

## **Legislative Council**

### **Panels on Planning, Lands & Works and Environmental Affairs**

#### **Study on Sustainable Development for the 21<sup>st</sup> Century (SUSDEV 21)**

##### **Purpose**

This paper aims to brief Members further on the Study on Sustainable Development for the 21<sup>st</sup> Century (SUSDEV 21).

##### **Background**

2. At the last Legislative Council Joint Panel Meeting held on 9 December 1999, Members were briefed on the preliminary findings and recommendations of the Study on SUSDEV 21. Members made the following comments -

- (a) the concept of sustainable development was novel and difficult to be readily understood by the general public;
- (b) Members enquired about the Government's specific policy strategy and/or initiatives to achieve sustainable development in a particular sector/industry;
- (c) sustainability indicators should include those which assess and reflect human right situation, pace of democracy and constitutional development; and
- (d) the Sustainable Development Unit (SDU) as announced in the Chief Executive's 1999 Policy Address should be appropriately placed within the existing Government hierarchy to enable it to effectively monitor the conduct of sustainability evaluation of all major Government initiatives.

3. Members also requested further information on the cost of the Study on SUSDEV 21.

##### **Study on SUSDEV 21**

4. The Study on SUSDEV 21 began on 1 September 1997. It aims to develop a definition of sustainable development applicable to Hong Kong, a set of sustainability indicators that will be used to assess the impact of major Government

policy and programme proposals on sustainability, a computer-aided evaluation tool to assist such assessment, and the institutional arrangements that integrate the sustainability assessment into the policy formulation process. Two stages of public consultation have been conducted to collect public views on the above issues and the Study will be completed in April 2000 when a Final Report recommending options for the above issues will be produced by the consultants.

### **A. Definition of Sustainable Development**

5. Sustainable development is a difficult concept to grasp. This is partly because it seeks to embrace a full spectrum of social, economic and environmental activities taken place both within and outside the Government; and partly because different countries have adopted different definitions that suit their individual circumstances.

6. One key task of the Study on SUSDEV 21 is to develop a definition of sustainable development for Hong Kong that suits our circumstances. Based on comments they have received during the initial consultation, they have proposed -

“Sustainable development in Hong Kong balances social, economic and environmental needs, both for present and future generations, simultaneously achieving a vibrant economy, social progress and better environmental quality, locally, nationally and internationally, through the efforts of the community and the Government.”

7. The definition serves to set out broad direction for the Government policies and strategies as well as community participation.

8. To further enhance the public’s understanding and awareness of the importance of sustainable development, we have launched an Awareness Raising Programme which comprises a host of activities including roving exhibitions, demonstrations / discussion sessions, seminars at tertiary and secondary institutions, workshops, public forums, etc. The two stages of public consultation on the Study on SUSDEV 21 have also served to stimulate public discussion on the subject and, hence, the understanding of the concept.

### **B. Purpose of the Study**

9. It should be noted that it is not part of the Study to formulate a strategy or policy on sustainable development, nor does it aim to promote a particular sector or industry. The objectives of the Study are -

- (a) to increase public awareness and understanding of the concept of sustainable development; and
- (b) to improve the Government policy formulation process to ensure that all future major Government policies or proposals would take better account of their combined impacts on society, economy and environment. In this respect, the Study has recommended –
  - (i) the application of a computer-aided decision support tool which would facilitate the conduct of sustainability evaluation during the early stage of policy formulation; and
  - (ii) various options for improving the existing institutional set-up (see Section D below) with a view to better integrating social, economic and environmental assessment into the existing policy formulation process.

### **C. Sustainability Indicators**

10. In order to assess the impact of each policy initiative through the decision support tool, the consultants have recommended a total of 39 sustainability indicators that would enable assessment to be made of the effect of a policy or programme proposal in helping Hong Kong to achieve or comply with key guiding values. These guiding values are set out in **Annex A**. The 39 indicators are set out in **Annex B**. The selection criteria for these indicators are set out in **Annex C**.

11. During the past public consultation activities, we have received a total of 216 suggestions for sustainability indicators. A list of these proposed indicators is set out in **Annex D**. 98 of these have been accommodated within the recommended indicators. 6 of them (listed in **Annex E**) are being given further consideration. The remainder is not proposed to be included. Many are not sensitive to change or are not representative or indicative of wider effects. Others are too imprecise.

12. With regard to other suggested social pointers, such as human rights, equal opportunities or constitutional development, etc. that have been stressed by a number of parties during the present round of consultation, consideration is being given to how these might be reflected or reported on in the process.

### **D. Institutional Arrangement**

13. In the 1999 Policy Address, the Government undertook to set up a Council for Sustainable Development (CSD) to provide advice to the Government on how to better achieve sustainable development and a Sustainable Development Unit

(SDU) to monitor the implementation of sustainability evaluation for major policy proposals. The Government has not yet taken a view on the detailed arrangements of these two new bodies such as their exact remit, working methods, relationship with other advisory bodies/Government bureaux and departments, etc. The Study on SUSDEV 21 would, having regard to feedback from the public consultation exercise, recommend options for the institutional arrangements. Upon receipt of the consultants' recommendation, the Government would then take a final decision.

### **E. Cost of Study**

14. A detailed breakdown of the cost of the Study is set out at **Annex F**.

### **Conclusion**

15. Members' views are sought on –
- (a) the proposed definition of sustainable development;
  - (b) the indicators; and
  - (c) the institutional arrangements.

### **Annexes**

- Annex A List of guiding principles
- Annex B List of 39 recommended sustainability indicators
- Annex C List of selection criteria for sustainability indicators
- Annex D List of 216 proposed indicators received during public consultation
- Annex E List of relevant indicators worthy of further consideration
- Annex F Breakdown of cost of the Study on SUSDEV 21.

Planning and Lands Bureau  
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## Guiding Principles

<b>Economy</b>	Hong Kong should achieve a competitive and prosperous market-based economy which provides the resources to meet the needs and aspirations of the population, both now and in the future.
<b>Health and Hygiene</b>	Hong Kong should provide a living and working environment and pursue policies which promote and protect the health of the people of Hong Kong.
<b>Natural Resources</b>	Hong Kong should promote the sustainable use of natural resources through improving consumption efficiency, minimising the use of non-renewable resources and re-using, recycling waste and recovering energy from wastes.
<b>Society and Social Infrastructure</b>	Hong Kong should foster a stable and progressive society and enable individuals to contribute to and fulfil their potential by providing universal access to adequate and appropriate social infrastructure.
<b>Biodiversity</b>	To maintain the biodiversity of Hong Kong and to minimise any threat which consumption in Hong Kong may have on biodiversity elsewhere.
<b>Leisure and Cultural Vibrancy</b>	Protect and enhance the vibrancy of Hong Kong's recreational opportunities, leisure activities, cultural diversity, archaeological, historical and architectural assets.
<b>Environmental Quality</b>	Hong Kong should be pro-active in avoiding environmental problems, seek to find opportunities to enhance environmental quality, and minimise the unwanted side effects, locally, nationally and internationally, of development and inefficiencies such as air, noise and water pollution or land contamination.

**Mobility**

Hong Kong should provide safe, accessible and efficient transport systems and pedestrian facilities along with an efficient transport network for the movement of goods and facilitation of services for the community.

## Indicators for SUSDEV 21

<b>Economy</b>	<ul style="list-style-type: none"> <li>● Economic return as determined through cost benefit analysis.</li> <li>● Percentage change in income less income tax for the upper quartile household minus the percentage change in income less income tax for the lower quartile.</li> <li>● Gross domestic fixed capital formation as a percentage of GDP.</li> <li>● Expenditure on primary, tertiary and secondary education as a percentage of GDP.</li> </ul>
<b>Health and Hygiene</b>	<ul style="list-style-type: none"> <li>● Public satisfaction with the cleanliness of Hong Kong.</li> <li>● In patient discharges and deaths per 100,000 population due to diseases of the respiratory system.</li> </ul>
<b>Natural Resources</b>	<ul style="list-style-type: none"> <li>● Consumption of energy per unit of output (\$ GDP)</li> <li>● Quantity of municipal solid waste, public fill and construction and demolition waste requiring final disposal per capita.</li> <li>● The total remaining landfill capacity (by volume).</li> <li>● Volume of freshwater supplied per capita.</li> <li>● Percentage of demand met by locally-derived freshwater resources.</li> <li>● Area of countryside.</li> </ul>
<b>Society and Social Infrastructure</b>	<ul style="list-style-type: none"> <li>● Average length of waiting list for public rental housing.</li> <li>● Median rent to income ratio for private housing.</li> <li>● Percentage of households residing in inadequate housing.</li> <li>● Living space per person.</li> <li>● Percentage of population living within a short walk of a community hall.</li> <li>● Waiting lists for Residential Care Homes for the elderly.</li> <li>● Number of students members of civic education and community services organisations.</li> <li>● Percentage of students receiving a passing grade or above in the Chinese and English languages in HKCEE.</li> </ul>

<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>● Area of Hong Kong of high terrestrial ecological value.</li> <li>● Area of Hong Kong of high marine ecological value.</li> <li>● Area of managed terrestrial habitat for conservation.</li> <li>● Area of managed marine habitat for conservation.</li> </ul>
<b>Leisure and Cultural Vibrancy</b>	<ul style="list-style-type: none"> <li>● Number of recorded archaeological sites.</li> <li>● Number of recorded cultural and historical sites.</li> <li>● Percentage of population living within districts with a shortfall of required provision of open space.</li> <li>● Annual ticket sales for major cultural, entertainment and sporting events.</li> </ul>
<b>Environmental Quality</b>	<ul style="list-style-type: none"> <li>● Composite index for Criteria Air Pollutants based on percentage of the Air Quality Objectives.</li> <li>● Composite index for Toxic Air Pollutants based on percentage of Acceptable Risk.</li> <li>● Quantity (Tones) of carbon dioxide emitted per year.</li> <li>● Quantity (Tonnes) of carbon dioxide emitted per capita per year.</li> <li>● Percentage of population exposed to excessive noise.</li> <li>● Number of kilometres of river ranked “Excellent” or ‘Good’ using the EPD River Water Quality Index.</li> <li>● Composite index of marine water quality pollutants based on percentage of the Water Quality Objectives.</li> <li>● Number of beach-days per year ranked ‘ Good’ or ‘Fair’.</li> </ul>
<b>Mobility</b>	<ul style="list-style-type: none"> <li>● Average Travel Distances; the united of such a measure is passenger distance travelled, i.e. the distance in kilometres travelled by passengers to get to work by all major groups of transport modes.</li> <li>● Average Network Speed; i.e. the average network speed of travel across all major groups of transport modes both public and private and which reflects the proportion of passenger use (calculated as total passenger kilometres divided by total passenger hours).</li> <li>● The cost of freight transport; the cost of charges and operating costs as a percentage of GDP.</li> </ul>

**Criteria for the selection of sustainability indicators**

- (a) representativeness;
- (b) simple and easy to interpret;
- (c) scientifically valid;
- (d) able to show trends over time;
- (e) give early warning about irreversible trends where possible;
- (f) sensitive to change in the environment, society or economy it is meant to indicate;
- (g) based on readily available and adequately documented data;
- (h) capable of being updated at regular intervals; and
- (i) have a target level or guideline against which to compare.

**Proposed Sustainability Indicators Received during Public Consultation**

**Economy**

1. Per capita GDP, GNP
2. Unemployment rate
3. Real (constant dollars) disposable income per decile
4. Research & development as a percentage of GDP
5. Number of hours worked per week doing unpaid labour by gender
6. Number of reported occupational accidents; deaths
7. The Gini coefficient (which measures the level of income in equality)
8. Income disparity/poverty
9. Ratio between working to non-working population

**Health and Hygiene**

10. Age-adjusted deaths per 100,000 population
11. Infant mortality per 100,000 population
12. Suicide rates by age and gender groups
13. Cervical cancer rates
14. Deaths from heart disease, diabetes and all forms of cancer
15. Reported cases of certain types of cancer
16. Notifications of infectious diseases including bacillary dysentery, hepatitis A, typhoid fever, tuberculosis and food poisoning
17. Work days lost due to sickness
18. Admissions to hospital due to pollution related respiratory diseases
19. Reported cases of respiratory disease
20. Number of early deaths due to air pollution
21. Reported cases of pollution-related illnesses
22. Estimated costs of pollution-related illnesses e.g. in terms of hospital costs and working days lost
23. Health
24. Mortality/morbidity
25. Infant mortality rate
26. Contribution of health towards the productivity of the community
27. Frequency/Quality of safety practices maintained/sustained in the workplace, particularly in the construction industry
28. Admissions to hospital due to (food) poisoning
29. Deaths from sickness/illness
30. In-patient discharges and deaths due to diseases of the respiratory system where the numbers should be surveyed in age groups.

**Natural Resources**

31. Land
32. Waste-fresh water, coastal and marine
33. Atmosphere
34. Reliable energy supply
35. Gross building weight per GFA
36. Material production energy calculation
37. Ratio of annual buildings GFA for new/renovated
38. Annual GFA energy efficiency
39. Areas of paving/roof
40. % km by motor vehicle (as a transport energy indicator)
41. Ratios of energy use by transport mode
42. Percentage population and job-sites rail-served
43. Percentage platforms with screen doors
44. Energy intensity; KW/dollars of GDP by sector (industry, transport, commercial, residential)
45. Waste disposed of per capita

46. Remaining landfill capacity
47. Area of protected countryside and marine waters
48. Percentage green belt/country park land
49. Energy use efficiency
50. Percentage of countryside
51. Ecological footprint
52. Environmental space
53. Availability of land space that is suitable for constructing high standard landfills in Hong Kong
54. Freshwater consumption (per head per year)
55. Solar energy consumption
56. Natural scenery
57. Area of reclaimable sites left, with the establishment of the threshold limit, and the rate of reclamation
58. Area of reclamation
59. Rate of increase or decrease of energy consumption – conventional and new form of energy
60. Land use should be addressed through area of land for auction and land covered by urban development
61. Area of the remaining usable site sold by public auction and sites under construction
62. Urban renewal to prevent decay of the existing city addressed through re-use of urban land for development
63. Area of reclamation to control the limited resources of the harbour
64. Quantity (Tonnes) of quarrying materials per year

### **Society and Social Infrastructure**

65. Government social service expenditure per capita
66. Percentage of elderly living below the 'poverty line'
67. Day care places per 1,000 persons over age 65 per district
68. Women's wages/salaries as proportion of men's
69. Number of women at managerial level in public service
70. Average floor space per head in private and public housing
71. Average length of waiting list for public rental housing
72. Percentage of population residing in inadequate housing
73. Percentage of badly degraded building stock
74. Total housing cost (i.e. mortgage repayment, rates, management and maintenance fee) to income ratio
75. Development cost yardstick of the residential dwellings
76. Size of population
77. Diversity of skills and abilities
78. Education
79. Household income spent on housing
80. Investment in renewing the obsolete housing stock
81. Residential density
82. Education indicator such as classroom size and level of teacher training
83. Overall urban density
84. Perimeter wall / floor area ratio
85. Living space per person of the lowest 10% of the population
86. Percentage of population living within a short walk of club house / MTR
87. Gender equity
88. Mortgage repayment to income ratio
89. Annual applicants for public housing
90. Number of people using homeless shelters or number of homeless people
91. Distribution of public housing throughout city
92. Number of rehabilitated public housing units
93. Yearly percentage increase in number of dwelling units
94. Waiting time for subsidized housing
95. Percent of dwellings in need of major repair
96. Affordability level of single family home
97. Housing affordability ratio – housing prices
98. Housing affordability ratio – rent prices
99. Home ownership rate
100. Education level of population, university graduates to population ratio
101. Illiteracy ratio and the rate of decrease
102. Computer literacy to total population and household ratio
103. Computer software development statistics and rate of increase

104. Average IQ / EQ of secondary school students and rate of change

## **Biodiversity**

105. Biological diversity  
106. Total numbers of species in Hong Kong for well-studied groups  
107. Changes in area of key habitat types  
108. Impacts of wood products from unsustainable sources  
109. Consumption of fish, particularly coral reef fish, caught outside Hong Kong  
110. Index of certain habitat  
111. Population changes in a) species listed in the IUCN Red Data Books as globally threatened, and b) locally scarce or threatened and species  
112. Population changes of selected species (breeding, migratory, and wintering) representative of and reliant on the full range of habitats found in Hong Kong  
113. Area and quality of each habitat type found in Hong Kong, which is able to support viable populations of species dependent upon that habitat  
114. Area of viable habitat or ecosystem lost, degraded or threatened by development, proposed development or damaging human interference (e.g. illegal dumping, hill fires)  
115. Density and number of types of flora and fauna and the rate of the changes  
116. Annual counting and / or estimation on population of statutory protected animals  
117. Sites of high ecological value  
118. Restoration of natural systems like cleaning up streams and sea water  
119. Protection of fauna and flora  
120. Ecosystem health (e.g. species diversity and areas of important natural habitat)  
121. Number of arts performances  
122. Number of independent arts groups  
123. Open space per person per district  
124. Percentage of population who are members of National Sports Associations  
125. Number of declared antiquities, monuments and archaeological sites  
126. Recreation  
127. Street markets in Hong Kong  
128. Urban open spaces and parks  
129. Green rate of the city area  
130. Number of people visiting outdoor pursuits such as country parks, beaches and barbecue sites  
131. Number of members of conservation, hiking or scout / guide associations  
132. Proportion of time spent on cultural activities for a certain age group  
133. Percentage of full time professionals in the cultural sector to the working population (to indicate the sustainability of the profession)  
134. The number of computer games sold per capita  
135. The amount of certain types of pirated VCDs confiscated  
136. Annual number of exhibitions  
137. Annual number of visits and performances by overseas cultural organizations  
138. Green spaces in urban areas

## **Environmental Quality**

139. Number of days when API exceeds 100 by district  
140. Number of districts where Annual Air Quality Objectives exceeded  
141. Number of beaches receiving very good / good rating  
142. total emissions of greenhouse gases as CO<sub>2</sub> equivalent  
143. River water quality index  
144. Comparison of chemical use with our level of understanding of the chemical  
145. Amount of pollutants per unit GDP  
146. Water quality (e.g. nutrient level) for fish and aqua-biota  
147. Noise  
148. Greenhouse gases  
149. Greenage / ground covered by green plants  
150. Indoor air quality of Hong Kong  
151. Annual number of reported red tide or annual loss of fish-farms (tonnes) due to red tide  
152. Abstractions for public water supply  
153. Expenditure on environmental research and environmental technology application in universities as a percentage of the total tertiary education expenditure

## **Mobility**

154. Public transport patronage by type : taxi, bus, light bus, MTR, MCRC, ferries, tram
155. Number of vehicle kilometres travelled by class
156. Percentage of people using public transport to commute to / from work
157. % container km by rail vs truck
158. Average vehicle speed in territory overall
159. Number of trips made by foot
160. Journey to work per employee
161. % employees on flexi-time
162. Accessibility and congestion indices
163. % flats within one km of train station
164. Kilometres of bicycle only lanes and bus-only lanes
165. Public satisfaction / dissatisfaction with public transport safety and road safety
166. Area of roads and flyovers or other measurement for road building

## **Others**

167. Index of crimes per 100,000 population
168. Incidences of domestic violence
169. Percentage of people who feel safe walking along at night (by district)
170. Percentage of population who feel crime is a major problem
171. Number of rape / assault cases reported to the police
172. Law enforcement expenditure per capita
173. Motor vehicle accidents per 1,000 population
174. Enrolment ratios of children attending kindergarten
175. Education expenditure per student
176. Pupil-teacher ratio
177. Student drop-out rate
178. Percentage of population who are university graduates or above
179. Proportion of teachers who are tertiary educated
180. Proportion of teachers who find information technology (IT) useful in education
181. Percentage of population who are 'satisfied' or 'highly satisfied' with Government performance
182. Percentage of people who think that human rights in Hong Kong can be "freely exercised"
183. Percentage of population 18 and over registered to vote
184. Percentage of registered voters who voted
185. Number of complaints by the public on environmental violations
186. Number of warnings given by the EPD to polluters before prosecution
187. Number of prosecutions
188. Levels of fines imposed by the courts pursuant to prosecutions
189. Number of complaints by the public on landuse zoning violations
190. Number of notifications by Planning Department to violators
191. Number of cases in which illegal activities are successfully halted or reversed
192. Basic civic rights (e.g. right to be represented, right to object and appeal, right to know, right to be consulted, freedom of speech)
193. Polluter pays principle as an indicator reflecting the equity of environmental responsibility
194. Hong Kong's strength and weakness
195. Comprehensive indicators to cover all aspects of life
196. Environmental and social expenditure
197. The attention various bureaux / departments paid to these indicators
198. Ways Hong Kong internalizes its cost
199. Juvenile delinquency
200. Human potential in the form of health, physical capabilities, mental capacity, reproductive success etc
201. Population
202. Public participation in the political process
203. Rate of population increase including new born babies in Hong Kong per year
204. Length of waiting list for applying immigration and emigration
205. Married-born and unmarried-born children of Hong Kong residents in the mainland
206. Number of drug abused people
207. Crime rates

208. The harm to Hong Kong's international reputation when ecological biodiversity shrinks as a direct result of government's development decisions
209. The threshold of population in Hong Kong or the intended limited of population and the rate of increase of population
210. The composition of population, average age and the rate of ageing of the population
211. The distribution and the pattern of population movement
212. Occupancy to stock ratio for different development types
213. Number of internationally acclaimed / awarded buildings and internationally mentioned / renowned tourist spots
214. Proportion of Government and related organization staff to population ratio
215. Externalities
216. Public safety

**List of useful indicators to be considered for inclusion in future**

<b>Indicators</b>	<b>Reasons for further consideration</b>
Solar energy consumption	Energy consumption has significant economic environmental quality and natural resource implications for sustainable development. The current set of indicators makes no distinction as to the proportion of renewables in the energy source.
Percentage of dwelling in need of repair	The quality of urban fabric and building stock is an increasingly important issue in Hong Kong due to ageing of buildings.
Ecological footprint	The focus of the indicator set of the Study is on Hong Kong-based indicators. Yet, cross-boundary nature of sustainable development has been raised as a focus for an indicator.
Natural scenery	The value of natural scenery should be reflected in the natural resources indicators, e.g landscape impacts which are now considered under the EIAO.
Computer literacy to total population and household ratio	Information technology is an ever-expanding aspect of the daily life in communications, research, business and industry, etc. Computer literacy among the working population is therefore important in terms of economic potential, education and social development. Some measure of general proficiency in the use of computers would therefore have resonance for sustainable development.
Indoor air quality of Hong Kong	It is an issue of particular prominence in Hong Kong at present. The working lives and lifestyles of Hong Kong people means that a large proportion of our time is spent indoors where there are also air pollutants with potential long term health effects.

**Study on Sustainable Development for the 21<sup>st</sup> Century (SUSDEV21)****Breakdown of Cost****(As at 20 January 2000)**

<b><u>Items</u></b>	<b>Consultant's Cost (in million HK\$)</b>	<b>Share (in HK\$)</b>
(a) <b>Main Study</b>	23.09	23.09
<ul style="list-style-type: none"> <li>• including local and overseas research, development of definition of sustainable development, guiding principles and sustainability indicators, and the computer-based decision support tool, review of institutional mechanism, development of a Geographical Information System for existing baseline conditions, establishment of relevant social, economic and environmental baselines based on available data, devising public consultation strategies and relevant training to government officials in using the decision support tool</li> </ul>		
(b) <b>Environmental Baseline Surveys</b>	7.41	4.89
<ul style="list-style-type: none"> <li>• surveys on terrestrial habitat mapping and ranking, toxic air pollutants, toxic pollutants in marine sediments &amp; biota, and non-transport related noise pollution</li> </ul>		
(c) <b>Awareness Raising and Consultation Programme</b>	4.50	0.45
<ul style="list-style-type: none"> <li>• two stages public consultation exercise and the awareness raising programme</li> </ul>		
(d) <b>Procurement of Computer Facilities</b>	1.50	-
(e) <b>Contingency</b>	3.50	<i>(to be confirmed)</i>
<b>Total:</b>	<b>40.00</b>	<b>28.43</b>