

Sustainable Consumption of Biological Resources

Sustainable Development Division
Environment Bureau
HKSAR Government

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8 March 2017

Rundown

- I. Latest Development of Sustainable Development (Tom TAM, ENB)
- II. Sustainable Consumption of Biological Resources (Tom TAM, ENB)
- III. Interactive Game (CHOW Cheuk Wai, ENB)

Topics by Tom

1. Latest Development of Sustainable Development

可持續發展的最新發展

2. Sustainable Consumption of Biological Resources

生物資源的可持續發展

What is Sustainable Development (SD)?
什麼是可持續發展？

What is Sustainable Development?

什麼是可持續發展？

❖ “.....development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

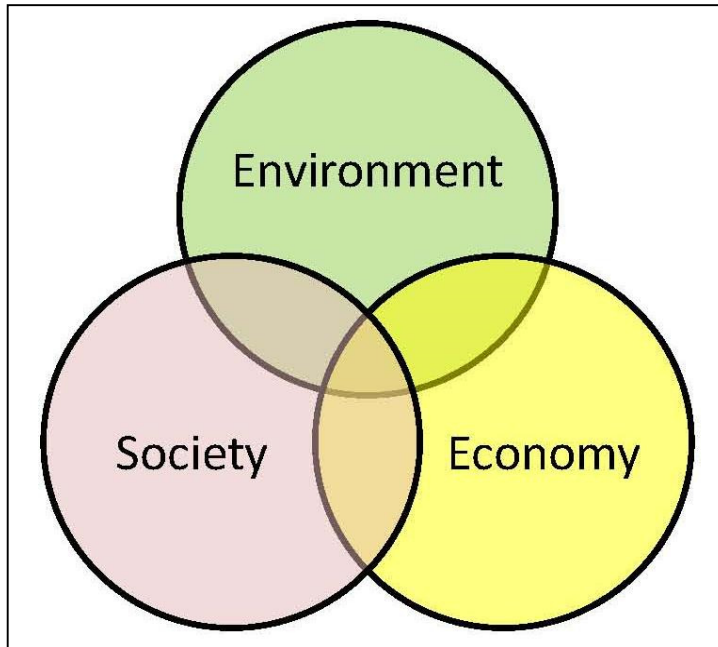
- “既能滿足我們現今的需求，又不損害子孫後代去滿足他們需求的能力” 的一個發展模式

(“Our Common Future”, World Commission on Environment and Development, 1987)

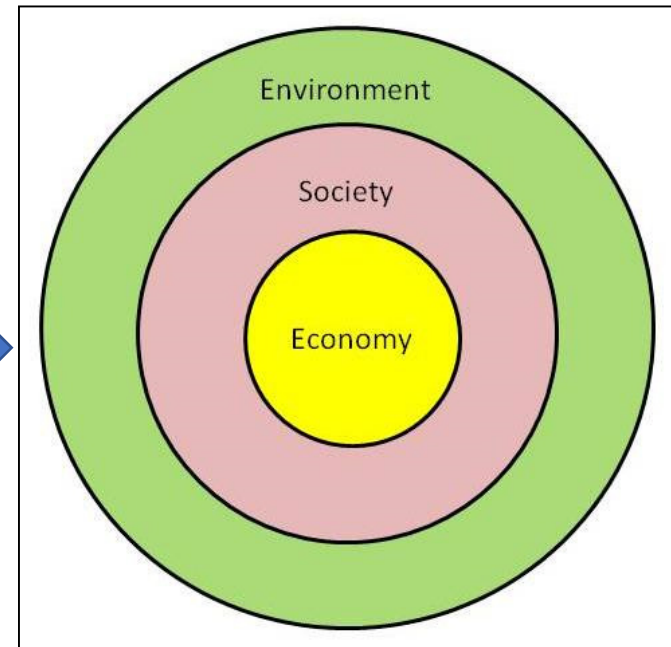
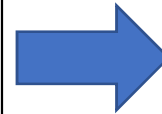
(《我們的共同未來》，聯合國環境與發展委員會，一九八七年)

What is Sustainable Development? 什麼是可持續發展？

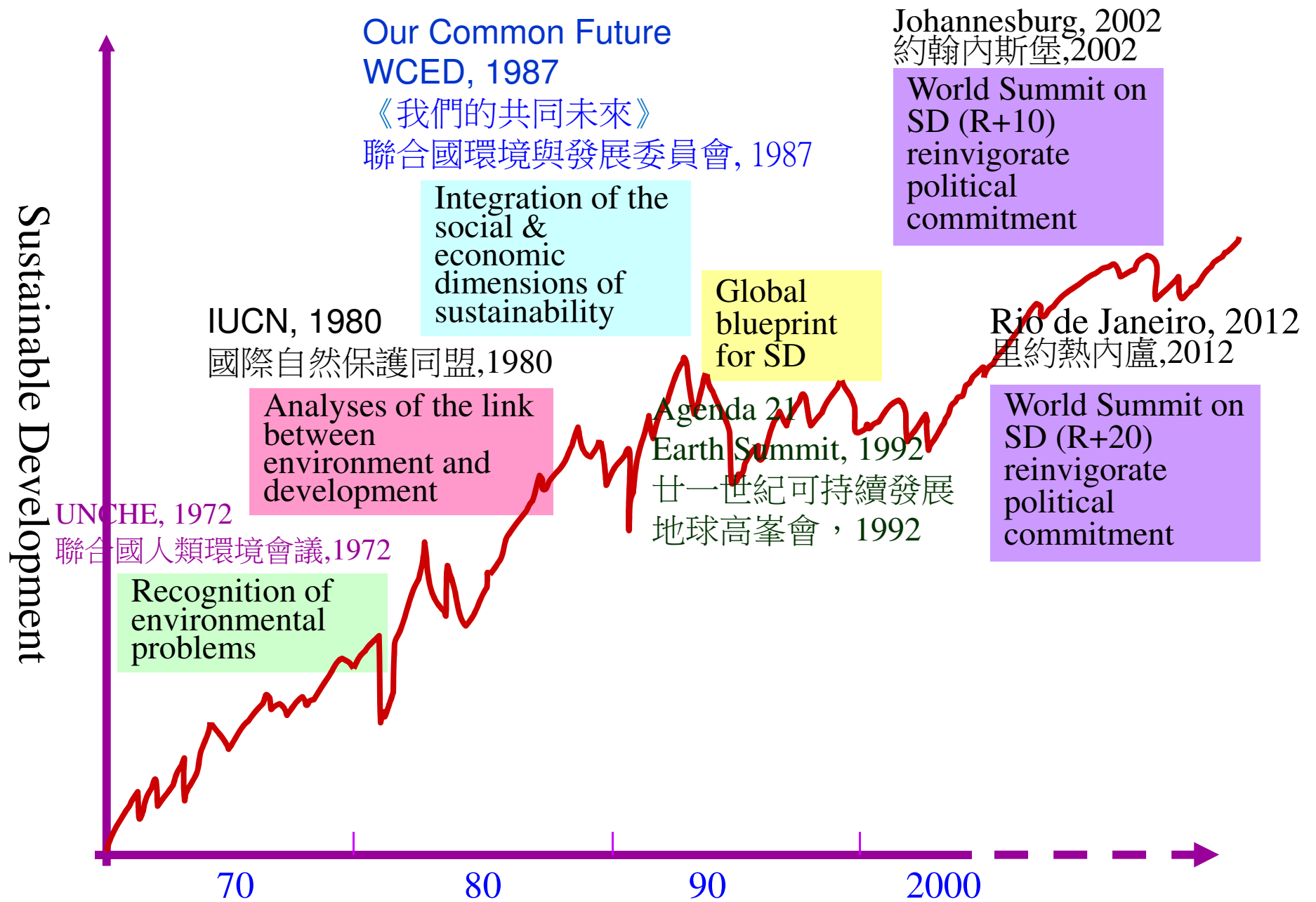
Development in SD conceptual models 可持續發展的概念模型的演變



- The common “three-ring” model of SD
- A compromise of the 3 spheres
- 常見的「三環」概念模型
- 三者間的協調



- The “nested” model of SD
- Emphasis on interrelationship
- 「鳥巢」概念模型
- 強調三者間關係



Agenda 21 urges nations to...

廿一世紀議程促進各國

- ✓ Harmonize the various sectoral **economic, social & environmental** policies and plans
- ✓ 協調各經濟、社會及環境政策及計劃
- ✓ Ensure **socially** responsible **economic** development while protecting the resource base & the **environment**
- ✓ 在有效利用資源、保護環境和秉承社會責任的前題下發展經濟
- ✓ Facilitate widest possible participation
- ✓ 擴大公眾參與

2030 Agenda for Sustainable Development, United Nations

At the UN Sustainable Development Summit on 25 September 2015, world leaders adopted the 2030 Agenda for Sustainable Development which includes a set of 17 Sustainable Development Goals (SDGs) and the associated 169 targets to end the poverty, fight inequity and injustice, and tackle climate change by 2030.

2030 Agenda for Sustainable Development, United Nations

The 17 goals in 2030 Agenda

1. End poverty in all its form
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure. Promote inclusive and sustainable industrialisation and foster innovation
10. Reduce inequality within and among countries
11. Make cities inclusive, safe resilient and sustainable consumption and production patterns
12. Ensure sustainable consumption and production patterns

2030 Agenda for Sustainable Development, United Nations

The 17 goals in 2030 Agenda

13. Take urgent actions to combat climate change and its impacts.
14. Conserve and sustainable use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystem, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
16. Promote peaceful and inclusive societies sustainable development
17. Strengthen the means of implementation and revitalise the global partnership for sustainable development

2016 Seventh Public Engagement Process

2016年第七次公眾參與過程

Promotion on Sustainable Consumption of Biological Resources 推廣可持續使用生物 資源 (生物資源 識取惜用)



What is Council for Sustainable Development (SDC) 可持續發展委員會 and its Public Engagement Processes 公眾參與過程?

- Established in 2003 by Chief Executive
- Members include representatives from environment, social and business sectors and senior Government officials
- Conducts public engagements on different sustainable development issues:
 - Identify priority areas
 - Prepare a public engagement document
 - Involve the wider community directly
 - Report back to Government
 - Government to act

2004 First Public Engagement Process

2004年第一次公眾參與過程

Making Choices for Our Future

- Municipal Waste
- Renewable Energy
- Urban Living Space

為我們的未來
作出抉擇

- 都市廢物
- 再生能源
- 城市生活空間



2006 Second Public Engagement Process

2006年第二次公眾參與過程

Population Policy

為可持續發展
提升人口潛力



2007 Third Public Engagement Process

2007年第三次公眾參與過程

Better Air Quality

未來空氣
今日靠你

2009 Fourth Public Engagement Process

2009年第四次公眾參與過程

Sustainable Built Environment

優化建築設計

締造可持續建築環境

2012 Fifth Public Engagement Process

2012年第五次公眾參與過程

Combating Climate Change

紓緩氣候變化：
從樓宇節能減排開始



2013 Sixth Public Engagement Process

2013年第六次公眾參與過程

**Municipal Solid Waste
Charging**
都市固體廢物收費

2016 Seventh Public Engagement Process

2016年第七次公眾參與過程

Promotion on
Sustainable
Consumption of
Biological Resources
推廣可持續使用生物
資源
(生物資源
識取惜用)



www.enb.gov.hk/en/susdev/sd/
www.susdev.org.hk

II. Sustainable Consumption of Biological Resources

What are Biological Resource (生物資源)?

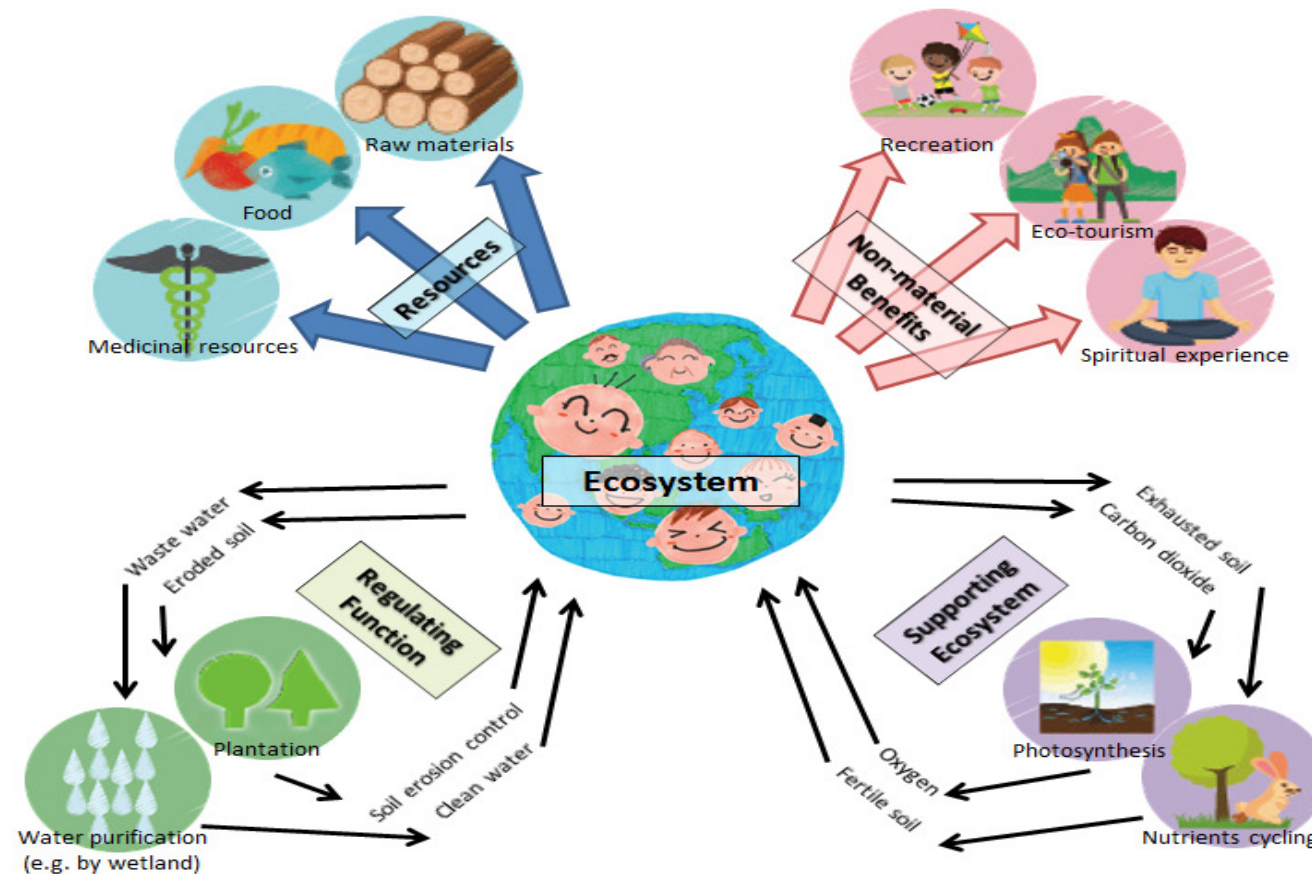
Biological resources include genetic resources, organisms or their parts, populations, or any other biotic component of ecosystems with actual or potential use of value for humanity.
(Convention on Biological Diversity, United Nations)

Biological resources refer to all living organisms that fulfil human's fundamental needs 生物資源泛指那些可滿足我們基本需要, such as clothing, food and feed, shelter, fuel, paper, and medicine, etc. (衣服、食物及飼料、住屋、燃料、紙張及醫藥等) 的各種生物。 Generally speaking, biological resources cover 3 types of resources 一般來說，生物資源可分為以下三種：

- Animal resources 動物資源, e.g. insects, fish, amphibians, reptiles, birds, mammals 昆蟲類、魚類、兩棲類、爬行類、鳥類和哺乳類；
- Plant resources 植物資源, e.g. trees, shrubs, herbs 喬木、灌木、草本植物；
- Microbial resources 微生物資源, e.g. bacteria 細菌。

Why Sustainable Consumption of Biological Resources Important

Four functions of ecosystem 生態系統: (1) providing resources; (2) providing non-material benefits; (3) supporting ecosystem; and (4) regulating functions.



- Sustainable ? Consumption rate < Production rate
- Humans do not know when the ecosystem will break down

2016 Seventh Public Engagement Process

2016年第七次公眾參與過程

Promotion on Sustainable Consumption of Biological Resources

推廣可持續使用生物資源 (生物資源 識取惜用)



Why are Biological Resources important to us

早上

穀物和小麥均來自**植物資源**，是重要的糧食作物。其生產過程中很多時都會使用**棕櫚油**。



大多數品牌的牙膏都含有**棕櫚油**。



大部分衣物、鞋、手袋都是由**棉花、蠶絲和動物皮**等材料製成。

Why are Biological Resources Important to Us

下午

印刷用紙是從**森林**的各種木材原料加工製成的。



乳牛為我們提供牛奶，而牛奶可用於製作其他乳類製品，例如：芝士、乳酪、奶粉、忌廉和牛油。



傢具是從**森林**的各種木材原料加工製成的。

Why are Biological Resources Important to Us

晚上



Types of Biological Resources Discussed Today

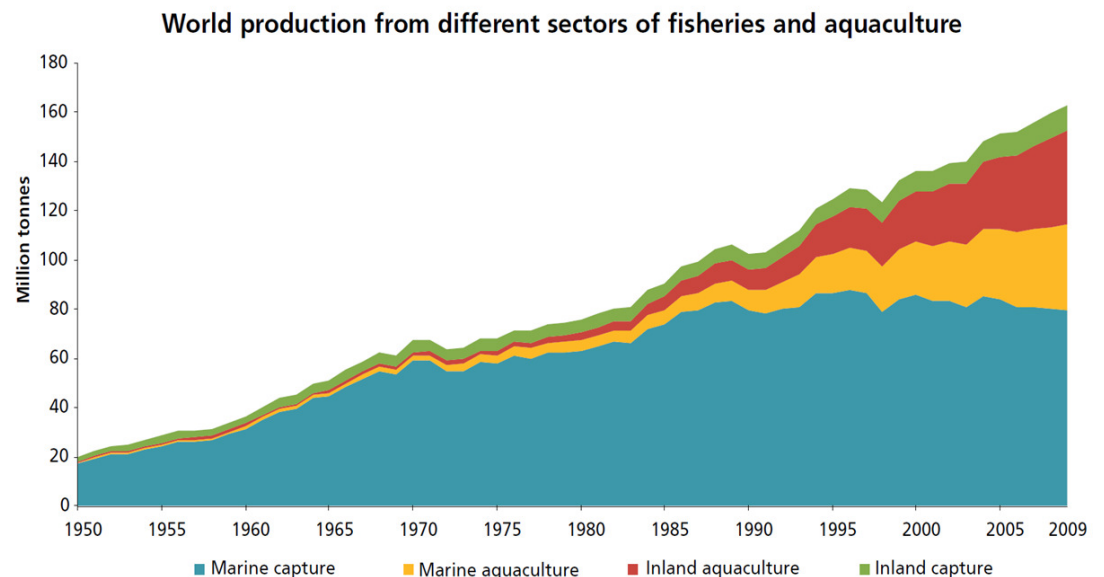
- Marine Resources 海洋資源
- Textiles and Cotton 紡織品及棉花
- Wood and Paper Products 木材及紙張
- Rice, Milk and Palm Oil 大米牛奶及棕櫚油

Marine Resources

Current Levels of Consumption

Overexploitation 過度開採

- The global production from different sectors of fisheries and aquaculture increased 8 folds from about 20 million tonnes in early 1950s to about 160 million tonnes in 2009.
 - According to the Food and Agriculture Organization of the United Nations (FAO), over 70% of the world's fish species are either “fully exploited”, “overexploited” or “significantly depleted”.
- (Source: Food and Agriculture Organisation, United Nations)



Marine Resources

Current Levels of Consumption and Problems

Overexploitation

- Pacific Bluefin Tuna (太平洋藍鰭吞拿魚) is an example of overexploited species.
- According to the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean, in 2013, the Pacific Bluefin tuna population has declined by 96% since we began fishing it decades ago. Even worse, according to Global Tuna Conservation at Pew Environment Group, at least 90 % of the fish being caught have not yet reached reproductive age, which further undermines their ability to reproduce.

(Source: International Scientific Committee for Tuna and Tuna-like Species in North Pacific Ocean)

Marine Resources

Current Levels of Consumption and Problems

Overexploitation

- Humphead Wrasse(蘇眉)is now listed as “Endangered” on the International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species.
- High-finned Grouper(老鼠斑)is listed as “Vulnerable” by the IUCN.
- Camouflage Grouper(清水石斑)and Leopard Coral Trout(東星斑)are the other fish species facing the threat of depletion. Both of them are listed as “Near Threatened” by the IUCN.

Marine Resources

Current Levels of Consumption and Problems

Overexploitation

- Hong Kong is the sixth / seventh largest per capita seafood consumer in the world, an average resident consumes about 70 kg of seafood per year (2011/2012 figures), more than three times the global average.
- Partly due to overfishing in the South China Sea, the catches of a common fish consumed by Hong Kong people, i.e. Golden Threadfin Bream, have declined by 30% over the past 10 years.

Marine Resources

Current Efforts

Solution

“This is a sustainable fish”

<https://www.youtube.com/watch?v=6ps0truARKs>

- 85% of world fisheries were overtaxed
- By-catch caused by trawling
- Fishing Farms
- Eco-labels – e.g. ASC and MSC

Marine Resources

Current Efforts in Hong Kong

Solution

“環保海鮮”

<https://www.youtube.com/watch?v=2HtGlQIjwIQ>

2:30 – 6:22

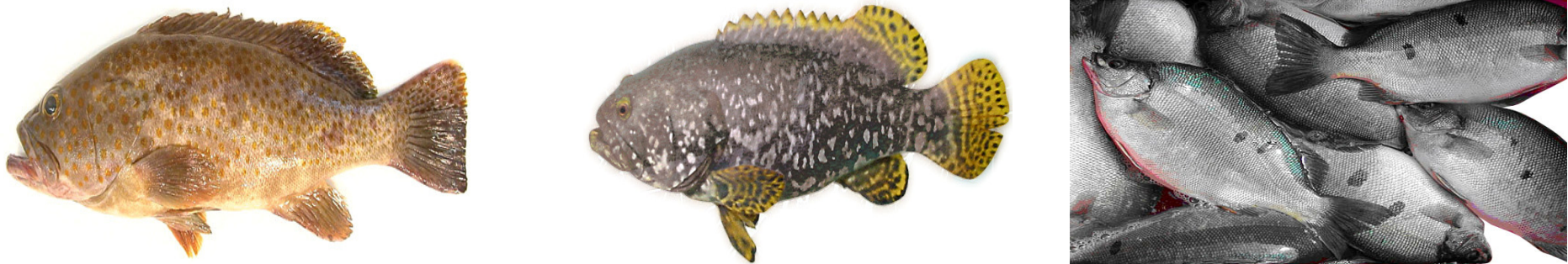
Marine Resources

Current Efforts in Hong Kong



Solution

- AFCD Good Aquaculture Practice - Accredited Fish Farm Scheme 優質養魚場計劃



Source: Agriculture, Fisheries and Conservation Department Hong Kong

Marine Resources

Current Efforts in Hong Kong

Solutions

- Ban of Trawling 拖網 in 2012 by AFCD
- Companies Say No to Shark Fin
- Sustainability – conscious menus of government entertainment functions. Banning of (1) shark fin; (2) bluefin tuna; (3) humphead wrasse*; (4) Hong Kong grouper (wild caught specimen only)*; (5) sturgeon caviar*; and (6) black moss.
- Seafood Guide by WWF
世界自然基金會香港分會 《海鮮選擇指引》

Marine Resources

International Experiences – Eco-labels

Marine Stewardship Council (MSC) 海洋管理委員會

<https://www.youtube.com/watch?v=EhosdSmvWrl>

- MSC collects data of fish stocks for analysis.
- To restore a fish stock to a sustainable level, MSC certifies greatly reduced in its capture
- Amongst about 1,500 fish stocks, only about 500 stocks are comprehensively analysed.

Textiles

International Experiences – Eco-labels

ChainPoint

<https://www.youtube.com/watch?v=RxYLQKQE3Yg>

- Sustainable textiles supply chain.
- Types of textiles include animal-based material such as wool or silk, plant-based material such as linen and cotton, and synthetic material such as polyester and rayon.

Cotton 棉花

Current Levels of Consumption

- Cotton is most commonly grown in monoculture (the approach of growing a single crop in a given field) and its production often involves high water consumption and heavy use of pesticides and dyes.
- It takes more than 2,700 litres of water to produce just one single cotton T-shirt. Taking the average water consumption per person per day in Hong Kong, this is enough for a person's use for about 20 days.
- In 2014, 110,000 tonnes of textiles were discarded in Hong Kong, which is equivalent to discarding some 1,400 T-shirts per minute.

Cotton

Current Efforts in Hong Kong

- The EcoChic Design Award (可持續時裝設計大獎) is a sustainable fashion design competition which aims to inspire fashion designers and students to design mainstream clothing with sustainable techniques.
- Collection of old clothes to reuse organised by various NGOs.

Cotton

International Experiences – Eco-labels

Better Cotton Initiative (BCI) 更優質棉花倡議

<https://www.youtube.com/watch?v=9MqopykgHHk>

<https://www.youtube.com/watch?v=E7gnQISylac>

<https://www.youtube.com/watch?v=ees8BSIFDIw>

- Only 2% of world cotton market comprises sustainable cotton.
- Areas of concerns : Use of less water and pesticide (environmental), education of children (social), and more earning (economic).

Wood and Paper Products

Current Levels of Consumption

- The global market for wood, pulp and paper products creates pressure on tropical countries to clear their forests.

Wood and Paper Products

The Problems

Deforestation 森林砍伐

- Deforestation results from the huge demand for timber and wood products. Globally, an estimated 70,000 sq. km. of forests, equivalent to the size of 60 to 70 of Hong Kong land area, are lost each year. The losing rate is equivalent to the size of 20 football fields every minute.

Wood and Paper Products

The Problems

Deforestation

- According to the National Institute for Space Research, Brazil, from 1998 to 2013, deforestation in Amazon, Brazil had accumulated to over 400,000 km², which is equivalent to almost 400 times of the land area in Hong Kong.

Wood and Paper Products Current Efforts in Hong Kong

- Certified pulp and paper products in Hong Kong have increased substantially in the past five years.
- As of May 2016, there were 624 Forest Stewardship Council (FSC) 森林管理委員會 suppliers in Hong Kong, up from around 398 in 2011. FSC is an internationally well-known certification scheme for wood and paper based products.

Wood and Paper Products International Experiences – Eco-labels 環保標籤

Sustainable Forestry Initiative (SFI) 可持續林業倡議

<https://www.youtube.com/watch?v=w6mBCr4zF4Q>

- Area of concerns : productivity (economic), biodiversity, recreational and visual benefits, protection of special sites (environmental), qualified personnel to log, and training of staff (social).

Rice

International Experiences

<https://www.youtube.com/watch?v=3vQLeuk741w>

Five principles to produce in a sustainable way:

- Water, fertilizers, labour, energy should be used more effective.
- Land, water, biodiversity must be protected from degradation.
- If you respect the first two principles, your rice will be more resistant to natural shocks.
- Consider to use your rice field for other agricultural activities.
- Governments should adopt policies that facilitate the application of the 4 principles by rice farmers.

(Food and Agriculture Organisation of the United Nations)

Milk

International Experiences

<https://www.youtube.com/watch?v=8wPxAb2XiQg>

- Forum for the Future
- Concerned issues : greenhouse gases emissions, water harvesting (environmental), cow comfort (social), for consumers to gain maximum nutrition with the lowest price and for dairy industry to survive these constraints (economic).

Palm Oil 棕櫚油

Current Levels of Consumption

- Palm oil is found in almost everything from food and household products, to cosmetics and other body care products, e.g. pizza, ice-cream, chocolates, soap and lipsticks.



Palm Oil

Current Levels of Consumption

- Palm oil is a type of edible vegetable oil derived from the fruit of oil palm trees. Today, palm oil plantations are growing throughout Asia, Africa and Latin America, mostly at the expense of tropical forests.

Palm Oil

Current Levels of Consumption

- **Currently, Indonesia and Malaysia produce over 80% of the world's palm oil.** According to US Department of Agriculture, the global production of palm oil has risen by 20% from 2011 to 2015. Indonesia and Malaysia are the two major producers.

Palm Oil

The Problems

Deforestation

- Indonesia lost at least 12,400 km² of forest over the period from 2009 to 2011, 40% of the loss took place in Sumatra. The palm oil sector was the single largest driver of deforestation in the 2009–2011 period in Sumatra, with identified loss accounting for about a quarter (3,000 km²) of forest loss.

Palm Oil

The Problems

Loss of Natural Habitats 生境破壞

- According to Borneo Orangutan Survival Australia, the primary threat to orangutans is the loss of habitats. Up to 80% of suitable forests in Indonesia and Malaysia have been lost in the past 20 years. In 2015, estimates show less than 7,000 Sumatran orangutans (蘇門達臘猩猩) and 50,000 Bornean orangutans (婆羅洲猩猩) are surviving in the wild.

Palm Oil

The Problems

Loss of Natural Habitats

- Forest destruction for palm oil production is pushing Sumatran tigers 蘇門答臘虎 to the edge of extinction. Tigers need large areas of forest and wildlife corridors to range in order to hunt. Deforestation has fragmented extensive tracts of rainforest.
- We don't know when we'll come to the crunching point when the nature punishes humans.
- We know little about the nature – only about 10% of the global species have been identified.

Palm Oil

The Problems and International Experiences

- <https://www.youtube.com/watch?v=M3b4n7Mz1YE>

Palm Oil

International Experiences – Eco-labels

- Roundtable on Sustainable Palm Oil
- The certification system covers one million ha of palm tree plantation area (about 10 times of Hong Kong land area).

What will be our next actions?

Next Actions – Facilitate Smart Choices of Consumers

- Information platform can provide a wide range of information, including updates on different eco-labels and certificates, facts and statistics of sustainable products (product origins, harvesting methods, etc.), availability suppliers, and results of market surveys on consumers' attitudes and preferences.

Next Actions – Promoting Best Practices Among Businesses and Public Sector

- Green Procurement Guidelines
- Charters and Voluntary Commitments – Business sign green charter as a formal pledge to their voluntary commitments on social responsibility and environmental protection.
- Award Schemes – e.g. (1) The UK's Sustainable Restaurant Award; and (2) Green Card Reward Programme in South Korea.
- Green Banquets and Dining Guidelines

Next Actions – Education and Publicity

Examples

- Sustainable Consumption Week in the Mainland
- Singapore Supports the Use of Sustainable and Haze-free products – In order to educate people on the impact of open burning to clear land for agriculture and palm plantation, ...environmental groups and a think tank launched a series of educational outreach and social media programmes in 2015, including public engagement campaign, bus stop advertisement, nature walks, mall exhibitions, school talks, art installations, and short videos production.

2016 Seventh Public Engagement Process

2016年第七次公眾參與過程

Promotion on
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Consumption of
Biological Resources
推廣可持續使用生物
資源
(生物資源
識取惜用)



<http://www.susdev.org.hk/>

Thank you!

謝謝！

Supplementary Info

Sustainability Assessment (SA)

Under the [sustainability assessment system](#), all bureaux and departments are required to

- carry out sustainability assessments of strategic initiatives and policy programmes which may bring noticeable or persistent implications on the economic, environmental and social conditions of Hong Kong; and
- include in their submissions to the Executive Council (ExCo) and / or the Chief Secretary's Committee (now the Policy Committee) the sustainability findings or results of their proposals with effect from April 2002.

根據[可持續發展評估制度](#)，所有決策局和部門均須要：

- 對於有可能對香港經濟、環境及社會帶來明顯或持久影響的新策略性措施或政策項目，進行可持續發展評估；及
- 由二零零二年四月起在提交予行政會議和／或政務司司長委員會(現為政策委員會)的文件內，闡述就有關建議進行可持續發展評估的結果

Guiding Principles of Sustainable Development for Hong Kong

香港可持續發展的指導性準則

Economy
經濟

Health &
Hygiene
健康與衛生

Natural
Resources
自然資源

Society & Social
Infrastructure
社會及基礎設施

Biodiversity
生物多樣化

Leisure &
Cultural Vibrancy
消閒及文化活動

Environmental
Quality
環境質素

Mobility
交通運輸

49 parameters and checklist questions under the 8 guiding principles

8 個指導性準則下的 49 個參數和清單問題

Eight Guiding Principles for SA

“Do you live in a sustainable manner?”

- Economy (經濟) – Did you use local products in the past month?
- Health and Hygiene (健康與衛生) – Do you do sports frequently?
- Natural Resources (自然資源) – Have you ever deferred your plan to renew electronic appliances to reduce e-waste ?
- Society and Social Infrastructure (社會及基礎設施) – Did you do charity work recently not years ago ?
- Biodiversity (生物多樣化) – Did you hike in the countryside in the past year ?
- Leisure and Cultural Vibrancy (消閒及文化活動) – Did you visit local museums / attend local concerts in the past year ?
- Environmental Quality (環境質素) – Have you ever adopted alternative transport modes to avoid air travel in a bid to reduce GHG emissions ?
- Mobility (交通運輸) – Are you a public transport commuter?

Interactive Game – A Package of Actions to Promote Sustainable Consumption of Biological Resources

Actions may include

- Establishment of an information platform of eco-labels to facilitate smart choices of consumers
- Promotion of best practices amongst businesses and public sector
 - (1) Green Procurement Guidelines
 - (2) Charters and Voluntary Commitments
 - (3) Award Schemes, e.g. Green Card Reward Programme
 - (4) Green Banquets and Dining Guidelines
- Education and publicity

in following trades

- Fisheries products
- Timber products
- Palm oil related products
- Cotton / garments

Interactive Game – A Package of Actions to Promote Sustainable Consumption of Biological Resources

Game Instruction

Part A

- Assign 'Stakeholder Roles' (Yellow) (Stakeholders in the game include Government, Consumers, NGOs and Traders.)
- Discuss by starting with the Public Sector to formulate a package of actions.

Part B

- Conduct a Sustainability Assessment 可持續發展評估 on your proposal and write the ideas on the 'Game Sheet'
- Produce a group statement

Sustainability Assessment 可持續發展評估 differs from EIA 環境影響評估

Environmental Impact Assessment (EIA) is a planning tool has to do with the methodologies and techniques for identifying, predicting, and evaluating the environmental impacts associated with particular developments actions (projects).

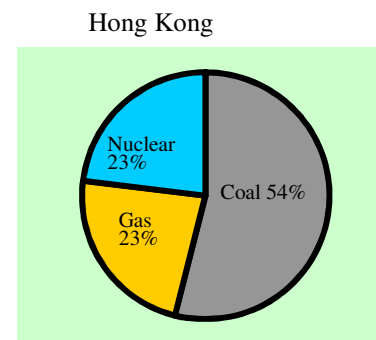
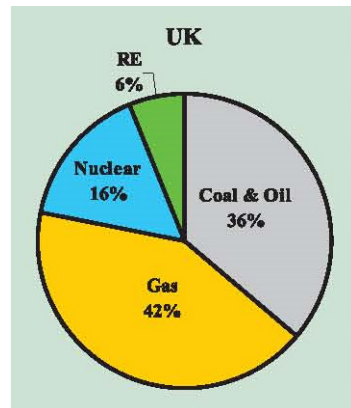
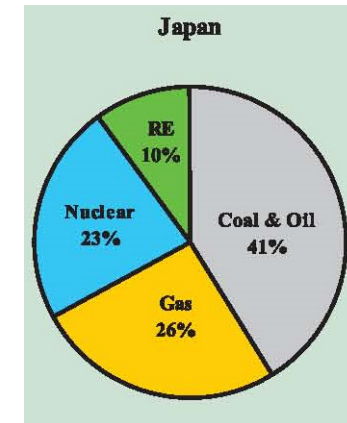
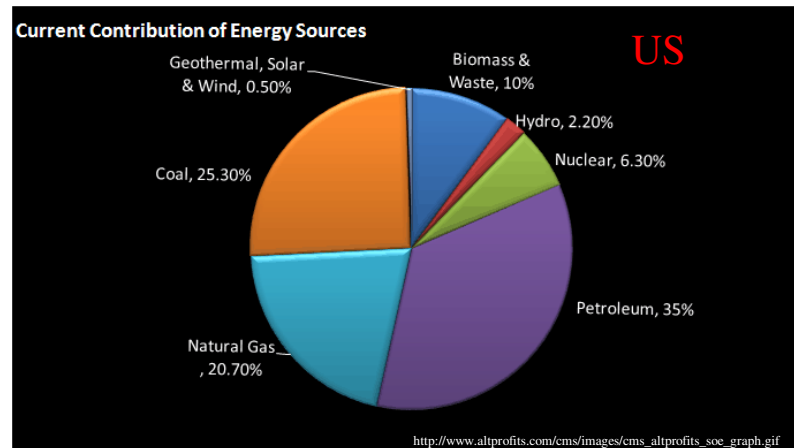
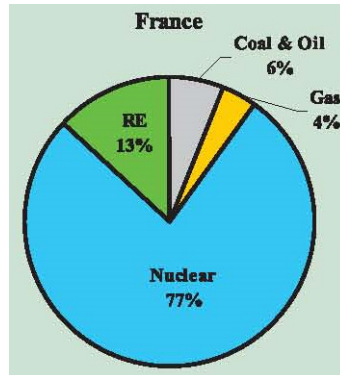
[Kennedy, 1988]

Sustainability Assessment differs from EIA

Noise standards 噪音標準 and Air Quality Objectives 空氣質素指標 have to be met in EIAs

No standards to meet in most cases of Sustainability Assessment

World Primary Energy 世界各國初級能源 By Different Types of Fuel



Source: Consultation Document (HK's Climate Change Strategy and Action Agenda- Sept 2010)

Hong Kong's Carbon Footprint 碳足跡

In 2008, the total GHG emission of Hong Kong were about 42,000,000 tonnes CO₂-e, or around 6 tonnes on a per capita basis, accounting for about 0.1% of global emission or slightly less than that of Hong Kong's population as a share of the world's total..... 2008年，香港的總溫室氣體排放量約為4,200萬噸二氧化碳當量，人均溫室氣體排放量約為6公噸。香港排放佔全球排放量約0.1%，略低於香港人口佔全球人口的比例。

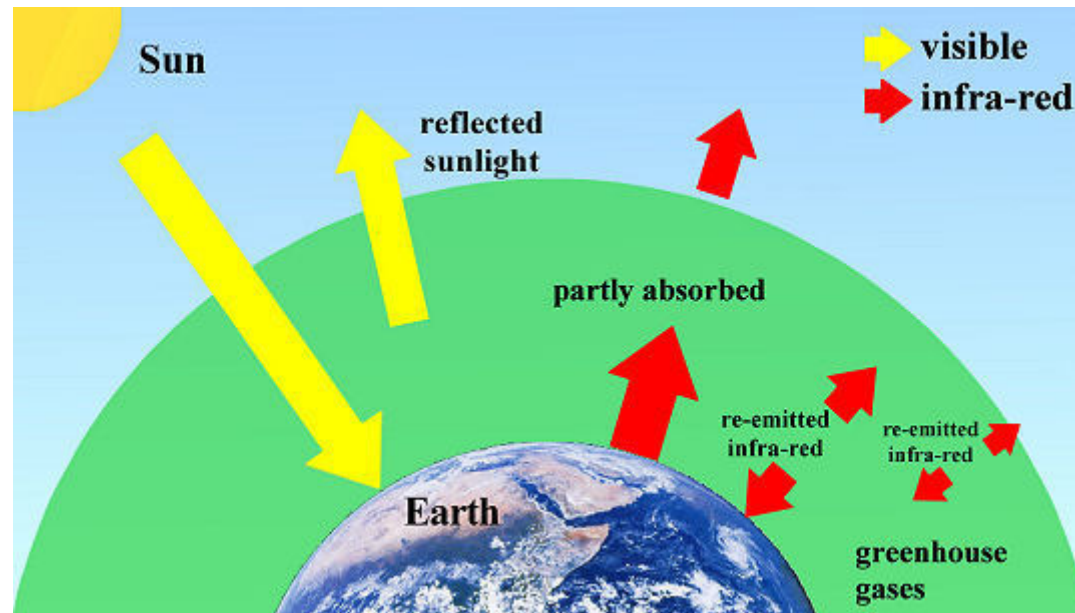
Source: Consultation Document (HK's Climate Change Strategy and Action Agenda- Sept 2010)



Some General SD Issues 一些可持續發展的課題

- Pollutions 環境污染
- Greenhouse Gas Emissions 溫室氣體排放 Climate Change 氣候變化

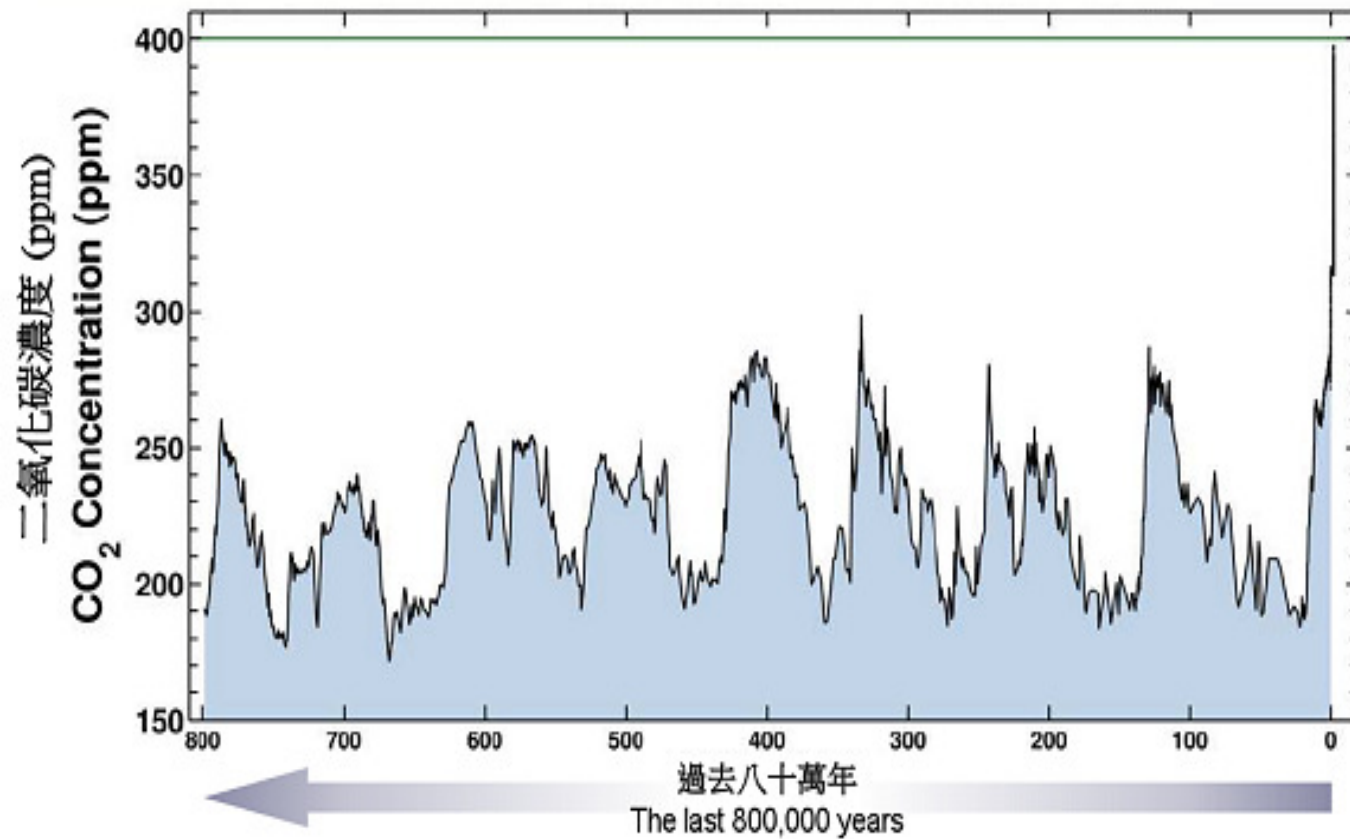
There will be no winter in Hong Kong 香港將再沒有冬天.....



Courtesy : Hong Kong Observatory

Some General SD Issues – Greenhouse Gas Emissions

一些可持續發展的課題 --- 溫室氣體排放



Courtesy : Hong Kong Observatory