

**URBAN PLANNING AND ENVIRONMENTAL LAW QUARTERLY**

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*The 2011 Fred Kan & Co.’s prize for the best dissertation submitted in the Master of Science (Environmental Management) course at the University of Hong Kong is reviewed in the main article of this edition of the UPELQ.*

*The prosecution statistics illustrate (as usual) that penalties for environmental offences continue generally to be manifestly inadequate, indicating our courts still treat environmental offences as less serious than other offences.*

*The Editors*

**CONTENTS**

FEATURE:	Page
<b>A STUDY OF TREE MANAGEMENT QUALITY ON URBAN CONSTRUCTION SITES.....</b>	<b>1</b>
<b>TOWN PLANNING .....</b>	<b>3</b>
<b>WEST KOWLOON CULTURAL DISTRICT (WKCD) .....</b>	<b>5</b>
<b>HONG KONG BRIEFING.....</b>	<b>6</b>
<b>CLIMATE CHANGE.....</b>	<b>7</b>
<b>ADVISORY COUNCIL ON THE ENVIRONMENT (ACE)...</b>	<b>9</b>
<b>REGIONAL &amp; INTERNATIONAL.....</b>	<b>11</b>
<b>PROSECUTION STATISTICS...</b>	<b>15</b>

**A STUDY OF TREE MANAGEMENT QUALITY ON URBAN CONSTRUCTION SITES**

In the 2010-2011 Master of Science (Environmental Management) course at the University of Hong Kong Mr. Sit Yiu chose a seemingly prosaic, but environmentally important, topic for his dissertation : *A Field Assessment of Tree Management Quality in construction sites in Hong Kong*, which was awarded the 2011 Fred Kan & Co. prize for the most meritorious dissertation submitted for the MSc (Environmental Management) degree in 2011.

In this edition of the UPELQ we review Mr. Sit’s interesting and – in terms of Hong Kong’s urban environment – most useful dissertation.

*Objective and methodology*

The objective of the dissertation was to examine treatment of existing trees on construction sites, from the point of view of the preservation of trees. The author’s sample base comprised 50 construction sites across Hong Kong, which were visited twice over a four months period.

Assessment criteria and a tree management scoring system were devised so as to standardise as much as possible the author’s visual assessments of each site.

From these visual assessments the author draws certain conclusions. He concludes with a number of practical recommendations aimed at increasing the health and survival rate of trees on Hong Kong’s numerous construction sites.

*Trees in Hong Kong*

The dissertation begins with an assumption which no reasonable person could argue with : *trees are valuable assets in an urban environment.*

Trees provide habitat for urban wildlife, ameliorate air pollution, create shade and a cooling effect, sequester carbon and generally enhance the amenity of an urban landscape. Old trees are also respected and appreciated for their historic and cultural values. Hong Kong has 501 urban trees registered as *Old and Valuable Trees*.

It has been found that one hectare of mature trees can store 6.5 tons of carbon and generate enough oxygen for 45 people annually. Such is the direct benefit of trees to city dwellers that the *World Health Organisation* recommends that urban communities should have at least 9m<sup>2</sup> of “urban green space” per capita.

In Hong Kong trees play another very important role : they help to stabilise slopes and act as a buffer to prevent flash-flooding.

*Problems for urban trees*

Growing and surviving in Hong Kong’s crowded urban areas is not easy for a tree. Various threats to its health and longevity exist, including: lack of space; competition with other human activities; poor and compacted soils; and, especially, poor tree management, which is the focus of the dissertation.

*Tree management in Hong Kong*

In 2010 the government established the *Tree Management Office (TMO)* on the recommendation of the *Task Force on Tree Management (2009)*.

However, despite the creation of the TMO, management of public trees is still shared by

a number of different government departments, which some have criticised as an inefficient and fragmented management framework, which renders conservation of trees less effective.

Poor tree-management on construction sites is a singularly significant danger to Hong Kong's mature trees, especially. As the author notes :

“During rapid urban development in the past decades of Hong Kong, tree preservation and care has been largely neglected (Conservancy Association, 2009). Construction damage could be the quickest and most destructive way to ruin urban tree populations. Many trees are unnecessarily injured by poor construction practices. Jim (2003) finds that trenching work along pavements for installation or maintenance of underground utilities is a major cause of health decline of street trees in Hong Kong. Jim (2005) also finds that 28 losses of the city's valuable heritage trees are predisposingly caused by construction damage and roadwork trenching injury. In addition, there are also many news reports about urban trees being poorly treated in construction sites (Oriental Daily, 2010a, 2010b, 2010c; Ming Pao, 2010).”

A recent (2009) illustration of the consequences of poor tree-management during construction work was the loss of the decades old, historic “ghost tree” at Maryknoll Convent School. The tree was so badly damaged by construction work that subsequently it had to be cut down.

Interestingly, the author informs us that a 1997 study concluded that in Guangzhou construction activities in the period 1990-1994 killed 4,670 street trees, which was then approximately 10% of the total number of public trees in the urban area.

The main set of tree-management guidelines for government departments is the *General Specification for Civil Engineering Works* (GS) (CEDD, 2006). For the purposes of the dissertation, it was assumed that private construction companies would also follow the GS.

#### Violations of the GS

The author's mechanism for placing individual site assessments on an objective plane was to assess each site's management of trees in terms of the severity of violations of management measures set out in the sections 26.08 and 26.09 of the GS. Section 26.08 contains quite detailed instructions for construction contractors to follow to avoid damaging trees. For example, part of section 26.08 is as follows :

“The Contactor shall exercise the greatest care to avoid any damage to the preserved trees and shall comply with the following in respect of all the preserved trees :

- (a) Take all necessary precautions to ensure that :
  - (i) No nails or other fixings shall be driven into the trees, including the exposed tree roots,
  - (ii) No fencing, services, or signs other than the identification labels or markings required under Clause 26.04 shall be attached to any part of the trees,

- (iii) No trees shall be used as anchorages for ropes or chains used in guying or pulling, or for any other purposes,
- (iv) No soil, materials, equipment or machinery shall be stockpiled or stored within the tree protection zones,
- (v) No site offices, workshops, canteens, containers or similar structures shall be installed within the tree protection zones,
- (vi) Petrol, oil, bitumen, creosote, cement and other materials likely to be injurious to the trees shall be kept away from the tree protection zones, and any accidental spills of these materials shall be cleaned up immediately,
- (vii) Excessive water shall be drained away from the tree protection zones to prevent damage to tree roots by asphyxiation.
- (viii) The surface on slopes shall be shaped so that water will not drain to the tree trunks but bypass them...”

A basket of six violation categories was chosen as the basis for comparing standards of tree-management on the sample sites, namely :

- soil contamination
- soil compaction
- root damage
- lack of protection for trunks
- detrimental attachment of materials to trunks
- crown damage

For each violation, assessment criteria were determined, applying the GS guidelines. For example :

#### “Soil compaction

- (i) “No soil, materials, equipment or machinery shall be stockpiled or stored within the tree protection zones”;
- (ii) “No site offices, workshops, canteens, containers or similar structures shall be installed within the tree protection zones”;
- (iii) “No passage or parking of vehicles and no operation of equipment or machinery shall take place within the tree protection zones...”

#### Crown damage

- (i) “Align all routes of the overhead services within the Site and all access routes to the Site or within the Site away from the preserved trees as far as possible and seek the Engineer approval to the alignment”;
- (ii) “Any equipment, in particular delivery vehicles, overhead cranes, mechanical excavations, drilling rigs and piling rigs, shall be carefully operated so as not to cause striking of the trunks, branches, foliage or root collars of the trees”;
- (iii) “The Contractor shall not carry out pruning to the preserved trees unless the pruning work is required under the Contractor is directed by the Engineer. The Contractor shall notify the Engineer of any preserved trees whose branches interfere with the Works and thus require pruning. Pruning shall only commence after the Engineer's approval has been obtained...”

#### Severity of violations

The scale of severity of violations adopted was :

- (i) not-observed – no violation was observed or verified.
- (ii) minor – i.e. the violation was observed but the expected impact was insignificant, or the violation was unavoidable; e.g.
  - Soil contamination : the severity would be rated as minor if only few bitumen or cement residues were observed on the soil surface under the tree (i.e. less than 10% of the site area was contaminated).
  - Soil compaction : the severity would be rated as minor if the impact of the soil compaction on the trees was considered as insignificant.
  - Root damage : the severity would be rated as minor if insignificant root damage caused by the construction activities was found (i.e. less than 5% of the tree root was injured).
- (iii) moderate – i.e. the violation was observed but the expected impact was moderate; e.g.
  - Soil contamination : the severity would be rated as moderate if some bitumen or cement residues were observed on the soil surface under the tree (i.e. more than 10% but less than 30% of the site area was contaminated).
  - Soil compaction : the severity would be rated as moderate if the impact of the soil compaction on the trees was considered as moderate.
  - Root damage : the severity would be rated as moderate if moderate root damage caused by the construction activities was found (i.e. more than 5% but less than 30% of the tree root was injured).
- (iv) severe – i.e. the violation was observed and the expected impact was severe; e.g.
  - Soil contamination : the severity would be rated as severe if a substantial amount of bitumen or cement residues were observed on the soil surface under the tree (i.e. more than 30% of the site area was contaminated).
  - Soil compaction : the severity would be rated as severe if the soil was considered as being severely compacted by the construction practices. It could be a case of heavy construction materials stockpiling very close to the tree base, for example.
  - Root damage : the severity would be rated as severe if substantial root damage caused by the construction activities was found (i.e. more than 30% of the root was injured).

#### Comparative scores

The author says that “tree management of each site was figured out based on the maximum level of severity of the violations.”

On the basis of these comparative data, tree-management for each site was placed in one of four categories :

- (i) Good  
All the six violations categories had “Not-observed” grading.

- (ii) Fair  
Violation(s) was/were found but the maximum severity was minor only.
- (iii) Unsatisfactory  
Violation(s) was/were observed but the maximum severity was moderate only.
- (iv) Poor  
Violation(s) was/were observed and at least one of the violations was severe.

The author then gave a numerical value to each site's management level, using a scoring system :

- good – 4
- fair – 3
- unsatisfactory – 2
- poor – 1

#### Results of assessments

Looking only at the "severe" and "moderate" categories, the broad results for each violation were (in terms of percentage of sites with a severe or moderate rating).

- (i) oil contamination – 22%
- (ii) soil compaction – 28%
- (iii) root damage – 14%
- (iv) lack of trunk protection – 50%
- (v) attachment of detrimental materials – 32%
- (vi) crown damage – 18%

The two most common violations were lack of protection of tree trunks and attachment of harmful materials to trunks. Only 18% of sites had adequate trunk protection measures in place, and only 34% had no harmful materials attached to trees. The author's general conclusion was that more than 70% of the sites had either poor or unsatisfactory tree-management practices.

#### Tree management quality

Of the assessed sites, 13 were private developments and 37 were managed by various government departments.

The dissertation sets out a number of tables illustrating comparative and mean management performances for government and private construction sites, based on the scoring system. The overall mean scores were :

- overall (i.e. all 50 sites) – 1.92
- government – 2.00
- private – 1.69

The author notes :

"The result shows that tree management quality of all the sites is generally unsatisfactory, which echoes with the findings in Chapter 3.2. The result also shows that tree management quality in the government sites is similar to than that in the private sites (2.00 Vs 1.69). Both are generally unsatisfactory. This is quite an unexpected result. Government sites are supposed to have much better tree management quality because they need to follow the GS while the private sites do not. So the finding implies that the government sites have sloppy management and the GS is not functioning well in controlling the work quality in government construction sites."

#### Deficiencies and recommendations

The dissertation concludes with the author's opinions on Hong Kong's underlying deficiencies in its tree-management processes, and his recommendations to

address those. A brief summary of these is as follows :

#### (a) Lack central management department and consistent standards

There is no department with full authority and responsibility for managing public trees. This was clearly illustrated by a comparison of the varying levels of tree-management quality on sites controlled by different government agencies. Different standards of care are applied by each government department. The recommendation is for the Tree Management Office to adopt a more robust role in encouraging better tree-management standards for construction sites.

#### (b) Lack of controls and penalties to prevent construction – caused damage

The government lacks statutory controls over construction sites to monitor and prevent damage to trees. As well, penalties are not applied to persons involved in mis-management of trees during construction.

Under the GS, compensatory planting may be required where trees are removed or lost due to construction works. Indeed, in the years 2006-2008, 180,000 trees were planted to compensate the loss of 30,000 trees. However, whilst this figure looks encouraging, the truth is that newly planted trees do not have to match those removed in characteristics. So, you may have a very young tree replacing a 50 years old one.

The recommendation is for the government to carry out more frequent audits of construction sites and to impose fines for poor management of trees; the fines could help fund educational programmes to promote good tree husbandry.

#### (c) Lack of proactive tree preservation plan

Effective tree preservation should begin at the design stage of a construction project, but that is not the norm in Hong Kong. Tree specialists are usually brought in after the work has started – and damage inflicted. The government and private construction industry need to adopt a more proactive approach to preserving trees, beginning with calling in tree experts at the beginning of a project.

#### (d) Lack of competent staff

Tree management requires human supervision, but the construction industry and government lack competent, trained staff to do this effectively.

In-house training courses should be arranged to lift the expertise of management staff concerning proper measures for preserving trees. For the government, the Tree Management Office should take a leading and increased role in improving the capacity of staff to manage trees including bringing in better qualified foreign experts.

#### (e) Lack of resources

A major issue is that the government has few resources for tree maintenance, although funds are generally available for tree planting.

The author recommends that the government should first maintain and protect existing trees – especially on public construction sites – rather than devoting all its resources to planting trees.

#### (f) Inflexible "tree protection zone" concept

The concept of a "tree protection zone" in the GS needs to be more flexible to respond to specific site constraints.

The author recommends that effective tree protection zones should be made a priority for construction sites, and that the zone should be designed by a competent person and decided on at the design stage.

#### Conclusion

Hong Kong presents an overall picture of very poor management of trees on construction sites. Current tree-management quality on construction sites could be improved by mandating consistent tree management standards and proactive tree preservation plans, carrying out proper site supervision with deterrent punishment measures applied, and ensuring sufficient tree management staff and resource input.

## TOWN PLANNING

Planning and lands policy tabled at LegCo Finance Committee Special Meeting on 7<sup>th</sup> March 2012

#### Planning policies

##### Residential land supply

**The planning and lands policy tabled in Legco's Finance Committee Meeting on 7 March 2012 reveals that** the 2012-13 Government Land Sale Programme comprises 47 residential sites with a capacity to produce about 13,500 flats, of which 24 are new sites whilst 23 are rolled over from last year's Land Sale Programme. The government has included for the first time private residential sites in the Kai Tak Development. The two sites, with a total area of about 1.6 hectares, could provide about 1,000 flats. On completion, the Kai Tak Development will provide land for some 17,000 private housing units, including units built under the "flat for flat" scheme of the Urban Renewal Authority (URA).

To ensure the supply of housing units, including small and medium-sized flats, the government will continue to impose limits on the number or size of flats to be built on suitable sites, having regard to site characteristics and market conditions.

For the first quarter of 2012-13, the government will arrange for sale by tender four residential sites, two in Tseung Kwan O and one each in Sha Tin and North Point, which could provide a total of about 1 400 flats. Minimum flat number restrictions will be imposed on the three sites in Tseung Kwan O and North Point to guarantee a quantity for supply to the public.

Through the government's land sale programme, the four West Rail property development projects at Long Ping Station (North), Long Ping Station (South), Tsuen Wan West Station TW 6 and Yuen Long

Station, the three property development projects owned by the MTR Corporation Limited (MTRCL) at Tai Wai Station, Tin Shui Wai Light Rail Terminus and Tseung Kwan O, URA's redevelopment projects, projects subject to lease modification/land exchange and private redevelopment projects not subject to lease modification/land exchange, the total housing land supply scheduled for the coming year is estimated to have the capacity to realise about 30 000 private residential flats.

#### *Land use studies and reviews in progress*

The Planning Department (PlanD) and the Civil Engineering and Development Department (CEDD) are conducting a number of land use studies and reviews, covering an area of approximately 2,500 hectares. Larger area studies and reviews include:

- North East New Territories New Development Areas (NENT NDAs) this review is anticipated to be completed by 2013. The NDAs will make available land for housing development in 2018 at the earliest.
- Hung Shui Kiu New Development Area (HSK NDA): this review is anticipated to be completed by 2014. It is expected that the HSK NDA will make available land for housing development in 2021 at the earliest.
- Review of sites in North District/Yuen Long for housing development: four sites in Kwu Tung South, Yuen Long South, Fanling/Sheung Shui Area 30 and Kong Nga Po have been identified for a planning and engineering study to ascertain the feasibility of, and scope for, developing the sites for residential use. The study will commence at the end of 2012 and take about 18 to 30 months to complete.
- Remaining development in Tung Chung New Town: this is a detailed planning and engineering study, which covers Tung Chung and its adjacent areas including fallow land, foreshore and seabed. The study is anticipated to be completed by 2014.
- Industrial land: PlanD has completed the latest Area Assessments of Industrial Land in the Territory, looking into availability of industrial land in "Industrial" and "Other Specified Uses" annotated "Business" ("OU(B)") zones which are not yet developed, and is reviewing the uses of existing private industrial buildings in these two zones. It is recommended that approximately 60 hectares of industrial land can be rezoned to non-industrial use, half of which, i.e. about 30ha, located in Tsuen Wan, Yuen Long, Fo Tan, Siu Lek Yuen, Tuen Mun, Tai Kok Tsui and Fanling, could be rezoned for residential use. If all the rezoning proposals are implemented, the area of "Industrial" zones will be reduced from about 297 hectares to about 241 hectares, while the area of "OU(B)" zones will be increased from about 200 hectares to 209 hectares in the territory.
- "Green Belt" ("GB") zone: at present, approximately 15 258 hectares of land in the territory is zoned as "GB", accounting for about 26 per cent of the

total area of land covered by statutory town plans. The planning intention of the "GB" zone is primarily to conserve the natural environment, define the limits of urban and suburban development areas with natural features, contain urban sprawl and provide passive recreational outlets. The first phase of the review has been completed, with a focus on "GB" sites in the New Territories that are de-vegetated, deserted, formed or spoiled.

Taking into account various factors, including land ownership, topography and the environment of the surrounding areas, the government's initial proposal is that a total of 15 "GB" sites, which are located in Tai Po, Sha Tin, Tuen Mun, Yuen Long and Sai Kung districts, can be rezoned for residential use. Statutory plans should first be amended before rezoning of the "GB" sites for residential use. The Government will consult the public on the rezoning according to the established procedures. The second phase of the review has also commenced, with a focus on private land which would allow developers to carry out residential or other development uses through rezoning. The whole review is expected to be completed in mid-2012.

- "Government, Institution or Community" ("G/IC") sites: the review has been completed. According to the findings, 24 sites have been identified as suitable for residential development. Most of the sites are located in "G/IC" zones. Statutory plans should first be amended before rezoning the sites for residential development. The government will consult the public on the rezoning according to established procedures, and will also study ways to reduce restrictions posed by some government utilities to the development of adjacent areas so as to release more land available for other uses.

#### *Pilot scheme for redevelopment of industrial buildings*

In its 2012-13 Budget, the Financial Secretary proposed to invite the URA to launch redevelopment projects for industrial buildings in the form of a pilot scheme to provide a new impetus to the Development Bureau's work on the revitalisation of industrial buildings. The Board of the URA will deliberate on criteria for the selection of industrial buildings and the implementation timetable of the pilot scheme. The scheme is expected to be launched in the next one to two years.

#### *Harbourfront enhancement*

On completion of all ongoing and approved waterfront promenade projects, including the two promenades in Central and Quarry Bay (Hoi Yu Street), as well as the Kai Tak Runway Park Phase 1 adjacent to the Cruise Terminal and Kwun Tong Promenade Stage 2, the length of the water promenade open for public use will be extended by 2 kilometres.

To create a vibrant harbourfront with more diversified attractions, the Development Bureau is exploring, with the Harbourfront Commission, the establishment of a statutory and dedicated harbourfront authority, which will push ahead with the design, construction, operation and management of

harbourfront projects with a creative mindset, flexible framework and entrepreneurial culture.

[*Press Release, Development Bureau, 07/03/2012*]

#### *Mega island floated*

To help solve Hong Kong's land shortage, a man-made mega island could rise from the sea south of Cheung Chau.

The proposed artificial island is only one of 25 coastal sites proposed by the government to provide more land. The government did not reveal whether the 1,500-hectare site to be reclaimed from the sea will be connected to Cheung Chau. Use of the reclaimed land has not been finalised, but will include housing and office space.

Other sites proposed include artificial islands west of Hei Ling Chau (100 hectares) and north of Lamma (400 hectares). The government is also proposing to connect Peng Chau and Hei Ling Chau to create a site of more than 700 hectares. Another plan would join Beaufort Island and Po Toi Island to produce an additional 300 hectares.

Additionally, 13 sites are listed for artificial or disturbed shoreline areas near Tuen Mun, Tung Chung, Tsing Yi, Tai Po and Tseung Kwan O. Seven proposed sites are on natural but not protected shorelines at Lung Kwu Tan and Tai Lam Chung.

The chief engineer of port works at the Civil Engineering and Development Department, Robin Lee Kui-biu, admitted there are environmental concerns with some of the sites. For example, Chinese white dolphins are found in Sunny Bay and there are mangroves near Tai Po Kau.

Civil Engineering Office head, Edwin Tong Ka-hung, said the government would consider using technology, such as confined disposal facilities, to reduce environmental impacts.

Public consultation on reclamation and rock cavern development ended in February. The general view of the public is there is a need for more land - with the two biggest concerns being location and impact on the environment. Tong forecast that Hong Kong would need 1,500 more hectares by 2039, when as the population will reach 8.9 million. The earliest any reclamation can be completed is 2019.

The Hong Kong Dolphin Conservation Society accused the government of being irresponsible in proposing sites prone to environmental disruption. He said reclamation at Sunny Bay, Tuen Mun and Lung Kwu Tan will scare away the Chinese white dolphins and finless porpoises.

WWF also called on the government to think thoroughly about such far-reaching plans because the list includes areas of high ecological importance.

[*The Standard, 05/01/2012*]

#### *Old quarry grows green*

Gray granite has been transformed into green for 35,000 residents of Kwun Tong District. The quarry in Jordan Valley, Ngau Tau Kok, ended rock extraction in 1976. It has been park which provides a green oasis for 17

public estates, including Choi Ying, Choi Tak and Choi Fook estates.

With an area of about 13,560 square metres, the park has a theme garden with a meandering walking trail and sitting-out facilities, a play area for children, an elderly fitness area, a tai chi garden and a foot massage path.

Converting the former quarry into a public park involved great effort in design and development. Deputy Director of Housing, Ada Fung Yin-suen, said that with little natural vegetation, the project was challenging to architects. The main challenge was to produce a design with environmental, social-behavioral and aesthetic features. Designs were made to conserve the natural granite as well as incorporating transplanted trees.

Indigenous granite specimens and information boards are displayed along the walking trail to help visitors get a better understanding of geo-conservation and geology. The project includes 91 mature trees.

The design of the park's public lavatories made use of natural lighting and ventilation to reduce energy consumption.

[*The Standard*, 26/01/2012]

#### Fewer home sites available for developers

The government announced 47 residential sites would be available for sale in 2012-13, which could provide a total of 13,500 flats. The government plans to make fewer residential sites available to developers this year than last, leading to fewer flats being built, a move likely to help underpin prices in the short term.

That compares with the 52 sites offered last year, which could potentially provide 16,000 flats. Most of the sites are in relatively remote areas in the New Territories, with only 10 located in Kowloon and on Hong Kong Island. With the 47 new sites and private redevelopments by MTR Corp and the Urban Renewal Authority, there is a potential for construction of 29,800 flats in the coming financial year. Last year the government planned to release enough sites to provide 35,000 flats.

Twenty-four of the 47 sites are new; the rest were offered previously but not sold. The latest list includes two sites on the Kai Tak Development, home of the old airport, the first time private housing sites in that area have been released for sale.

The government also has split larger sites into small parcels to give smaller developers a chance to bid. As the government has such a small land bank, it has even resorted to putting two sites in Sha Tau Kok, near the mainland border, on the list. There are fewer luxury sites available for sale than in previous years.

New land supply in the next few years would rely on the Kai Tak Development and Tsung Kwan O. Lam said the government will also speed up residential development along railway routes.

Some analysts argue the government could make more land available and should do so to ensure a steady land supply that would stabilise prices in Hong Kong's volatile property market in the longer term.

[*SCMP*, 03/02/2012]

#### Reclamation plans pose wildlife threat

A recent land reclamation scheme worries environmentalists and experts in the marine biology field, as more than a third of the proposed sites are home to valuable marine creatures or suspected to be ecologically sensitive.

Reclamation is one of Chief Executive Donald Tsang Yam-kuen's plans to boost land supply to ease the housing shortage. The government estimates it needs an extra 1,500 hectares of land to support Hong Kong's increasing population, which is expected to hit 8.9 million by 2039.

The government has earmarked 25 sites for possible reclamation, including sites at Tseung Kwan O, Shuen Wan, Wu Kai Sha, Shek O Quarry, Hei Ling Chau, Beaufort Island, Lamma North and South Cheung Chau.

Marine scientist Wong Chi-chun has released underwater pictures of some of these sites for land reclamation. He said projects undertaken to improve water quality and a recent ban on trawler fishing would be wasted if large-scale reclamation went ahead.

At least nine of the 25 sites are home to sensitive marine life. In 2001, Wong identified a rare, 100-year-old table coral measuring more than two metres in diameter, 69 metres below the surface, between Po Toi Island and Beaufort Island. This specimen had been undisturbed because of rapid currents around it and the depth of water. Its flat shape, which gave the coral its name, made it particularly vulnerable to sedimentation. In 2003, Wong saw a red lionfish off Shek O Quarry.

The Agriculture, Fisheries and Conservation Department confirmed that the two species could be found in Hong Kong only off the south eastern islands and in eastern waters. Finless porpoises and another kind of soft coral, the sea whip, have been found at sites that are more accessible to the public, including Cheung Chau and Tseung Kwan O. The department said Cheung Chau was near a key habitat for Hong Kong's finless porpoises, but that the incidence porpoise sightings there has been low.

Sites at Shuen Wan and Wu Kai Sha may also lose valuable marine life as they are next to Lung Mei, in Tai Po, where more than 200 marine species have been identified.

Life sciences professor Ang Put-o, of Chinese University, said reclamation had an irreversible impact on coral reefs, which require sunlight to survive. Reefs near Chek Lap Kok were harmed when the government reclaimed land for the airport.

Chau Kwong-wing, professor of real estate and construction at the University of Hong Kong, said reclamation might not be a bad choice given the lack of infrastructure in the New Territories. Yet the public should be given all the facts and options with specific costs, risks and environmental impacts.

[*SCMP*, 07/02/2012]

#### United fronts fight seaside reclamation

Residents across the city are fighting the government's ambitious waterfront reclamation plans, which they say would damage the coastline and worsen traffic.

At Sandy Bay, in Pok Fu Lam and Wu Kai Sha, a popular natural pebble beach near Ma On Shan, both of which are on the reclamation list, local residents are organising their resistance.

Residents, including University of Hong Kong staff living in up-market flats in Pok Fu Lam, have united to commission a professional environmental impact study on how development on reclaimed land would affect the area; whilst across the city, middle-class residents in Ma On Shan have formed an alliance to protect the beach in Wu Kai Sha.

The residents' alliance, which fears development on reclaimed land at Sandy Bay would worsen the area's traffic and environment, plans to submit the results of the environmental impact study to the government. A resident of Pok Fu Lam's Scenic Villas, who declined to be named, said cost should not be the dominant factor in the government's decision on the issue. Across the city in Ma On Shan, people living close to Wu Kai Sha are concerned that their local beach will be destroyed.

The Civil Engineering and Development Department has said the city needs more land for housing and diverse economic development, and reclamation should not be seen as the last resort for solving these problems. It also released data suggesting that there was not much rural land available and the cost of developing it was higher than reclamation, as it frequently involved land resumption, which often meant compensation for, and relocation of, affected residents.

Ng Mee-kam, an urban planning professor at Chinese University, accused the government of "putting the cart before the horse" by not having a clear reason for the reclamation. Ng said that land reclaimed in West Kowloon was originally destined for public housing but was filled with luxury flats.

The government says Hong Kong needs another 1,500 hectares of land to support projected population growth of 1.8 million by 2039. However, many critics say the projections are unreliable in the absence of an official population policy.

[*SCMP*, 05/03/2012]

### WEST KOWLOON CULTURAL DISTRICT (WKCD)

WKCD's proposed development plan backed by respondents to Stage 3 Public Engagement Exercise

The public supports the overall layout of the proposed Development Plan for the future arts and cultural hub exhibited by the West Kowloon Cultural District Authority (WKCD) during the Stage 3 Public Engagement Exercise (PE3).

WKCD displayed information on the proposed Development Plan and solicited views from the public and stakeholders in October 2011. Out of 944 feedback forms

received, 75% were from citizens under the age of 30. The comments illustrated a very enthusiastic response from citizens and their concern regarding progress of the project.

PE3 was the last stage of Engagement Exercise conducted by WKCD for the preparation of the Development Plan. An analysis of the views was conducted by an independent team and published in a *Report on the Analysis of Views for the Stage 3 Public Engagement Exercise*. Comments were also made concerning a lack of iconic buildings planned for the District, unsatisfactory building density and height, an unhealthy emphasis on commercial activities, and the questionable ability of the proposed transport network to adequately cope with traffic flows.

The analysis team found support for the overall layout, proposed variety of public transport means to access the District, the environmentally friendly design of the District, the Great Park, and the piers and cycling tracks to be established in the District. The public also showed interest in certain general and operational issues, such as the strategic positioning of WKCD, financial sustainability, adequacy of nurturing and audience building programmes, and general cultural policy for Hong Kong.

[Press Release, West Kowloon Cultural District Authority, 23/12/2011]

#### Statutory planning process for the West Kowloon Cultural District (WKCD) begins

The West Kowloon Cultural District Authority (WKCD) submitted its proposed Development Plan to the Town Planning Board for consideration, signalling the start of the statutory planning process for creating the WKCD.

The anticipated construction programme will be broadly as follows :-

- (i) 2013 – commencement of construction work
- (ii) 2014-15 – scheduled completion of the Arts Pavilion and part of the Park
- (iii) Shortly thereafter – completion of Xiqu Centre
- (iv) Following completion of (i)-(iii), phase I construction – including Centre for Contemporary Performance, M+ (first phase), Lyric Theatre, Medium Theatre I, Music Centre, Mega Performance Venue, Exhibition Centre and Musical Theatre—will commence.

The Development Plan was exhibited as part of the Stage 3 Public Engagement exercise. Taking due consideration of public views and suggestions, minor refinements were made, such as increasing non-building areas of the WKCD.

The Development Plan was also subject to the *South West Kowloon Outline Zoning Plan*. The maximum plot ratio of 1.81, with provision of not less than 23 hectares of public open space, residential use of not more than 20% of total plot ratio, and building height restrictions, must be observed.

The Town Planning Board will consider the Development Plan for 3 months, and the Board may treat it as a draft plan prepared by the Board for the purposes of the *Town*

*Planning Ordinance*. There will also be a 2-months public inspection period, after which the draft plan will be submitted to the Chief Executive within nine months thereafter.

[Press Release, West Kowloon Cultural District Authority, 30/12/2011]

#### West Kowloon Cultural District Authority announces design competition for its first arts venue

A competition is launched for the design of a 1,100-seat main theatre, a 400-seat small theatre, a tea house for performances for audiences up to 200, and ancillary training and education facilities.

It is hoped that the competition will reveal a design team that can deliver for Hong Kong a world-class home for Chinese Opera practitioners, students and audiences, and can deliver a facility fitting for such an important form of Chinese cultural heritage. A Steering Committee made up of representatives of professional institutes and arts and cultural disciplines has been appointed to oversee the competition.

The Xiqu Centre will be the first of 17 core arts and cultural venues to be opened within the District, and will be one of the 15 proposed performing arts venues. The Xiqu Centre aims at providing a world-class facility for Cantonese and other Chinese opera performances. The project is expected to be completed by the end of 2015.

[Press Release, West Kowloon Cultural District Authority, 09/03/2012]

#### Give arts hub Venetian touch

To replace the debated monorail for the West Kowloon Cultural District, WKCD members suggested introducing a Venetian-style water taxi system, which would allow visitors to travel around the whole arts hub in half an hour. The Authority was also requested to cater for the elderly and handicapped. Appropriate forms of transport for disabled visitors to use within the hub, including a moving walkway, are under consideration.

The monorail was criticised as being too expensive and likely to block the view of the harbour from the WKCD.

For the Hub's buildings, a stepped-height approach has been adopted, with lower buildings located near the harbour. The highest building at the site will be approximately 100 metres high.

The gross floor area of the site will be 739,550 square metres distributed as: 20% to be for residential use; 35 to 40% for arts and cultural facilities; 20% for retail, dining and entertainment facilities; and the remaining 25% for hotels and offices.

[SCMP, 10/03/2012]

## HONG KONG BRIEFING

#### Government and environmental organisations call for litter tax

Environmental organisations point out that the litter production rate in Hong Kong remains high compared to other capital cities of the world. Seoul has a litter production

rate which is only one third of that of Hong Kong.

The government has proposed a litter tax as a means to reduce litter production in Hong Kong. The proposal is currently subject to public consultation, which is to end on 10 April 2012. The government suggested four measures to levy tax on the public for the management of litter: a tax based on the quantity of litter produced; a tax based on actual water charges paid each month; a tax levied on a stage-by-stage basis; or a tax imposed as a fixed lump sum for every residence.

The Deputy Director of Environmental Protection Mr. Lam Kei Chong, said that the four measures all have their pros and cons, and stressed that the Department has no preference for any particular measure. However, he voiced his opinion that levying taxes based on the quantity of litter is the most efficient way to reduce litter; while levying tax based on water charges or on a lump-sum basis is easier to implement.

Various environmental protection organisations are supportive of an anti-litter tax. Most expressed a preference for levying a tax based on quantity of the litter. Deputy Environmental Affairs Manager of *Friends of the Earth*, Miss Au Wing Chee, explained that the other proposed measures would not accurately reflect the actual amount of litter produced. They may also prejudice those residences which carry out classification of litter. *Friends of the Earth* raised the example of the Plastic Bags Levy and commented that the success of the Levy in reducing the use of plastic bags shed light on the practicability of introducing a Litter Tax.

Legislators Chan Hak Keung, Yu Yok Mei and Kam Nai Wai are also in favour of levying taxes based on quantity of litter, though they suggest various side-measures to reduce the burden on the public, such as distributing free litter bags and granting exemption for residences with litter production below a certain quantity. The public and the food service and catering sectors, however, are strongly against the proposal.

[Sing Tao Daily, 16/01/2012]

#### Residual Pesticides affect vegetables

Environmental organisation *Green Peace* extracted samples from various vegetables and fruits in Hong Kong and the Guangdong area to analyse their contents. In over 90% of the samples, one or more types of residual pesticides were found. Four or more types of residual pesticides were found in approximately 20% of the samples. The organisation condemned the lack of enforcement of regulations by Guangdong and Hong Kong governments to prevent the sale of vegetables containing chemical residues.

The manager of the survey campaign claimed that even ingesting a tiny amount of highly-concentrated pesticide can lead to various symptoms of intoxication, such as difficulty in breathing and even loss of consciousness. *Green Peace* requested Guangdong and Hong Kong governments to set down detailed agenda for reducing the use of pesticides in farm products. Other than increasing the frequency of inspecting farm products, Hong Kong should also cooperate with Guangdong officials to reduce and

restrict the use of pesticides in the first place, thus resolving the problem at its root.

[*Sing Tao Daily*, 17/01/2012]

### Electricity companies over-estimated demand for electricity for 10 years

Surveys of the records of Hong Kong's two electricity companies show that there is a tendency for the companies to generate electricity at a rate faster than the growth of demand for electricity.

Comparing the year 2001 with year 2010, Hong Kong Electric's total demand for electricity has dropped by 0.2%. However, the company's electricity generation has increased by 13%. For China Light and Power Limited (again comparing the year 2001 with year 2010), total demand for electricity rose by 15.7%, whilst total electricity generation increased by 27%. There is an increasing discrepancy between the amount of electricity generated and the actual amount consumed by the public.

The current practice is for the electricity companies to estimate the electricity demand and then to proceed with the purchase of fuel and investment in power generation equipment on the basis of that estimate. Consumers have no part to play in the process of evaluating electricity demand. Although the two companies do keep records of actual electricity consumption, they are unable to derive useful information regarding consumption habits of consumers.

In light of the current situation, experts suggest that the government should consider installing intelligent ammeters in consumers' meter boxes. By doing so, it is said that electricity consumption information would be delivered to the electricity companies in a timely manner. The two companies could then make a more precise and accurate evaluation of consumers' future electricity demand.

Experts also point out that by accurate prediction of electricity demands, investment resources can be saved by the power companies. Unnecessary electricity generation is avoided, and ultimately energy would therefore be saved.

Intelligent ammeters can be installed in commercial buildings as a starting point, as about 30% of electricity is consumed by commercial buildings.

[*Sing Tao Daily*, 19/02/2012]

### Incinerator is not the way to go

The government's plan to build an incinerator near Lantau Island has caused huge public discontent, especially amongst Lantau residents. Residents are worried that the construction will affect the Lantau area and even deter visitors from visiting the island. They are worried that the quality of life for future generations will deteriorate as a result of the operation of the incinerator.

Opposition has been voiced not just by nearby residents but also various environmentalists and environmental protection organisations. Douglas Woodring, founder of the *Ocean Recovery Alliance* and a Clinton Global Initiative Commitment Maker, expressed his concerns over the proposal to build an incinerator. He criticises the proposal as "substandard thinking" and a "lazy way out of a problem". Whist building

an incinerator can quickly solve the problem of disposing properly of increasing volumes of waste, the proposed incinerator will create insurmountable long-term side effects, such as destruction of the marine environment of the area.

It has been suggested by critics of the proposal that the possibility to turn waste into fuel should be examined by the government. Instead of disposing of the waste in incinerators or land-fill sites, waste could be a useful secondary raw material for generating electricity. The government should develop technologies to re-generate the waste into energy. All valuable plastic material should be extracted, after which the remaining material can then be transformed into fuel through distillation, and the fuel burnt to generate electricity.

Technologies to improve recycling practices and waste-to-fuel transformation should be deployed. Waste reduction, recycling and transformation are far better than building an Incinerator, which clearly represents a retrograde step in the environmental protection agenda of the government.

[*SCMP*, 08/03/2012]

### Air Pollution Index is under review

In order to accommodate the new Air Quality Objectives, which will come into force in 2014, the government is reviewing the Air Pollution Index which has been in force for 17 years.

The current Index has two major loopholes. The first is that the Index only utilises the pollutant which has the highest concentration in the air as the basis for formulating the maximum allowable pollution level. Even if the concentration level of various pollutants is comparatively high, the Index will not reflect this so long as the concentration level of each individual pollutant does not exceed the limit prescribed. The result is that there may be a false indication of "good" air quality when the reality is the contrary.

The second major shortcoming of the current Index system is that the concentration level of suspended particles is calculated by the average level in the preceding 24 hours, and therefore it does not reflect accurately the current level of suspended particles existing in the air.

The government has consulted local scholars on the issue and has recommended that changes be made to address the two shortcomings.

First, the calculation of the Index in future will take into account a range of air pollutants, as opposed to the current system of taking into account only the pollutant which has the highest concentration level in the air. The cumulative effect of various pollutants can then be reflected in the Index. Further, the new Index would also take into account any adverse impact which poor air quality has on public health, to the effect that this would be reflected in the Index even if the concentration level of air pollutants is comparatively low.

Secondly, the current system of calculating suspended particles based on the preceding 24 hours will be altered. In future, the calculation will be based on the preceding 3 hours. This is taken to be more reflective of the current level of suspended particles in the air. Experts suggest that a calculation based

on the preceding 1 hour is not advisable because that would be far too variable, and thus of low referential value.

[*Ming Pao*, 12/03/2012]

### LIM's submissions to LEGCO environmental panel concerning proposed incinerator

The Living Islands Movement "urges the Honourable Members to ask EPD the following questions with reference to the IWMF Phase 1 project (5177DR):

1. We challenge EPD's claim that it is recovering 52% of Hong Kong's MSW. According to Government figures, 18,000 tonnes of MSW is produced in Hong Kong every day. We believe this includes material exported by the private sector in the normal course of business that is not processed by government facilities. In fact, we believe that government actually collects about 9,000 tonnes MSW per day, and that only a small percentage of this is recovered. So we ask: Precisely how much MSW collected from domestic and commercial premises was recovered by Government in 2011?
2. In a letter to Living Islands Movement of 31 October 2011 (attached), EPD stated that cost estimates were in preparation for both Shek Kwu Chau (SKC) and TTAL proposed sites. Why are they not included in today's proposal (5177DR) presented to the Panel for Environmental Affairs? What are the comparative costs of the two locations?
3. LIM estimates that the cost of an incinerator at TTAL would be HK\$3-5 billion and would be commissioned two years earlier than one at SKC, saving HK\$20 billion tax payers' money. Why has TTAL therefore not been chosen for the first incinerator? Further, can EPD confirm that TTAL is to be the site of a second incinerator as indicated in the map in Annex E1 of today's paper?
4. EPD claims that transport distance for MSW to SKC is one fourth less than TTAL. But, why is EPD concealing the additional sea transport required to take the toxic residue from the SKC location (over 900 tons per day) to TTAL?
5. We do not understand the claim that a "balanced spatial distribution" is achieved by siting an incinerator at SKC. What is the justification for this when it goes against the normal planning practice of siting industrial facilities away from areas zoned for conservation and recreation?"

[*Living Islands Movement news release*, 23/03/2012]

## CLIMATE CHANGE

### Energy-saving firms slow on green offensive

Only a handful of small and medium-sized enterprises are investing in power-efficient

products and services, even though many are reducing their energy consumption.

This is the conclusion of a survey by *Climate Change Business Forum* of 300 companies, of which 73% said climate change will be a top business concern during the next three years. Many companies worry that climate change will lead to soaring power costs, extreme weather events and disruptions due to pandemics and infectious diseases. Businesses especially vulnerable to the effects of climate change are in the banking and financial services, fuel importers and manufacturing industries.

These fears have led to more than half of them taking steps to reduce energy consumption in the supply chain, which represents almost 90% of a company's total carbon emissions. Some 36% are seeking to lower costs by setting energy or carbon reduction targets; 29% are implementing employee training to focus on cutting energy costs.

Forum executive committee chairman, Thomas Ho On-shing, said companies are merely responding to obvious risks, but are hesitant to invest in green products and services.

Almost 70% of companies anticipate an increasing demand for green products and services in the coming three years. However, only 12% said they are actively developing energy-efficient, low-carbon products and services.

The survey results also show many companies are clamoring for stronger government leadership in climate change efforts.

It found 58% want more ambitious carbon reduction targets, as about two-thirds of them consider Hong Kong to be unprepared for the effects of climate change.

"The government needs to set an ambitious goal, like China, as many companies do not act because they are confused by its ambivalent attitude towards reducing carbon emissions," said Jeanette Kwok, HSBC senior vice president of corporate sustainability in Asia Pacific.

[*The Standard*, 29/02/2012]

### Ice hockey in danger of extinction

A Canadian winter tradition could be facing extinction within decades because of climate change, a new study concludes.

According to a recent article in the *Institute of Physics' journal*, the ice season has shortened noticeably over the last 50 years, especially in southern British Columbia and Alberta and parts of the prairie provinces. Temperatures are not staying low enough long enough to allow ice to freeze over. By mid-century, it might not be possible to play ice hockey or skate on outdoor rinks without artificial intervention.

That prospect might even be enough to alarm the prime minister, Stephen Harper, who has come under increasing criticism in the international community, and at home, for renegeing on Canada's commitment to cut greenhouse gas emissions, and for his aggressive promotion of the Alberta tar sands, which have a heavier carbon imprint than traditional crude.

It takes a long cold spell to be able to build a good foundation for ice sports — at least three days in a row at -5°C — the researchers determined from interviews with public rink officials. However, temperature records from 142 weather stations across the southern belt of Canada, where most of the population lives, showed a distinct warming trend from 1951-2005.

According to the criteria set by rink officials, many of those locations would have experienced later start dates for outdoor skating during recent years. Most had had shorter seasons, as much as 20 to 30% shorter in British Columbia, Alberta, Saskatchewan, and Manitoba and parts of western Ontario. Only Atlantic Canada showed a longer season.

Temperatures in Canada have increased by on average more than 2.5°C since 1950, which is about three times the global average of warming attributed to climate change. Canadian cities are becoming warmer due to increasing urbanisation.

[*The Guardian*, 05/03/2012]

### EU extends CO2 curbs

European Union governments will have to record changes to forestry and farmland that alter the carbon balance under a draft law published on 12 March 2012, as the European Commission presses ahead with new rules against greenhouse emissions.

The proposals go beyond agreements reached at United Nations climate change talks in Durban last year, by requiring EU nations to monitor emissions from cropland and grazing land in addition to forests. Environmental campaigners have welcomed the proposal, whilst farmers said they had major concerns. "This is the first step to incorporate these sectors into the EU's reduction efforts," the European Union Climate Commissioner said in a statement.

The bloc's *Emissions Trading Scheme* (ETS) already seeks to limit carbon emissions of utilities, heavy industry and aviation. The introduction of carbon charges for all aircraft using EU airports from the start of this year has led to furious resistance from airlines and non-EU governments. But the EU has said it will stand firm unless the United Nations' International Civil Aviation Organisation can come up with a global scheme. It has also said its next target is shipping and later this year will publish proposals for curbing maritime emissions.

The EU's forests and agricultural lands cover more than three-quarters of EU territory. Although highly significant, carbon accounting for forestry and land-use is less established than for other sectors and progress on managing it internationally and within the EU has been slow. So far land use, land use change and forestry, known by the acronym LULUCF, has been excluded from the EU's set of fixed targets to try to reduce climate change.

One consequence is that emissions from biomass, when used in power generation, have been counted as zero, causing some to question whether an EU target to increase the share of renewables in the energy mix is being met through emissions from biomass.

The Commission's proposal does not go as far as land-use targets, but emissions from burning biomass such as wood for power

generation, for instance, would have to be monitored.

When monitoring and reporting has been in place "for a number of years" and proven to be effective, as a second step the Commission said it would propose including LULUCF in the EU's binding emissions reduction target.

Environmental groups that favour the EU's new approach agree with the Commission's stance that a forestry and land-use target should not be part of the ETS, and say they differ fundamentally with other sectors in that they can remove carbon as well as adding to overall emissions.

[*Reuters*, 12/03/2012]

### Climate 'events' displaced 42 million in Asia

Climate-related disasters have displaced more than 42 million people in Asia over the past two years, the Asian Development Bank claims in a report calling for swift action to avert future crises.

"Asia and the Pacific is the global area most prone to natural disasters, both in terms of the absolute number of disasters and of populations affected," said the report.

About 31.8 million people in the region were displaced by climate-related disasters and extreme weather in 2010, including more than 10 million in Pakistan due to massive flooding.

A further 10.7 million were forced to flee their homes last year, the report says, warning that such events will only increase with climate change.

"While many of those displaced returned to their homes as conditions improved, others were less fortunate, struggling to build new lives elsewhere after incurring substantial personal losses," Asian Development Bank vice-president Bindu Lohani wrote in the report's foreword.

The bank said Asia had six of the 10 countries most vulnerable to climate change, with Bangladesh and India in the top two places on a list that also includes Nepal, the Philippines, Afghanistan and Myanmar.

"The environment is becoming a significant driver of migration in Asia and the Pacific as the population grows in vulnerable areas, such as low-lying coastal zones and eroding river banks," Lohani said.

"By taking steps now, [governments] can reduce vulnerability, strengthen resilience, and use migration as an adaptation tool."

The report said governments in Asia-Pacific countries must enact a range of measures to stave off future crises. Among other measures, it recommends more investment in urban infrastructure and basic services to accommodate the anticipated increase in migration to cities.

The bank said the Asia-Pacific region needed to spend about US\$40 billion a year until 2050 to "climate proof" the region against the impact of global warming.

[*SCMP*, 14/03/2012]



## Cooperation on water

On its debut as a full member, China has made a deep impression at the ongoing World Water Forum this week.

The six-day event, which opened in Marseille, southern France, is an ideal platform for the country to forge international cooperation to jointly tackle water challenges with international and regional partners.

On 14 March, Minister of Water Resources Chen Lei, head of the Chinese delegation, signed the Joint Statement on Establishment of China-Europe Water Platform. It marks the establishment of a long-term cooperation platform between China and Europe.

One day earlier, China signed a pact with Japan and South Korea to boost cooperation on water management issues. The three countries have agreed to organise policy and strategic dialogue through regular high-level meetings, share water-related technologies and establish an information sharing system.

Given that water-related risks have become increasingly prominent and posed common challenges to the Asia-Pacific region, the new initiative demonstrates the three neighbours' resolve to resolve to regional water problems hand in hand.

Global climate change has made extreme weather events more frequent and water-related problems more severe, posing a daunting challenge for the world.

China has also vowed to invest 4 trillion yuan in the water sector over the next decade, to promote the sustainable use of the country's water resources and raise public awareness of the need for water conservation and water security.

[China Daily, 16/03/2012]

## Future living standards 'may already be doomed'

Pressures on the earth's ecosystem are now so great that future generations could be doomed to falling living standards, the Organisation for Economic Co-operation and Development says in a report looking to the mid-century.

The report by OECD builds on previous forecasts, ending in 2030, that focused on climate change, biodiversity and the impacts on health from pollution. It said the prospects are more alarming than the situation described in the previous reports.

Carbon emissions from energy use are likely to rise by 70% by 2050, resulting in more disruptive climate change effects. On present trends, the world's average temperature will be 3 to 6 degrees (C.) higher than in pre-industrial times, compared with the United Nation's target of 2 degrees.

To reach the 2-degree goal would cost only 0.2 percentage points in economic growth each year on average, if implementing measures began today.

Species loss is set to continue, especially in Asia, Europe and southern Africa. According to a scientific benchmark, "mean species abundance", diversity of land species is expected to fall by 10% by 2050 compared with today.

[SCMP, 17/03/2012]

## ADVISORY COUNCIL ON THE ENVIRONMENT (ACE)

Summary of minutes of the 182<sup>nd</sup> Meeting of the Advisory Council on the Environment (14 November 2011), ACE Paper 15/2011 and ACE Paper 16/2011

### Emission standards

Members were briefed on the ACE Paper 15/2011 on tightening emission standards for newly registered vehicles to Euro V level. Salient points arising from the meeting are:-

- 1) To improve air quality in Hong Kong, the Advisory Council proposed to tighten emission standards for newly registered vehicles (except light vehicles of design weight less than 3.5 tonnes) to Euro V level effective from 1 June 2012, which is considered in ACE Paper 15/2011. Major car producers confirmed that they could supply an adequate number of Euro V models to Hong Kong by December 2012. The Council was supportive of the proposal.
- 2) The Advisory Council consulted several parties for the purpose of this paper:-
  - (a) Vehicle suppliers such as Hong Kong Motor Traders Association;
  - (b) Non-Franchised Bus Operators;
  - (c) Public Light Bus Operators;
  - (d) Non-franchised Bus Operators; and
  - (e) Public Light Bus Operators.
- 3) The Right Hand Drive Motor Association (RHDA) proposed a transitional period of 6 months after introduction of the mandatory emission standards. The government would consider a special arrangement to allow use of a limited number of cars which do not meet Euro V standard and which had already been brought to Hong Kong.
- 4) A member expressed his concern that heavy-duty trucks, light goods vehicles and buses were major sources of roadside air pollution in Hong Kong. He urged that measures should cover these types of vehicles in order to ensure effectiveness of the mandatory standards.
- 5) The government replied that it was difficult to determine how much nitrogen dioxide was attributable towards vehicular emissions as there were also other contributing factors leading to the formation of nitrogen dioxide. Generally speaking, about 30% of the emissions came from vehicles and the rest came from power plants, marine sector and other combustion sources.
- 6) Members proposed that the Transport Department should step up their efforts to boost the take-up rate, as a large number of vehicles still meet only the lower emission standards. The government should initiate action to expedite the replacement of vehicles to meet the new standards.
- 7) The government concurred with the need for disincentives to holding aged vehicles. The previous proposal of raising licence fees for aged vehicles,

however, did not receive support from the public and the Legislative Council. As to the suggestion of increasing the frequency of inspection, it is important to secure the necessary support for its introduction.

- 8) The government considered the proposal for an advanced emission check to include a test on Nitrogen Dioxide for petrol and LPG vehicles with the aid of dynamometers.

### Producer responsibility scheme

Members were briefed on the ACE Paper 16/2011 concerning a new producer responsibility scheme for waste electrical and electronic equipment. Salient points arising from the meeting are:-

- 1) Not less than 70,000 tonnes of waste electrical and electronic equipment (WEEE) were generated every year in Hong Kong and over 80% is recycled. However, WEEE generation in Hong Kong has been increasing in recent years.
- 2) The purpose of the new Producer Responsibility Scheme (PRS) for WEEE is to effectively organize different stakeholders to take up the eco-responsibilities in minimizing any adverse impacts on the environment. Key elements of the scheme are:-
  - (a) retailers to collect the recycling fee and provide take back service;
  - (b) the Administration to procure the requisite WEEE treatment capacity by a "Design-Build-Operate (DBO)" contract;
  - (c) importers/exporters to comply with enhanced import/export control; and
  - (d) recyclers to comply with enhanced licensing control relating to the treatment and storage of WEEE.
- 3) The Council was supportive of the new proposal for a Producer Responsibility Scheme. The government is playing a very important role in facilitating and supporting the new Scheme, e.g. implementing the new Scheme through *Product Eco-responsibility Ordinance* (Cap. 603) and other relevant legislation, which requires:-
  - (a) a retailer is required to provide mandatory and free take-back service;
  - (b) permit controls for the import and export of WEEE;
  - (c) licensing for the storage and treatment of WEEE;
  - (d) payment of a charge to be collected on purchase of new electronic products.
- 4) The Council suggested that the Administration should set up more collection centers for the collection of waste from households. In addition, a central fund should be set up to mitigate the retailers' compliance costs in providing the take-back service.
- 5) The Council recommended that the Administration should procure an increase in the processing capacity of the treatment plant. The treatment plant could start with 30,000 tonnes at the outset, given the fact that about 90% of the waste was exported to developing countries. But members expressed a view that this was unsustainable and it merely shifted the burden to other jurisdictions.

- 6) The Council suggested that the government should conduct further research on the arrangements to help reduce logistics costs in providing the take-back service, e.g. setting up more collection points.

**Summary of minutes of the 183<sup>rd</sup> Meeting of the Advisory Council on the Environment (30 December 2011), ACE Paper 17/2011, ACE Paper 18/2011 and ACE Paper 19/2011**

#### *Proposed Marine Park*

Members were briefed on the ACE Paper 17/2011 on a proposed marine park in the Brothers Islands. Salient points arising from the meeting are:-

- 1) The proposed marine park in Brothers Islands is one of the conditions imposed by the Council before endorsing the Environmental Impact Assessment report regarding the construction of Hong Kong-Zhuhai Macao Bridge. The park will help in protecting and enhancing Chinese White Dolphins habitats, as they are the key species in North Lantau waters.
- 2) To achieve this objective, the management plan for the marine park will cover such factors as:-
  - (a) designation of anchorage area;
  - (b) establishment of core area;
  - (c) conduct scientific research and monitoring of Chinese White Dolphin;
  - (d) control of all commercial fishing in the park; and
  - (e) establishing a marine conservation education programme.
- 3) It is expected that the final boundary of the marine park will be determined in 2013/2014 and the legislative designation of the marine park will be completed in 2016.
- 4) The Council was concerned about the possible impacts of the proposed third runway at Chek Lap Kok to the marine park. The boundary of the marine park should be subject to a more comprehensive review in light of these new mega developments on Lantau Island. It is recommended that the Agriculture, Fisheries and Conservation Department should closely monitor the project and see if there is any need to change the boundaries of the park.
- 5) The Council recommended that a "dolphin friendly" design should be planned for all underwater structures and believed that the structures could harmonise with the natural coastline nearby and make the region more suitable for the Chinese White Dolphins.
- 6) The Council recommended that the boundary of the marine park be extended to the coastline along the Sham Shui Kok area for better conservation of the Chinese White Dolphins, and that the Secretariat should write to the Lantau Logistics Park persuading it to take into consideration the creation of the Marine Park and dolphin survey reports in their future study for the proposed Lantau Logistics Park project, as required under the *Environmental Impact Assessment Ordinance*.

#### *Waste management*

Members were briefed on ACE Paper 19/2011 concerning the report of the 118<sup>th</sup> Environmental Impact Assessment Subcommittee Meeting in relation to a proposal to build a waste disposal incinerator. Salient points arising from the meeting are:-

- 1) The report on the project-- "Development of Integrated Waste Management Facilities (IWMF) Phase 1"-- was submitted by the Nature Conservation and Infrastructure Planning Division of the Environmental Protection Department. The facilities' purpose will be to reduce municipal solid waste requiring landfill disposal and to recover energy form such waste with the provision of electricity. The report mainly dealt with: (1) preferred location for accommodating the facilities at a lagoon in Tuen Mun or on an artificial island near Shek Kwu Chau; and (2) the choice of incineration technology and whether the plasma arc gasification technology should be used.
- 2) Recommendations of the EIA Subcommittee were as follows:-
  - (a) The report could be endorsed with some proposed conditions, given the preferred location at a lagoon in Tuen Mun or on an artificial island near Shek Kwu Chau.
  - (b) In respect of the Tuen Mun site, recommendations include, among other things: a Woodland Enhancement Plan for areas near the site to achieve carbon offsetting; recycling and reuse of bottom ash generated by the waste incineration process; and establishing communal facilities.
  - (c) In respect of Shek Kwu Chau site, the recommendations include: to maximise local public land-fills for reclamation of artificial land; to promote ecotourism; to complete designation of the marine park before construction work; to recycle and reuse bottom ash generated by the waste incineration process; and to develop communal facilities.
- 3) Members were briefed on the plasma arc gasification technology and noted that there has been no advancement in the technology since 2009. The majority agreed with the above recommendations by the EIA Subcommittee.
- 4) To address the public concerns with this project, members took the view that the Council and the Environmental Protection Department should make all possible information available to the public, particularly the waste treatment, choice of technology as well as the location for the project on its website.

**Summary of minutes of the 184<sup>th</sup> Meeting of the Advisory Council on the Environment (16 January 2012), ACE Paper 1/2012, ACE Paper 2/2012**

#### *Environmental impacts of the incinerator*

Members were briefed on the ACE-EIA Paper 6/2011 and ACE Paper 19/2011 concerning the environmental impact assessment of the "Integrated Waste

Management Facilities (IWMF) Phase 1" project. Salient points arising from the meeting are:-

- 1) The Hong Kong Productivity Council (HKPC) did not participate in the Environmental Impact Assessment study (EIAS) of the Integrated Wasted Management Facilities project (IWMF).
- 2) The air quality monitoring project for areas in Hong Kong, such as Cheung Chau, Shek Kwu Chau and South Lantau, was awarded to HKPC in September 2011. The monitoring programme will collect baseline information for general reference and long-term planning. The government confirmed that none of the data collected by the HKPC had been used in their IWMF EIA report. There was no direct linkage between the report and the monitoring work done by the HKPC.
- 3) The Council decided to stand by the recommendations tendered to Director of Environmental Protection on the IWMF EIA report.

#### *Solid waste charging*

Members were briefed on the ACE Paper 1/2012 regarding public consultation on municipal solid waste charging. Salient points arising from the meeting are:-

- 1) The paper took the members through the consultation exercise including: reasons behind the proposal for municipal solid waste charging; charging models currently put to public consultation, namely quantity-based system, proxy system, fixed charge system and a partial charging system; whether mandatory source separation should be introduced; challenges discovered through certain trial scheme and baseline studies conducted in Hong Kong; and specific issues currently the subject of consultation with the public and stakeholders.
- 2) The Council was supportive of the government's initiative to reduce municipal solid waste (MSW). Waste charging was not a tax initiative or a mechanism for cost recovery, but an alternate way to reduce waste generation and disposal.
- 3) The quantity-based charging system was the preferred option in order to introduce an economic incentive for behavioural change in the community, so as to reduce waste generation. But members expressed their view that the catering industry would be penalised as the waste was actually generated by their customers.
- 4) The government may first adopt a phased implementation of the MSW charging in particular sectors. With the experience gained, the fees system could be extended to other sectors so as to ensure a smooth implementation of the new measure; and
- 5) The government should step up efforts to educate the public on the importance of waste reduction at source and to induce a change in the community's attitude towards waste generation.

#### *Emissions from other mobile sources*

Members were briefed on the ACE Paper 2/2012 on revised proposals for controlling

emissions from non-road mobile sources. Salient points arising from the meeting are:-

- 1) The original proposal for import controls of non-road mobile machinery (for instance, machines used in airport, port facilities and other construction sites) to require those machines meet stipulated emission standards-- was revised, in light of the fact that a majority of imported machines were for re-export.
- 2) The revised proposal targeted at controlling the sale, lease and supply of non-road mobile machinery for local use. All such machines to be sold or leased for use in Hong Kong must be approved by the Environmental Protection Department and be properly labelled in future. Machines already in local use will be exempted and bear exemption labels. There will also be a third type of labels for machines granted conditional approval for identification purpose.
- 3) The Council was supportive of the revised proposal for controlling emissions from non-road mobile machinery.

## REGIONAL & INTERNATIONAL

### UNITED STATES

#### EPA draws praise and fire over new emission regulations

The Environmental Protection Agency ("EPA") has unveiled new federal standards for toxic pollutants and mercury emissions from coal power plants. Amendments to the *Clean Air Act* are considered to be the most wide-reaching of the legislation initiated by the EPA during the Obama administration.

Under the amended Act, US coal and oil-fired power plants must limit their emissions of mercury and other hazardous air pollutants, and install proven and widely available pollution control technologies to cut harmful emissions of mercury, arsenic, chromium, nickel and acid gases. The EPA will impose mandatory numerical emission limits for all existing and future coal plants for emissions of mercury, acid gasses and other pollutants. In addition, the EPA proposes a range of "widely available, technical and economically reasonable practices, technologies, and compliance strategies" to meet the new standards stipulated in the Act.

According to an EPA analysis, the nation will benefit from increased economic gains, such as a reduction in clean-up costs, as a result of reduced pollution. It is also estimated that public health costs will be reduced to between \$59 billion and \$140 billion by 2016, and the new regulations will prevent 17,000 premature deaths each year.

The amended Act has been largely welcomed and supported by environmentalists; however, it was heavily criticised by some industry groups and Republicans. The Republicans complain that the EPA has failed to perform a proper analysis of economic impacts by the new regulatory changes, and that they could result in millions of jobs lost and place a strain on the nation's power grid. The EPA, although acknowledging the fact that the new

regulations will result in increased power grid strain, predicts that more jobs will be created as power plants invest millions of dollars in upgrades.

[*CNN News*, 21/12/2011]

### EUROPEAN UNION

#### International airlines to be charged for carbon emissions

Europe's highest court has controversially ruled that the extension of the European Union's carbon emissions trading scheme to apply to airlines based outside the EU was legal. According to the ruling, the EU legislation did not infringe the sovereignty of other states and was compatible with all relevant international agreements. All airlines flying to and from EU airports will therefore be required to buy permits under the emissions trading scheme as from 1 January 2012.

The unilateral action taken by the EU to include foreign airlines in Europe's emission trading scheme has stirred fierce opposition among countries such as the US, China and India. Countries opposed to the measure have vowed to take retaliatory measures against the EU. Critics of the EU ruling also argue that under the 1997 Kyoto Protocol, countries should address emissions from aviation jointly through the UN's aviation body, the *International Civil Aviation Organisation*.

The European Court of Justice confirmed its stance through its ruling that the EU was within its rights to take unilateral action because talks during the previous decade had failed to result in any significant progress in respect of aviation emissions.

The court ruling, albeit final, may still allow some flexibility in terms of how the emissions regulations will be implemented. "Equivalent measures" to exempt incoming flights to Europe are allowed if the airline's original nation has measures in place to offset the international emissions of the route.

The European Commission has calculated that the cost to airlines is likely to rise between Euro 2 to 12 for each passenger, which represents only a small addition to ticket prices for long-haul flights, should the cost be passed on to travelers. Most countries are, however, dubious about the accuracy of this assessment.

[*The Guardian*, 21/12/2011]

#### EU brings farms and forests into low-carbon plans

The EU has tabled a proposal for discussion at the European Parliament on draft accounting rules to limit greenhouse gas emissions by forests and agriculture. The current rules covering agriculture and forestry account for only two of the three main greenhouse gases, i.e. methane and nitrous oxide, but not carbon dioxide ("CO<sub>2</sub>"). The revised plan aims to accurately measure CO<sub>2</sub> emissions from biomass used for energy, and from ploughing and logging. The EU Commissioner for Climate Action stated that the proposal will also help in protecting biodiversity and water resources, supporting rural development and ensuring more climate-friendly agriculture processes.

Earlier, EU negotiators aimed for a more ambitious target for CO<sub>2</sub> emissions cuts. Amongst the 26 member states, Poland, due to its heavy reliance on coal for electric power supply, was the only country to raise objection. The EU, however, is determined to transform the whole of Europe into a "low-carbon economy" by following its low-carbon roadmap to cut 25% of CO<sub>2</sub> emissions by 2020, 40% by 2030 and an overall target of 80% by 2050.

[*BBC News*, 13/03/2012]

### AUSTRALIA

#### Industry call to scrap state pollution target

Whilst business leader in the industry generally welcomed the establishment of a national target for a reduction of greenhouse gas emissions, they are of the view that individual state targets will be unnecessary and undesirable.

The ambitious target to cut emissions by 20 per cent by 2020 has been established by the Victorian government's *Climate Change Act*. This target is inconsistent with the Commonwealth government's greenhouse gas emissions cap of 5 per cent. Industry leaders argue that meeting the Victorian target as well as the national target to cut emissions will lead to duplication, inefficiency, and higher costs. It also poses a threat to global companies who are already struggling with the strong Australian dollar.

Companies, including aluminium giant Alcoa and global gas and oil company Exxon Mobil, are now urging the state government to scrap the Act entirely. A spokesman for the Victorian government declined to comment but stated that "the report of the *Climate Change Act* review committee is being finalised".

[*The Age*, 12/02/2012]

#### Great Barrier Reef strategic assessment

The Australian government, the *Great Barrier Reef Marine Park Authority*, and the Queensland government have formally agreed to undertake a comprehensive strategic assessment of the Great Barrier Reef World Heritage Area and adjacent coastal zone, and are now inviting public comment on the draft terms of reference. The strategic assessment will have two key components – a marine component and a coastal component.

The strategic assessment will help identify, plan for and manage existing and emerging risks to ensure ongoing protection and management of the unique environmental values of the Great Barrier Reef World Heritage Area and adjacent coastal zone. It is anticipated that this will be achieved by:

1. investigating the adequacy of the existing management arrangements for the Great Barrier Reef World Heritage Area, and
2. assessing current and future development policies and planning in the Great Barrier Reef World Heritage Area and the adjacent coastal zone and analysing likely direct, indirect and cumulative impacts.

## SWITZERLAND

In Engadin, 2,456 metres above sea level in Switzerland, the Romantik Hotel Muottas Muragl has undergone a major expansion and renovation that won last year's Swiss Solar Award in the building renovation category and the PlusEnergieBau Solar Award for generating more energy than it needs.

Despite a 50 per cent increase in the heated floor space, the hotel's photovoltaic system now produces more energy per annum than the hotel uses, making it the first "plus-energy" hotel in the Alps.

The solar panels generate power for heating both space and water. Excess energy is stored in the thermal loop field in the ground and drawn on when required by means of a heat pump.

As well, the hotel's energy consumption has dropped by 64 per cent following the renovation, from 436,000 kilowatts per hour per annum to 157,400 kWh/a. Its previous annual consumption of about 40,000 litres of heating oil and 36,600 kWh/a of household and operating electricity are now entirely covered by solar energy.

CO2 emissions have also been drastically reduced by 144 tonnes per annum.

[SCMP, 08/02/2012]

## PERU

### Peru sets prison sentence guidelines for illegal mining

The Peruvian government has introduced new sanctions aimed at bringing widespread illegal mining under control. The new law imposes sentences of between four to ten years for convictions for offences created by the law, including:-

- undertaking unauthorised exploration, extraction and development of mineral resources, and causing damage to the environment through such activities;
- mining in unauthorised areas that includes natural reserves and peasant or indigenous community lands;
- illegal usage of river dredges, and contaminating irritation or water systems;
- employing minors for illegal mining;
- granting of fraudulent authorisations by government officials for illegal mining; and
- financing of illegal mining, including the sale and distribution of equipment and products for the operations.

Illegal mining is the most notorious cause of environmental damage. An example is the operation of dredges on Amazonian tributaries, which has destroyed many square miles of rainforest.

The new regulation will combat unauthorised miners as well as small legal mining operations across the country which have for many years escaped the more stringent supervision applied to mining operations conducted on a larger scale. Officials say that

small mining operations, - illegal or informal miners - will have a grace period of 120 days to bring their operations in line with the new legislation.

[Peruvian Times, 01/03/2012]

## CHINA

### Beijing's massive tree planting

More than 13,000 hectares of trees will be planted in Beijing this year, starting along the sixth ring road and covering 14 districts, as part of efforts to tackle heavy pollution.

In order to reduce levels of health-threatening fine particulates, known as PM2.5 (airborne particles smaller than 2.5 microns in diameter), the city plans to plant about 66,000 hectares of forest around Beijing, with the first 20 per cent to be planted this year.

[SCMP, 09/02/2012]

### China's air standards going national by 2016

The Chinese government announced that a revised air quality standard that includes an index of PM2.5 particles will be implemented throughout the country by 1 January 2016. The PM2.5 index, which replaced the previous adopted standard (PM10), can measure finer particles that are considered more hazardous to health than larger ones. Under the modified standard, stricter limits are imposed and new analytical methods are specified for several types of pollutants, such as SO2, NO2 and other particulates.

The Ministry of Environmental Protection is determined to work on this five-year plan to prevent air pollution, with the aim of reducing the amount of fine particles in the air by strengthening controls over industrial waste treatment and auto emissions. The government will begin by monitoring PM2.5 in four municipalities, 27 provincial capitals, and three key industrial belts, which include: east China's Yangtze River Delta; south China's Pearl River Delta; and the northern Beijing-Tianjin-Hebei-area.

Local governments will also be encouraged to formulate plans for meeting the new standard, raise environmental access requirements for enterprises and to invest more in pollution treatment.

The ministry stated that currently approximately two-thirds of cities in the nation fail to meet the recently updated air quality standard, adding that combating urban air pollution in China will be "an arduous task". However, the new standard can be seen as a major step forward in the country's environmental protection effort and in meeting guidelines established by the World Health Organisation.

[China Daily, 03/03/2012]

### US, EU and Japan challenge China on rare earths at WTO

The US, Japan and the European Union have filed a case against China at the World Trade Organisation, challenging its restrictions on rare earths exports. The filing focuses on 17 rare earth minerals which are used to make products like flat-screen televisions, smart phones and hybrid cars.

The US government accuses China, which produces about 95% of the world's rare earths, of limiting exports and controlling the pricing of the rare earths.

The Chinese government has denied the allegations, stating that the restriction on quotas for exporting rare earths is in line with WTO rules to prevent environmental damage contributed by excessive mining. Due to environmental concerns, China will continue to export and manage rare earths based on its existing practice, despite a WTO ruling earlier this year that China had illegally restricted exports of other materials, such as bauzite, zinc and magnesium.

[BBC News, 12/03/2012]

## INDIA

### Tribunal scraps Posco's environmental approval

Korean steelmaker Posco's bid to build a 12 million tonnes integrated steel complex in Jagatsinghpur, Orissa, received a major jolt today when a two-judge bench of the National Green Tribunal suspended the environmental clearance granted to the project in January 2011.

"The environmental clearance granted on January 31, 2011 to the project shall remain suspended till such review and appraisal is done by the ministry," a bench of the Tribunal said.

The Tribunal pointed out that a memorandum of understanding between the Orissa government and Posco states the project is for production of 12 million tonnes of steel per annum (MTPA), but the environment impact assessment (EIA) report has been prepared only for 4 MTPA steel production in the first phase and not the entire 12 million tonnes per annum for which environment clearance was granted.

The NGT bench said the MoEF should take "policy decision" that in projects of such magnitude the EIA should be done for the complete project. "The EIA should assess it for the full capacity right from the beginning," it said.

The Ministry of Environment and Forests had granted environmental clearance to the project in 2007. However, it was re-appraised in 2010-11 by the ministry's Expert Appraisal Committee after the Meena Gupta Committee appointed by MoEF to inquire into approvals given to the project found glaring shortcomings in the earlier approvals. But overruling the panel, the then environment minister had issued the final order granting environmental clearance to the project, with additional conditions, in January 2011.

[The Indian Express, 30/03/2012]

## WORLD

In 1970, the world's population was 3.7 billion. Today, it is seven billion. By the end of the century we will have to feed almost three times as many people as in 1970. How can we do that?

The UN's Food and Agriculture Organisation recently estimated that up to nine billion can be fed if crop yields rise by 1 per cent a year and the world's farmland expands by 13 per cent. This forecast,

however, takes no account of the ecological damage done by removing more land from the natural cycles, or the looming collapse of most of the world's big fisheries.

The forecast also ignores the probable impacts of global warming on food production, and those will be dire; the rule of thumb is that we will lose 10 per cent of global food production with every rise in average global temperature of 1 degree Celsius. As we are virtually bound to see an increase of 2 degrees before the global average temperature stops rising (if it does), that's one-fifth of world food production gone.

But what if you could make meat production independent of climate by growing the meat itself in a lab, using stem cells from a cow, sheep or chicken.

This is already being done, but the quantities are small and the meat is still a long way from having the same taste and texture as meat from live animals.

The ecological benefits would be immense. The political benefits might be even greater. If half the meat people eat was "cultured", greenhouse gas emissions would drop sharply. About half the land converted to grain-growing in the past century could be returned to natural forest. The famines and wars that will come with global food shortages could be postponed for decades, and even the warming itself might be stopped.

"Cultured food" may be commercially available in a few years if the research is pushed hard. However, there is very little finding for research at present.

[SCMP, 07/02/2012]

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**Convictions under environmental legislation:  
January to March 2012**

[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:

*January 2012*

Thirty-nine convictions were recorded in January for breaches of legislation enforced by the Environmental Protection Department.

Seven of the convictions were under the Air Pollution Control Ordinance, 1 under the Environmental Impact Assessment Ordinance, 10 under the Noise Control Ordinance, 1 under the Ozone Layer Protection Ordinance, 17 under the Waste Disposal Ordinance and 3 under the Water Pollution Control Ordinance.

The heaviest fine in January was \$30,000 imposed on a company which used powered mechanical equipment without a valid construction noise permit, and a company that caused another person to import controlled waste without a permit.

*February 2012*

Twenty convictions were recorded in February for breaches of legislation enforced by the Environmental Protection Department.

Five of the convictions were under the Air Pollution Control Ordinance, 1 under the Environmental Impact Assessment Ordinance, 3 under the Noise Control Ordinance, 1 under the Product Eco-responsibility Ordinance, 9 under the Waste Disposal Ordinance and 1 under the Water Pollution Control Ordinance.

The heaviest fine in February was \$30,000 imposed on a company that discharged waste or polluting matter into a water control zone.

*March 2012*

Thirty-five convictions were recorded in March for breaches of legislation enforced by the Environmental Protection Department.

Six of the convictions were under the Air Pollution Control Ordinance, 4 under the Environmental Impact Assessment Ordinance, 10 under the Noise Control Ordinance, 14 under the Waste Disposal Ordinance and 1 under the Water Pollution Control Ordinance.

The heaviest fine in March was \$15,000 imposed on a company that carried out prescribed construction work in a designated area without a valid construction noise permit.

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