the mayor's Ultra Low Emission Zone ("ULEZ") for combating pollution does not come into effect until 2020 and covers only the central London area. ClientEarth, an environmental law firm, successfully caused the government to issue a national air clean-up plan last year, which should bring forward the start date of the ULEZ.

Nearly £200,000 will be spent on new electronic signs and measuring equipment at Tower Bridge to urge drivers to switch off their engines when the bridge is open, but there will be no enforcement or incentive to do so. Another scheme involves trained volunteers patrolling the streets of the London on high pollution days to talk to drivers about turning their engines off. The unacceptable level of air pollution in the capital has become a key issue in the 2016 London mayoral contest.

[*The Guardian*, 11/02/2016]

Members of ADVOCASIA



An Association of Asian Commercial Law Firms

Sydney, Australia

COLIN BIGGERS & PAISLEY

Level 42, 2 Park Street
Sydney, NSW 2000
Australia
Tel: (612) 8281-4555
Fax: (612) 8281-4567

Brisbane, Australia

COOPER GRACE WARD

Level 21, 400 George Street
Brisbane
QLD 4000
Australia
Tel: (61) 7-3231-2444
Fax: (61) 7-3221-4356

Perth, Australia

KOTT GUNNING

Level 8, AMP Building
140 St Georges Terrace
WA 6000, Australia
Tel: (618) 9321-3755
Fax: (618) 9321-3465

Melbourne, Australia

MADDOCKS

140 William Street, Melbourne
Victoria 3000, Australia
Tel: (613) 9288-0555
Fax: (613) 9288-0666

Adelaide, Australia

NORMAN WATERHOUSE

Level 15, 45 Pirie Street, Adelaide 5000
South Australia
Tel: (618) 8210-1200
Fax: (618) 8210-1234

Phnom Penh, Cambodia

BNG LEGAL

No.64, Street 111
Sangkat Boeung Prolit
Khan 7 Makara
Phnom Penh
Tel: (855-23) 212 414
Fax: (855-23) 212 840

Macau

**ANTÓNIO RIBEIRO BAGUINHO - LAWYERS
AND PRIVATE NOTARIES**

Av. da Amizade
555, Edif. Landmark
ICBC Tower, 13 Floor, Room 1308
Macau
Tel: (853) 28788128
Fax: (853) 28705351

Hong Kong, China

FRED KAN & CO.

Suite 3104-07, Central Plaza
18 Harbour Road
Hong Kong
Tel: (852) 2598-1318
Fax: (852) 2588-1318

Baotou City, China

JIANZHONG LAW FIRM

The Middle Part of Jianshe Road
Baotou, Inner Mongolia
P.R.China
Tel: (86) 472-7155473
Fax: (86) 472-7155474

Beijing, China

JINCHENG TONGDA & NEAL LAW FIRM

10th Floor, China World Tower
No. 1 Jianguo Menwai Avenue
Beijing 100004
China
Tel: (86) 10 5706 8585
Fax: (86) 10 8515 0267

Qindao, China

QINDAO LAW FIRM

22/F, Northern Tower, Golden Square
20 Hong Kong Road(M),
Qingdao, P.R.China
Postal Code 266071
Tel: 86-532-85023100
Fax: 86-532-85023080

Shanghai, China

SHANGHAI UNITED LAW FIRM

14/F, China Insurance Building
166 East Lujiazui Road
Shanghai, P.R. China
Postal Code 200120
Tel: (86) 21-68419377
Fax: (86) 21-68419499

Guangzhou, Dongguan, China

TRUST LAW FIRM

35F, Shun Tak Business Centre
246 Zhongshan Road 4
Guangzhou
P.R.China 510030
Tel: (86) 20-83635488
Fax: (86) 20-83635444

Mumbai, India

DHRUVE LILADHAR & CO

61/62 Free Press House, 6th Floor
215, Free Press Journal Marg
Nariman Point
Mumbai 400 021
India
Tel: (91) 22-6760-6000
Fax: (91) 22-6760-6001

New Delhi, India

O.P. KHAITAN & CO.

Khaitan House B-1,
Defence Colony, New Delhi-110 024
India
Tel: (91) 11-4650-1000
Fax: (91) 11-2433-7958

Jakarta, Indonesia

LEGISPERITUS LAWYERS

Mega Plaza 12th Floor
Jl. HR. Rasuna Said Kav. C-3
Jakarta 12920, Indonesia
Tel: (62) 2-1527-9109

Tel Aviv, Israel

RNC

5th Kineret St.
BSR Tower No. 3
Bene-Beraq 5126237
Tel: +972 (0)3-617-4000
Fax: +972 (0)3-617-4022

Tokyo, Japan

SOGA LAW OFFICE

2F, Yotsuya Y's Bldg.
7-6 Honshiocho Shinjuku-ku
Tokyo 160-0003
Japan
Tel: (81) 3-5919-3022
Fax: (81) 3-5919-3350

Incheon, Republic of Korea

K&L LAW FIRM

#201, Myong-in
28 Soseung-ro, 185 Beon-gil
Nam-gu
Incheon
South Korea (402-876)
Tel: +82 32 864 8300
Fax: +82 32 864 8301

Kuala Lumpur, Malaysia

CHEANG & ARIFF

39 Court @ Loke Mansion
No. 273A, Jalan Medan Tuanku
50300 Kuala Lumpur, Malaysia
Tel: (603) 2691-0803
Fax: (603) 2693- 4475

Yangon, Myanmar

JTJB MYANMAR CO LTD

Suit No. 01-04, Union Business Centre,
Nat Mauk Road, Bo Cho Quarter, Bahan Township,
Yangon
Myanmar
Tel: +95 1860 3455

Auckland, New Zealand

HESKETH HENRY

Private Bag 92093
Auckland
1142, New Zealand
Tel: (64) 9-375-8700
Fax: (64) 9-309-4494

Manila, Philippines

**HERRERA TEEHANKEE &
CABRERA LAW OFFICES**

5th Floor, SGV II Building
6758 Ayala Avenue
Makati City 1200, Philippines
Tel: (63) 2-813-7111
Fax: (63) 2-840-5555

Singapore

JOSEPH TAN JUDE BENNY LLP (JTJB)

No. 6 Shenton Way,
#23-08,
DBS Building Tower Two
Singapore 068809
Tel: (65) 6220-9388
Fax: (65) 6225 7827

Colombo, Sri Lanka

D.N. THURAIRAJAH & CO.

No. 16/3, Sulaiman Terrace
Colombo 00050
Sri Lanka
Tel: (94) 1-1250-3314
Fax: (94) 1- 1250-3313

Bangkok, Thailand

APISITH & ALLIANCE

57 Park Ventures Ecoplex, 9th Floor
Unit 907 Wireless Road, Lumpini
Pathumwan
Bangkok 10330
Thailand
Tel: (66) 2108-2860
Fax: (66) 2655-2265

Dubai, United Arab Emirates

LUTFI & CO.

901 Al Attar Business Tower
Sheikh Zayed Road
Dubai, United Arab Emirates
Tel: (97) 14-3798-298
Fax: (97) 14-3798-689

Ho Chi Minh City, Vietnam

LUATVIET ADVOCATES AND SOLICITORS

19th Floor Vincom Center
72 Le Thanh Ton Street
Ben Nghe Ward
Dist 1, Ho Chi Minh City
Vietnam
Tel: (84) 8-3824-8440
Fax: (84) 8-3824-8441

Convictions under environmental legislation: February to March 2016 (April data not available)

[Note: the EPD no longer classifies second (and subsequent) offences.]

The EPD's summary of convictions recorded and fines imposed during the above period is as follows:

February 2016

Forty-one convictions were recorded in February 2016 for breaches of legislation enforced by the Environmental Protection Department.

Five of the convictions were under the Air Pollution Control Ordinance, 11 were under the Noise Control Ordinance, 24 were under the Waste Disposal Ordinance, and 1 was under the Water Pollution Control Ordinance.

The heaviest fine in February was \$100,000, assessed against a company that used powered mechanical equipment otherwise than in accordance with permit conditions.

March 2016

Sixty-three convictions were recorded in March 2016 for breaches of legislation enforced by the Environmental Protection Department.

Eight of the convictions were under the Air Pollution Control Ordinance, 6 were under the Noise Control Ordinance, 1 was under the Product Eco-responsibility Ordinance, 46 were under the Waste Disposal Ordinance, and 2 were under the Water Pollution Control Ordinance.

The heaviest fine in March was \$30,000, assessed against a person who imported controlled waste without a permit.

**Fred Kan & Co.
Solicitors
Suite 3104-06 Central Plaza
18 Harbour Road
Wanchai
Hong Kong**